Safety Precautions

- Important Notes on exporting this product or equipment containing this product;

 If the end-user or application of this product is related to military affairs or weapons, its export may be controlled by "Foreign Exchange and Foreign Trade Control Law" of Japan where export license will be required before product can be exported from Japan.
- 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.
- 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.

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. Electric data of this product (Instruction Manual, CAD data) can be download from the following web site;

● Contact to : _____

industrial.panasonic.com/ac/e/

Panasonic Corporation, Industrial Device Business Division

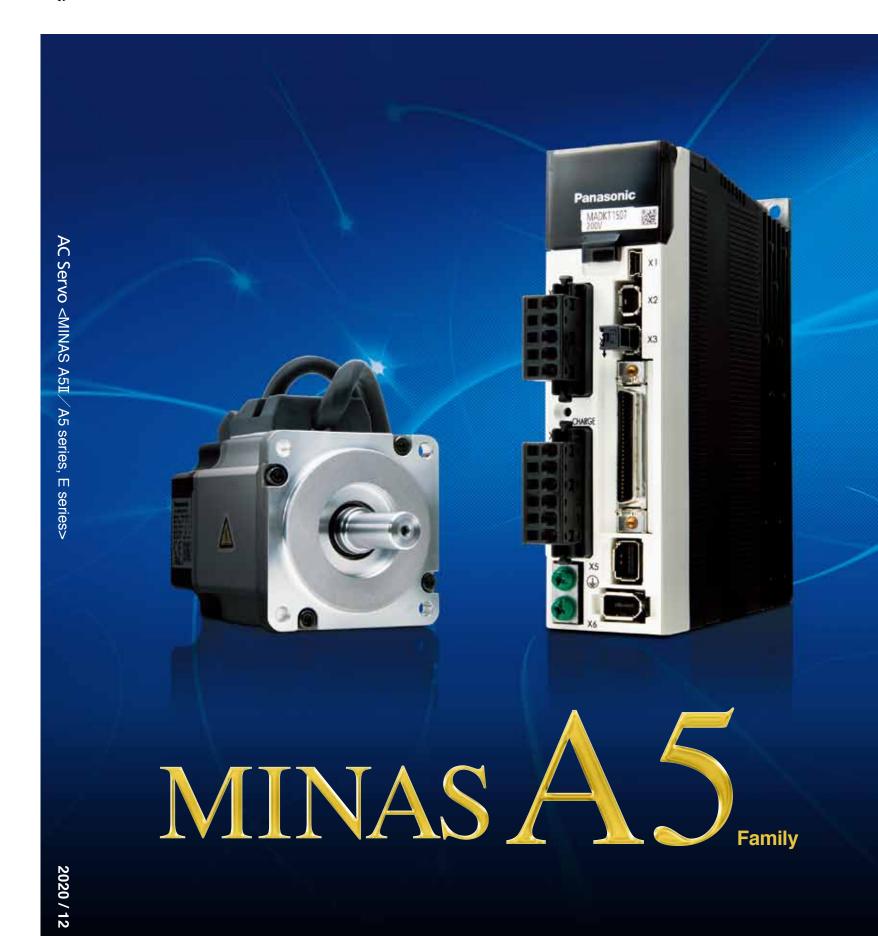
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The contents of this catalog apply to the products as of December 2020.

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Panasonic INDUSTRY

AC Servo
MINAS A5 II / A5 series
MINAS F series

2020/1 Catalog







Two-degree-of-freedom control system

All-in-one type

Rated output: 50 W to 15.0 kW

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

All-in-one type

Rated output: 50 W to 15.0 kW

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

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

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

Position control type

Rated output: 50 W to 5.0 kW

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

Slim design and position control type





Rated output: 50 W to 400 W

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

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

High-speed communication "Realtime Express" support model

Ultra high-speed Network type



Rated output:

50 W to 15.0 kW

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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

DC 24 V type



Rated output:

10 W. 20 W. 30 W

Synchronized motion and precise CP control up to 32 axes with 100 Mbps communication

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 cable¹² using
- Two-degree-of-freedom control system

Motor Specifications -Motor Specifications, Description Cable part No. Designation Specifications of Motor connector -Encoder Cable Motor Cable

191 Brake Cable-196 Interface Cable 197 Connector Kit-198 Battery for Absolute Encoder -207 Mounting Bracket 208 Reactor -209External Regenerative Resister-

Contents

A5II. A5IIE. A5. A5E series

Table of Part Numbers and Options 21

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

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

A5II Series Features -

Applicable Peripheral Devices ·

Wiring to the Connector

Control Circuit Diagram

Dimensions of Driver

Special Order Product · Model Designation

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

Wiring to the Connector X3

Wiring to the Connector X4

Wiring to the Connector X5

Wiring to the Connector X6

Table of Part Numbers and Options

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Driver Specifications

Wiring Diagram

Safety Function

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

-246 -288 Sales Office

Surge Absorber for Motor Brake

List of Peripheral Devices

General-purpose RS485 communication AE-LINK support type

series



Rated output:

50 W to 5.0 kW

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

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

Quicker, Wiser and Friendlier $\,A5I$ series

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

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







 The above is a measure based on our test environment





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

3

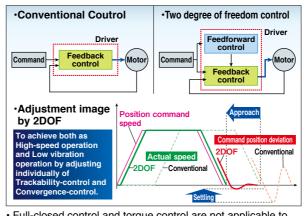


Realizes guick and accurate movement. Fast response & High-precision positioning

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

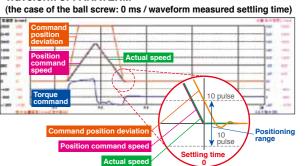


· Full-closed control and torque control are not applicable to 2DOF control system.

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

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

Waveform of PANATERM



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

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

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

· Adjustment is completed in only 3 processes

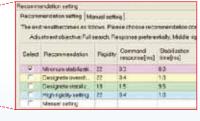


· Fit gain adjustment window

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

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

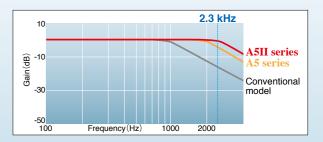
· Automatically proposes various settings



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 A 5 Family

) UiC

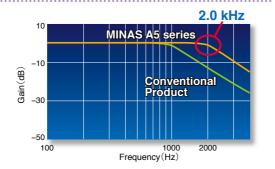


2.0 kHz Frequency Response

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

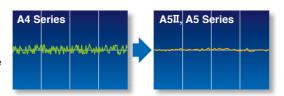




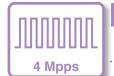
Example application Semiconductor production equipment, textile machinery, etc.

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



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

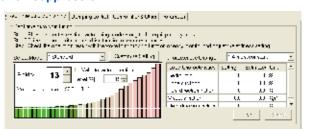
Example application Semiconductor production equipment, food processing machinery, etc.

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

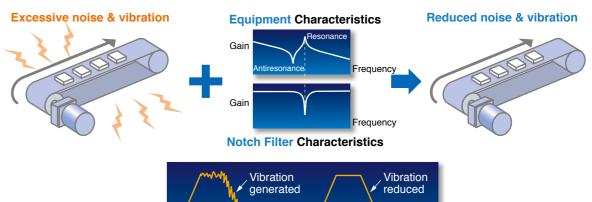
A5II

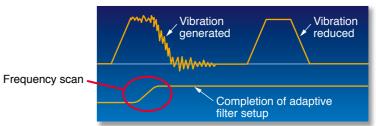
Example application Semiconductor production equipment, food processing machinery, etc.

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.)





Damping filter

Manual/Auto Damping Filter

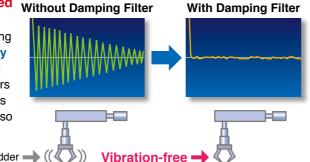
Example application

MINAS A 5 Family

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.



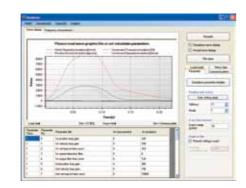


Motion Simulation

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

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



novative encode

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]									
1	Series	A 4	A5II A5	Weight Reduction						
4	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

Safe torque off

Complies with European Safety Standards.

Example application Semiconductor and LCD production equipment, etc.

Compliance with EU safety standards.

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

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



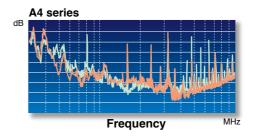
Low noise

Example application

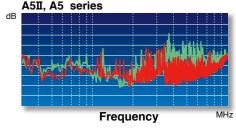
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

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.

7

Features

MINAS A 5 Family









PANATERM Set-up Support Software

A5II A5 A5IIE

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

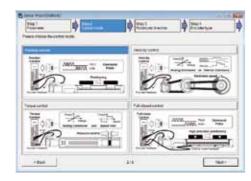
The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A5 Family through the USB interface.

Localized in 4 languages

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

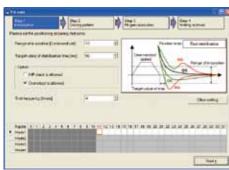
Setup Wizard

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



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 A5II, A5IIE)



Service Life Prediction

The service life prediction function considers the internal temperature for main components such as the fan and condenser. If the rated value is exceeded, an alarm is displayed. This approach prevents unexpected suspension of operation and allows for planning of systemized maintenance.



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

Encoder Temperature Monitor

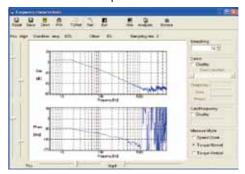
The Encoder Temperature Monitor is a new function capable of real-time measurement of the interior temperature of the encoder, something that has been difficult to achieve in the past. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with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

Other New Function

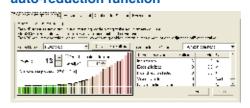
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

Frequency characteristics measurement function

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

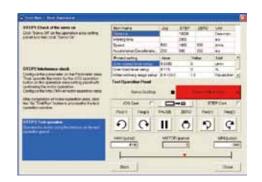


Added New screen for gain adjustment, equipped with stiffness oscillation auto-reduction function

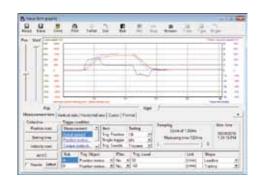


Trial run

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



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



<CAUTION>

This software is applicable only to A5II, A5, A5IIE, A5E series. To apply this software to conventional product (A, AII, E or A4 series), consult our distributors.

Hardware configuration 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 1024 × 768pix or more (desirably 1024 × 768) Resolution 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

MINAS A 5 Family **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.

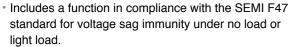
Full-closed Control

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





- · 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



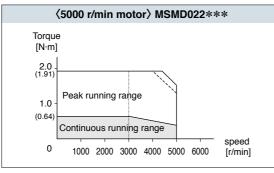
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not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

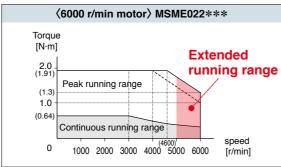
6000-rpm capability

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.

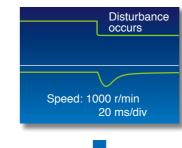
Disturbance Observer A5II A5 A5IIE A5E



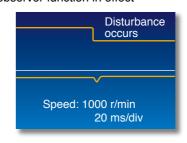


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect



Disturbance observer function in effect



Torque Feed Forward A5II A5 A5IIE

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

Friction Torque Compensation



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

3-Step Gain

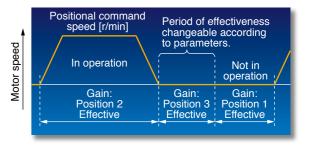


A 3-step gain switch is available in addition to the normal gain switch.

This chooses appropriate gain tunings at both stopping and running.

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

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



Inertia Ratio Conversion A5II A5 A5IIE

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

IEC : International Electrotechnical Commission EN: Europaischen Normen

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

Panasonic Testing Centre

Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

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

A 급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A 급) 전자파적합기기로서 판매자

또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

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

Applicable External Scales

A5II A5

Applicable External Scale Manufacturer		Model No.	Resolution [µs]	Maximum Speed (m/s) ^{'3}
Parallel Type (AB-phase)	General	_	Maximum s	speed after ation: 4 Mpps
		SR75	0.01 to 1	3.3
		SR85	0.01 to 1	3.3
Carial Type (Ingramental)	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
	Fagor Automation S.Coop.	SAP	0.05	2.5
		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. to a Community	AT573A	0.05	2.5
	Mitutoyo Corporation	ST778A(L)	0.1	5
			0.001	0.4
	Renishaw plc	RESOLUTE	0.05	20
			0.1	40

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

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

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

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

MINAS A5 Family

Model Designation

Motor Line-up

MINAS A5 Family

Motor Line-up

IVIC	tor Line	-up								
					Rated	Rotary 6	encoder			
	Мо	tor	Voltage	Rated output (kW)	rotational speed (Max. speed) (r/min)	20-bit incremental	17-bit absolute	Enclosure (*1)	Features	Applications
	MSMD		100 V 200 V	0.05 0.1 0.2 0.4 0.75	3000 (5000) 3000 (4500)	0	0	IP65	Leadwire type Small capacity Suitable for high speed application Suitable for all applications	Bonder Semiconductor production
Low inertia			100 V 200 V	0.05 0.1 0.2 0.4 0.75	3000 (6000)	0	0	IP67	Small capacity Suitable for high speed application Suitable for all applications	equipment • Packing machines etc
	MSME		400 V 200 V 400 V	0.75 1.0 1.5 2.0 3.0 4.0 5.0	3000 (5000) 3000 (4500)	0	0	IP65 ^(*2)	Middle capacity Suitable for the machines directly coupled with ball screw and high stiffness and high repetitive applica- tion	• SMT machines • Food machines • LCD production equipment etc
Mi	MDME		400 V 200 V 400 V	0.4 0.6 1.0 1.5 2.0 3.0 4.0 5.0 7.5 (3) 11.0 (3) 15.0 (3)	2000 (3000) 1500 (3000) 1500 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven	Conveyors Robots Machine tool etc
Middle inertia	MFME (Flat type)	6	200 V 400 V	1.5 2.5 4.5	2000 (3000)	0	0	IP67	Middle capacity Flat type and suitable for machines with space limitation	Robots Food machines etc
	MGME (Low speed/ High torque type		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
High	мнмо		100 V 200 V	0.2 0.4 0.75	3000 (5000) 3000 (4500)	0	0	IP65	Leadwire type Small capacity Suitable for low stiffness machines with belt driven	Conveyors Robots etc
High inertia	мнме		200 V 400 V	1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000) 1500 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven, and large load moment of inertia	Conveyors Robots LCD manu- facturing 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 ** Motor specifications

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

Motor rated output

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

voltage specifications					
Symbol	Specifications				
1	100 V				
2	200 V				
4	400 V				
Z	100 V/200 V common (50 W only)				

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.

Special specifications

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

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

	Shaft			Holding brake		Oil 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

Shaft		Holding	g brake	Oil seal	
Round Key-way		without	with	without	with
•		•			•
•			•		•
	•	•			•
	•		•		•
		Shaft Round Key-way		- , · · · · · · · · · · · · · · · · · ·	- J

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 200 V

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

امطمست	Gear	IVIC	otor ou	itput (VV)	Gear
1N 2N 3N 4N	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	Α	D	K	T	1	5	0	5	*	* *	H
Position control type	М	Α	D	Κ	Т	1	5	0	5	E	* *	H

Special specifications

Frame symbol * Power device Max. Symbol Frame Symbol Frame current rating MAD Frame A MED Frame E MBD Frame B MFD Frame F T1 MCD Frame C MGD Frame G

* A5IIE, A5E series is up to F-frame.

MDD Frame D MHD Frame H

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

Symbol Current rating Supply voltage 10 A

T2	15 A	specifi	cations
T3	30 A	Symbol	Specifications
T4	35 A	1	Single phase, 100 V
T5	50 A	3	3-phase, 200 V
T7	75 A	4	3-phase, 400 V
TA	100 A	5	Single/3-phase, 200 V
TB	150 A		
TC	300 A		

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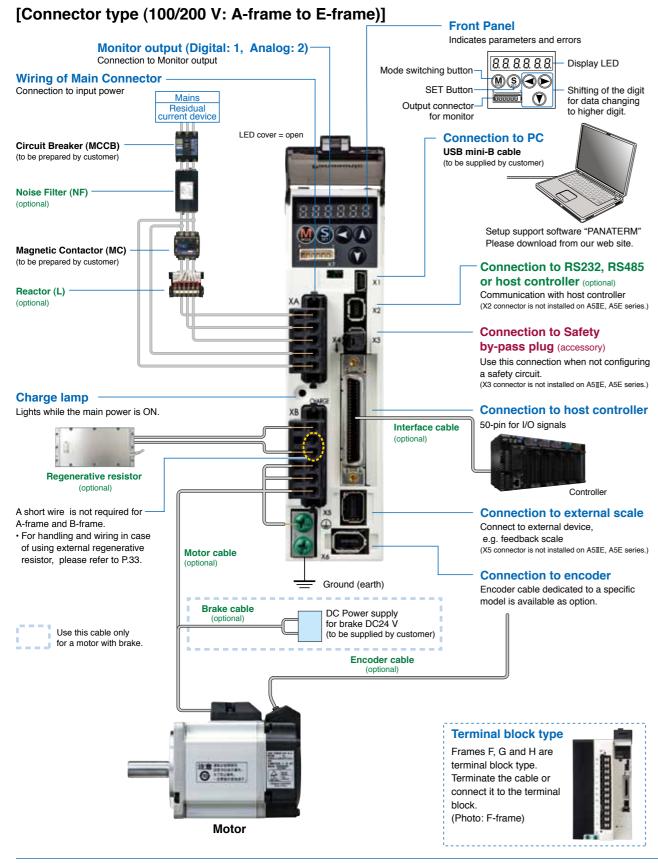
Only position contr	ol			
		t detector		_
	Symbol	Specifications	Symbol	Specification

Special specifications

Symbol	Specifications	Symbol	Specifications
05	5 A	40	40 A
07	7.5 A	64	64 A
10	10 A	90	90 A
12	12 A	A2	120 A
20	20 A	B4	240 A
30	30 A		

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

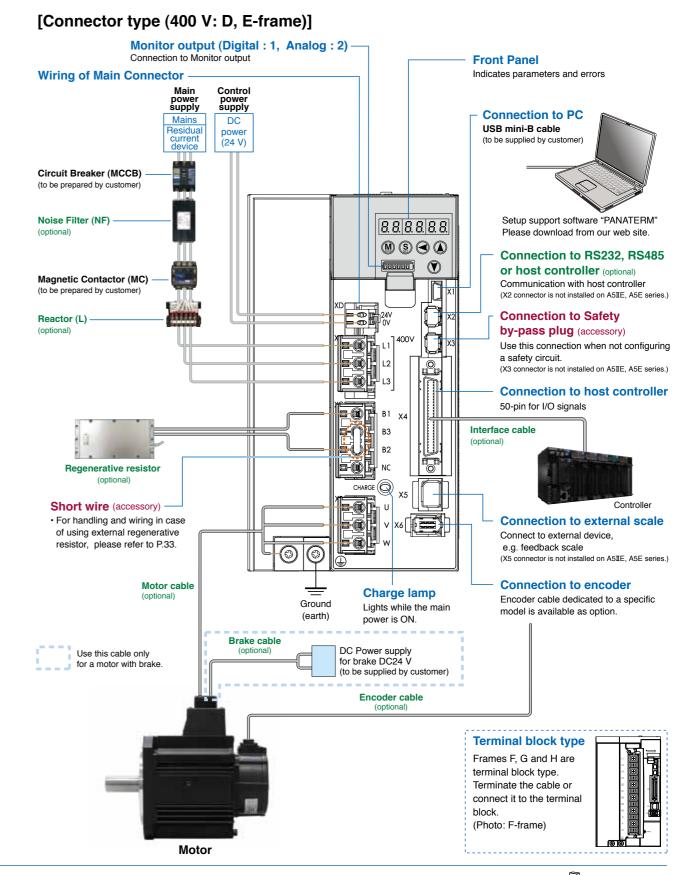
^{*} S: can be used in incremental.



<Caution>

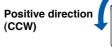
Apply adequate tightening torque to the product mounting screw by taking into consideration strength of the screw and the characteristics of material to which the product is installed. Overtightening can damage the screw and/or material; undertightening can result in loosening.

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.





MINAS A 5 Family Driver and List of Applicable Peripheral Devices

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	Ferrite core	Rated operating current of magnetic contactor Contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *3	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *4	Diameter and withstand voltage of brake cable																	
MADU	MSME	Single phase,	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190																									
MADH MADK	MSMD MHMD	100 V Single/ 3-phase, 200 V	50 W to 200 W	approx. 0.5 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450								0.28 mm² to																	
MBDH	MSME	Single 100 V	200 W	approx. 0.5 kVA	10 A	DV0P4170	DV0P4190		20 A	0.75 mm²/ AWG18				0.75 mm²/ AWG18	0.75 mm ² / AWG22 to																	
MBDK	MSMD MHMD	Single/ 3-phase, 200 V	400 W	approx. 0.9 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450		(3P+1a)	600 VAC or more				600 VAC or more	AWG18 100 VAC or more																	
MCDH MCDK	MSME MSMD MHMD	Single 100 V Single/ 3-phase,	400 W	approx. 0.9 kVA approx.		DV0PM20042	DV0P4190					0.75 mm²/ AWG18 600 VAC			or more																	
	MDME	200 V		1.3 kVA approx.	15 A							or more																				
	MHME		1.0 kW 0.9 kW	1.8 kVA approx.			DV0P4190				0		0																			
	MSME	Single/ 3-phase,	1.0 kW	1.8 kVA approx.		DV0P4220	DV0P1450	DV0P1460	30 A		onnec		onnec																			
	MHME MDME MFME	200 V	1.5 kW	1.8 kVA approx. 2.3 kVA	20 A	5 401 4220			(3P+1a)		Connection to exclusive connector		Connection to exclusive connector																			
	MSME MDME		400 W	approx. 0.9 kVA							clusiv		clusiv																			
IVIDDIT			600 W	approx.							é cor		é cor																			
	MSME		750 W	1.2 kVA approx. 1.6 kVA							nnect		nect																			
	MSME MDME	3-phase,	1.0 kW	approx.	10 A	FN258L-16-07 (Recommended)	DV0PM20050		20 A	2.0 mm ² / AWG14	q	0.52 mm ² / AWG20	9	2.0 mm ² / AWG14																		
	MHME MGME	400 V	0.9 kW	1.8 kVA	1071	(component)	D VOI MIZOGGO		(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 (Recommended)	60 A			0.75 mm²/ AWG18 600 VAC																				
MEDH	MFME	200 V	2.5 kW	approx. 3.8 kVA				component / *5	(3P+1a)			or more																				
MEDK	MSME MDME	3-phase,	V Recommended DV0FW20050 DV0F1460 (3P+1a)			0.52 mm²/ AWG20																										
	MHME	400 V	2.5 kW	approx. 3.8 kVA	15 A	(Recommended) component	DV0PM20050	DV0P1460				100 VAC or more																				
	MGME		2.0 kW	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 MSME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	DV0P1460 RJ8035 (Recommended component)			(Ο) φ5.3	0.75 mm²/ AWG18 600 VAC or more	φ5.3		0.75 mm ² /																	
	MFME		4.5 kW	approx. 6.8 kVA				*5	100 A (3P+1a)		Terminal block	of filore	Terminal block		AWG18 100 VAC																	
MFDH	MGME MDME MHME		5.0 kW	approx. 7.5 kVA				-	(4: 1:4)	3.5 mm²/ AWG12	M5		M5	3.5 mm²/ AWG12	or more																	
MEDIC	MGME		2.0 kW	approx. 3.8 kVA						600 VAC or more					600 VAC or more																	
	MSME MDME MGME MHME		3.0 kW	approx. 4.5 kVA							10 mm or smaller		7 mm or smaller																			
	MSME MDME MHME	3-phase, 400 V	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended component)	DV0PM20050	DV0P1460	60 A (3P+1a)		(O) 	0.75 mm²/ AWG18 100 VAC	(O) _{\$\psi_3.2}																			
	MFME		4.5 kW	approx. 6.8 kVA							Terminal block	or more	Terminal block																			
	MGME MSME MDME MHME		5.0 kW	approx. 7.5 kVA							M4		М3																			
	MDME		7.5 kW	approx. 11 kVA							11 mm or	0.75 mm²/	10 mm or		-																	
	MGME	3-phase, 200 V	6.0 kW	approx. 9.0 kVA	60 A	(Recommended component)	DV0P1450		100 A (3P+1a)		smaller	AWG18 600 VAC	smaller																			
IVIGDIT	MHME		7.5 kW	approx. 11 kVA		Component /				5.3 mm²/ AWG10		or more		13.3 mm²/																		
MGDK	MDME	0 nh	7.5 kW	approx. 11 kVA		FN258-42-07 or			60.4	600 VAC or more	<u>φ5.3</u>	0.75 mm²/	<u>φ5.3</u>	AWG6 600 VAC																		
	MGME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA approx.	30 A	FN258-42-33 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		Terminal block	AWG18 100 VAC or more	Terminal block	or more																		
	MHME		7.5 kW 11 kW	11 kVA approx.	100 A	(component)		RJ8095 (Recommended component)			M5		M5																			
		3-phase, 200 V	11 kW	17 kVA approx. 22 kVA	100 A	FS5559-80-34 (Recommended component	DV0P1450	T400-61D (Recommended component *5	150 A (3P+1a)		16 mm or smaller	0.75 mm²/ AWG18 600 VAC or more	10 mm or smaller	21.1 mm²/ AWG4 600 VAC	_																	
MHDH MHDK	MDME	0	11 kW	approx. 17 kVA	50 A	FN258-42-07 or		RJ8095 (Recommended) — T400-61D (Recommended) — Component	13.3 AW 600		13.3 mm²/ AWG6 600 VAC		13.3 mm²/ AWG6 600 VAC					*5	*5		*5	*5	*5	AWG6 600 VAC	AWG6 600 VAC	AWG6 600 VAC		φ6.4 Terminal	0.75 mm ² /	φ4.3 Terminal	or more 13.3 mm²/ AWG6 600 VAC	-
		3-phase, 400 V	15 kW	approx. 22 kVA	60 A	FN258-42-33 (Recommended component)	DV0PM20050		100 A (3P+1a)	or more	e lerminal block M6	AWG18 100 VAC or more	block M4	or more 21.1 mm²/ AWG4 600 VAC	2/																	

- *1 Select peripheral devices 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 For the ground screw, use the same crimp terminal as that for the main circuit terminal block.
- *4 The diameter of the ground cable and the external dynamic brake resistor cable must be equal to, or larger than that of the motor

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

- *5 Use these products to suit an international standard.
- Related page

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

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 (1) 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.

-Romarke>

- 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)	(200 V) L1, L2, L3, L1C, L2C, B1, B2, B3, NC, U, V, W		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])

. determing torque net (directina terriminal esterni estimest					
	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.

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131 DV0P4132

DV0PM20032

DV0PM20033

DV0PM20034

DV0P4290

DV0P4380

DV0PM20035

DV0PM20040

DV0PM20102 DV0PM20103

DV0P4350

DV0P2990

DV0P4430 DV0PM20027

DV0PM20028

DV0PM20029

MFECA0**0EAD MFECA0**0EAM MFECA0**0MJD

MFECA0**0MKD MFECA0**0TJD

MFECA0**0TKD MFECA0**0EAE 188 MFECA0**0MJE

MFECA0**0MKE

MFECA0**0TJE MFECA0**0TKE MFMCA0**0EED MFMCA0**0NJD MFMCA0**0NKD 191

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

MFMCB0**0PJT

MFMCB0**0SJT

MFMCB0**0SKT

MFMCB0**0PKT 196

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Analog Monitor Signal DV0PM20031

DV0PM20026

DV0PM20010

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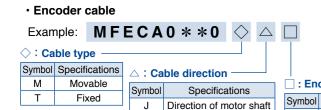
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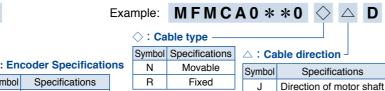
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		Motor				Driver		Power				Optional par	ts				
	Dawar	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		capacity	Encode	er Cable		Motor (Cable	Brake Cable	External	Reactor	Noise Filte
Motor series	Power supply	Output (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) 4,5,8		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	Δ.	Approx. 0.4							D\/0D4000	DVODOOZ	
	Single	100	MSMD011 □ 1 *	51	MAD 🔷 T1107	MAD ◇ T1107E	A-frame	Approx. 0.4							DV0P4280	DVUPZZI	DV0P417
	phase 100 V	200	MSMD021 □ 1 *	53	MBD ◇ T2110	MBD ♦ T2110E	B-frame	Approx. 0.5							DV0P4283	DVODOOO	
MSMD		400	MSMD041 □ 1 *	55	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9			MFMCA 0 * * 0EED				DV0P4282	DV0P228	DV0PM20
(Leadwire) type		50	MSMD5AZ ☐ 1 *	50	MAD ◇ T1505	MAD ◇ T1505E		Approx. 0.5	MFECA 0 * * 0EAM			MFMCB 0 * * 0GET	D\/0D4004				
3000 r/min	Single	100	MSMD012 ☐ 1 *	52	MAD \diamondsuit T1505	MAD ◇ T1505E	A-frame	Approx. 0.5	x. x. x.						DV0P4281	DV0P227 DV0P220	DV0P417
	phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD ◇ T1507	MAD ♦ T1507E		Approx. 0.5									DV0PM20
_	200 V	400	MSMD042 □ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9							DV0P4283	DV0P228	
0 8 -:		750	MSMD082 □ 1 *	57	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx. 1.3							DV0P220	DV0PM20	
OW		50	MSME5AZ□1 *	65	MAD \diamondsuit T1105	MAD ♦ T1105E	A 60000	Approx. 0.4	MFECA	MFECA		MFM 0 * * 0		MFMCB	DV0P4280	DV/0D227	
	Single phase	100	MSME011 □ 1 *	67	MAD ◇ T1107	MAD ♦ T1107E	A-frame	Approx. 0.4	0 * * 0MJD /For movable,\	0 * * 0MJE /For movable,\		For move direction motors	rable,\ on of	O * * OPJT (For movable, direction of mater shoft)	DV0F4280	DVOFZZI	DV0P41
	100 V	200	MSME021 □ 1 *	69	MBD ◇ T2110	MBD ♦ T2110E	B-frame	Approx. 0.5	direction of motor shaft MFECA			MFM 0 * * 0	CA	MFMCB 0 * * 0PKT	DV0P4283	DV0P228	
MSME		400	MSME041 □ 1 *	71	MCD ♦ T3120	MCD <> T3120E	C-frame	Approx. 0.9		/ For movable, \ / For movable, \		For mov opposite of of motor	able, irection	For movable, opposite direction of motor shaft	DV0P4282	D V 01 220	DV0PM20
(Connector)		50	MSME5AZ ☐ 1 *	66	MAD \diamondsuit T1505	MAD ♦ T1505E		Approx. 0.5			MFMCA 0 * * 0RJD	MFMCB	DV0P4281	DV0D00			
3000 r/min	Single	100	MSME012 □ 1 *	68	MAD ◇ T1505	MAD ♦ T1505E	A-frame	Approx. 0.5	0 * * 0TJD For fixed, direction of	0 * * OTJE / For fixed, direction of		For fixed, direction of motor shaft	ed, \ on of	For fixed, direction of motor shaft	D V 01 4201	DV0P227 DV0P220	DV0P41
	phase/ 3-phase	200	MSME022 □ 1 *	70	MAD \diamondsuit T1507	MAD ◇ T1507E		Approx. 0.5	motor shaft/	motor shaft/		MFM 0 * * 0	CA	MFMCB 0 * * 0SKT			DV0PM20
	200 V	400	MSME042 □ 1 *	72	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9	0 * * 0TKD For fixed, opposite direction	0 * * 0TKE For fixed, opposite direction		For fix opposite of of motor	ed, irection	For fixed, opposite direction of motor shaft	DV0P4283	DV0P228	
		750	MSME082 □ 1 *	73	MCD ♦ T3520	MCD ♦ T3520E	C-frame	Approx. 1.3	of motor shaft	of motor shaft		Note				DV0P220	DV0PM20
	Single phase	200	MHMD021 □ 1 *	59	MBD 🔷 T2110	MBD ♦ T2110E	B-frame	Approx. 0.5							DV0P4283	DV0P228	DV0P41
MHMD /I eadwire	100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9							DV0P4282		DV0PM20
Leadwire type 3000 r/min	Single	200	MHMD022 □ 1 *	60	MAD \diamondsuit T1507	MAD ◇ T1507E	A-frame	Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE		MFM 0 * * 0		MFMCB 0 * * 0GET		DV0P227 DV0P220	DV0P41
3000 r/min	phase/ 3-phase	400	MHMD042 □ 1 *	62	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx. 0.9		Note) 7					DV0P4283	DV0P228	DV0PM20
	200 V	750	MHMD082 □ 1 *	63	MCD ♦ T3520	MCD ♦ T3520E	C-frame	Approx.								DV0P220	DV0PM20

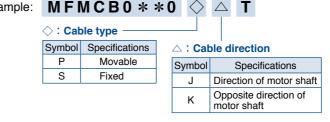
Opposite direction of

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



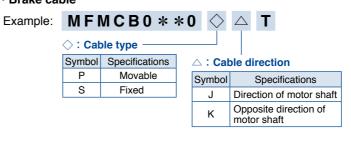


Opposite direction of



				D V 01 220	DV0PM20042	
lote) 6	Cables for oppo	site to output	shaft canno	ot be used	with 50 W or	
	100 W motor.					

- Note) 7 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.
- Note) 8 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box).
 - Please buy the battery part number "DV0P2990" separately.
- · Brake cable



50 Ω 25 W DV0P4280 100 Ω 25 W DV0P4281 External 25 Ω 50 W DV0P4282 Regenerative 50 Ω 50 W DV0P4283 Resistor 30 Ω 100 W DV0P4284 20 Ω 130 W DV0P4285 DV0P220, DV0P221, DV0P222, Reactor DV0P223, DV0P224, DV0P225, DV0P227, DV0P228, DV0P20047 DV0P4170, DV0PM20042 DV0P4220, DV0PM20043 Noise Filter DV0P3410 DV0P4190 Single phase Surge Absorber DV0P1450 3-phase (200 V) DV0P1460 Ferrite core 22

Options

Interface Cable

Connector Kit

Connector Kit for Motor

Connection

Connector Kit for

Connector Kit

Motor/Encoder Connection

Battery For Absolute Encoder

Battery Box Note) 8

Mounting

Encoder Cable

Motor Cable

Brake Cable

Bracket

Connector Kit for Motor/Brake Connection

for Power Supply Input

Interface Conversion Cable

Title

A-frame Single row type

tvpe

A-frame to D-frame

RS485, RS232

External Scale Encoder

Safety

Interface

A-frame

B-frame

C-frame

without Battery Box

with Battery Box

without Brake

Note) 8

D-frame

Double row

E 17-bit Absolute

D 20-bit Incremental

Part No.

DV0P4360 DV0P4120 DV0P4121 DV0P4130

DV0P4131 DV0P4132

A-frame Single row type DV0PM20032

			Motor				Driver		Power			Optiona	l parts					· Options (IP	65 motor)
						A5II series	A5IIE series		capacity	Encod	er Cable	Motor	Cable	Brake					Title
		Power	Output	Part No.	Rating/	A5 series Part No.	A5E series Part No.		/ at \			WIOTOI	Oabic	Cable	External	Reactor		Interface Cable	9
	Motor series	supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	(rated load / (kVA)	20-bit Incrementa 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	Noise Filter	Interface Conv	ersion Cable
		Single phase/ 3-phase	1000	MSME102 □ C *	74		MDD \diamondsuit T5540E	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220		A-frame Sii
		200 V		MSME152 C *		-	MDD \diamondsuit T5540E		Approx. 2.3	MFECA	MFECA 0**0ESE	0**2ECD	0**2FCD	_	DV0P4285	DV0P222	DV0DM00040	Connector Kit for Power	to D-frame typ
Low		3-phase 200 V	3000	MSME202 □ C * MSME302 □ C *	77	MFD \diamondsuit TA390	MED ♦ T7364E MFD ♦ TA390E		Approx. 4.5		0 OLGE	MFMCA	MFMCA	_	Note) 6 DV0P4285	DV0P223 DV0P224	DV0PM20043	Supply Input Connection	E-frame (20 D-frame (40
v inertia	MSME 3000 r/min	200 V	5000	MSME402 C * MSME502 C *	79	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 7.5			0**3ECT	0**3FCT		×2 in parallel	DV0P225	DV0P3410	Connector Kit	E-frame (40
۵		3-phase		MSME084	105 106	MDD ♦ T3420 MDD ♦ T3420	MDD ♦ T2412E MDD ♦ T3420E MDD ♦ T3420E MED ♦ T4430E		Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048	_	Recommended components	for Control Power Supply Input Connection	D-frame and E-frame (40)
		400 V		MSME304	108 109	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E		Approx. 4.5	00ESD	0**0ESE	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	Note) 7	P.252	Connector Kit for Motor Connection	A-frame to DE-frame (20 D-frame (40
		Single phase/ 3-phase 200 V	1000	MDME102 □ C * MDME152 □ C *	80 81		MDD ♦ T3530E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Regenerative Resistor	E-frame D-frame (40
		3-phase	2000	MDME202 □ C *	82	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	0 ZLOD	0 21 00	_	DV0P4285 Note) 7		DV0PM20043	Connector Kit f Motor/Encoder	
	MDME	200 V			84 85	MFD ♦ TB3A2 MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410		RS485, RS2 Safety
Middle	2000 r/min	3-phase	1500	MDME044	112 113 114	MDD ♦ T2407 MDD ♦ T2412 MDD ♦ T3420	MDD ♦ T2407E MDD ♦ T2412E MDD ♦ T3420E	D-frame	Approx. 0.9 Approx. 1.2 Approx. 1.8 Approx. 2.3	MFECA	MFECA 0**0ESE	MFMCD 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048	- Note) 7	Recommended components	Connector Kit	Interface External Sca Encoder Analog Moni
inertia		400 V		MDME204	116 117	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E		Approx. 4.5		0 OESE	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 DV0PM20049 x2 in parallel	Note) 7	P.252	Battery For Abs Battery Box No Mounting Bracket	
	MGME	Single phase/ 3-phase 200 V	900	MGME092 □ C *	92	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8	MFECA	MFECA 0**0ESE	MFMCD 0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220	Encoder Cable	without Batt with Battery Note) 8
	Low speed/\ High torque type	3-phase 200 V		MGME202 C * MGME302 C *					Approx. 3.8 Approx. 4.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410		
	1000 r/min	3-phase 400 V	900	MGME094						MFECA 0**0ESD	MFECA 0**0ESE	MFMCD 0**2ECD MFMCA	MFMCE 0**2FCD MFMCA	-	DV0PM20048 DV0PM20049	 Note) 7	Recommended components	Motor Cable	without Brak
		Single	3000	MGME304 □ C * MHME102 □ C *	127	MFD \diamondsuit TA464		F-frame	Approx. 4.5 Approx. 1.8			0**3ECT	0**3FCT		x2 in parallel	DV0P228/ DV0P222	P.252		
		phase/ 3-phase 200 V	1500	MHME152 □ C *	98	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 2.3			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P222 DV0PM20047/ DV0P222	DV0P4220		with Brake 50 Ω 25 W
_		3-phase		MHME202 C *			MED ♦ T7364E	E-frame			MFECA 0**0ESE	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 6		DV0PM20043		100 Ω 25 W 25 Ω 50 W
High inertia	MHME 2000 r/min	200 V	4000 5000	MHME302	101 102	MFD ♦ TB3A2 MFD ♦ TB3A2			Approx. 6	Approx. 4.5 Approx. 6 Approx. 7.5		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	External Regenerative Resistor	50 Ω 50 W 30 Ω 100 W
tia			1500	MHME104 C * MHME154 C *	131	MDD 🔷 T3420	MDD ◇ T3420E	D-frame	Approx. 1.8 Approx. 2.3 Approx. 3.3 Approx. 4.5 Approx. 4.5		MFMCD 0**2ECD MFMCE	MFMCE 0**2FCD MFMCE	-	DV0PM20048		Recommended		20 Ω 130 W 120 Ω 80 W 80 Ω 190 W	
		3-phase 400 V	3000	MHME204	133	MFD 🔷 T5440				0**0ESD 0**0ESE			0**2ECD MFMCA	0**2FCD MFMCA	_	DV0PM20049	Note) 7	components P.252	Reactor
				MHME504 C *				1 -nane	Approx. 7.5			0**3ECT	0**3FCT		x2 in parallel			Noise Filter	DV0P4170, DV0P4220,

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

Please buy the battery part number "DV0P2990" separately.

		to	туре					
3	Connector Kit for Power	D-frame	Double row type	DV0PM20033	200			
4	Supply Input	E-frame	(200 V)	DV0PM20044	200			
	Connection	D-frame	,	DV0PM20051				
		E-frame	,	DV0PM20052				
1	Connector Kit for Control Power Supply Input Connection	D-frame E-frame	and	DV0PM20053				
	Connector Kit	A-frame	to D-frame	DV0PM20034	201			
	for Motor	E-frame	(200 V)	DV0PM20046				
	Connection	D-frame	(400 V)	DV0PM20054				
	Connector Kit	E-frame		DV0PM20045				
	for Regenerative Resistor	D-frame	(400 V)	DV0PM20055				
				DV0P4310	204			
4	Connector Kit fo	r		DV0P4320	204			
3	Motor/Encoder (Connectio	n	DV0P4330	005			
T				DV0P4340	205			
		RS485, I	RS232	DV0PM20102				
		Safety		DV0PM20103	198			
┪		Interface		DV0P4350				
	Connector Kit	External		DV0PM20026				
		Encoder	Ocale					
Ч			l it Oi I		199			
	D E AL		lonitor Signal	DV0PM20031				
	Battery For Abso		oder	DV0P2990	207			
	Battery Box Not	ie) 8		DV0P4430				
	Mounting Bracket	D-frame		DV0PM20030	208			
		without E	Battery Box	MFECA0**0ESD	189			
	Encoder Cable	with Batt Note) 8		MFECA0**0ESE	190			
\dashv				MFMCA0**2ECD	191			
				MFMCD0**2ECD				
┥				MFMCE0**2ECD	192			
١		without E	Brake	MFMCF0**2ECD				
	Motor Cable			MFMCA0**3ECT				
				MFMCD0**3ECT	193			
┥				MFMCA0**2FCD				
		with Bral		MFMCE0**2FCD	194			
		Willi Diai	ve.		405			
		F0 C 25	14/	MFMCA0**3FCT	195			
1		50 Ω 25		DV0P4280				
3		100 Ω 25		DV0P4281				
٦	External	25 Ω 50		DV0P4282				
	Regenerative	50 Ω 50		DV0P4283	210			
	Resistor	30 Ω 100		DV0P4284	5			
٦		20 Ω 130) W	DV0P4285				
		120 Ω 80) W	DV0PM20048				
١		80 Ω 190	W	DV0PM20049				
	Reactor	DV0P22	0, DV0P221, 3, DV0P224, 7, DV0P228,		209			
	Naine Filter	DV0P41	70, DV0PM2 20, DV0PM2	0042	250			
	Noise Filter	DV0P42		00 1 0	251			
		Single pl		DV0P4190				
it	Surge Absorber			DV0P1450	252			
-	Guige ADSUIDEI	3-phase	,	DV0P1450 DV0PM20050	253			
		o-pilase	(- 00 V)	DV0PM20050 DV0P1460				
	Ferrite core							

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).

400 W to 15.0 kW IP67 motor (MSME)

		ı	Motor				Driver		Power				Optional	parts				
	Motor series	Power supply	Output (W)	Part No. Note) 1	Rating/ Spec. (page)	A5II series A5 series Part No. Speed, Position, Torque, Full-Closed type	A5IIE series A5E series Part No. (Position control type	Frame	capacity (at rated load)	20-bit Incremental	17-bit Absolute		Motor without Brake Note) 5	with Brake Note) 5	Brake Cable Note) 5	External Regenerative Resistor	Reactor (Single phase) 3-phase	Noise Filter
		Single phase/ 3-phase 200 V		MSME102 \(\text{1 *} \)	74 75	Note) 2 MDD ◇ T5540 MDD ◇ T5540	Note) 3,4 MDD ♦ T5540E MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3	Note) 5	Note) 4,5,9		MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220
			2000	MSME202 □ 1 *	76	MED ◇ T7364	MED \diamondsuit T7364E	E-frame	Approx. 3.3	MFECA 0**0ETD	MFECA 0**0ETE		0 2205	0 21 02	_	DV0P4285 Note) 7	DV0P222 DV0P223	DV0PM20043
5		3-phase 200 V		MSME302 □ 1 *		•	MFD ♦ TA390E	_	Approx. 4.5				MFMCA MFMCA	-	DV0P4285	DV0P224		
Low inertia	MSME 3000 r/min	200 \$	4000 5000	MSME402	79	MFD ♦ TB3A2	MFD ♦ TB3A2E MFD ♦ TB3A2E	F-frame	Approx. 6 Approx. 7.5				0**3ECT	0**3FCT		×2 in parallel	DV0P225	DV0P3410
ä		3-phase	750 1000 1500 2000	MSME084	105 106	MDD ♦ T3420 MDD ♦ T3420	MDD ♦ T2412E MDD ♦ T3420E MDD ♦ T3420E MED ♦ T4430E		Approx. 2.3	MFECA	MFECA		MFMCD 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048	_	Recommended components
		400 V	3000 4000	MSME304	108 109	MFD ◇ T5440 MFD ◇ TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E MFD \diamondsuit TA464E	Approx. 4.5	0**0ETE -		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	Note) 8	P.252		
		Single phase/ 3-phase 200 V		MDME102 □ 1 * MDME152 □ 1 *	80	•	MDD ♦ T3530E	D-frame	Approx. 1.8 Approx. 2.3				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220
		200 V	2000	MDME202 □ 1 *	82		MED \diamondsuit T7364E	E-frame Approx. 3.3 Approx. 4.5		MEEOA		0 ZLOD	0 2100		DV0P4285 Note) 7	DV0P222 DV0P223	DV0PM20043	
			3000 4000	MDME302		v	MFD ♦ TA390E MFD ♦ TB3A2E		MFECA 0**0ETD	MFECA 0**0ETE		MFMCA	MFMCA	_	DV0P4285	DV0P224	DV0P3410	
		3-phase 200 V		MDME502 ☐ 1 * MDME752 ☐ 1 *	85		MFD ♦ TB3A2E		Approx. 7.5				0**3ECT	0**3FCT	-	x2 in parallel DV0P4285	DV0P225	Recommended
	MDME		11000	MDMEC12 1 *		MHD \diamondsuit TC3B4	_	H-frame	Approx. 17				Note) 6	6 Note) 6		x3 in parallel	Note) 8	components P.252
Middle	2000 r/min		1500	MDMEC52	111 112 113 114	MDD \diamondsuit T2412 MDD \diamondsuit T3420			Approx. 22 Approx. 0.9 Approx. 1.2 Approx. 1.8 Approx. 2.3 Approx. 3.3				MFMCD 0**2ECD	MFMCE 0**2FCD		x6 in parallel DV0PM20048 DV0PM20049		Recommended
inertia		3-phase 400 V	4000	MDME304	117	MFD \diamondsuit TA464		F-frame	Approx. 4.5 Approx. 6 Approx. 7.5	MFECA 0**0ETD	MFECA 0**0ETE		MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	— Note) 8	components P.252
			11000	MDME754 \(\begin{array}{c cccc} 1 & * & & & & & & & & & & & & & & & & &	120		_	G-frame	Approx. 17				Note) 6	Note) 6		DV0PM20049 x3 in parallel DV0PM20049 x6 in parallel		
		Single phase/ 3-phase 200 V		MDMEC54 □ 1 * MFME152 □ 1 *			MDD ◇ T5540E	D-frame		Approx. 22	MFECA		MFMCA 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220
	MFME	3-phase	2500	MFME252 □ 1 *	90	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.8	0**0ETD	0**0ETE		MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 7	DV0P224	DV0PM20043
	(Flat type) 2000 r/min	200 V		MFME452 1 *		·	·	E F-frame Approx. 6.8 E D-frame Approx. 2.3 E E-frame Approx. 3.8 MFECA No**0ETD 0**			MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	Note) 8	DV0P3410		
		3-phase 400 V		MFME154 1 * MFME254 1 *					MFECA 0**0ETE		MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048 DV0PM20049	— Note) 8	Recommended components		
		700 V	4500	MFME454 □ 1 *	124	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	0**0ETD (O OLIL		MFMCD 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	11016) 0	P.252	

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

	 Options 	(IP67	moto
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	Title		Part No.	Pag	
Interface Cable			DV0P4360		
			DV0P4120		
			DV0P4121	10-	
Interface Conve	rsion Cab	le	DV0P4130	197	
			DV0P4131		
			DV0P4132		
	A-frame to	Single row type	DV0PM20032		
Connector Kit for Power Supply Input	D-frame	Double row type	DV0PM20033	200	
Connection	E-frame	,	DV0PM20044		
	D-frame	,	DV0PM20051		
	E-frame	(400 V)	DV0PM20052		
Connector Kit for Control Power Supply Input Connection	D-frame E-frame		DV0PM20053		
Connector Kit	A-frame	to D-frame	DV0PM20034	20	
for Motor	E-frame	(200 V)	DV0PM20046	20	
Connection	D-frame	(400 V)	DV0PM20054		
Connector Kit	E-frame	-	DV0PM20045		
for Regenerative Resistor	D-frame	(400 V)	DV0PM20055		
			DV0PM20036	203	
Connector Kit fo			DV0PM20037	204	
Motor/Encoder (Connectio	n	DV0PM20038	204	
			DV0PM20039		
	RS485, I	RS232	DV0PM20102		
	Safety		DV0PM20103	198	
Connector Kit	Interface		DV0P4350		
	External	Scale	DV0PM20026		
	Encoder		DV0PM20010	199	
	Analog M	Ionitor Signal	DV0PM20031		
Battery For Abso	olute Enco	oder	DV0P2990	207	
Battery Box Not	-\ 0		D) (0D 4 400	20	
Battory Box 1101	e) 9		DV0P4430		
Mounting	D-frame		DV0P4430 DV0PM20030	208	
Mounting	D-frame	Battery Box		208	
Mounting Bracket	D-frame without E	ery Box	DV0PM20030		
Mounting Bracket	D-frame without E	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD	190	
Mounting Bracket	D-frame without E	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD	190	
Mounting Bracket	D-frame without E	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD	190	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD	190	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD	190 191	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT	190 191	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	190 192 193	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9	ery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD	190 190 190 190	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9 without E	ery Box Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT	190 192 193	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9 without E	ery Box Brake Ke	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280	190 192 193	
Mounting Bracket Encoder Cable	D-frame without E with Batt Note) 9 without E with Brake 50 Ω 25 100 Ω 25	ery Box Brake Ke W 5 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281	190 192 193	
Mounting Bracket Encoder Cable Motor Cable	D-frame without E with Batt Note) 9 without E with Brake 50 Ω 25 100 Ω 25 25 Ω 50	ery Box Brake Ke W 5 W W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	190 192 193	
Mounting Bracket Encoder Cable Motor Cable	D-frame without E with Batt Note) 9 without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $50 \Omega 50$	ery Box Brake Ge W S W W W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283	190 192 193 194 195	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Batt Note) 9 without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $00 \Omega 100$ $00 \Omega 100$	ery Box Brake Ge W S W W W W D W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284	190 192 193 194 195	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Batt Note) 9 without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $00 \Omega 100$ $00 \Omega 100$ $00 \Omega 100$	ery Box Brake W S W W W D W D W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4285	190 192 193 194 195	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Batt Note) 9 without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $00 \Omega 100$ $00 \Omega 130$ $00 \Omega 130$ $00 \Omega 130$	ery Box Brake W S W W W O W O W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048	190 192 193 194 195	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Batt Note) 9 without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $00 \Omega 100$ $00 \Omega 130$	ery Box Brake W S W W W O W O W O W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049	190 192 193 194 195	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Brake So Ω 25 100 Ω 25 25 Ω 50 Ω 00 Ω 100 Ω 120 Ω 130 Ω 120 Ω 80 Ω 190 DV0P222 DV0P222	ery Box Brake W 5 W W 0 W 0 W 0 W 0 W 0 W 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCP**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225,	190 191 192 194 195	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt Note) 9 without E with Brain 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	ery Box Brake W W W W W O W O O W O O D D	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042	190 192 193 194 210	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt Note) 9 without E with Brain 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22: DV0P41 DV0P42	ery Box Brake W 5 W W 0 W 0 W 0 W 0 W 0 D, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042	190 191 192 193 194 195 210 209	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt Note) 9 without E with Brake 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22: DV0P41 DV0P42: DV0P34	ery Box Brake W 5 W W 0 W 0 W 0 W 0 W 0 D, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCP**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043	190 192 193 194 195 210 209	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor Noise Filter	D-frame without E with Batt Note) 9 without E with Brak 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22: DV0P41 DV0P42: DV0P34 Single ph	ery Box Brake W 5 W W 0 W 0 W 0 W 0 D, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2 10 nase	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCP**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043	208 190 191 192 193 194 210 209 250 251	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt Note) 9 without E with Brake 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22: DV0P41 DV0P42: DV0P34	ery Box Brake W 5 W W 0 W 0 W 0 W 0 D, DV0P221, 33, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2 10 nase (200V)	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCP**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043	190 191 192 193 194 195 210 209	

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 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.

							Driver		Power				Optional parts					
			Motor	2	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		Part No. Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type Note) 2	Part No. (Position control type Note) 3,4	Frame	(rated load) (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter
		Single phase 3-phase 200 V		MGME092 □ 1 *	92	MDD ◇ T5540	MDD ♦ T5540E	D-frame	Approx. 1.8				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220
			2000	MGME202 □ 1 *	93	MFD ♦ TA390	MFD ♦ TA390E		Approx. 3.8	MFECA	MFECA						DV0P223	
			3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5	0**0ETD		MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P224	DV0P3410	
=	MGME	3-phas	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5			0 OLO1	0 0 0		AZ III paralloi	DV0P225		
ואווטטופ ווופונומ	Low spee High torq type	d/) ue) 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
٩	1000 r/m	in	900	MGME094 □ 1 *	125	MDD ◇ T3420	MDD ◇ T3420E	D-frame	D-frame Approx. 1.8				MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		
		2 nhaa	2000	MGME204 □ 1 *		MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 3.8	MFECA	CA MFECA		MFMCA	MFMCA		DV0PM20049		Recommended
		3-phas 400 V	3000	MGME304 □ 1 *			MFD \diamondsuit TA464E	F-frame	F-framo Annroy 4 h	0**0ETD	0**0ETE		0**3ECT	0**3FCT	_		Note) 7	components
			4500	MGME454 □ 1 *	128	MFD \diamondsuit TA464	MFD \diamondsuit TA464E								-	·	-	P.252
			6000	MGME604 □ 1 *	129	MGD ♦ TB4A2	_	G-frame	Approx. 9.0				Note) 6	Note) 6		DV0PM20049 ×3 in parallel		
		Single phase		MHME102 □ 1 *	97	MDD ◇ T3530	MDD ♦ T3530E	D-frame	Approx. 1.8	_			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222	DV0P4220
		200 V		MHME152 □ 1 *	98	MDD ◇ T5540	MDD ♦ T5540E		Approx. 2.3				0 ZEOD	0 21 05			DV0PM20047 DV0P222	
			2000	MHME202 □ 1 *	99	MED ◇ T7364	MED <> T7364E	E-frame	Approx. 3.3	MFECA			MFMCE 0**2ECD	MFMCE 0**2FCD		DV0P4285 Note) 8	DV0P223	DV0PM20043
			3000	MHME302 □ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5	0**0ETD	0**0ETE		MEMCA	МЕМОА		DV0P4285	DV0P224	
		3-phas			101		MFD \diamondsuit TB3A2E	-	Approx. 6				MFMCA MFMC 0**3ECT 0**3F0	0**3FCT		×2 in parallel	DV0P225	DV0P3410
١	<u>.</u>	200 V	5000	MHME502 ☐ 1 *	102	MFD \diamondsuit TB3A2	MFD \diamondsuit TB3A2E		Approx. 7.5						-			
Ligit iileitid	MHME 2000 r/m		7500	MHME752 □ 1 *	103	MGD ♦ TC3B4	_	G-frame	Approx. 11				Note) 6	Note) 6		DV0P4285 x3 in parallel	– Note) 7	Recommended components P.252
4			1000	MHME104 □ 1 *	130	MDD 🔷 T2412	MDD ♦ T2412E	D.	Approx. 1.8				MFMCD			D\/0DM00040		
			1500	MHME154 □ 1 *	131	MDD 🔷 T3420	MDD ◇ T3420E	D-frame	Approx. 2.3				0**2ECD	MFMCE		DV0PM20048		
				MHME204 ☐ 1 *	132	MED \diamondsuit T4430	MED ◇ T4430E	E-frame	Approx. 3.3	MEEGA	MEEGA		MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommended
		3-phas 400 V	3000	MHME304 □ 1 *	133	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE		MENAGA	MENAGA	-	D\/0D\400040	— Note) 7	components
			4000	MHME404 □ 1 *	134	-	MFD \diamondsuit TA464E	4E F-frame Approx. 6	, ,,,,	5 52.2		MFMCA MFMCA 0**3ECT 0**3FCT	DV0PM20049 Note) 7 ×2 in parallel	, .	P.252			
			5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD \diamondsuit TA464E				0""3ECT 0""3FCT		<u> </u>					
			7500	MHME754 ☐ 1 *	136	MGD ♦ TB4A2	_	G-frame	Approx. 9.0				Note) 6	Note) 6		DV0PM20049 ×3 in parallel		

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

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- 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.

	Title		Part No.			
Interface Cable			DV0P4360			
			DV0P4120			
			DV0P4121			
Interface Conve	rsion Cabl	е	DV0P4130			
		-	DV0P4131			
			DV0P4132			
	A-frame	Single row	DV0PM20032			
Connector Kit	to D-frame	type Double row	DV0PM20033			
for Power Supply Input		type				
Connection	E-frame	,	DV0PM20044			
	D-frame	,	DV0PM20051			
Connector Kit for Control Power	D-frame E-frame	and	DV0PM20052 DV0PM20053			
Supply Input Connection	L-mame	(400 V)				
Connector Kit	A-frame	to D-frame	DV0PM20034			
for Motor	E-frame	,	DV0PM20046			
Connection	D-frame	(400 V)	DV0PM20054			
Connector Kit	E-frame		DV0PM20045			
for Regenerative Resistor	D-frame	(400 V)	DV0PM20055			
			DV0PM20036			
Connector Kit fo			DV0PM20037			
Motor/Encoder (Connection	n	DV0PM20038			
			DV0PM20039			
	RS485, F	RS232	DV0PM20102			
	Safety		DV0PM20103			
Connector Kit	Interface		DV0P4350			
	External	Scale	DV0PM20026			
	Encoder		DV0PM20010			
	Analog M	onitor Signal	DV0PM20031			
Battery For Abso	olute Enco	der	DV0P2990			
Battery Box Not	te) 9		DV0P4430			
Mounting Bracket	D-frame		DV0PM20030			
Bracket	without E	Battery Box	MFECA0**0ETD			
Encoder Cable	with Batte Note) 9		MFECA0**0ETE			
	, -		MFMCA0**2ECD			
			MFMCD0**2ECD			
	without E	trako	MFMCE0**2ECD			
	with four E	, and	MFMCF0**2ECD			
Motor Cable			MFMCA0**3ECT			
			MFMCD0**3ECT			
			MFMCA0**2FCD			
	with Brak	е	MFMCE0**2FCD			
			MFMCA0**3FCT			
			DV0P4280			
	50 Ω 25	W				
	50 Ω 25 1 100 Ω 25		DV0P4281			
		5 W	DV0P4281 DV0P4282			
	100 Ω 25	w W				
Regenerative	100 Ω 25 25 Ω 50	W W	DV0P4282			
Regenerative	100 Ω 25 25 Ω 50 50 Ω 50	W W W	DV0P4282 DV0P4283			
Regenerative	100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100	S W W W O W	DV0P4282 DV0P4283 DV0P4284			
Regenerative	100 Ω 25 25 Ω 50 ° 50 Ω 50 ° 30 Ω 100 20 Ω 130	S W W W O W O W	DV0P4282 DV0P4283 DV0P4284 DV0P4285			
Regenerative Resistor	100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P220	6 W W W O W O W O W O D, DV0P221, 3, DV0P224,	DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,			
Regenerative Resistor	100 Ω 25 25 Ω 50 ° 50 Ω 50 ° 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P221 DV0P417	6 W W W O W O W O W O D, DV0P221, 3, DV0P224,	DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
Regenerative Resistor	100 Ω 25 25 Ω 50 ° 50 Ω 50 ° 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P221 DV0P417	6 W W W O W O W O W O, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2	DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
Regenerative Resistor	100 Ω 25 25 Ω 50 ° 50 Ω 50 ° 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P221 DV0P411 DV0P422	6 W W W O W O W O D O DV0P221, 33, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
External Regenerative Resistor Reactor Noise Filter Surge Absorber	100 Ω 25 25 Ω 50 ° 1 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P221 DV0P412 DV0P422 DV0P425 DV0P425 DV0P425 DV0P425 Single ph	6 W W W O W O W O W O, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043			
Regenerative Resistor Reactor Noise Filter	100 Ω 25 25 Ω 50 ° 1 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P221 DV0P412 DV0P422 DV0P425 DV0P425 DV0P425 DV0P425 Single ph	6 W W W 0 W 0 W 0 W 0 W 0 W 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D	DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043			

0.9 kW to 7.5 kW IP67 motor (MGME)

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

		400.14	Main	circuit	Single phase, 100 V to 120 V $^{+10~\%}_{-15~\%}$ 50 Hz/60 Hz					
		100 V	Contro	l circuit	Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz					
			Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz					
	lnpu:		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					
		400 V	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	ironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation*1)					
			Alti	tude	Lower than 1000 m					
			Vibr	ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)					
	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive					
Ва	Enc	oder feed	dback		17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial					
sic Spe				A/B phase	A/B phase, initialization signal defferential input.					
Basic Specifications	Feedback scale feedback			serial	Manufacturers that support serial communication scale: DR. JOHANNES HEIDENHAIN GmbH Fagor Automation S.Coop. Magnescale Co., Ltd. Mitutoyo Corporation Nidec Sankyo Corporation Renishaw plc					
	P	Octobrol	Input		General purpose 10 inputs The function of general-purpose input is selected by parameters.					
	Parallel I	Control	signai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.					
	0 0	Analog	oianal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)					
	connector	Allalog	sigriai	Output	2 outputs (Analog monitor: 2 output)					
	ector	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)					
		ruise si	griai	Output	4 outputs (Line driver: 3 output、 open collector: 1 output)					
				USB	Connection with PC etc.					
		mmunicat ction	ion	RS232	1 : 1 communication					
				RS485	1 : n communication up to 31 axes to a host.					
	Saf	ety functi	on		Used for functional safety.					
	Fro	nt panel			(1) 5 keys (2) LED (6-digit)(3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))					
	Reg	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.)					
	Dyr	namic bra	ke		A-frame to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only					
	Control mode				Switching among the following 7 mode is enabled, (1) Position control (2) 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			
Positi	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)			
Position control	input	Electronic gear (Division/Multiplication of command pulse)	1/1000 times to 1000 times			
으		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input			
	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.			
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.			
	Instantaneo	us Speed Observer	Available			
	Damping Co	ontrol	Available			
	2DOF settir	igs	Only available at A5I 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.			
8		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.			
0	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			
Ξ .	Speed Conf	rol filter	Available			
Function	2DOF settir	igs	Only available at A5II Series			
3 =	Control inpu	ıt	Speed zero clamp, Torque command sign input etc.			
orq	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)			
N [*]	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.			
₽ E		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver : 4 Mpps			
- <u>cl</u> o	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> <u>o</u></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.			
			1/40 times to 160 times			
	feedback so		Available			
	Damping Co	ontrol	Available			
		ontrol	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.			
Corr	Damping Co	encoder feedback pulse	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			
Common	Damping Co		The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting.			
Common	Damping Co	encoder feedback pulse	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. 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 \	circuit	E-frame to F-frame	3-phase, 200 V to 230 V +10 % 50 Hz/60 Hz					
	ower	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz					
			circuit	E-frame to F-frame	Single phase, 200 V to 230 V +10 % 50 Hz/60 Hz					
		400 V	Main circuit	D-frame to F-frame	3-phase, 380 V to 480 V					
	400 V Control circuit Control circuit Control 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)					
		mmunicat	ion	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.

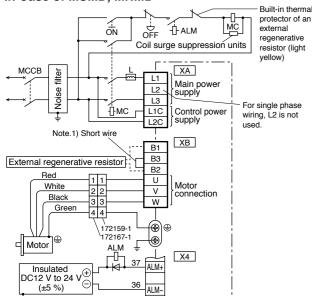
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		Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.
		Control outp	out	Positioning complete (In-position) etc.
			Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps
	Position contro	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)
	control	input	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 setting	ngs	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.

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

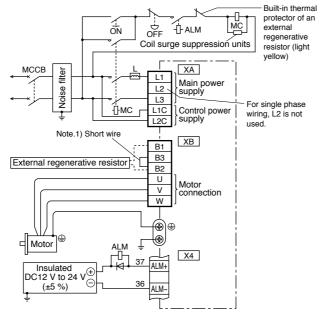




· In Case of MSME

and Terminal Block

Wiring to Connector, XA, XB, XC, XD



Note.1)

Built-in thermal

protector of an

regenerative

resistor (light

external

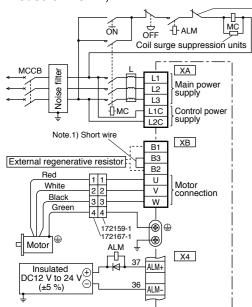
	<u> </u>			
Frame No.	Short wire (Accessory)	Built-in regenerative resistor	Connection of the connector XB	
			In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative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

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

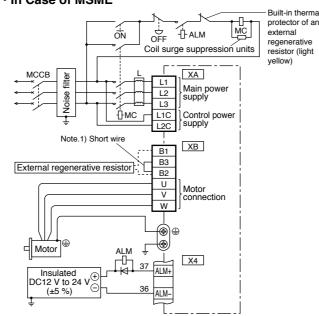
In Case of 3-phase, A-frame to D-frame, 200 V type

· In Case of MSMD. MHMD

Note.1)



· In Case of MSME



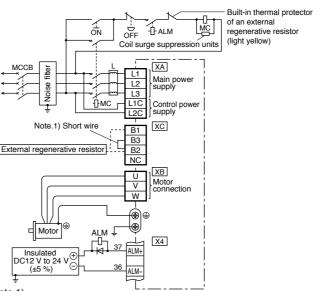
Note.1

Frame No.	Short wire (Accessory)	Built-in regenerative resistor	Connection of the connector XB		
			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)

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

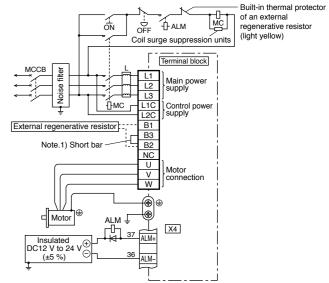
* Refer to P.186, P.187, Specifications of Motor connector.



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

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

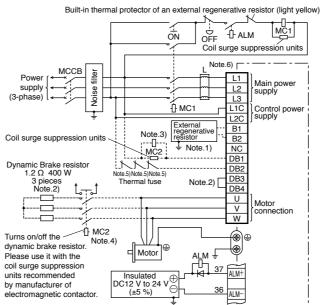
In Case of 3-phase, F-frame, 200 V type



Note.1)

F	Short bar (Accessory)	Built-in regenerative resistor	Connection of terminal block		
Frame No.			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

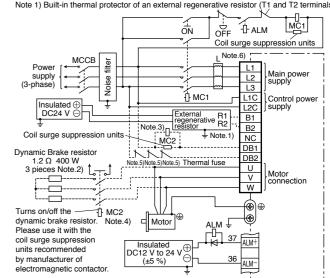


Note.1) About regenerative resistor

Frame No.	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) About dynamic brake resistor							
Frame	Chart har	Short bar Accessory) 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			
			Remove attached short bar	Object of the street of the street			

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

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



Note.1) About regenerative resistor

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

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

Note.2) About dynamic brake resistor

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.

between DB3-DB4
 Open between DB1-DB2

- Note.5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor.
- Note.6) Reactor should be prepared by the customer. * Refer to P.186, P.187, Specifications of Motor connector.

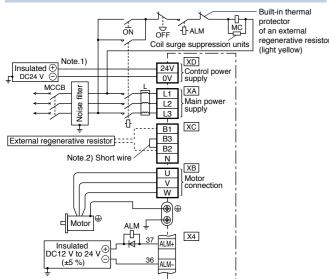
hetween DR3-DR4

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Wiring Diagram

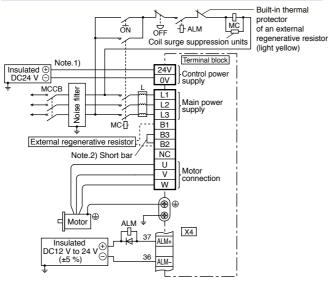
In Case of 3-phase, D-frame and E-frame, 400 V type



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

	•				
Frame	Short wire (Accessory)	Built-in regenerative resistor	Connection of the connector XC		
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 resistor 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 (

Coil surge suppres

| 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 OFF

tive R1

∯ MC1

- d ALM

24V

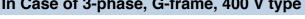
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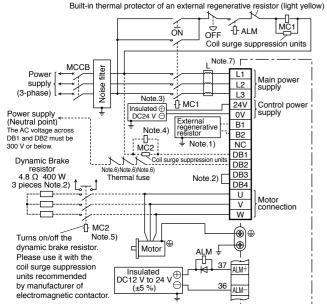
In case of not using

· Open between DB1-DB2

Coil surge suppression units

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





Note.1) About regenerative resistor

Frame No.	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) About dynamic brake resistor						
	O consideration of the order of the object					

Frame No.	Short bar	dynamic brake In case of using	Connection of terminal block				
	(Accessory)		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.

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

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

Outline Description of Safe Torque Off (STO)

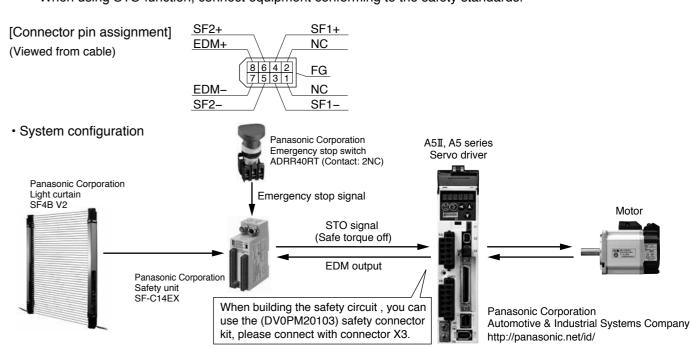
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

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

Safety Precautions

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



35

without

DC24 V

Turns on/off the

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

3 pieces Note.2) L

dvnamic brake resistor.

Please use it with the

coil surge suppression

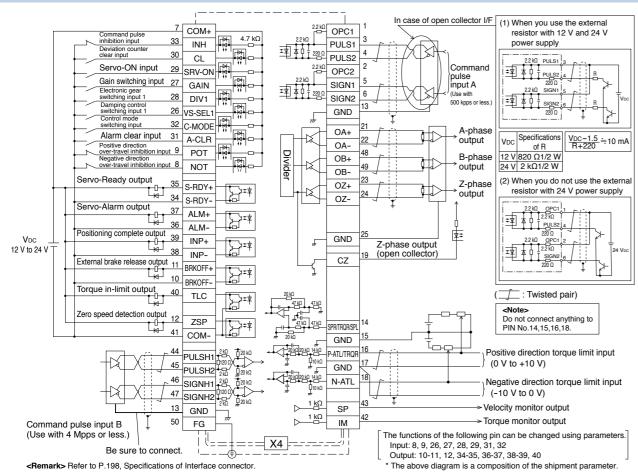
Note.1) About regenerative resistor

Note.2) About dynamic brake resistor

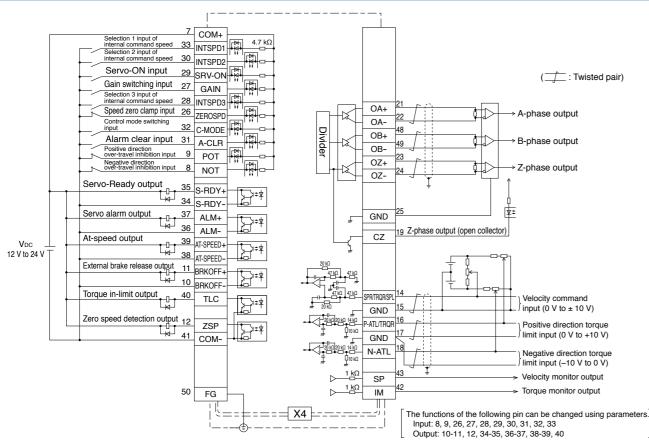
without

units recommended by manufacturer of Note.5)

Wiring Example of Position Control Mode



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

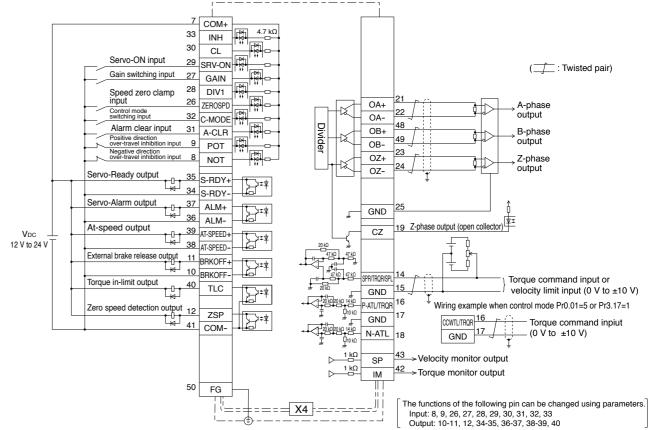


37

<Remark> Refer to P.198, Specifications of Interface connector

The above diagram is a composition of the shipment parameter.

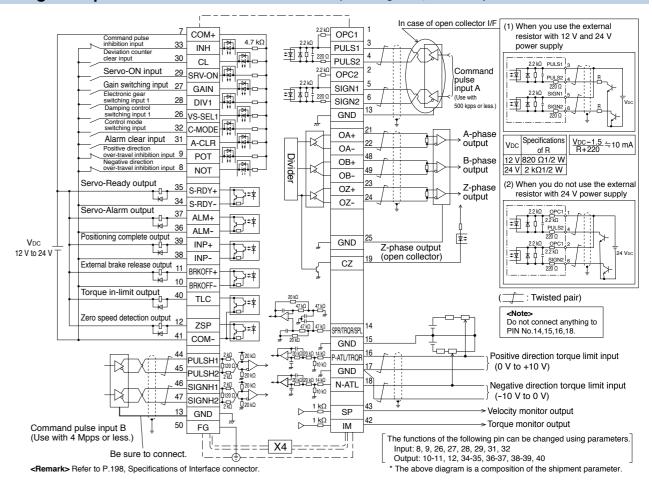
Wiring Example of Torque Control Mode (Excluding A5IIE, A5E series)



<Remark> Refer to P.198, Specifications of Interface connector.

* The above diagram is a composition of the shipment parameter

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



38

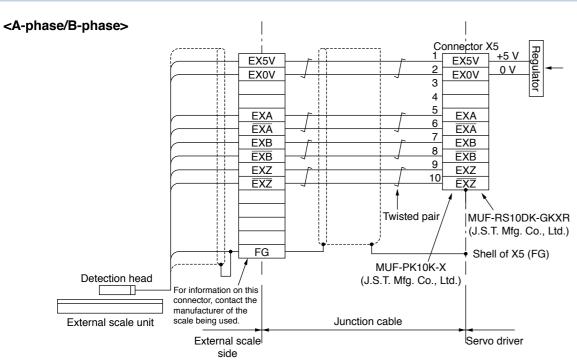
Applicable External Scale

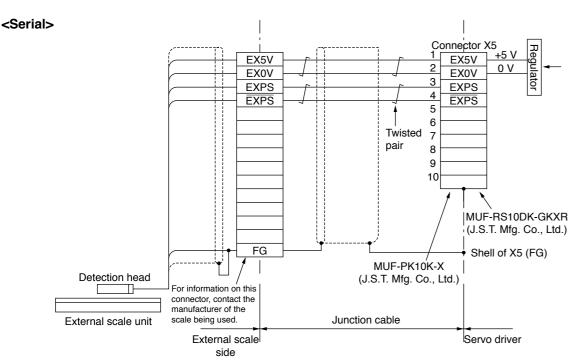
The manufacturers applicable external scales for this product are as follows.

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

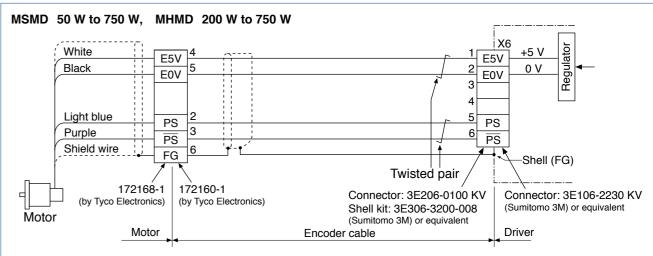
- DR. JOHANNES HEIDENHAIN GmbH
- Fagor Automation S.Coop.
- Magnescale Co., Ltd.
- Mitutoyo Corporation
- Nidec Sankyo Corporation
- Renishaw plc
- * For the details of the external scale product, contact each company.

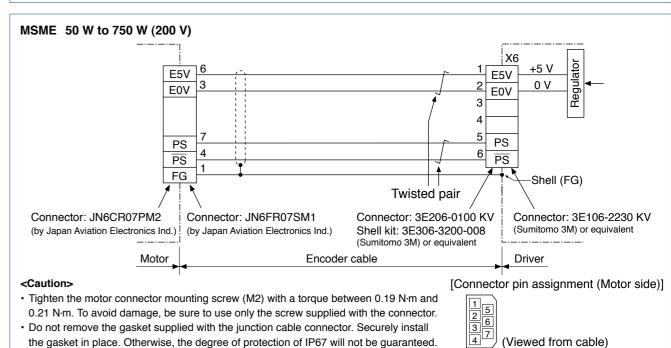
Wiring Diagram of X5

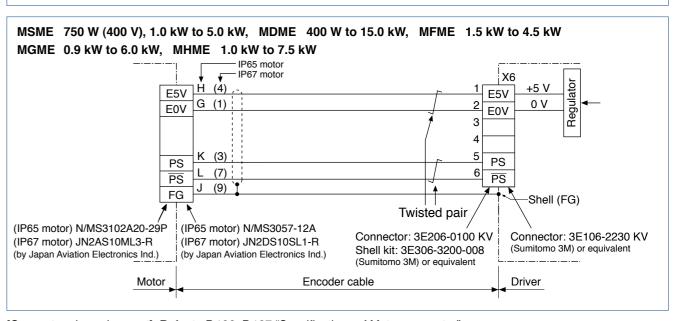




In Case of 20-bit Incremental Encoder



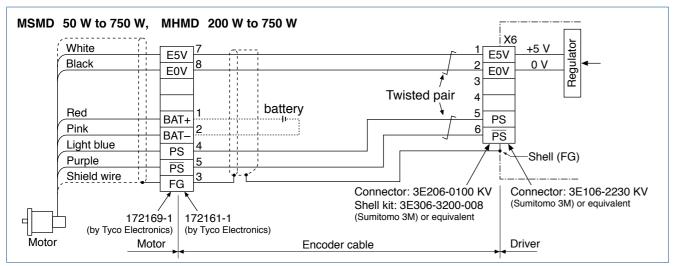


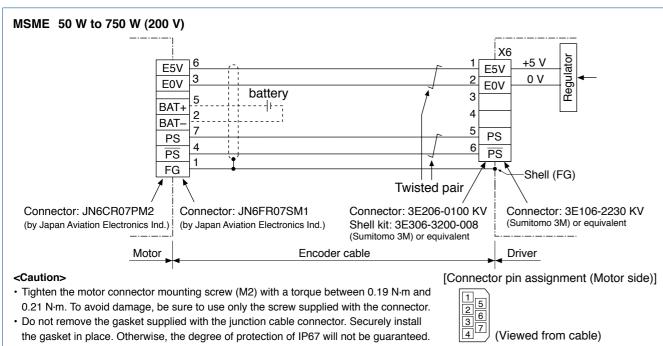


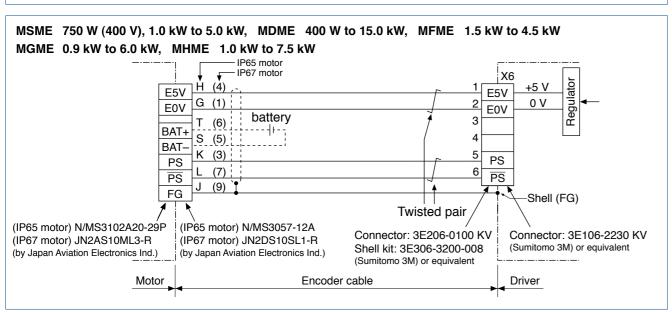
[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

A5 Family

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



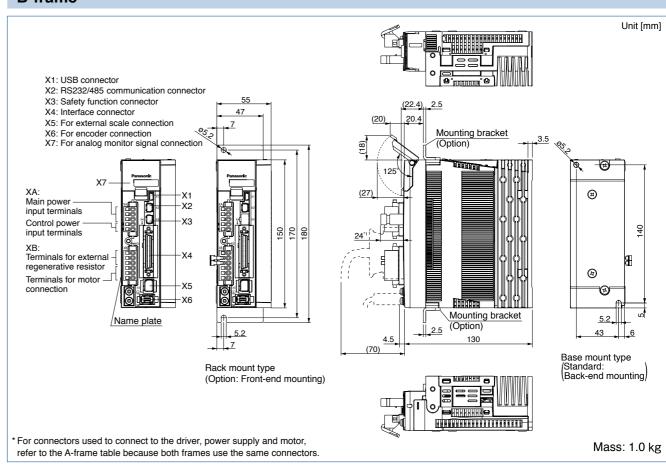




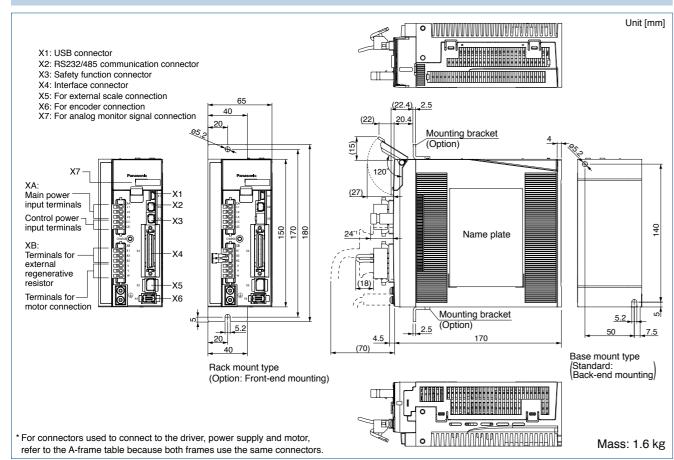
[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

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 (Standard: Back-end mounting) (Option: Front-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 Connector XB 06JFAT-SAXGF J.S.T. Mfg. Co., Ltd. Connector X7 530140610 (or equivalent Japan Molex Inc.

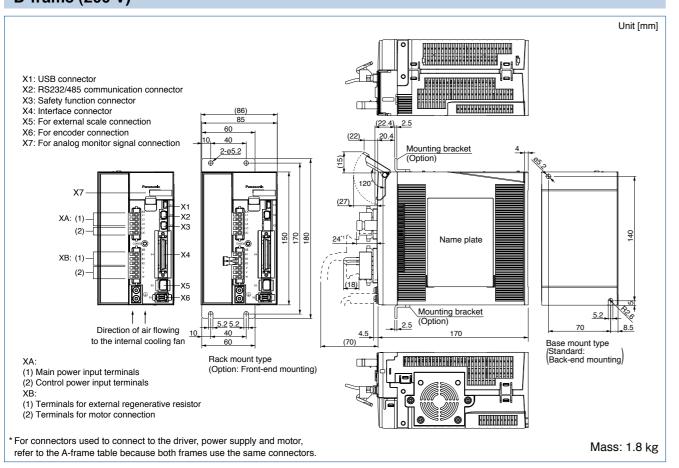
B-frame

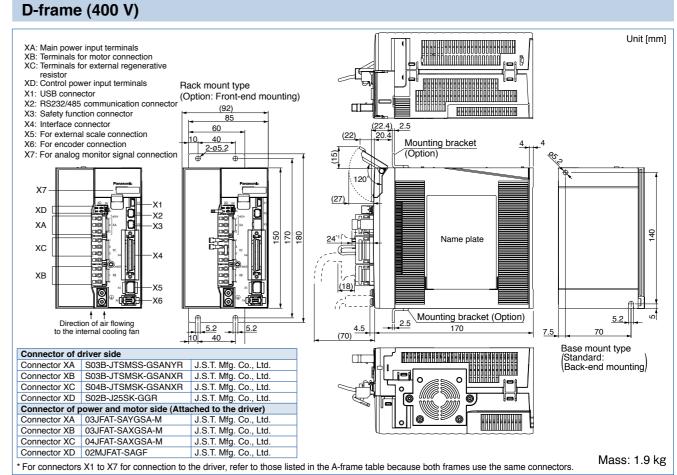


C-frame

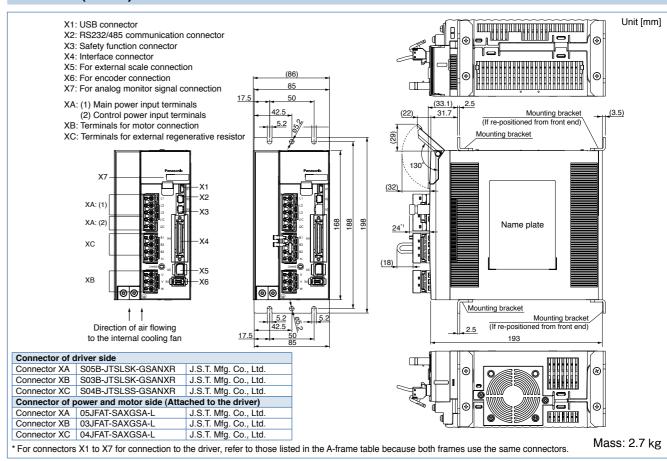


D-frame (200 V)



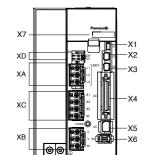


E-frame (200 V)



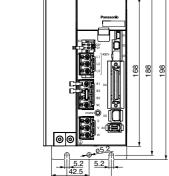
E-frame (400 V) X1: USB connector

- 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

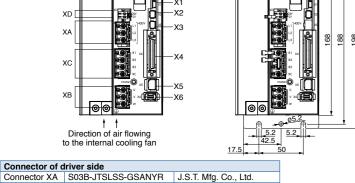


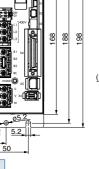
Direction of air flowing to the internal cooling fan

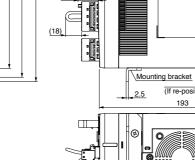




42.5

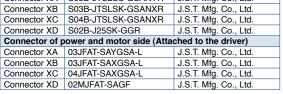






• The size of A5II, A5 series and A5IIE, A5E series is same.

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



Mass: 2.7 kg

(If re-positioned from front end)

Name plate

Mounting bracket

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

F-frame (200 V/400 V)

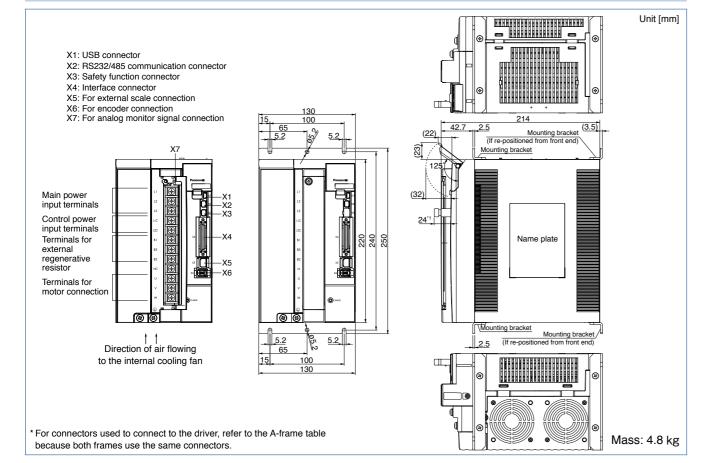
Connector XD S02B-J25SK-GGR

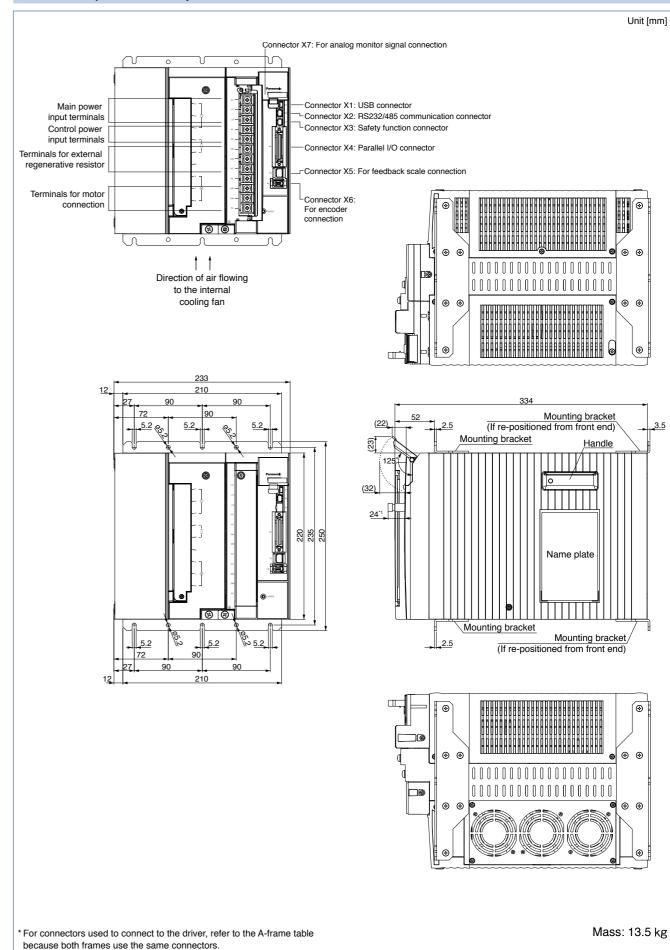
Connector XA 03JFAT-SAYGSA-L

Connector XB 03JFAT-SAXGSA-L

Connector XC 04JFAT-SAXGSA-L

Connector XD 02MJFAT-SAGF





A5IE, A5E series is out of the lineup.

X7: For analog monitor signal connection

X2: RS232/485 communication connector

-X1: USB connector

Screws for earth (x2)

Control terminal for dynamic brake resiste

Terminals for motor connection

- Control power input terminals

Terminals for external regenerative resistor

X3: Safety function connector

X6: For encoder connection

-X5: For external scale connection

X4: Interface connector

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

Unit [mm]

Base mount type

(Back-end mounting)

Mass: 21.0 kg

H-frame (200 V/400 V)

Main power input terminals

Name

Features/Lineup

A5 Family

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

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

Motor Contents

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

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

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

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

. P.92

P.104

MHME (200 V) 1.0 kW to 7.5 kW . P.97

0.9 kW to 6.0 kW

750 W to 5.0 kW.

MFME (400 V)

MSME (400 V)

MDME (400 V) 400 W to 15.0 kW

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

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

1.0 kW to 7.5 kW P.130

IP67 motor P.137 dimensions...

Motors with Gear Reducer Type and Specifications...... P.141

Model No. designation...... P.142 The combination of the driver and the motor..... Table of motor specifications... P.143 Torque Characteristics of Motor

.P.144 Dimensions of Motor.....

Output Shaft...

Built-in Holding Brake

(IP65 type motor) **Motor Specification Description** Compact

Environmental Conditions.... P.182 Notes on [Motor specification] Permissible Load at

(IP67 type motor)

MHMD

High inertia

MFME

(Flat type)*

Middle inertia

Rated output: 1.5 kW to 4.5 kW

Middle capacity motor

has the IP67 type.

Max. speed: 3000 r/min

Rated speed: 2000 r/min

Enclosure: IP67

: 4500 r/min(750 W)

Max. speed: 5000 r/min

Rated speed: 3000 r/min

Enclosure: IP65

Features

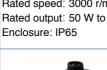
- Line-up IP65 motor: 50 W to 5.0 kW IP67 motor: 50 W to 15.0 kW
- Max speed: 6000r/min (MSME 50 W to 750 W)
- · Low inertia (MSME) to High inertia (MHME).
- · Low cogging torque: Rated torque ratio 0.5 % (typical value).
- 20-bit incremental encoder (1048576 pulse)
- 17-bit absolute encoder (131072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

Motor Lineup

Small capacity

MSME Low inertia

Max. speed: 6000 r/min Rated speed: 3000 r/min Rated output: 50 W to Enclosure: IP67



Max. speed: 5000 r/min : 4500 r/min(750 W)

MSMD

Low inertia

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



Low inertia

Max. speed: 5000r /min : 4500 r/min (from 4.0 kW) Rated speed: 3000 r/min Rated output: 750 W(400 V),

1.0 kW to 5.0 kW Enclosure: IP65, IP67



Middle inertia Max. speed: 3000 r/min 2000 r/min

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

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



(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

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

: 1500 r/min(7.5 kW)

Part No.: M ME **** ** C: IP65 motor 1: IP67 motor

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

Direction of air flowing

to the internal

cooling fan

A5 Family

Specifications

				AC1	00 V	
Motor model	IP65			MSMD5AZG1□	MSMD5AZS1□	
*1		IP67		-	-	
Annliaghla	Model	A5II, A5	series	MAD	T1105	
Applicable *2	No.	A5IIE, A	5E series	MAD ⊘T1105E	_	
diver	Fr	ame sym	nbol	A-fra	ame	
Power supply	capacit	y	(kVA)	0.	.4	
Rated output			(W)	5	0	
Rated torque			(N·m)	0.	16	
Momentary Ma	ax. peal	k torque	(N·m)	0.48		
Rated current		((A(rms))	1.1		
Max. current			(A(o-p))	4.7		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/	min) Note)1			No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	rtia	Withou	t brake	0.025		
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	gle turn	1048576	131072	

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

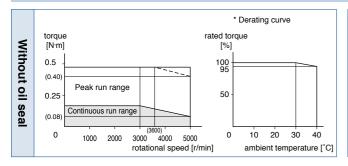
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

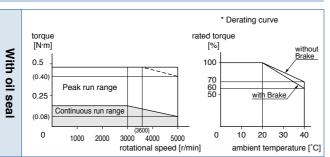
• Permissible load (For details, refer to P.183)

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

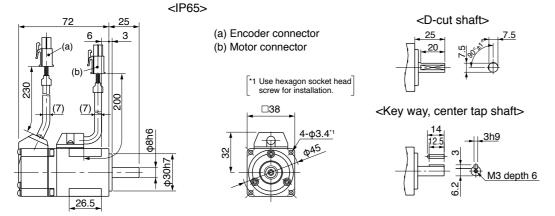
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Without Brake> Mass: 0.32 kg



* 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]

				AC2	00 V		
Mataumaad	-1	IP65		MSMD5AZG1□	MSMD5AZS1		
Motor mode	₽I ∗1		IP67		-	-	
Annlinable		Model	A5 I I, A5	series	MAD	T1505	
Applicable driver	*2	No.	A5IIE, A	5E series	MAD⇔T1505E	_	
dilvoi		Fr	ame sym	bol	A-fr	ame	
Power supp	oly (capacity	y	(kVA)	0	.5	
Rated outp	ut			(W)	5	0	
Rated torqu	ıe			(N·m)	0.	16	
Momentary	Ма	x. peal	c torque	(N·m)	0.4	0.48	
Rated curre	ent		(.	A(rms))	1.1		
Max. currer	nt		((A(o-p))	4.7		
Regenerativ	/e b	rake	Without option		No limi	t Note)2	
frequency (tin	nes/n	nin) Note)1	DV0P4281		No limit Note)2		
Rated rotat	ion	al spee	d	(r/min)	3000		
Max. rotation	onal	speed		(r/min)	5000		
Moment of	ine	rtia	Without brake		0.025		
of rotor (×1	0-4	kg·m²)	With brake		0.027		
Recommen ratio of the				tia Note)3	30 times	s or less	
Rotary encoder specifications			Note)5	20-bit Incremental	17-bit Absolute		
	Re	esolutio	n per sing	le turn	1048576	131072	

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

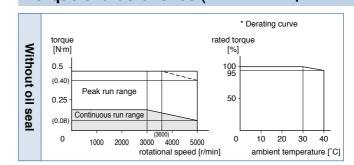
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

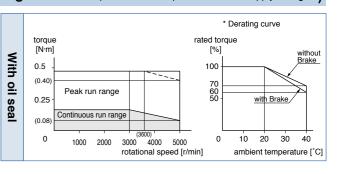
• Permissible load (For details, refer to P.183)

	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 \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.>)

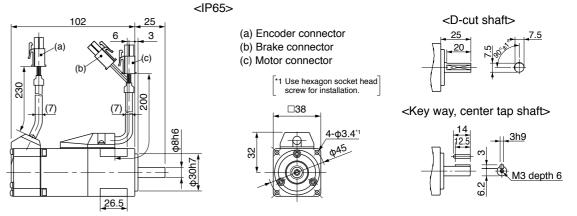




Dimensions

Specifications

<With Brake> Mass: 0.53 kg



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

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

[Unit: mm]

				AC1	00 V	
Matanasalah		IP65		MSMD011G1□	MSMD011S1	
Motor model *1		IP67		_	-	
Amaliaahla	Model	A5II, A5 series		MAD<	MAD ◇T1107	
Applicable driver *2	No.	A5IIE, A5	E series	MAD ⊘T1107E	_	
unven	Fı	ame syml	bol	A-fr	ame	
Power supply	capacit	у	(kVA)	0	.4	
Rated output			(W)	1	00	
Rated torque			(N·m)	0.	32	
Momentary M	lax. pea	k torque	(N·m)	0.95		
Rated current	t	()	A(rms))	1.7		
Max. current		((A(o-p))	7.2		
Regenerative	brake	Without	option	No lim	it Note)2	
frequency (times		DV0P4	4280	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	0.051		
of rotor (×10 ⁻⁴	4 kg·m²)	With b	rake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	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.

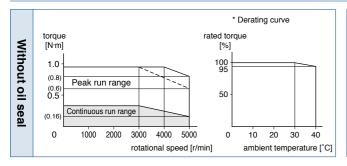
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

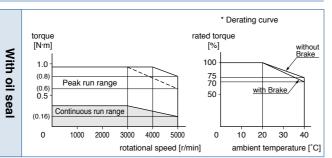
• Permissible load (For details, refer to P.183)

	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.>)

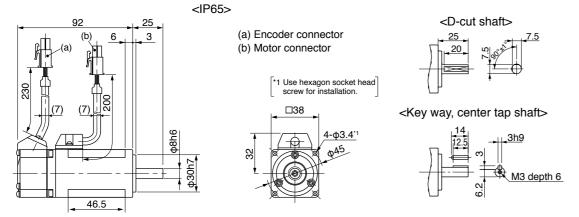




Dimensions

<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. [Unit: mm]

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

Specifications

				AC2	00 V
Motor mode		IP65		MSMD012G1□	MSMD012S1
	:1	IP67		-	-
	Model	A5II, A5	series	MAD<	T1505
Applicable driver *	No.	A5IIE, A	5E series	MAD ◇T1505E	-
ulivei	F	rame sym	bol	A-fra	ame
Power supp	ly capacit	У	(kVA)	0.	.5
Rated outpu	ıt		(W)	10	00
Rated torqu	е		(N·m)	0.0	32
Momentary	Max. pea	k torque	(N·m)	0.95	
Rated curre	nt	(A(rms))	1.1	
Max. curren	t		(A(o-p))	4.7	
Regenerative	e brake	Without	option	option No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4281		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	30	00
Max. rotatio	nal speed	I	(r/min)	5000	
Moment of i	nertia	Without	brake	0.051	
of rotor (×10) ⁻⁴ kg·m²)	With brake		0.054	
Recommendation of the I			tia Note)3	30 times	s or less
Rotary encoder specifications 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.

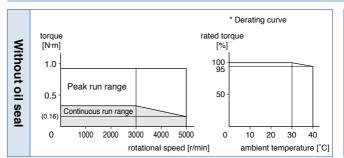
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

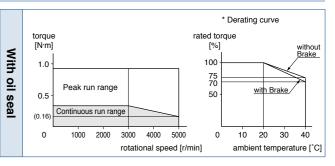
• Permissible load (For details, refer to P.183)

	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.

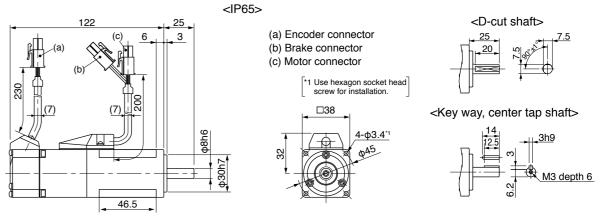
Torque characteristics (at AC200 V of power voltage)





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. [Unit: mm]

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

[Unit: mm]

Motor Specifications

Specifications

			AC1	00 V		
Mataumandal		IP65		MSMD021G1□	MSMD021S1	
Motor model *1		IP67		-	-	
Amalianda	Model	A5II, A5	series	MBD<	T2110	
Applicable driver *2	No.	A5IIE, A	5E series	MBD ⊘T2110E	_	
diver	Fr	ame sym	nbol	B-fra	ame	
Power supply	capacit	y	(kVA)	0.	5	
Rated output			(W)	20	00	
Rated torque			(N·m)	0.0	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	DV0P4283		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	rtia	Withou	t brake	0.14		
of rotor ($\times 10^{-4}$	kg·m²)	With I	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	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	gle turn	1048576	131072	

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

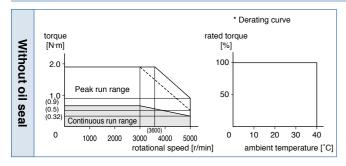
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

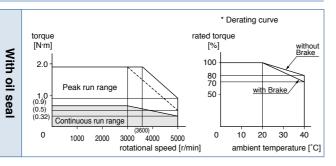
Permissible load (For details, refer to P.183)

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

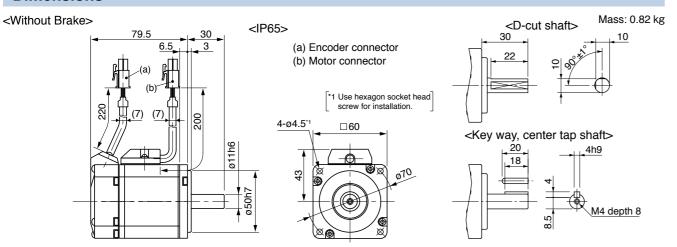
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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



* 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.

Specifications

				AC2	00 V	
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MSMD022G1□	MSMD022S1	
Motor mode	2 I ⊧1	IP67		-	-	
Annlinable	Model	A5 I I, A5	series	MAD	T1507	
Applicable driver	No.	A5IIE, A	5E series	MAD ⊘T1507E	_	
diivei	Fi	rame sym	bol	A-fra	ame	
Power supp	oly capacit	у	(kVA)	0	.5	
Rated outp	ut		(W)	20	00	
Rated torqu	ıe		(N·m)	0.0	64	
Momentary	Max. pea	k torque	(N·m)	1.91		
Rated curre	ent	(A(rms))	1.6		
Max. currer	nt	((A(o-p))	6.9		
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)	3000		
Max. rotation	nal speed		(r/min)	5000		
Moment of	inertia	Without	brake	0.14		
of rotor (×1	0 ⁻⁴ kg·m²)	With b	orake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3			tia Note)3	30 times or less		
Rotary enco	Rotary encoder specif		Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072	

200 V MSMD 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.

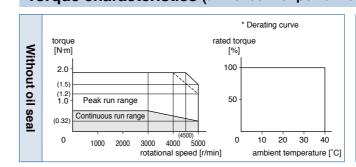
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

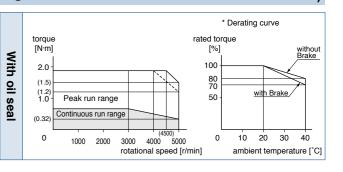
• Permissible load (For details, refer to P.183)

	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.

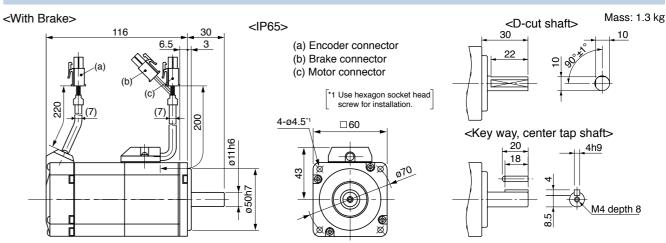
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<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.

driver

No.

Momentary Max. peak torque

Power supply capacity

Rated output Rated torque

Rated current

Max. current

Regenerative brake frequency (times/min) Note)1

Rated rotational speed

Max. rotational speed

of rotor (×10⁻⁴ kg·m²)

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Moment of inertia

(A(rms))

(A(o-p)) Without option

(r/min)

(r/min)

Note)3

DV0P4283

Without brake

With brake

Resolution per single turn

Specifications

			AC1	00 V		
Motor model		IP65		MSMD041G1□	MSMD041S1	
Wotor model		IP67		-	-	
A !! I- ! -	Model	A5Ⅱ, A5	series	MCD<	T3120	
Applicable driver *2	No.	A5IIE, A	5E series	MCD ⊘T3120E	_	
unver	Fr	ame sym	bol	C-fr	ame	
Power supply	capacit	y	(kVA)	0	.9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1.	1.3	
Momentary M	ax. peal	k torque	3.8			
Rated current (A(rms))				4.6		
Max. current			(A(o-p))	19.5		
Regenerative b	orake	Without	option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4282		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	t brake	0.26		
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3				30 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	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.

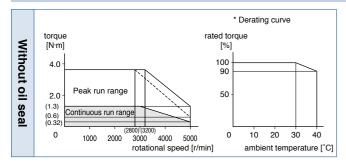
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2
Exolaing voltage (BC) (V)	2711.2

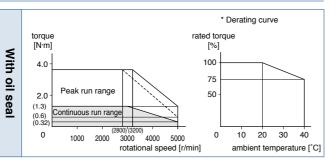
• Permissible load (For details, refer to P.183)

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

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

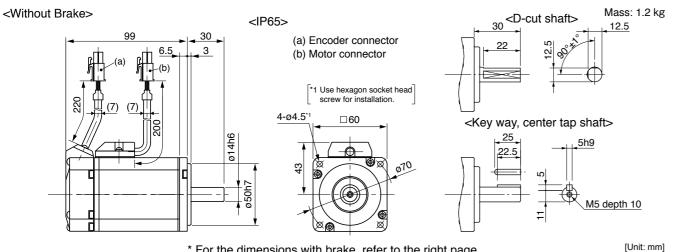
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



* 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								
AC20			00 V	Brake specifications (For details, refer to For This brake will be released when it is energized.)				
Matar madal	IP65 IP67		MSMD042G1□	MSMD042S1□	Do not use this for braking the motor in motion			
Motor model *1			_			tatic friction torque (N·m)	1.27 or more	
Annlicable	Model	A5II, A5 series	МВО	T2510	E	ngaging time (ms)	50 or less	
	Nο	ΛΕΠΓ ΛΕΓ .	MBDAT05105			Inlanding time (ma)	45 1	

2.6

11.0

No limit Note)2

No limit Note)2

3000

5000

0.26

0.28

30 times or less

20-bit

Incremental

1048576

	IP67	-	_		Static friction torque (N·m)	1.27 or more	
el	A5II, A5 series	MBD ◇T2510 MBD ◇T2510E –			Engaging time (ms)	50 or less	
	A5IIE, A5E series			Releasing time (ms) Note)4	15 or less		
F	ame symbol B-frame			Exciting current (DC) (A)	0.36		
cit	y (kVA)	0.9 400 1.3			Releasing voltage (DC) (V)	1 or more	
	(W)				Exciting voltage (DC) (V)	24±1.2	
	(N·m)				Exolaing voltage (Be) (V)	2711.2	
ea	k torque (N·m)	3	.8		• Permissible load (For details, refe	er to P.183)	

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

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

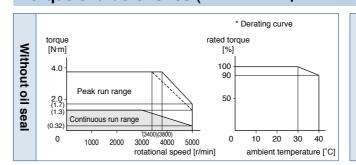
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

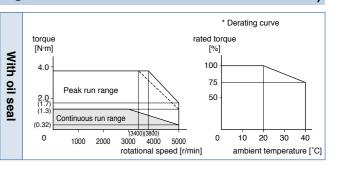
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

17-bit

Absolute

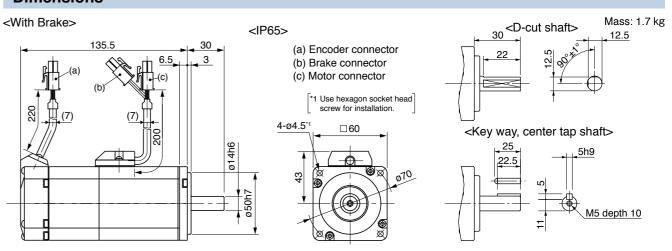
131072





Dimensions

<Cautions>



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

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

[Unit: mm]

			AC2	00 V
Motor model		IP65	MSMD082G1□	MSMD082S1□
*1		IP67	-	_
Annlinghla	Model	A5II, A5 series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_
divei	Fr	ame symbol	C-fra	ame
Power supply	capacit	y (kVA)	1.	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2.	4
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current		(A(o-p))	17.0	
Regenerative 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)	4500	
Moment of ine	rtia	Without brake	0.87	
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	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.

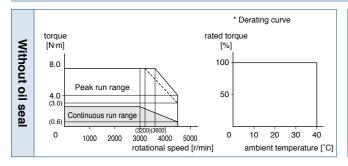
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

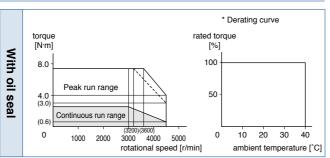
• Permissible load (For details, refer to P.183)

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

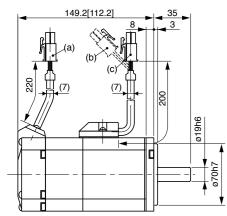
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



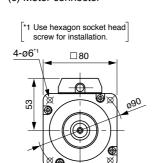


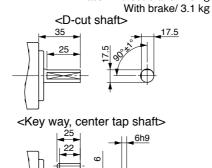
Dimensions



(a) Encoder connector (b) Brake connector (c) Motor connector *1 Use hexagon socket head

<IP65>





Mass: Without brake/ 2.3 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

57

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

Dimensions are subject to change without notice. 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

58

				AC1	AC100 V		
Matanasalah		IP65		MHMD021G1□	MHMD021S1		
Motor model *1		IP67		-	-		
Amaliaabla	Model	A5II, A5	series	MBD<	T2110		
Applicable driver *2	No.	A5IIE, A5	E series	MBD ⊘T2110E	_		
unven	Fı	ame syml	bol	B-fr	ame		
Power supply	capacit	у	(kVA)	0	.5		
Rated output			(W)	20	00		
Rated torque			(N·m)	0.	64		
Momentary M	lax. pea	k torque	(N·m)	1.91			
Rated current		()	A(rms))	2.5			
Max. current		((A(o-p))	10.6			
Regenerative	brake	Without option		No limit Note)2			
frequency (times	/min) Note)1	DV0P4283		No limit Note)2			
Rated rotation	nal spee	d	(r/min)	3000			
Max. rotationa	al speed		(r/min)	5000			
Moment of ine	ertia	Without	brake	0.42			
of rotor (×10 ⁻⁴	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 encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	n per sing	le turn	1048576	131072		

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

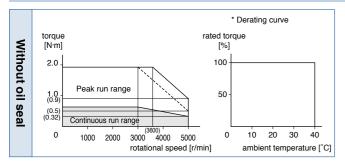
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

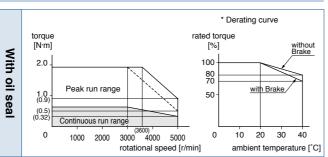
• Permissible load (For details, refer to P.183)

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

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

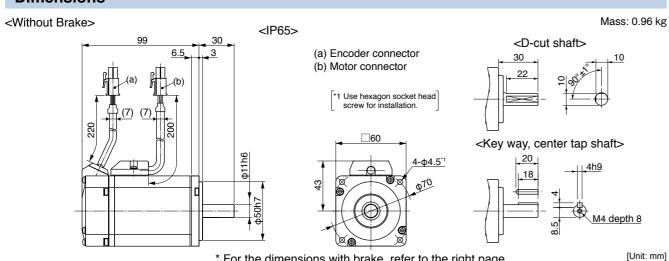
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

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

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

Specifications								
		AC2	00 V	Brake specifications (For details, refe (This broke will be released when it is energy				
Motor model	IP65	MHMD022G1□	MHMD022S1□	This brake will be released when it is energ Do not use this for braking the motor in mot				
*1	IP67	_	_	Static friction torque (N·m) 1.2	7 or more			

Motor model		1202		MHMD022G1 MHMD02251			(Do not	use this for braking the motor i	n moti
	*1		IP67	_	_		Static fri	ction torque (N·m)	1.27
	A 1: 11	Model	A5II, A5 series	MAD	T1507		Engagin	g time (ms)	50
	Applicable driver *2	No.	A5IIE, A5E series	MAD \diamondsuit T1507E	_		Releasir	ng time (ms) Note)4	15
	dilvei	Fr	rame symbol	A-fr	ame		Exciting	current (DC) (A)	
	Power supply	capacit	y (kVA)	0	.5	.	Releasir	ng voltage (DC) (V)	1 (
	Rated output		(W)	20	00]	Evciting	voltage (DC) (V)	-
	Rated torque		(N·m)	0.	64	l L	Lxciting	voltage (BC) (V)	
	Momentary Ma	ax. peal	k torque (N·m)	1.	91	•	Permi	ssible load (For details, ref	er to F
	Rated current		(A(rms))	1	.6			Radial load P-direction (N)	
	Max. current (A(o-p))		6.9		1 1	During	Thrust load A-direction (N)		
	Regenerative brak	rake	Without option	No limit Note)2		assembly		Thrust load B-direction (N)	
	frequency (times/r	nin) Note)1	DV0P4283	No lim	it Note)2]		Dadiel lead D direction (N)	

3000

5000

0.42

0.45

30 times or less

20-bit

Incremental

1048576

	,
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

P.183)

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

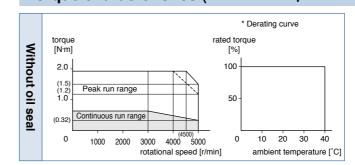
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

17-bit

Absolute

131072



(r/min)

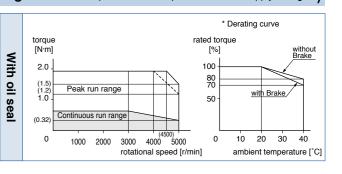
(r/min)

Note)3

Without brake

With brake

Resolution per single turn



Dimensions

Rated rotational speed

Max. rotational speed

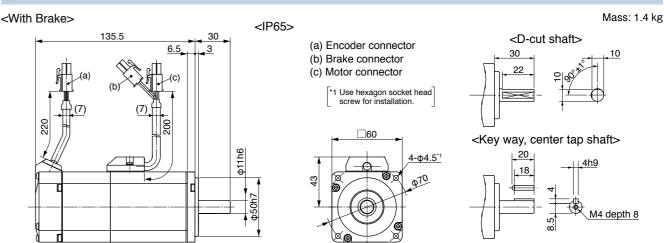
of rotor (×10⁻⁴ kg·m²)

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Moment of inertia



* 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		
Mataumadal		IP65		MHMD041G1□	MHMD041S1	
Motor model		IP67		-	-	
A Un a la la	Model	A5II, A5	series	MCD<	T3120	
Applicable driver *2	No.	A5IIE, A5	5E series	MCD ♦T3120E	_	
unven	Fr	ame sym	bol	C-fr	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))	4.6		
Max. current		((A(o-p))	19.5		
Regenerative I	orake	Without option		No limit Note)2		
frequency (times	min) Note)1	DV0P4282		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	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 encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per sing	le turn	1048576	131072	

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

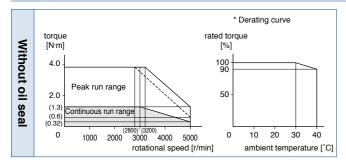
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

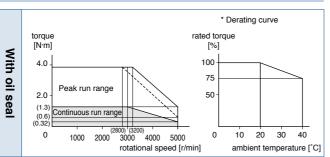
Permissible load (For details, refer to P.183)

During assembly	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

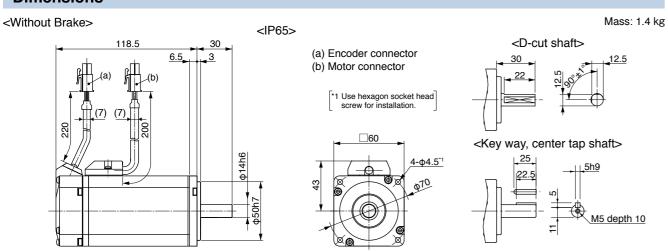
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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	
Mata:		IP65		MHMD042G1□	MHMD042S1
Motor mode *	.	IP67		-	_
A L' l- L -	Model	A5 I I, A5	series	MBD<	T2510
Applicable driver *	No.	A5IIE, A	5E series	MBD ⊘T2510E	_
divoi	Fr	ame sym	bol	B-fra	ame
Power supp	ly capacit	y	(kVA)	0	.9
Rated outpu	ıt		(W)	40	00
Rated torqu	е		(N·m)	1.	.3
Momentary	Max. peal	k torque	(N·m)	3.8	
Rated curre	nt	(A(rms))	2.6	
Max. current (A(o-p))		11.0			
Regenerative	e brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	0.67	
of rotor (×10 ⁻⁴ kg·m ²) With		With b	rake	0.70	
Recommend ratio of the le			tia Note)3	30 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

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

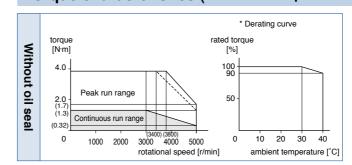
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

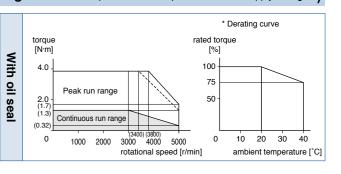
• Permissible load (For details, refer to P.183)

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

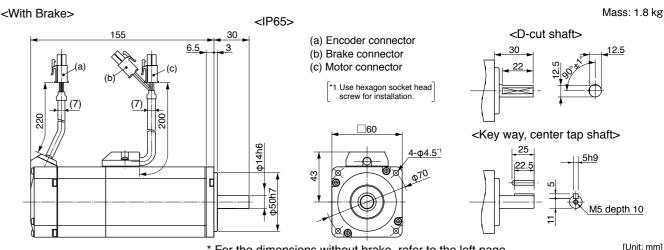
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





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.

				AC2	00 V
Matanasadal		IP65		MHMD082G1□	MHMD082S1
Motor model		IP67		-	-
Ammlianhla	Model	A5II, A5	series	MCD ⊘ T3520	
Applicable driver *2	No.	A5IIE, A5E series		MCD ⊘T3520E	_
divei	Fr	ame symb	ool	C-fra	ame
Power supply	capacit	y	(kVA)	1.	3
Rated output			(W)	75	50
Rated torque			(N·m)	2.4	
Momentary Ma	ax. peal	k torque	(N·m)	7.1	
Rated current (A(rms))		4.0			
Max. current (A(o-p))		17.0			
Regenerative brake Without option		No limi	t Note)2		
frequency (times/	min) Note)1	DV0P4	1283	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	4500	
Moment of ine	ertia	Without	brake	1.51	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	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.

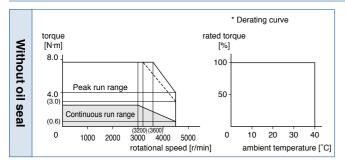
2.45 or more
70 or less
20 or less
0.42
1 or more
24±1.2

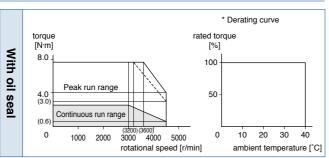
• Permissible load (For details, refer to P.183)

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

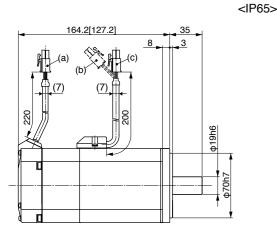
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

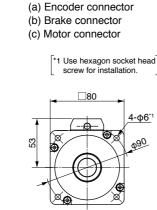
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

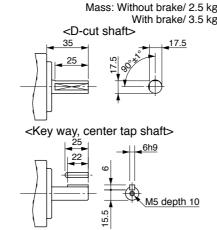




Dimensions







* Figures in [] represent the dimensions without brake.

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

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

Mass. Without braker 2.5 No
With brake/ 3.5 kg
<d-cut shaft=""></d-cut>
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[Unit: mm]

A5 Family

Specifications

				AC100 V	
Matarasasas		IP65		-	-
Motor model *1		IP67		MSME5AZG1	MSME5AZS1
Amaliaabla	Model	A5II, A5	series	MAD	T1105
Applicable driver *2	No.	A5IIE, A5	E series	MAD ◇T1105E	_
unver	Fr	ame syml	bol	A-fra	ame
Power supply	capacit	y	(kVA)	0.	.4
Rated output			(W)	5	0
Rated torque			(N·m)	0.16	
Momentary Ma	ax. peal	k torque	(N·m)	0.48	
Rated current (A(rms))		1.1			
Max. current (A(o-p))		4.7			
Regenerative brake Without option		No limi	t Note)2		
frequency (times/min) Note)1 DV0P4280		4280	No limit Note)2		
Rated rotation	rotational speed (r/min) 3000		00		
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.025	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

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

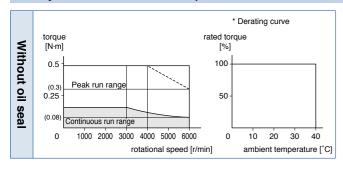
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

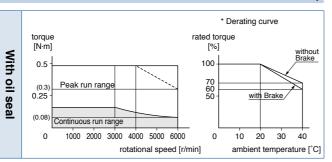
Permissible load (For details, refer to P.183)

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

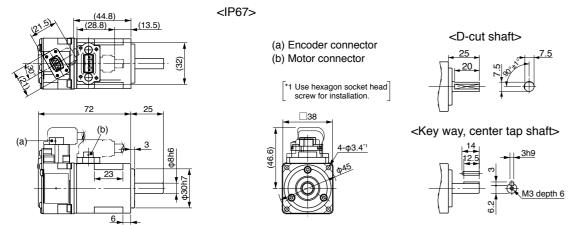




Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.31 kg



* 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.

Specifications

			AC2	00 V	
Matamaaa	-1	IP65		-	-
Motor mod	*1	IP67		MSME5AZG1□	MSME5AZS1
	Mode	A5II, A5	series	MAD ◇T150 5	
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1505E	-
unven	F	rame sym	ıbol	A-fr	ame
Power sup	ply capaci	ty	(kVA)	0	.5
Rated outp	out		(W)	5	0
Rated torq	ue		(N·m)	0.	16
Momentary	/ Max. pea	ık torque	(N·m)	0.48	
Rated current (A(rms))			1.1		
Max. current (A(o-p))			4.	.7	
Regenerati	ve brake	Without	option	No limit Note)2	
frequency (ti	mes/min) Note)	DV0P4280		No limit Note)2	
Rated rota	tional spe	ed	(r/min)	3000	
Max. rotati	onal spee	t	(r/min)	6000	
Moment of	inertia	Withou	t brake	0.025	
of rotor (x1	0 ⁻⁴ kg·m ²)	With I	orake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			gle 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.

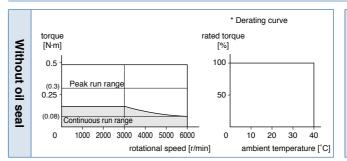
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

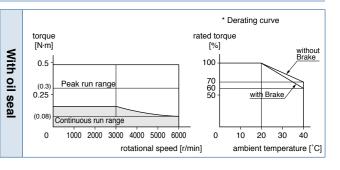
• Permissible load (For details, refer to P.183)

	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

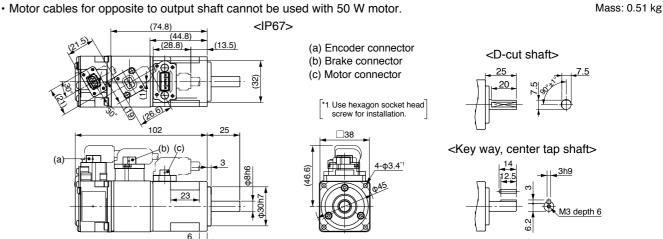
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



* 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.

				AC100 V	
Matanasadal		IP65		-	-
Motor model *1		IP67		MSME011G1	MSME011S1
	Model	A5II, A5 s	eries	MAD	T1107
Applicable driver *2	No.	A5IIE, A5	E series	MAD ⊘T1107E	_
unver	Fr	ame symb	ol	A-fra	ame
Power supply	capacit	y	(kVA)	0	.4
Rated output			(W)	10	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		option	No limit Note)2		
frequency (times/r	min) Note)1	DV0P4	280	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.051	
of rotor ($\times 10^{-4}$	kg·m²)	With br	rake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per 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.

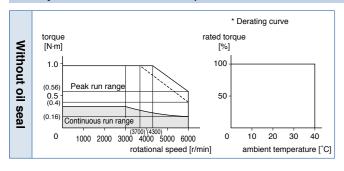
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

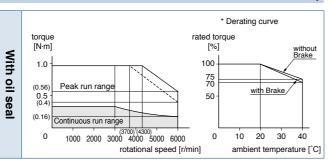
Permissible load (For details, refer to P.183)

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

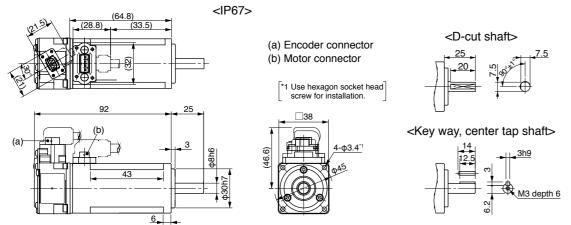




Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.46 kg



* 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

			AC2	00 V	
Matawasa	lal.	IP65		-	-
Motor mod	*1	IP67		MSME012G1□	MSME012S1
	Mode	A5II, A5	series	MAD	T1505
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1505E	_
unver	F	rame sym	bol	A-fra	ame
Power sup	ply capaci	ty	(kVA)	0	.5
Rated outp	out		(W)	1(00
Rated torq	ue		(N·m)	0.:	32
Momentary	y Max. pea	k torque	(N·m)	0.95	
Rated current (A(rms))			1.1		
Max. current (A(o-p))			4.	.7	
Regenerati	ve brake	Without	option	No limit Note)2	
frequency (ti	imes/min) Note	DV0P4280		No limit Note)2	
Rated rota	tional spe	ed	(r/min)	3000	
Max. rotati	onal spee	d	(r/min)	6000	
Moment of	inertia	Without	t brake	0.051	
of rotor (x1	10 ⁻⁴ kg·m²)	With b	orake	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	

200 V MSME 100 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

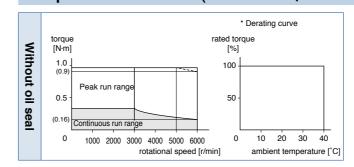
• Permissible load (For details, refer to P.183)

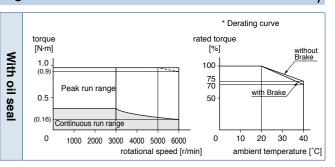
	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
accombiy	Thrust load B-direction (N)	117.6
During operation	Radial load P-direction (N)	68.6
	Thrust load A, B-direction (N)	58.8

- 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.>)

<u>♀</u>

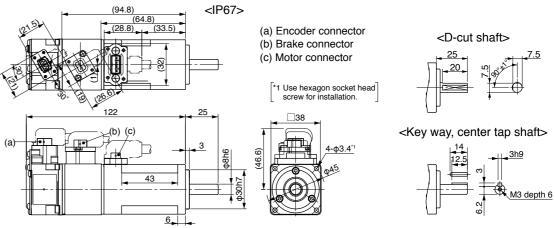




Dimensions < In Case of With Brake, Cable direction to output shaft.>

· 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.

		AC1	00 V		
Matauraadal		IP65		-	-
Motor model *1		IP67		MSME021G1□	MSME021S1
	Model	A5II, A5 series		MBD ⊘ T2110	
Applicable 42	No.	A5IIE, A	5E series	MBD ⊘T2110E	_
unver	Fr	ame sym	bol	B-fra	ame
Power supply	capacit	y	(kVA)	0.	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.64	
Momentary 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/r	min) Note)1	DV0P	4283	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.14	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
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.

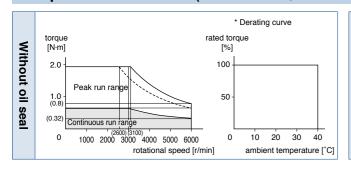
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

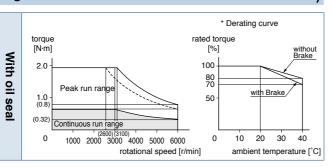
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
document	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

- 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.

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

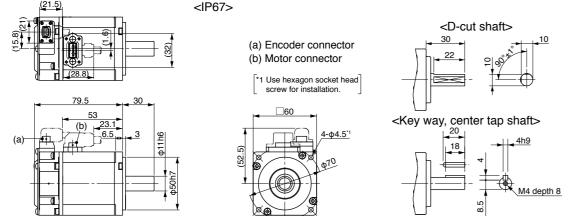


<Cautions>



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





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

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

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

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

[Unit: mm]

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

Specifications

				AC200 V	
Motor mode	-1	IP65		-	_
	*1			MSME022G1□	MSME022S1
Applicable driver *	Mode	A5II, A5 series		MAD \rightarrow T1507	
	*2 No.	A5IE, A	5E series	MAD ⊘T1507E	-
	F	ame symbol		A-frame	
Power supply capacity (kVA)				0.5	
Rated output (W)			200		
Rated torque (N·m)			0.64		
Momentary Max. peak torque (N·m)			1.91		
Rated current (A(rms))				1.5	
Max. current (A(o-p))			6.5		
Regenerative brake frequency (times/min) Note)1		Without option		No limit Note)2	
		DV0P4283		No limit Note)2	
Rated rotational speed (r/min)			3000		
Max. rotational speed (r/min)			6000		
Moment of inertia of rotor (×10 ⁻⁴ kg·m²)		Without brake		0.14	
		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			20-bit Incremental	17-bit Absolute	
	on 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.

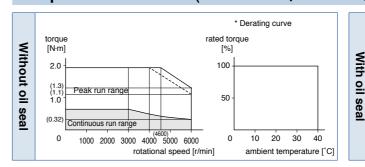
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

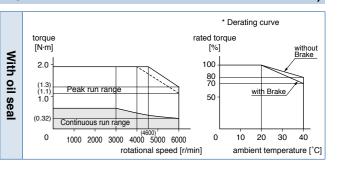
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
accorning	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

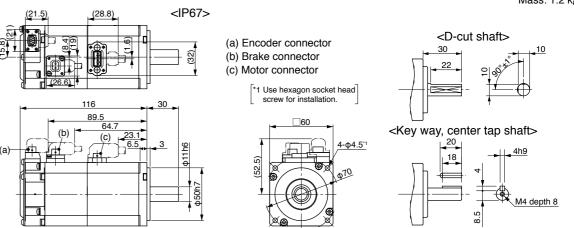
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

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

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

39

70

ries

Mass: 1.2 kg

[Unit: mm]

		AC100 V			
IP65		-	-		
Motor model *1		IP67		MSME041G1□	MSME041S1
Amaliaabla	Model	A5II, A5 series		MCD ⊘ T3120	
Applicable *2	No.	A5IE, A5E	series	MCD ♦T3120E	_
divei	Fr	ame symbol		C-fra	ame
Power supply	capacit	y (l	kVA)	0.	9
Rated output			(W)	40	00
Rated torque		1)	N·m)	1.	3
Momentary Ma	ax. peal	k torque (I	N·m)	3.8	
Rated current		(A(r	ms))	4.6	
Max. current (A(o-p))		19.5			
Regenerative brake frequency (times/min) Note)1 Without option DV0P4282		tion	No limi	t Note)2	
		DV0P4282		No limit Note)2	
Rated rotational speed (r/min)		min)	3000		
Max. rotationa	speed	(r/	min)	6000	
Moment of ine	rtia	Without bra	ake	0.26	
of rotor ($\times 10^{-4}$	kg·m²)	With brak	ке	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	r speci	fications N	Note)5	20-bit Incremental	17-bit Absolute
Re	esolutio	n per single t	urn	1048576	131072

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

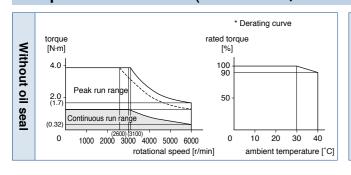
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

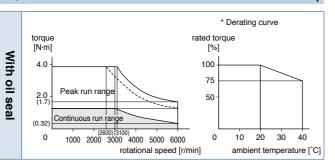
During assembly During	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

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

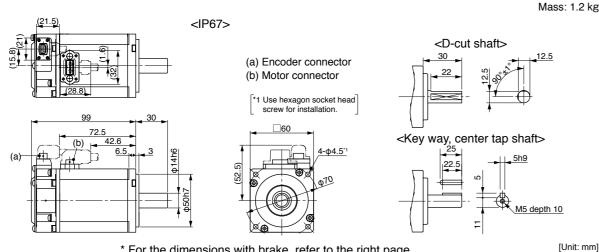
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

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

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

Specifications

			AC2	00 V	
IP65		-	-		
Motor model		IP67	MSME042G1□	MSME042S1	
Annliaghla	Model	A5II, A5 series	MBD ⊘ T2510		
Applicable driver *2	No.	A5IIE, A5E series	MBD ⊘T2510E	_	
divei	Fı	ame symbol	B-fra	B-frame	
Power supply	capacit	y (kVA)	0.	.9	
Rated output		(W)	40	00	
Rated torque		(N·m)	1.	.3	
Momentary M	ax. pea	k torque (N·m)	3.8		
Rated current		(A(rms))	2.4		
Max. current (A(o-p))		10).2		
Regenerative brake frequency (times/min) Note)1		Without option	No limit Note)2		
		DV0P4283 No limit Note		t Note)2	
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	al speed	(r/min)	6000		
Moment of ine	ertia	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	
F	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.

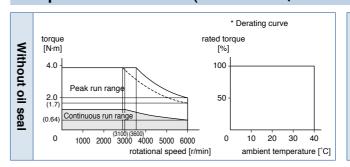
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

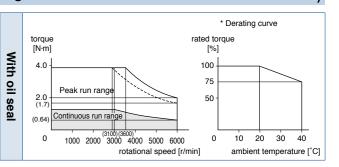
• Permissible load (For details, refer to P.183)

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

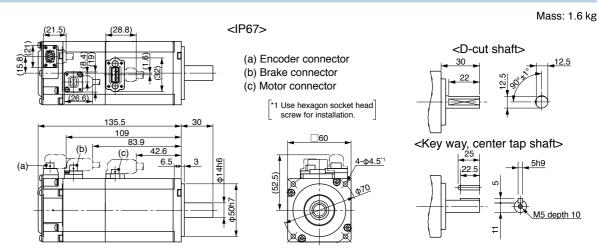
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

Torque characteristics (at 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.

[Unit: mm]

			AC200 V		
		IP65		-	-
Motor model *1		IP67		MSME082G1□	MSME082S1
A II I-I -	Model A5II, A5		series	MCD<	T3520
Applicable *2	No.	A5IIE, A5	E series	MCD ♦T3520E	_
unver	Fr	ame sym	bol	C-fr	ame
Power supply	capacit	у	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2	.4
Momentary Ma	ax. peal	k torque	(N·m)	7.1	
Rated current (A(rms))		4.1			
Max. current (A(o-p))		17.4			
Regenerative brake Without option		option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283		No limit Note)2	
Rated rotational speed (r/min)		(r/min)	3000		
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.87	
of rotor ($\times 10^{-4}$	kg·m²)	With b	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		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072

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

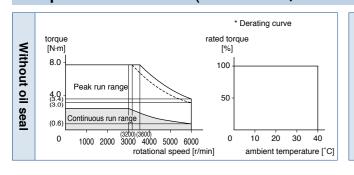
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

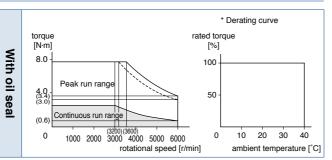
Permissible load (For details, refer to P.183)

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

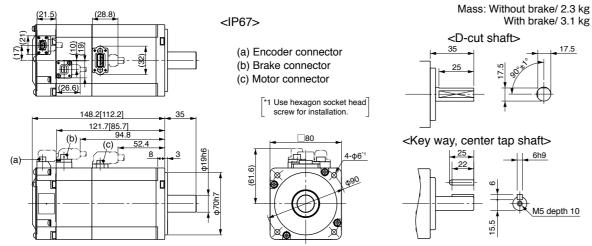
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



* Figures in [] represent the dimensions without 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.

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

AC200 V

MSME102GC□ MSME102SC□

MDD

T5540

D-frame

1.8

1000

3.18

9.55

6.6

28

No limit Note)2

No limit Note)2

3000

5000

2.03

2.35

15 times or less

20-bit

Incremental

1048576

MSME102S1

MSME102G1

MDD \diamondsuit T5540E

Specifications

Power supply capacity

Motor model

Applicable

Rated output Rated torque

Rated current

Max. current

Regenerative brake frequency (times/min) Note)1

Rated rotational speed

Max. rotational speed

of rotor (×10⁻⁴ kg·m²)

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Moment of inertia

driver

IP65

IP67

Model A5II, A5 series

Frame symbol

A5IIE, A5E series

(W)

(N·m)

(N·m)

(A(rms))

(A(o-p)) Without option

(r/min)

(r/min)

DV0P4284

Without brake

With brake

Resolution per single turn

No.

Momentary Max. peak torque

• Brake specifications (For details, refer to P.183)			
This brake will be released when it is to Do not use this for braking the motor in	energized.) n motion.		
01 11 11 11 11 11			

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

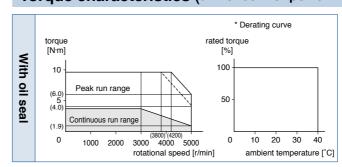
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

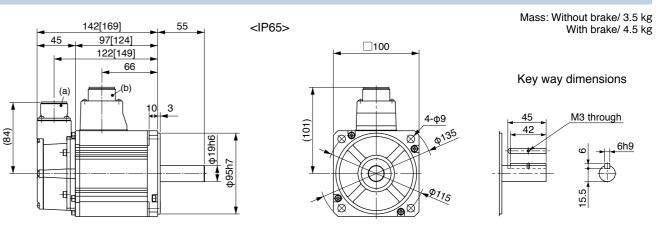
17-bit

Absolute

131072



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



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

[Unit: mm]

A5 Family

			AC2	00 V	
Mataumandal		IP65		MSME152GC□	MSME152SC
Motor model		IP67		MSME152G1	MSME152S1
Amaliaalala	Model	A5II, A5 series		MDD ⊘ T5540	
Applicable *2	No.	A5IIE, A5E serie	es	MDD \diamondsuit T5540E	_
divei	Fr	ame symbol		D-fr	ame
Power supply	capacit	y (kVA	١)	2	.3
Rated output		(V)	/)	15	00
Rated torque		(N·m	1)	4.77	
Momentary M	lax. peal	k torque (N·m	1)	14.3	
Rated current	t	(A(rms))	8.2	
Max. current (A(o-p))))	35	
Regenerative	brake	Without option		No limit Note)2	
frequency (times	/min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	nal spee	d (r/mir	1)	3000	
Max. rotation	al speed	(r/mir	1)	5000	
Moment of in	ertia	Without brake	;	2.84	
of rotor (×10 ⁻¹	4 kg·m²)	With brake		3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			3	15 times or less	
Rotary encoder specifications Note)5		5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per single turn		1048576	131072

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

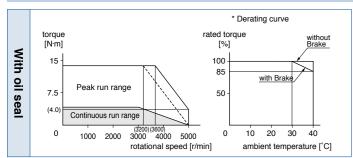
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

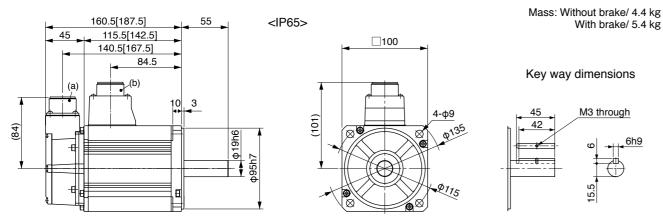
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

Specifications

				AC2	00 V
M - t - · · · · · · · · · · · · · · · · · ·	-1	IP65		MSME202GC□	MSME202SC
Motor mode	9I *1	IP67		MSME202G1□	MSME202S1
A I' l. l .	Model	A5II, A5 series		MED ⊘T7364	
Applicable driver	No.	A5IIE, A	5E series	MED ⊘T7364E	-
diivei	F	rame sym	bol	E-fra	ame
Power supp	oly capacit	у	(kVA)	3	.3
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	6.	37
Momentary	Max. pea	k torque	(N·m)	19.1	
Rated curre	ent	(A(rms))	11.3	
Max. current (A(o-p))			4	8	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	imes/min) Note)1 DV0P4285		4285	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed		(r/min)	5000	
Moment of	inertia	Without brake		3.68	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		le turn	1048576	131072	

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

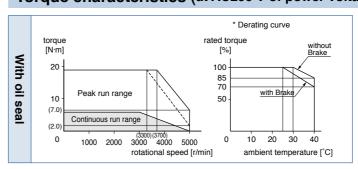
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

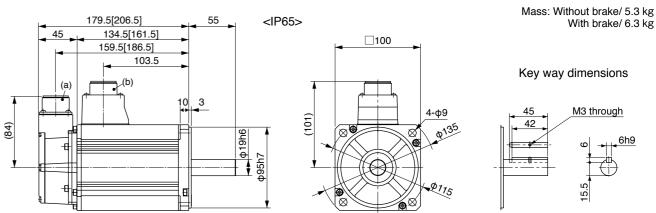
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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
Mataumandal		IP65		MSME302GC□	MSME302SC□
Motor model *1		IP67		MSME302G1□	MSME302S1□
	Model	A5I , A5 s	eries	MFD◇	TA390
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TA390E	_
unver	Fr	ame symb	ol	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	rake	Without o	ption	No limit Note)2	
frequency (times/r	nin) Note)1 DV0P4285×2		No limit Note)2		
Rated rotation	al spee	d	(r/min)	r/min) 3000	
Max. rotationa	l speed	((r/min)	5000	
Moment of ine	rtia	Without b	orake	6.50	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	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.

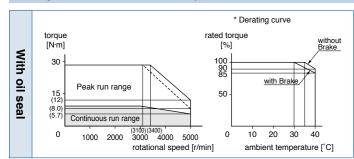
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

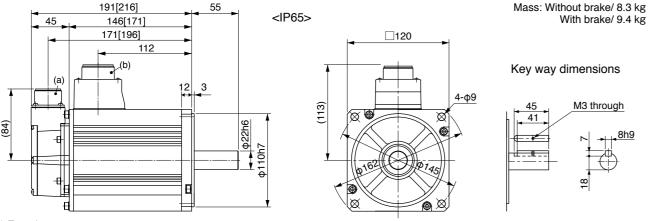
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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.

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



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



(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

			AC2	00 V	
N 4-4		IP65		MSME402GC□	MSME402SC
Motor mode *	.	IP67		MSME402G1□	MSME402S1
	Model	Model A5II, 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	it		(W)	40	00
Rated torqu	е		(N·m)	12	2.7
Momentary	Max. peal	k torque	(N·m)	38.2	
Rated curre	nt	(A(rms))	19.6	
Max. current (A(o-p))			8	3	
Regenerative	e brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1			No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	4500	
Moment of i	nertia	Without	brake	12.9	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			1048576	131072

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

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

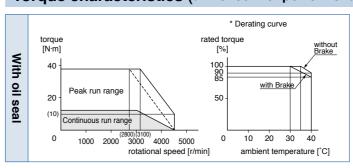
1	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

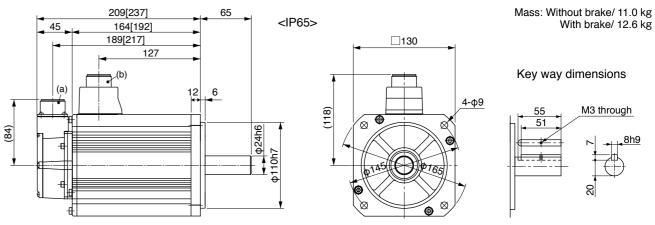
<u>.</u>	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

Dimensions

* 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.

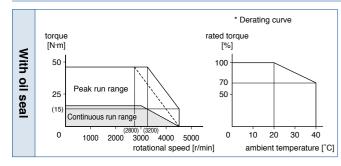
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

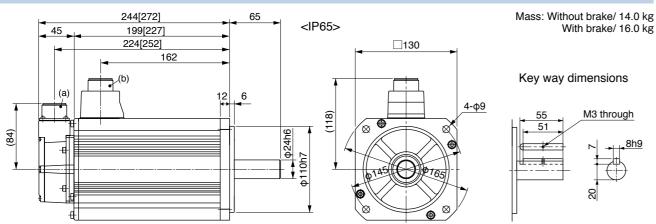
- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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

Specifications

			AC2	00 V	
M-1		IP65		MDME102GC	MDME102SC
Motor model		IP67		MDME102G1□	MDME102S1
	Model	A5II, A5	series	MDD<	T3530
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T3530E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supply	capacit	у	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	4.	77
Momentary N	1ax. peal	k torque	(N·m)	14.3	
Rated curren	t	(A(rms))	5.7	
Max. current		((A(o-p))	24	
Regenerative	brake	Without option		No limit Note)2	
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		4.60	
of rotor (×10	4 kg·m²)	With brake		5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encod	ler speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per s			le turn	1048576	131072

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

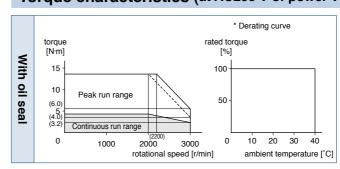
,	,
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

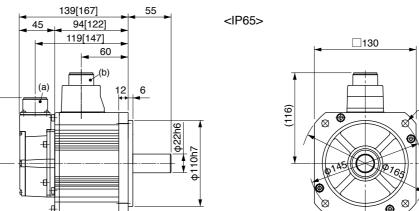
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

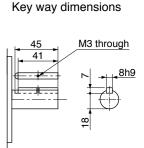
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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





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
IP65		MDME152GC	MDME152SC	
Motor model *1		IP67	MDME152G1	MDME152S1
A I' I- I -	Model	A5II, A5 series	MDD<	T5540
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T5540E	-
unvei	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	2	.3
Rated output		(W)	15	00
Rated torque		(N·m)	7.	16
Momentary Ma	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	9.4	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/r	nin) Note)1	DV0P4284	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	6.70	
of rotor ($\times 10^{-4}$	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	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

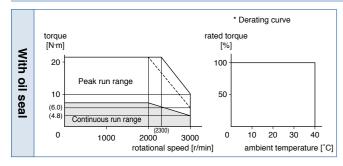
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

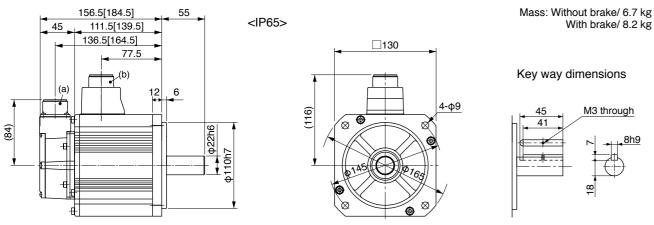
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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	
		IP65		MDME202GC□	MDME202SC	
Motor mod	el *1		IP67		MDME202G1□	MDME202S1
	N	/lodel	A5II, A5	series	MED<	T7364
Applicable driver	*2 N	lo.	A5IIE, A	5E series	MED ⊘T7364E	_
unven		Fr	ame sym	bol	E-fra	ame
Power sup	ply ca	pacity	у	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ue			(N·m)	9.	55
Momentary	/ Max	. peal	k torque	(N·m)	28.6	
Rated curre	ent		(.	A(rms))	11.5	
Max. curre	nt		((A(o-p))	49	
Regenerativ	ve bra	ke	Without	out option No limit Note)2		t Note)2
frequency (ti			DV0P4285		No limit Note)2	
Rated rotal	tional	spee	d	(r/min)	2000	
Max. rotation	onal s	peed		(r/min)	3000	
Moment of	inerti	а	Without	brake	8.72	
of rotor (×1	0 ⁻⁴ kg	g·m²)	With b	rake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary enc	oder	specit	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution			n per sina	le turn	1048576	131072

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

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

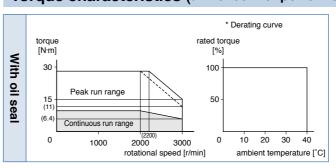
	,	,
5	Static friction torque (N·m)	13.7 or more
Е	Engaging time (ms)	100 or less
F	Releasing time (ms) Note)4	50 or less
E	Exciting current (DC) (A)	0.79±10 %
F	Releasing voltage (DC) (V)	2 or more
E	Exciting voltage (DC) (V)	24±2.4

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

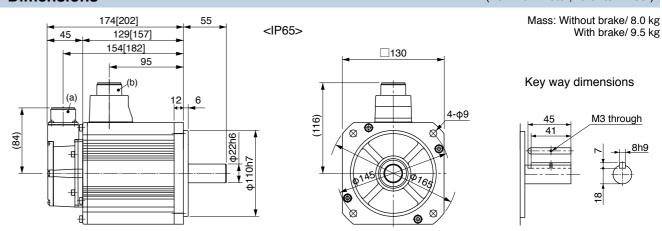
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

Torque characteristics (at 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]

			AC2	00 V	
Matanasadal		IP65		MDME302GC	MDME302SC
Motor model		IP67		MDME302G1	MDME302S1
Annlinabla	Model	A5II, A5	series	MFD⇔TA390	
Applicable *2	No.	A5IIE, A5	E series	MFD ⊘TA390E	-
dilvei	Fı	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	4	.5
Rated output			(W)	30	00
Rated torque			(N·m)	14	.3
Momentary M	lax. pea	k torque	(N·m)	43.0	
Rated curren	t	(/	A(rms))	17.4	
Max. current		(,	A(o-p))	74	
Regenerative	brake	Without option		No limit Note)2	
frequency (times	/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotation	al speed		(r/min)	3000	
Moment of in	ertia	Without brake		12.9	
of rotor (×10	4 kg·m²)	With b	rake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolutio	n per singl	e turn	1048576	131072

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

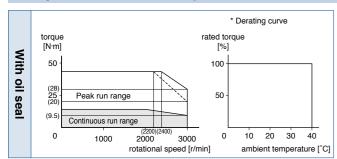
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

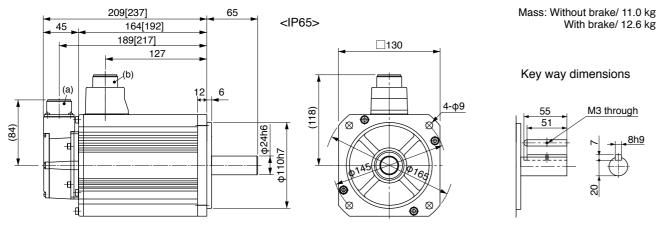
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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 MDME 4.0 kW [Middle inertia, Middle capacity]

Specifications

				AC2	00 V
		IP65		MDME402GC□	MDME402SC
Motor model		IP67		MDME402G1□	MDME402S1
	Model	A5II, A5	series	MFD♦	TB3A2
Applicable *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
unven	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	6.	.0
Rated output			(W)	40	00
Rated torque			(N·m)	19).1
Momentary M	ax. peal	k torque	(N·m)	57	' .3
Rated current		(A(rms))	21.0	
Max. current		((A(o-p))	89	
Regenerative I	orake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of ine	ertia	Without	brake	37.6	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	42	2.9
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
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.

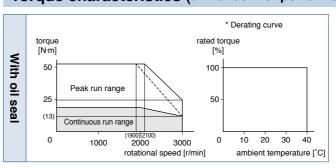
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

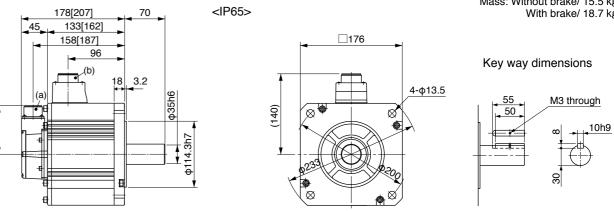
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

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

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

			AC2	00 V
IP65		MDME502GC	MDME502SC	
Motor model *1		IP67	MDME502G1	MDME502S1
Mod		A5II, A5 series	MFD ⊘TB3A2	
Applicable *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23	3.9
Momentary Ma	ıx. peal	k torque (N·m)	71.6	
Rated current		(A(rms))	25.9	
Max. current		(A(o-p))	110	
Regenerative b	rake	Without option	120	
frequency (times/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	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

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

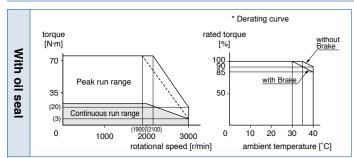
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

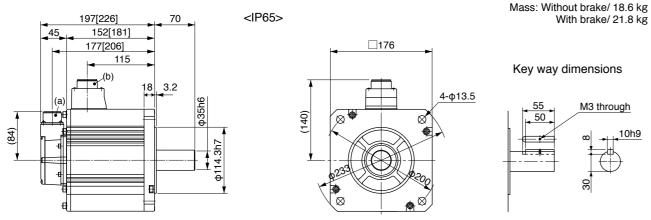
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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
Mataumaada		IP65		-	-
Motor mode *	•	IP67		MDME752G1□	MDME752S1
A U I	Model	A5 I I, A5	series	MGD♦	TC3B4
Applicable driver *	No.	A5IIE, A	5E series	_	_
unven	Fr	ame sym	bol	G-fr	ame
Power supp	ly capacit	y	(kVA)	1	1
Rated outpu	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. curren	t		(A(o-p))	16	35
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0P4	285×3	No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1500	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	101	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072

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

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

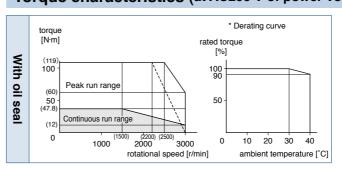
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

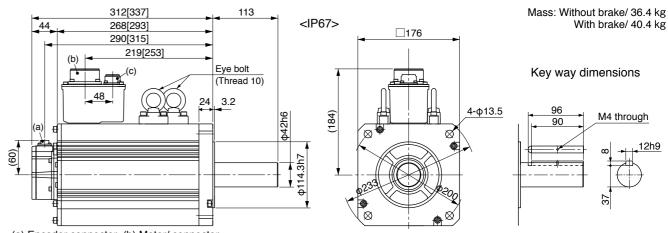
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
document	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



- (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		MDMEC12G1□	MDMEC12S1	
Annliaghla	Model	A5II, A5	series	MHD♦	TC3B4	
Applicable driver *	No.	A5IIE, A5	E series	_	-	
diffoi	Fi	rame syml	ool	H-fr	ame	
Power supp	ly capacit	у	(kVA)	1	7	
Rated outpu	ut		(W)	110	000	
Rated torqu	е		(N·m)	70	0.0	
Momentary	Max. pea	k torque	(N·m)	175		
Rated curre	nt	(/	A(rms))	54.2		
Max. curren	ıt	(A(o-p))	203		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P4285×6		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	1500		
Max. rotatio	nal speed		(r/min)	2000		
Moment of i	nertia	Without	brake	212		
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	220		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per single turn			e turn	1048576	131072	

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

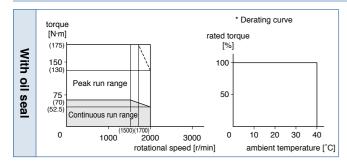
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

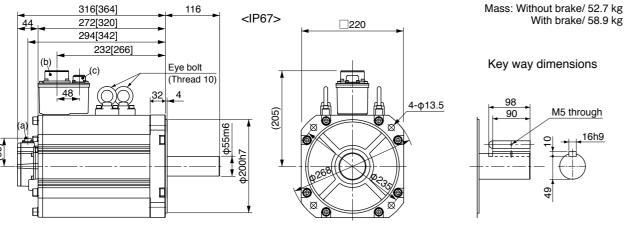
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- 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 \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

				AC2	00 V
M		IP65		-	-
Motor mode	∂ I ⊧1	IP67		MDMEC52G1	MDMEC52S1
A 1: 1- 1 -	Model	A5 I I, A5	series	MHD♦TC3B4	
Applicable driver	No.	A5IIE, A	5E series	-	-
divei	Fr	ame sym	bol	H-fr	ame
Power supp	oly capacit	y	(kVA)	2	2
Rated outpo	ut		(W)	150	000
Rated torqu	ie		(N·m)	95	i.5
Momentary	Max. peal	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	DV0P4285×6		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	2000	
Moment of	inertia	Without	brake	302	
of rotor (×10 ⁻⁴ kg·m ²)		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		Note)5	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.

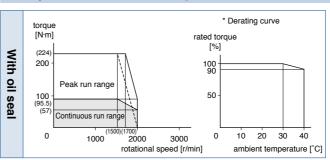
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

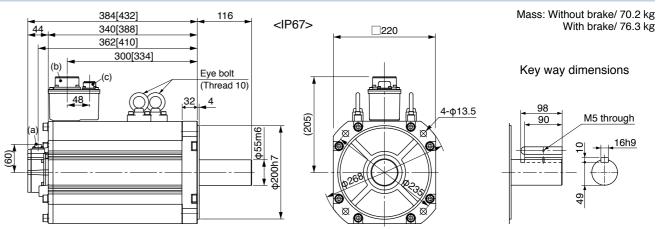
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
docombry	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.47.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) 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]

			AC2	00 V
Mataumaadal	IP65		-	-
Motor model *1		IP67	MFME152G1	MFME152S1
Amaliaabla	Model	A5II, A5 series	MDD ⊘ T5540	
Applicable 42	No.	A5IIE, A5E series	MDD ⊘T5540E	_
unver	Fı	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. pea	k torque (N·m)	21.5	
Rated current (A(rms))		7.5		
Max. current (A(o-p))		32		
Regenerative brake Without option		100		
frequency (times/min) Note)1 DV0P4284		No limi	t Note)2	
Rated rotation	Rated rotational speed (r/min)		2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	18.2	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encode	Rotary encoder specifications 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.

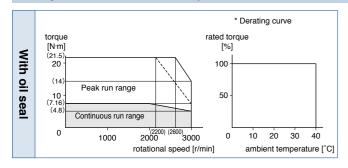
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

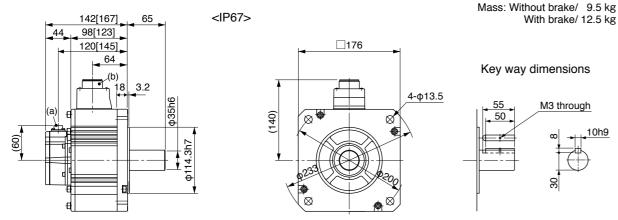
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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.

Specifications

			AC2	00 V	
		IP65		-	-
Motor mode) :1	IP67		MFME252G1□	MFME252S1
	Model	A5II, A5	series	MED ◇T7364	
Applicable driver *	No.	A5IIE, A	5E series	MED ⊘T7364E	_
unver	Fi	ame sym	bol	E-fra	ame
Power supp	ly capacit	у	(kVA)	3	8
Rated outpu	ut		(W)	25	00
Rated torqu	ie		(N·m)	11	.9
Momentary	Max. pea	k torque	(N·m)	30.4	
Rated current (A(rms))		13.4			
Max. current (A(o-p))		5	7		
Regenerativ	e brake	Without	option	75	
frequency (tim		DV0P4285		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	35.8	
of rotor (×10	0 ⁻⁴ kg·m²)	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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution		n per sing	le turn	1048576	131072

200 V MFME 2.5 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.

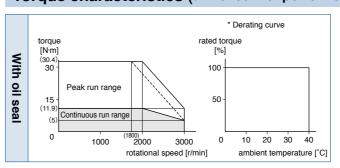
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Exciting voltage (DC) (V)	24±2.4

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

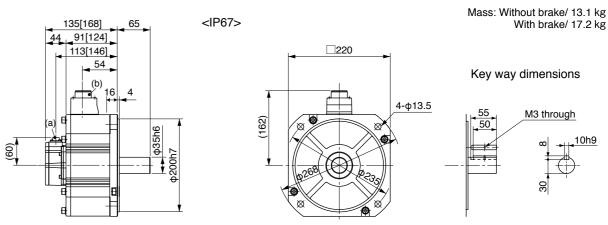
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- 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.

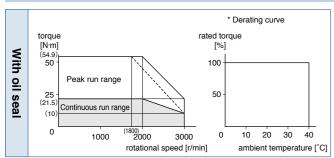
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

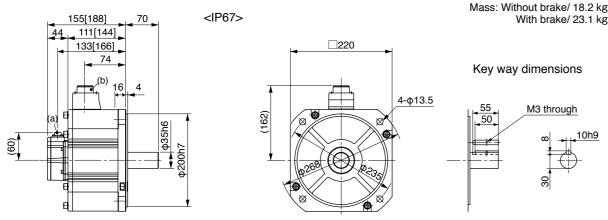
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- 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 \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]

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

Dimensions are subject to change without notice. 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	
Matanaaa	-1	IP65		MGME092GC□	MGME092SC	
Motor mod	el *1	IP67		MGME092G1□	MGME092S1	
	Model	A5II, A5	series	MDD ◇T5540		
Applicable driver	*2 No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	-	
uriver	F	rame sym	ibol	D-fr	ame	
Power supp	oly capaci	ty	(kVA)	1.	.8	
Rated outp	ut		(W)	90	00	
Rated torqu	ıe		(N·m)	8.	59	
Momentary	Max. pea	k torque	(N·m)	19.3		
Rated curre	ent	((A(rms))	7.6		
Max. current (A(o-p))		2	24			
Regenerativ	/e brake	Without option		No limit Note)2		
frequency (tir	mes/min) Note)	DV0P4284		No limit Note)2		
Rated rotational speed (r/min)		(r/min)	1000			
Max. rotation	Max. rotational speed (r/min)		(r/min)	2000		
Moment of	inertia	Withou	t brake	6.	6.70	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With I	orake	e 7.99		
Recommer ratio of the			rtia Note)3	10 times	s or less	
Rotary enc	oder spec	ifications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution	n per sing	le 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.)

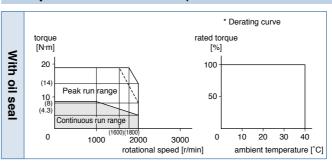
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

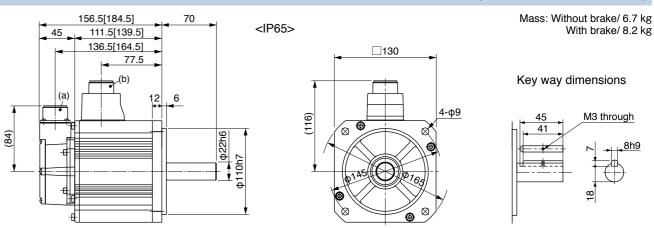
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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.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□
Amaliaabla	Model	A5II, A5 series	A5 series MFD \diamondsuit TA390	
Applicable *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_
unvei	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	3	.8
Rated output		(W)	20	00
Rated torque		(N·m)	19).1
Momentary Ma	ax. peal	k torque (N·m)	47.7	
Rated current		(A(rms))	17.0	
Max. current (A(o-p))		60		
Regenerative brake		Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotational speed		d (r/min)		
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	30.3	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	35.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary 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.

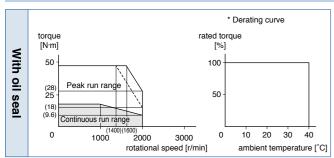
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

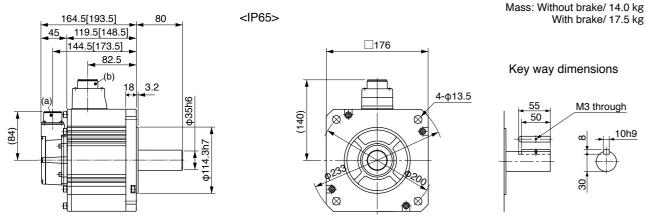
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

			AC200 V			
M-1		IP65		MGME302GC□	MGME302SC	
Motor mode *	.	IP67		MGME302G1□	MGME302S1	
	Model	A5Ⅱ, A5	series	MFD♦	TB3A2	
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TB3A2E	-	
unven	Fi	rame sym	bol	F-fra	ame	
Power supp	ly capacit	у	(kVA)	4.	5	
Rated outpu	ıt		(W)	30	00	
Rated torque	е		(N·m)	28	.7	
Momentary	Max. pea	k torque	(N·m)	71	71.7	
Rated current (A(rms))		22.6				
Max. current (A(o-p))		8	80			
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0P4	285×2	No limit Note)2		
Rated rotational speed (r/min)		(r/min)	1000			
Max. rotatio	nal speed		(r/min)	2000		
Moment of i	nertia	Without	brake	48.4		
of rotor (×10 ⁻⁴ kg·m ²)		With brake		53.7		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		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.

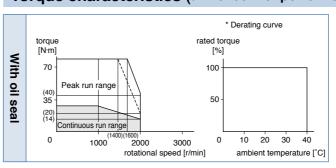
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

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

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

210.5[239.5]

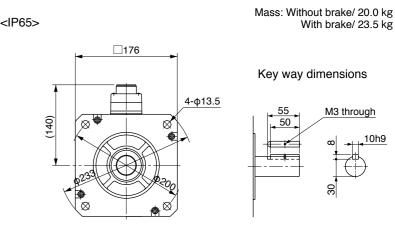
165.5[194.5]

128.5

3.2

190.5[219.5]

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



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

[Unit: mm]

IP65

IP67

Frame symbol

Model A5II, A5 series

Specifications

Power supply capacity

Momentary Max. peak torque

Motor model

Applicable

Rated output

Rated torque

Rated current

Max. current

Regenerative brake

frequency (times/min) Note)1

Rated rotational speed

Max. rotational speed

of rotor (×10⁻⁴ kg·m²)

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Moment of inertia

driver

AC200 V

MGD<>TC3B4

G-frame

9.0

6000

57.3

143

38.8

149

No limit Note)2

No limit Note)2

1000

2000

101

107

10 times or less

20-hit

1048576

MGME602S1

MGME602G1

• Brake specifications (For 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)

Thrust load A-direction (N)

Thrust load B-direction (N)

Radial load P-direction (N)

*2 The product that the end of driver model

operation Thrust load A, B-direction (N)

· Dimensions of Driver, refer to P.46.

*1 Motor specifications:

Static friction torque (N·m)

Releasing time (ms) Note)4

Releasing voltage (DC) (V)

Exciting current (DC) (A)

Exciting voltage (DC) (V)

During

assembly

Engaging time (ms)

A5 Family

58.8 or more 150 or less

50 or less

1.4±10 %

2 or more

24+24

2058

980

1176

1764

588

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.

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

(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)				
Static fri	ction torque (N·m)	58.8 or more		
Engagin	g time (ms)	150 or less		
Releasir	50 or less			
Exciting	current (DC) (A)	1.4±10 %		
Releasir	ng voltage (DC) (V)	2 or more		
Exciting	voltage (DC) (V)	24±2.4		
Permissible load (For details, refer to P.183)				
uring	Radial load P-direction (N)	2058		
	Thrust load A-direction (N)	980		

Brake specifications (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.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.>)

17-bit

Absolute

131072

AC200 V

MFD<>TB3A2

F-frame

7.5

4500

43.0

107

29.7

110

No limit Note)2

No limit Note)2

1000

2000

79.1

84.4

10 times or less

20-bit

Incremental

1048576

MGME452S1

MGME452G1

A5IIE, A5E series MFD TB3A2E

(kVA)

(W)

(N·m)

(N·m)

(A(rms))

(A(o-p))

(r/min)

(r/min)

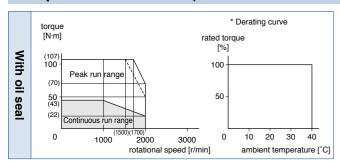
Without option

DV0P4285×2

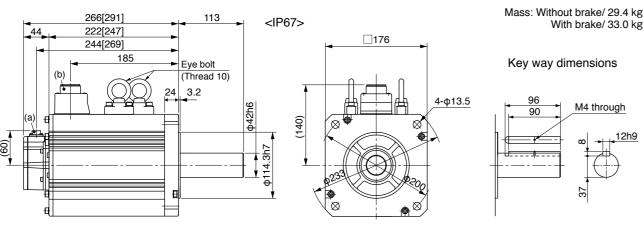
Without brake

With brake

Resolution per single turn



Dimensions



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

[Unit: mm]

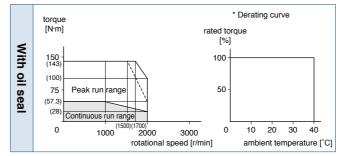
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

17-bit

Absolute

131072



Dimensions

Specifications

Power supply capacity

Motor model

Applicable

Rated output

Rated torque

Rated current

Max. current

Regenerative brake

Rated rotational speed

Max. rotational speed

of rotor (×10⁻⁴ kg·m²)

Moment of inertia

driver

IP65

IP67

Frame symbol

Model

No.

Momentary Max. peak torque

frequency (times/min) Note)1 DV0P4285×4

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

A5II, A5 series

A5IIE, A5E serie

(kVA)

(N·m)

(N·m)

(A(rms))

(A(o-p))

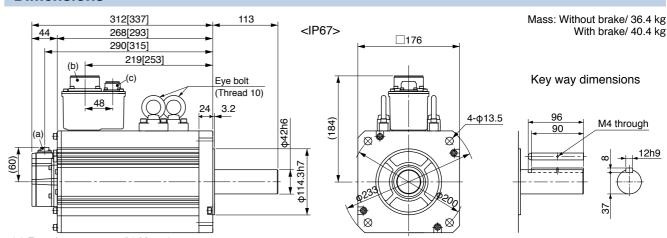
(r/min)

Without option

Without brake

With brake

Resolution per single turn



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

[Unit: mm]

				AC2	00 V
		IP65		MHME102GC	MHME102SC
Motor model		IP67		MHME102G1□	MHME102S1
	Model	A5II, A5 series		MDD ⊘ T3530	
Applicable driver *2	No.	A5IIE, A5E series		MDD ⊘T3530E	-
unver	Fi	ame sym	ıbol	D-fr	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	4.	77
Momentary N	1ax. pea	k torque	(N·m)	14.3	
Rated curren	t	((A(rms))	5.7	
Max. current			(A(o-p))	24	
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	t brake	24.7	
of rotor (×10	⁴ kg·m²)	With b	orake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
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.

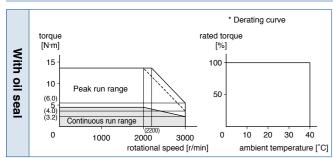
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

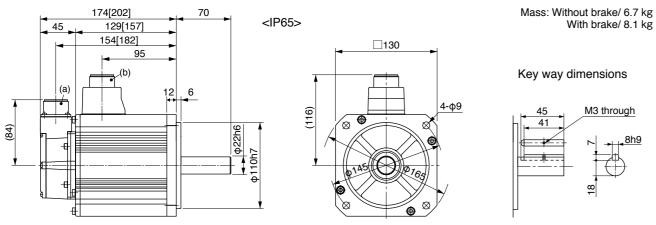
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
M-4		IP65		MHME152GC	MHME152SC
Motor mode	e 1	IP67		MHME152G1□	MHME152S1
A I' l. l .	Model	A5II, A5 series		MDD ◇ T5540	
Applicable driver *	No.	A5IIE, A5E series		MDD ⊘T5540E	-
unver	Fr	ame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	2	.3
Rated outpo	ut		(W)	15	00
Rated torqu	ie		(N·m)	7.	16
Momentary	Max. peal	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	9.4	
Max. currer	nt		(A(o-p))	4	0
Regenerativ	e brake	Without	option	22	
frequency (tim	nes/min) Note)1	DV0P	4284	130	
Rated rotati	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	37.1	
of rotor (×10 ⁻⁴ kg·m ²) With b		rake	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			le 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.

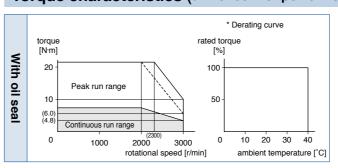
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

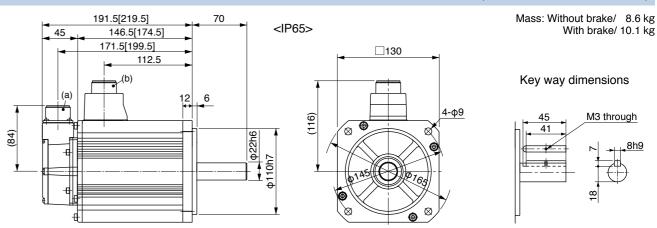
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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.140.)



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

[Unit: mm]

A5 Family

				AC200 V		
		IP65	MHME202GC□	MHME202SC		
Motor model *1		IP67	MHME202G1□	MHME202S1		
	Model	A5II, A5 series	MED ◇T736 4			
Applicable *2	No.	A5IIE, A5E series	MED ⊘T7364E	_		
anver	Fı	ame symbol	E-fra	ame		
Power supply	capacit	y (kVA)	3.	.3		
Rated output		(W)	20	00		
Rated torque		(N·m)	9.9	55		
Momentary M	ax. pea	k torque (N·m)	28.6			
Rated current		(A(rms))	11.1			
Max. current		(A(o-p))	4	7		
Regenerative b	orake	Without option	out option 45			
frequency (times/	min) Note)1	DV0P4285	142			
Rated rotational speed (r/min)			20	00		
Max. rotationa	ıl speed	(r/min)	3000			
Moment of ine	ertia	Without brake	57.8			
of rotor (×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 encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	Resolution per single turn			131072		
		_				

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

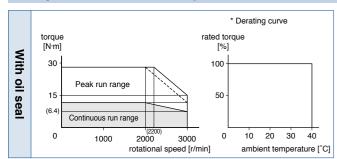
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

	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

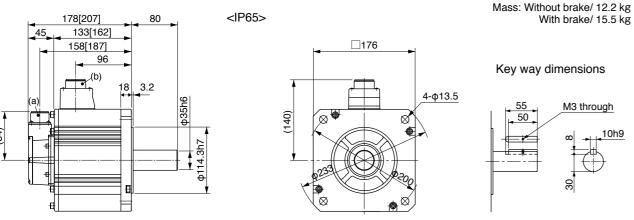
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
M -t		IP65		MHME302GC□	MHME302SC
Motor mode	•	IP67		MHME302G1□	MHME302S1
	Model	A5II, A5 series		MFD◇	TA390
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TA390E	-
unven	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)	14	.3
Momentary	Max. peal	k torque	(N·m)	43.0	
Rated curre	nt	(A(rms))	16.0	
Max. current (A(o-p))			6	8	
Regenerative	e brake	Without	option	1	9
frequency (tim	es/min) Note)1	DV0P4285×2		142	
Rated rotation	onal spee	d	(r/min)	20	00
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	90.5	
of rotor (×10 ⁻⁴ kg·m²) With brake		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 single turn			le turn	1048576	131072

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

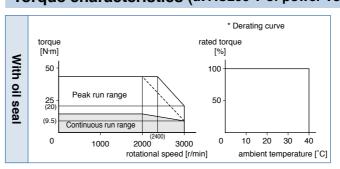
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

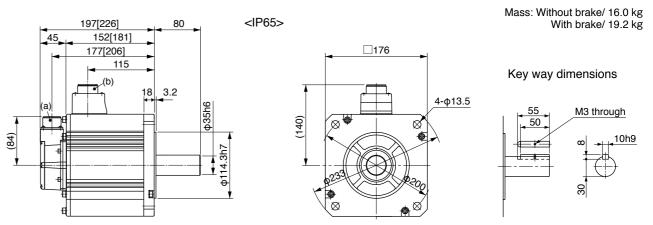
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

Torque characteristics (at 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		MHME402GC□	MHME402SC	
Motor model *1		IP67	MHME402G1	MHME402S1
A II I- I	Model	A5II, A5 series	MFD♦	TB3A2
Applicable *2	No.	A5IIE, A5E series	MFD ◇TB3A2E	_
unver	Fr	ame symbol	F-fr	ame
Power supply of	capacity	y (kVA)	6	.0
Rated output		(W)	40	00
Rated torque		(N·m)	19	9.1
Momentary Ma	ax. peal	torque (N·m)	57.3	
Rated current		(A(rms))	21.0	
Max. current		(A(o-p))	89	
Regenerative b	rake	Without option	17	
frequency (times/m	nin) Note)1	DV0P4285×2	125	
Rated rotation	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of ine	rtia	Without brake	112	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

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

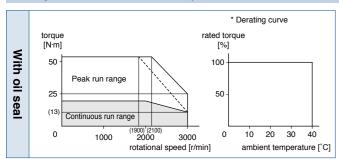
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

	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

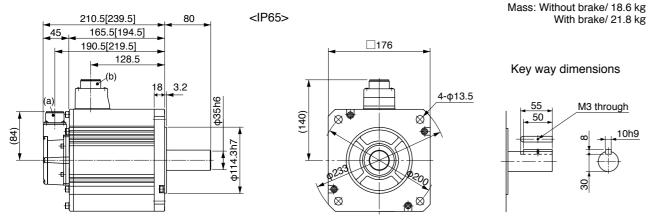
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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
Mata a da		IP65		MHME502GC	MHME502SC
Motor mode *		IP67		MHME502G1□	MHME502S1
Amaliaahla	Model	odel A5II, A5 series		MFD ⊘TB3A2	
Applicable driver **	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
divei	Fr	ame sym	bol	F-fra	ame
Power suppl	y capacit	y	(kVA)	7.	.5
Rated outpu	t		(W)	50	00
Rated torque	Э		(N·m)	23	3.9
Momentary I	Max. peal	k torque	(N·m)	71.6	
Rated currer	nt	(A(rms))	25.9	
Max. current	t		(A(o-p))	110	
Regenerative	e brake	Without	option	10	
frequency (time	es/min) Note)1	DV0P4	285×2	76	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	162	
of rotor (×10 ⁻⁴ kg·m ²) With		With b	rake	164	
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			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.

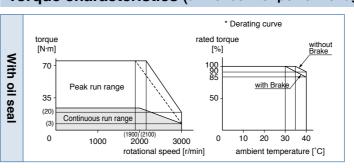
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

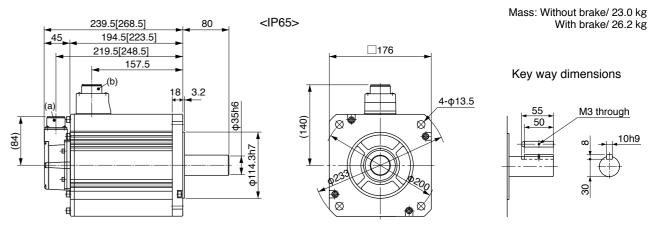
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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 model *1		IP67	MHME752G1□	MHME752S1
A 11 11	Model	A5II, A5 series	MGD ⊘TC3B 4	
Applicable 42	No.	A5IE, A5E series	_	_
diivoi	Fı	ame symbol	G-fr	ame
Power supply	capacit	y (kVA)	1	1
Rated output		(W)	75	00
Rated torque		(N·m)	47	7.8
Momentary Max. peak torque (N·m)			119	
Rated current		(A(rms))	44.0	
Max. current		(A(o-p))	165	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4285×4	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	273	
of rotor (×10 ⁻⁴ kg·m²) With brake			279	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
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.

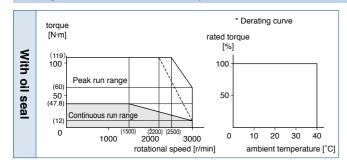
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

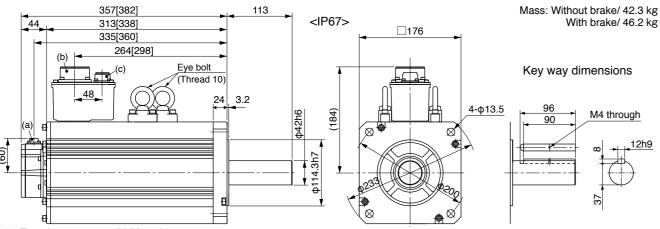
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- 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
M - t - · · · · - · · · ·		IP65		MSME084GC□	MSME084SC
Motor mode	9I ⊧1	IP67		MSME084G1□	MSME084S1
A II l. l .	Model	Model A5II, A5 series		MDD ◇T2412	
Applicable driver	No.	A5IIE, A5E series		MDD \diamondsuit T2412E	-
unver	Fi	ame sym	bol	D-fr	ame
Power supp	oly capacit	y	(kVA)	1.	.6
Rated outpo	ut		(W)	75	50
Rated torqu	ıe		(N·m)	2.:	39
Momentary	Max. pea	k torque	(N·m)	7.16	
Rated curre	ent	(A(rms))	2.4	
Max. currer	nt		(A(o-p))	10	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0PM	20048	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of	inertia	Without	brake	1.61	
of rotor (×10 ⁻⁴ kg·m ²) Wit		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 sir			le turn	1048576	131072

400 V MSME 750 W [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.

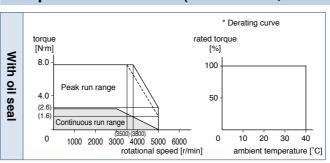
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

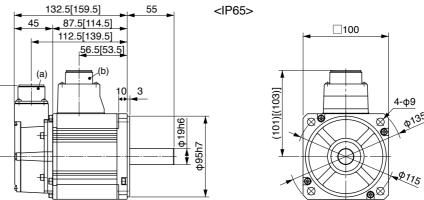
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

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



Key way dimensions

Mass: Without brake/ 3.1 kg

With brake/ 4.1 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.

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				AC400 V	
Motor model	IP65		MSME104GC□	MSME104SC□	
*1		IP67		MSME104G1□	MSME104S1
A !! I- I -	Model	A5II, A5 series		MDD<	T3420
Applicable 42	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unver	Fr	ame sym	nbol	D-fr	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	3.18	
Momentary Ma	ax. peal	k torque	(N·m)	9.55	
Rated current		((A(rms))	3.3	
Max. current	Max. current (A(o-p))			14	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Withou	t brake	2.03	
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	gle turn	1048576	131072

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

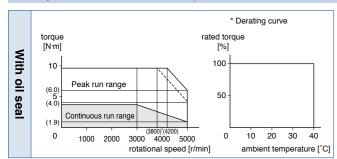
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

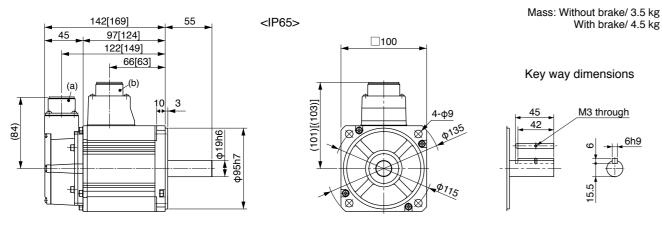
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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
		IP65		MSME154GC	MSME154SC
Motor model		IP67		MSME154G1□	MSME154S1
A I' I. I .	Model	A5 I I, A5	series	MDD<	T3420
Applicable driver *2	No.	A5IIE, A5E series		MDD ⊘T3420E	-
divoi	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)	4.	77
Momentary N	Max. peal	k torque	(N·m)	14.3	
Rated currer	nt	(A(rms))	4.2	
Max. current	:		(A(o-p))	1	8
Regenerative	brake	Without option		No limit Note)2	
frequency (time	es/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of in	nertia	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	s or less	
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

400 V MSME 1.5 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.

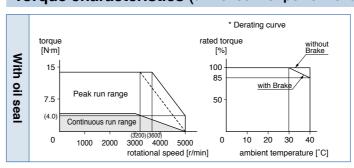
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

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

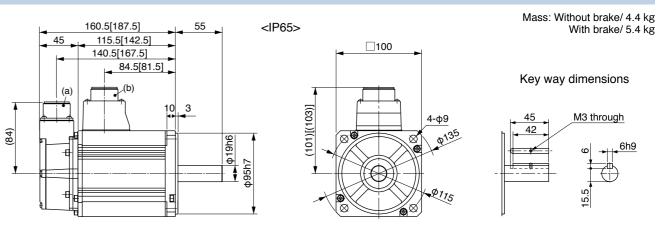
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
documbry	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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			MSME204GC□	MSME204SC	
Wotor model *1		IP67		MSME204G1□	MSME204S1
Ammliaabla	Model	A5II, A5 series		MED ⊘ T4430	
Applicable driver *2	No.	A5IIE, A5E series		MED ⊘T4430E	_
anver	Fr	ame sym	bol	E-fra	ame
Power supply	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 b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM	20049	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	3.68	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

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

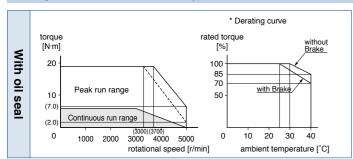
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

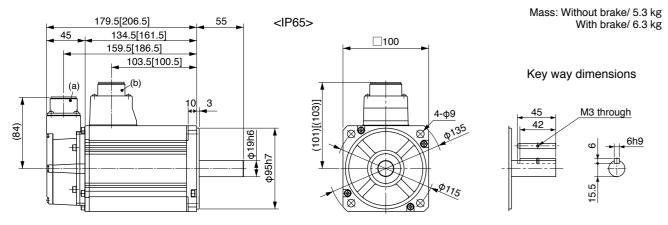
During assembly During	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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
Mataumaad	-1	IP65		MSME304GC□	MSME304SC
Motor mode	₽I *1	IP67		MSME304G1□	MSME304S1
Annlinable	Model	A5II, A5 series		MFD◇	T5440
Applicable driver	No.	A5IIE, A	5E series	MFD ◇T5440E	_
divei	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ıe		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	9.2	
Max. currer	nt		(A(o-p))	39	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tin	nes/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed	l	(r/min)	5000	
Moment of	inertia	Without	t brake	6.	50
of rotor (×1	0 ⁻⁴ kg·m ²)	With brake		6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per			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.

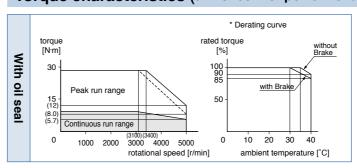
•	•
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

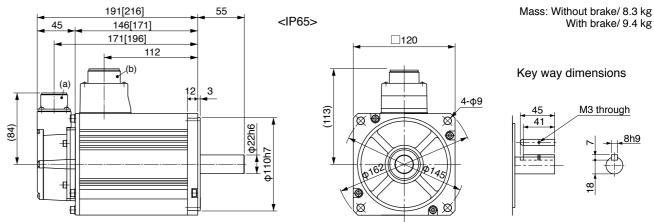
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC400 V		
IP65			MSME404GC	MSME404SC□	
Motor model *1		IP67		MSME404G1□	MSME404S1
	Model	A5II, A5 s	eries	MFD♦	TA464
Applicable driver *2	No.	A5IIE, A5	E series	MFD \diamondsuit TA464E	_
unver	Fı	ame symb	ol	F-fra	ame
Power supply	capacit	y	(kVA)	6	.8
Rated output			(W)	40	00
Rated torque			(N·m)	12.7	
Momentary Ma	ax. pea	k torque	(N·m)	38.2	
Rated current		(A	(rms))	9.9	
Max. current		(/	4(o-p))	42	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0PM20	0049×2	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 br	rake	14.2	
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
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.

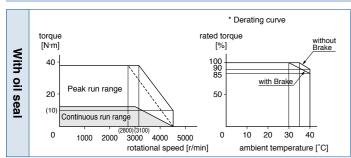
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

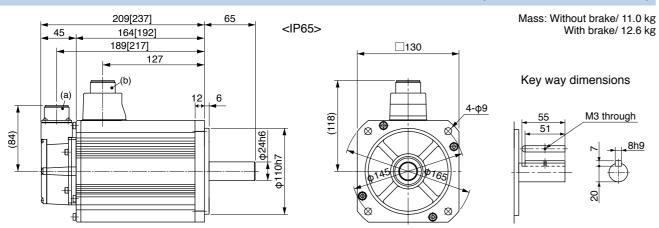
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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
Makananadal		IP65		MSME504GC□	MSME504SC	
Motor mode	€I ∗1		IP67		MSME504G1□	MSME504S1
Annlinable		Model	A5II, A5 series		MFD◇	TA464
Applicable driver	*2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-
divei		Fr	ame sym	bol	F-fra	ame
Power supp	oly o	capacit	y	(kVA)	7.	.5
Rated outp	ut			(W)	50	00
Rated torqu	ıe			(N·m)	15	i.9
Momentary	Ма	ıx. peal	k torque	(N·m)	47.7	
Rated curre	ent		(A(rms))	12.0	
Max. currer	nt		((A(o-p))	51	
Regenerativ	/e b	rake	Without option		357	
frequency (tin	nes/m	nin) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	4500	
Moment of	iner	rtia	Without	brake	17.4	
of rotor (×1	0-4	kg·m²)	With brake		18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less			
Rotary enco	ode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution pe			n per sina	le 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.

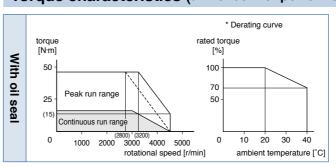
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

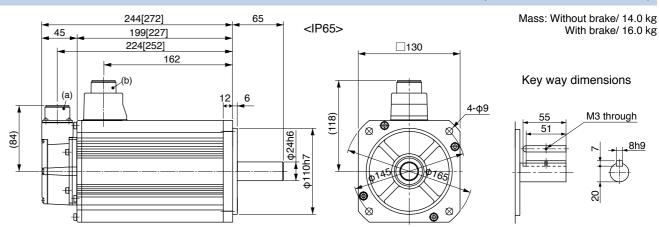
<u>.</u>	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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	
Motor model		IP65	MDME044GC	MDME044SC	
*1		IP67	MDME044G1	MDME044S1	
A 1: 1-1 -	Model	A5II, A5 series	MDD<	T2407	
Applicable driver *2	No.	A5IIE, A5E series	MDD \diamondsuit T2407E	-	
unver	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	0	.9	
Rated output		(W)	40	00	
Rated torque		(N·m)	1.	91	
Momentary Ma	ax. peal	k torque (N·m)	5.73		
Rated current		(A(rms))	1.2		
Max. current		(A(o-p))	4	4.9	
Regenerative b	rake	Without option	No limit 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 brake	1.93		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131072	

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

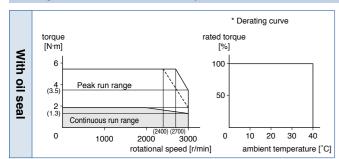
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

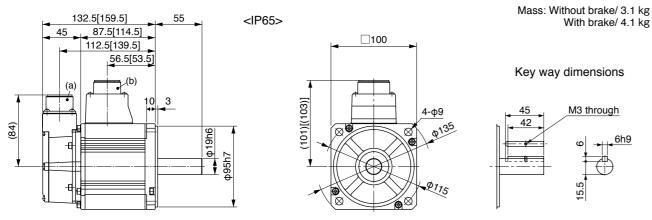
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

			AC400 V			
N 4 - 4		IP65		MDME064GC	MDME064SC	
Motor mod	ei *1	IP67		MDME064G1□	MDME064S1	
A	Model	A5II, A5	series	MDD<	MDD ⊘ T2407	
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ⊘T2407E	-	
unven	F	rame sym	bol	D-fr	ame	
Power sup	ply capaci	ty	(kVA)	1.	.2	
Rated outp	out		(W)	60	00	
Rated torqu	ue		(N·m)	2.	86	
Momentary	/ Max. pea	k torque	(N·m)	8.59		
Rated curre	ent	(A(rms))	1.5		
Max. curre	nt	((A(o-p))	6.5		
Regenerativ	ve brake	Without	Vithout option No limit Note)2		t Note)2	
frequency (ti	mes/min) Note)	DV0PM20048		No limit Note)2		
Rated rotat	tional spec	ed	(r/min)	2000		
Max. rotation	onal speed	i	(r/min)	3000		
Moment of	inertia	Without brake		2.03		
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	2.35		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary enc	oder spec	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution		n per sing	le turn	1048576	131072	

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

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

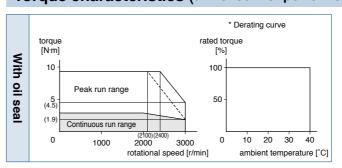
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

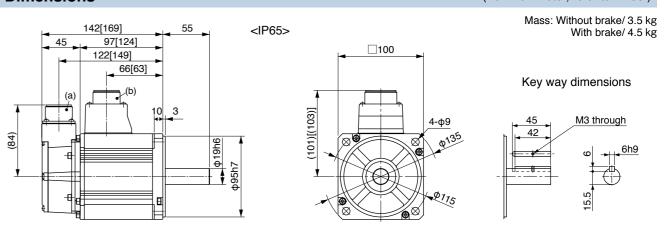
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC400 V		
Matarasadal		IP65		MDME104GC	MDME104SC
Motor model *1		IP67		MDME104G1	MDME104S1
A 11 11	Model	A5II, A5 series		MDD ⊘ T2412	
Applicable driver *2	No.	A5IIE, A5E series		MDD \diamondsuit T2412E	_
anver	Fr	ame syml	bol	D-fra	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 b	rake	Without	option	No limit 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	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 encoder specifications 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.

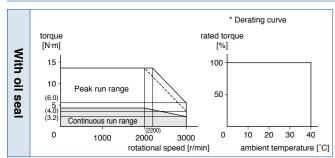
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

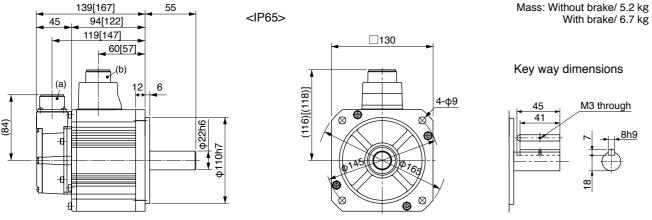
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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	
M-4		IP65		MDME154GC	MDME154SC
Motor mode	el ⊧1	IP67		MDME154G1□	MDME154S1
	Model	A5II, A5	series	MDD<	T3420
Applicable driver	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	Fi	rame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	2	.3
Rated outpo	ut		(W)	15	00
Rated torqu	ie		(N·m)	7.	16
Momentary	Max. pea	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	4.7	
Max. current (A(o-p))			2	0	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	6.70	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	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 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sina	le turn	1048576	131072

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

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

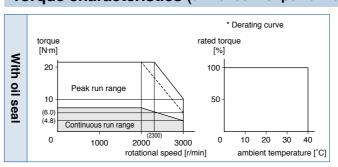
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

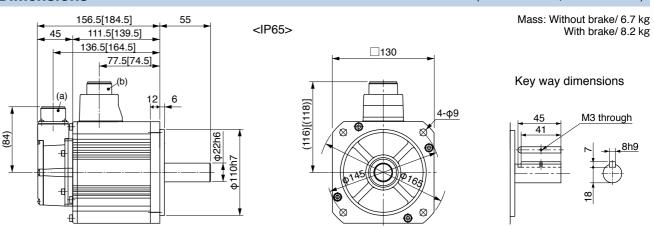
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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 \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]

			AC400 V		
Matanasadal		IP65		MDME204GC	MDME204SC
Motor model *1		IP67		MDME204G1□	MDME204S1
	Model	A5II, A5 series		MED ⊘ T4430	
Applicable driver *2	No.	A5IIE, A5E series		MED ⊘T4430E	_
unver	Fr	rame sym	bol	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 b	Regenerative brake Without option		option	No limit Note)2	
frequency (times/r	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	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 encoder specifications 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.

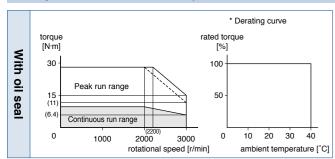
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

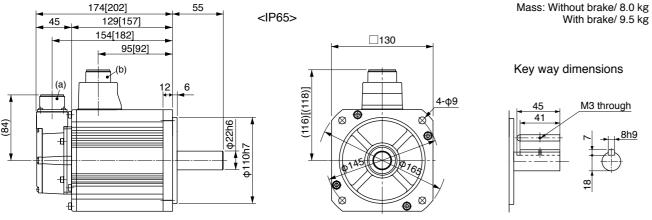
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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	Model	A5II, A5 series		MFD ◇ T5440	
Applicable driver *	No.	A5IIE, A5E 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))			37		
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	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·m ²)		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.

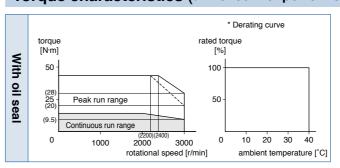
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

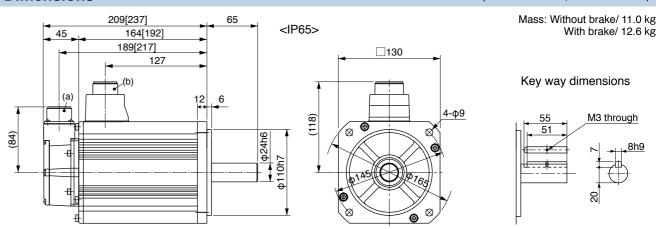
<u>.</u>	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

Torque characteristics (at 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
*1		IP67		MDME404G1□	MDME404S1
Amaliaabla	Model	A5II, A5	series	MFD⇔	TA464
Applicable driver *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unver	Fi	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	6	.8
Rated output			(W)	40	00
Rated torque			(N·m)	19.1	
Momentary M	ax. pea	k torque	(N·m)	57.3	
Rated current (A(rms))			A(rms))	10.6	
Max. current	Max. current (A(o-p))			4	5
Regenerative I	orake	Without option		No limit Note)2	
frequency (times	min) Note)1	DV0PM2	20049×2	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of ine	ertia	Without	t brake	37.6	
of rotor (×10 ⁻²	kg·m²)	With b	orake	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
F	Resolutio	Resolution per single turn			131072

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

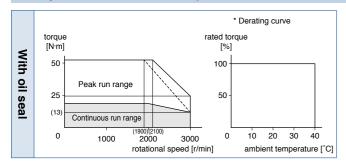
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

	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

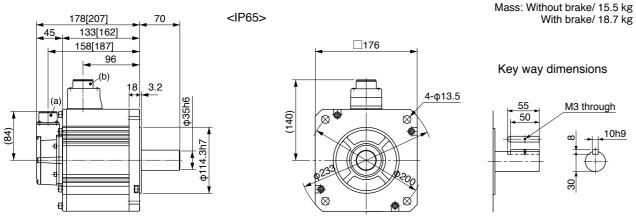
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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
Mataumand	-1	IP65			MDME504GC	MDME504SC
Motor mode	*1	II	P67		MDME504G1	MDME504S1
Annlinable	Мо	del A5	II, A5	series	MFD◇	TA464
Applicable driver	*2 No.	A5:	ΙΕ, Α	5E series	MFD \diamondsuit TA464E	_
divei		Frame	e sym	bol	F-fr	ame
Power supp	oly capa	acity		(kVA)	7	.5
Rated outp	ut			(W)	50	00
Rated torqu	ıe			(N·m)	23	3.9
Momentary	Max. p	eak tor	que	(N·m)	71.6	
Rated curre	ent		(A(rms))	13.0	
Max. currer	nt			(A(o-p))	5	5
Regenerativ	e brake	W	Without option		120	
, •		ote)1 DV	DV0PM20049×2		No limit Note)2	
Rated rotat	ional sp	peed		(r/min)	2000	
Max. rotation	onal spe	eed		(r/min)	3000	
Moment of	inertia	W	Without brake		48.0	
of rotor (×1	0 ⁻⁴ kg·n	n²) γ	With brake		53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
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.

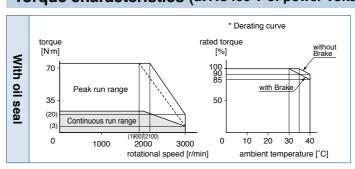
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

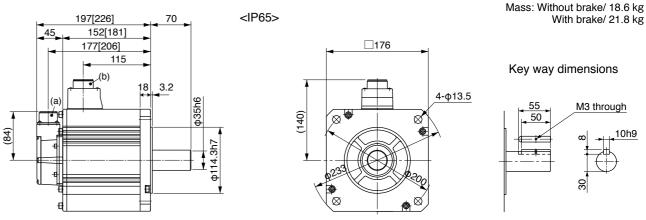
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
documbry	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- 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.139.)



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

[Unit: mm]

				AC4	00 V
Motor model		IP65		_	_
*1		IP67		MDME754G1	MDME754S1
Ammliaalala	Model	A5II, A5 series		MGD◇	TB4A2
Applicable driver *2	No.	A5IIE, A5E se	ies	_	_
divoi	Fr	ame symbol		G-fr	ame
Power supply	capacit	y (kV	A)	1	1
Rated output		(1	N)	75	000
Rated torque		(N·	m)	47.8	
Momentary M	ax. peal	k torque (N·	m)	119	
Rated current (A(rms))			22		
Max. current		(A(o-	o))	83	
Regenerative b	rake	Without option	n	No lim	it Note)2
frequency (times/	equency (times/min) Note)1 DV0PM20049×3		×3	No limit Note)2	
Rated rotation	al spee	d (r/m	in)	1500	
Max. rotationa	l speed	(r/m	in)	3000	
Moment of ine	rtia	Without brak	е	101	
of rotor (×10 ⁻⁴	kg·m²)	With brake		107	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single tur	n	1048576	131072

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

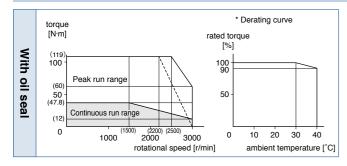
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

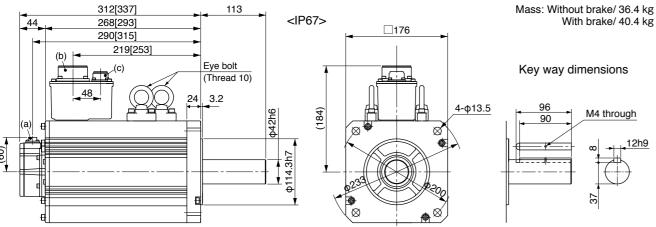
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
document	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- 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
N4 - 4	l-1	IP65		-	_
Motor mod	*1	IP67		MDMEC14G1□	MDMEC14S1
	Mode	A5II, A5	series	MHD	TB4A2
Applicable driver	*2 No.	A5IIE, A	5E series	-	-
unven	I	rame sym	bol	H-fr	ame
Power sup	ply capac	ity	(kVA)	1	7
Rated outp	out		(W)	110	000
Rated torq	ue		(N·m)	7	0
Momentary	y Max. pe	ak torque	(N·m)	175	
Rated curr	ent	(A(rms))	27.1	
Max. current (A(o-p))			10	01	
Regenerati	ve brake	Without	option	No limi	it Note)2
frequency (ti	Jency (times/min) Note)1 DV0PM20049×6		No limit Note)2		
Rated rota	tional spe	ed	(r/min)	1500	
Max. rotati	onal spee	d	(r/min)	2000	
Moment of	inertia	Without	brake	212	
of rotor (×1	10 ⁻⁴ kg·m²	With b	orake	22	20
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		
	Resoluti	on per sing	le turn	1048576	131072

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

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

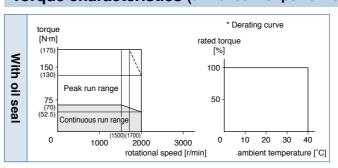
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

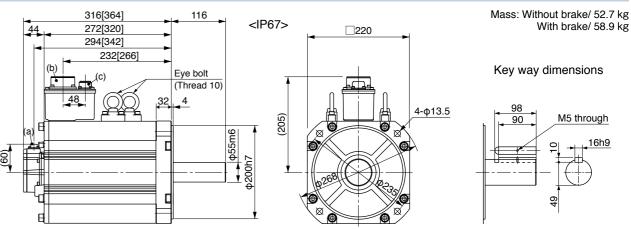
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
accombly	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) 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]

			AC4	00 V
Motor model		IP65	-	-
*1		IP67	MDMEC54G1	MDMEC54S1
Amaliaabla	Model	A5II, A5 series	MHD◇	TB4A2
Applicable *2	No.	A5IIE, A5E series	_	_
dive	Fr	ame symbol	H-fra	ame
Power supply	capacit	y (kVA)	2	2
Rated output		(W)	150	000
Rated torque		(N·m)	95.5	
Momentary Ma	ax. peal	k torque (N·m)	224	
Rated current		(A(rms))	33.1	
Max. current	Max. current (A(o-p))		11	18
Regenerative brake Without option		No limi	t Note)2	
frequency (times/r	min) Note)1	DV0PM20049×6	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l 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	s or less
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn		1048576	131072

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

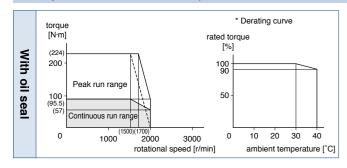
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

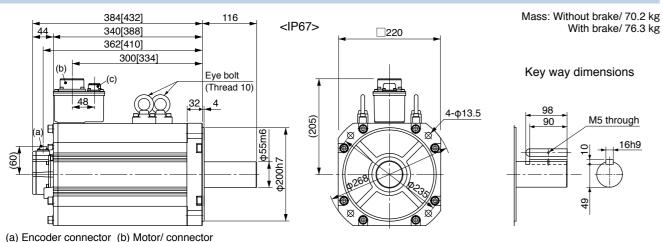
During assembly During operation	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.47.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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		
Motor mod		IP65		-	-	
MOTOL MOD	*1	IP67		MFME154G1□	MFME154S1	
	Model	A5II, A5	series	MDD<	T3420	
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ⊘T3420E	-	
unven	F	rame sym	bol	D-fr	D-frame	
Power sup	ply capacit	у	(kVA)	2	.4	
Rated outp	out		(W)	15	00	
Rated torq	ue		(N·m)	7.	16	
Momentary	Max. pea	k torque	(N·m)	21.5		
Rated current (A(rms))		3.8				
Max. current (A(o-p))		16				
Regenerati	ve brake	Without	option	100		
frequency (ti	mes/min) Note)1	DV0PM	120048	No limit Note)2		
Rated rota	tional spee	d	(r/min)	2000		
Max. rotati	onal speed	l	(r/min)	3000		
Moment of	inertia	Without	t brake	18.2		
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	23.5		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn		1048576	131072			

400 V MFME 1.5 kW Middle inertia, Middle capacity

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

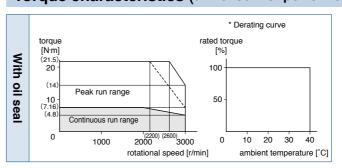
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

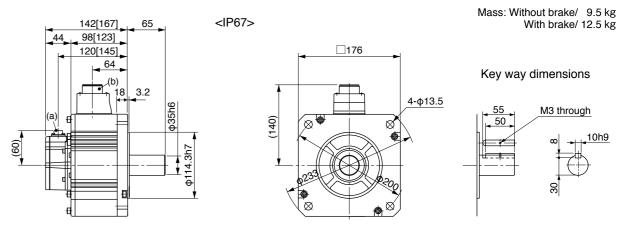
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions



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

[Unit: mm]

			AC4	00 V
Motor model		IP65	-	-
*1		IP67	MFME254G1□	MFME254S1
	Model	A5II, A5 series	MED<	T4430
Applicable *2	No.	A5IIE, A5E series	MED ⊘T4430E	-
unver	Fr	ame symbol	E-fra	ame
Power supply	capacit	y (kVA)	3	.9
Rated output		(W)	25	00
Rated torque		(N·m)	11.9	
Momentary M	ax. peal	k torque (N·m)	30.4	
Rated current		(A(rms))	6.7	
Max. current (A(o-p))		29		
Regenerative brake Without or		Without option	75	
frequency (times	min) Note)1	DV0PM20049 No limit N		t Note)2
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	al speed	(r/min)	3000	
Moment of ine	ertia	Without brake	35.8	
of rotor (×10 ⁻²	kg·m²)	With brake	45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		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.

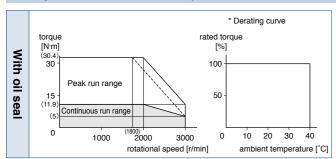
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

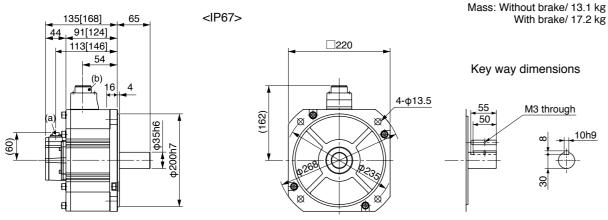
During assembly During operation	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

[Unit: mm]

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

400 V MFME 4.5 kW Middle inertia, Middle capacity

Specifications

			AC4	00 V
Mataumadal		IP65	-	-
Motor model		IP67	MFME454G1	MFME454S1
A 1: 1- 1 -	Model	A5II, A5 series	MFD◇	TA464
Applicable *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	-
unver	Fı	rame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.9
Rated output		(W)	45	00
Rated torque		(N·m)	21.5	
Momentary M	ax. pea	k torque (N·m)	54.9	
Rated current		(A(rms))	12.4	
Max. current (A(o-p))			5	3
Regenerative b	orake	Without option	6	7
frequency (times/	min) Note)1	DV0PM20049×2 375		75
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	63.1	
of rotor (×10 ⁻⁴ kg·m²) With brake		70.9		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn		1048576	131072	

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

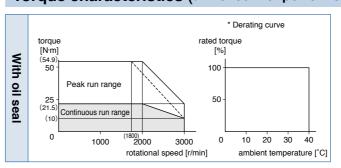
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

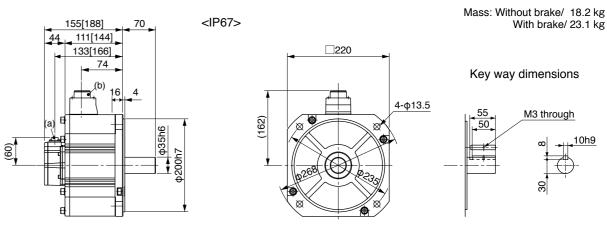
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
accombiy	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- 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
		IP65		MGME094GC□	MGME094SC□
Motor model *1		IP67		MGME094G1□	MGME094S1
	Model	A5II, A5	series	MDD<	T3420
Applicable *2	No.	A5IIE, A5E series		MDD ⊘T3420E	-
anver	Fr	ame sym	bol	D-fra	ame
Power supply	capacity	y	(kVA)	1.	.8
Rated output			(W)	90	00
Rated torque			(N·m)	8.9	59
Momentary Ma	ax. peal	k torque	(N·m)	19.3	
Rated current (A(rms))			3.8		
Max. current (A(o-p))			12		
Regenerative brake Without option		option	No limit Note)2		
frequency (times/n	nin) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	speed		(r/min)	2000	
Moment of ine	rtia	Without	t brake	6.70	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	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.

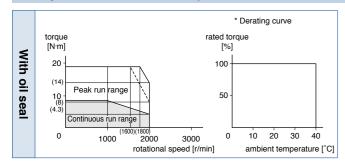
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

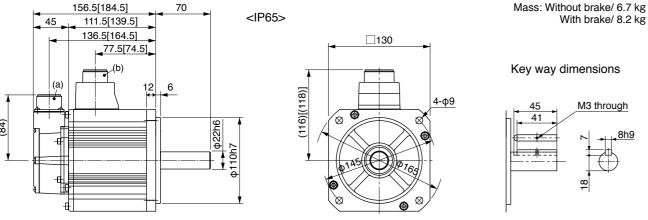
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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		MGME204GC□	MGME204SC
Motor mode	:1	IP67		MGME204G1□	MGME204S1
	Model	A5II, A5	series	MFD⇔	T5440
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unvei	F	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	3.	.8
Rated outpu	ut		(W)	20	00
Rated torqu	е		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	47.7	
Rated curre	nt	(.	A(rms))	8.5	
Max. current (A(o-p))			30		
Regenerativ	e brake	Without	option	No limit Note)2	
		DV0PM20049×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed	l	(r/min)	2000	
Moment of i	inertia	Without brake		30.3	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	rake	35	5.6
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			le turn	1048576	131072

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

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

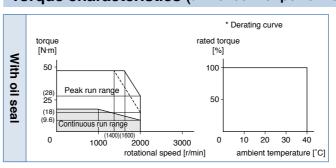
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

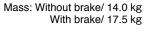
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

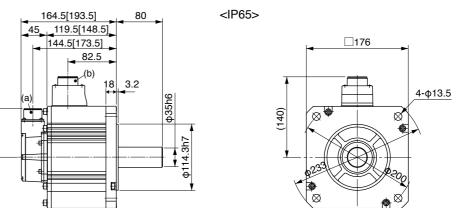


Dimensions

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



Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC4	00 V
Matanasadal		IP65		MGME304GC□	MGME304SC□
Motor model *1		IP67		MGME304G1□	MGME304S1
A so selle a delle	Model	A5II, A5	series	MFD♦	TA464
Applicable driver *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unven	Fr	ame sym	ıbol	F-fra	ame
Power supply	capacit	у	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	28.7	
Momentary M	ax. peal	k torque	(N·m)	71.7	
Rated current		((A(rms))	11.3	
Max. current (A(o-p))			40		
Regenerative t	orake	Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	al speed		(r/min)	2000	
Moment of ine	ertia	Without	t brake	48.4	
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	53.7	
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	Resolution per single turn			131072

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

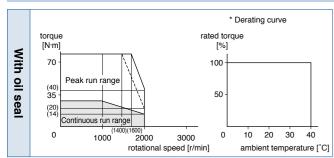
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

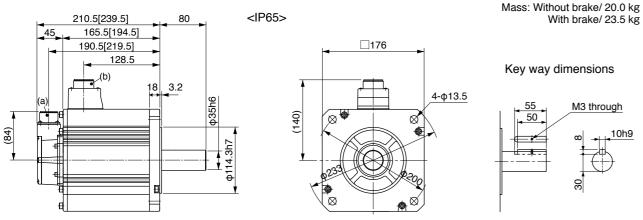
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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

	<u> </u>	
MOTOR	Specit	icatione
IVIOLOI	SUCCII	ications

Specifications

			AC4	00 V	
Matanaaaa		IP65		-	-
Motor mode	ÐI ⊭1	IP67		MGME454G1□	MGME454S1
A 1: 1- 1 -	Mode	A5II, A5	series	MFD◇	TA464
Applicable driver	No. ⊧2	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
diivei		Frame sym	nbol	F-fra	ame
Power supp	oly capac	ity	(kVA)	7.	.5
Rated outpo	ut		(W)	45	00
Rated torqu	ıe		(N·m)	43	3.0
Momentary	Max. pe	ak torque	(N·m)	107	
Rated curre	ent		(A(rms))	14.8	
Max. current (A(o-p))			5	5	
Regenerativ	e brake	Without	t option	No limi	t Note)2
frequency (tin	nes/min) Note	DV0PM2	20049×2	No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	1000	
Max. rotation	nal spee	ed	(r/min)	2000	
Moment of	inertia	Withou	t brake	79.1	
of rotor (×10 ⁻⁴ kg·m²) With brake		brake	84.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
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.

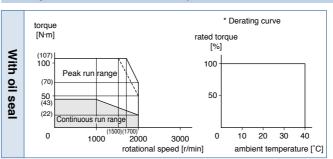
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

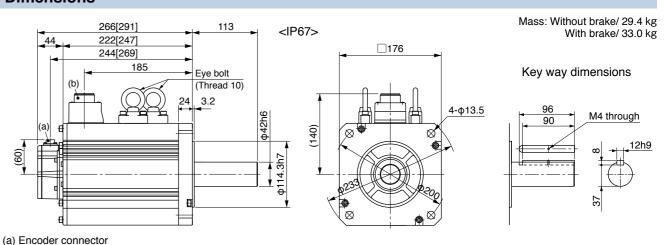
Radial load P-direction (N)	2058
Thrust load A-direction (N)	980
Thrust load B-direction (N)	1176
Radial load P-direction (N)	1470
Thrust load A, B-direction (N)	490
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- 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 \(\triangle\) 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



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

[Unit: mm]

			AC4	00 V	
		IP65	-	-	
Motor model *1		IP67	MGME604G1□	MGME604S1□	
Amaliaabla	Model	A5II, A5 series	MGD◇	TB4A2	
Applicable driver *2	No.	A5IIE, A5E series	_	_	
divei	Fr	ame symbol	G-fr	ame	
Power supply	capacit	y (kVA)	9	.0	
Rated output		(W)	60	00	
Rated torque		(N·m)	57	57.3	
Momentary Ma	ax. peal	k torque (N·m)	143		
Rated current		(A(rms))	19.4		
Max. current		(A(o-p))	74		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/r	min) Note)1	DV0PM20049×3	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	101		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary 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.

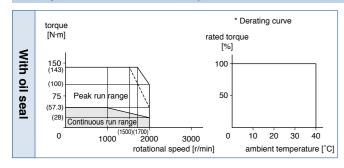
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

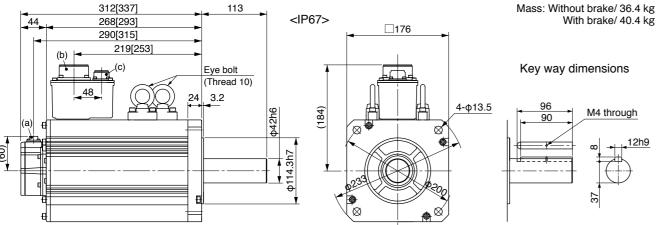
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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	
Matauanada		IP65		MHME104GC	MHME104SC
Motor mode	.	IP67		MHME104G1	MHME104S1
Annlinable	Model	A5II, A5	series	MDD<	T2412
Applicable driver **	No.	A5IIE, A5E series		MDD ⊘T2412E	_
diivei	Fr	ame sym	bol	D-fr	ame
Power suppl	ly capacit	y	(kVA)	1.	.8
Rated outpu	t		(W)	10	00
Rated torque	е		(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	DV0PM	DV0PM20048 No limit Note)2		t 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·m ²) With		With b	rake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		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.

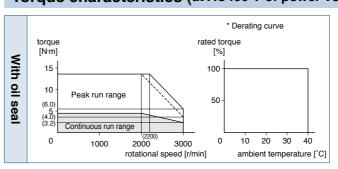
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

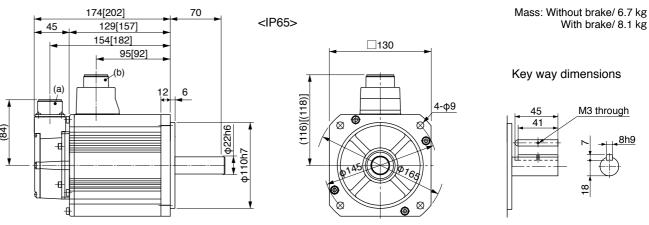
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During	Radial load P-direction (N)	490
	operation	Thrust load A, B-direction (N)	196

- 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.

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	
		IP65		MHME154GC	MHME154SC
Motor model *1		IP67		MHME154G1	MHME154S1
Mo		A5II, A5 series		MDD ⊘ T3420	
Applicable driver *2	No.	A5IIE, A5E	series	MDD ⊘T3420E	_
unver	Fr	ame symbol		D-fra	ame
Power supply	capacit	y (kVA)	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 op	tion	22	
frequency (times/r	nin) Note)1	DV0PM20	048	130	
Rated rotation	al spee	d (r/	min)	2000	
Max. rotationa	l speed	(r/	min)	3000	
Moment of ine	rtia	Without br	ake	37.1	
of rotor ($\times 10^{-4}$	kg·m²)	With brak	ке	38.4	
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			urn	1048576	131072

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

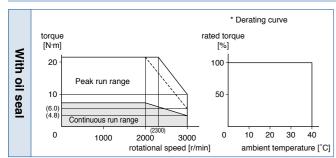
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

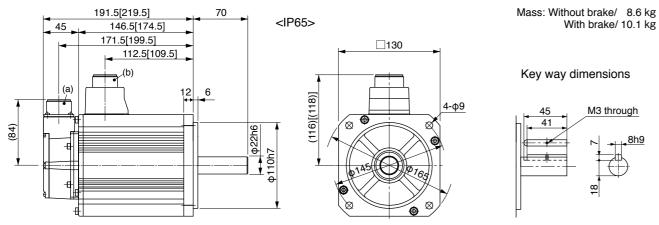
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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	
Matawaradal		IP65		MHME204GC	MHME204SC
Motor model		IP67		MHME204G1□	MHME204S1
A 1: 1- 1	Model	Model A5II, A5 series		MED<	T4430
Applicable driver *2	No.	A5IIE, A5E series		MED ⊘T4430E	_
divei	Fr	ame sym	bol	E-fra	ame
Power suppl	y capacit	y	(kVA)	3	.3
Rated outpu	t		(W)	20	00
Rated torque	Э		(N·m)	9.	55
Momentary I	Max. peal	k torque	(N·m)	28.6	
Rated currer	nt	(.	A(rms))	5.5	
Max. current	t	((A(o-p))	24	
Regenerative	e brake	Without	option	45	
frequency (time	es/min) Note)1	DV0PM	DV0PM20048 142		12
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of ir	nertia	Without	brake	57.8	
of rotor (×10	⁻⁴ kg·m²)	With b	rake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			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.

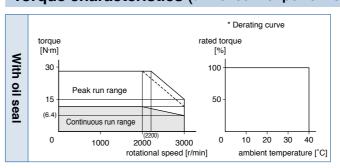
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

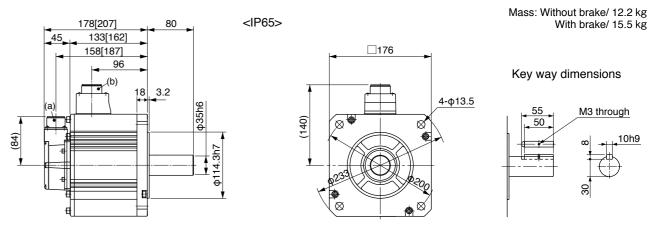
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- 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]

			AC4	00 V						
IP65		MHME304GC	MHME304SC							
Motor model *1		IP67	MHME304G1□	MHME304S1						
Amaliaabla	Model	A5II, A5 series	MFD<	T5440						
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit T5440E	-						
anver	Fı	rame symbol	F-fra	ame						
Power supply	capacit	y (kVA)	4	.5						
Rated output		(W)	30	00						
Rated torque		(N·m)	14	.3						
Momentary Ma	ax. pea	k torque (N·m)	43.0							
Rated current		(A(rms))	8.0							
Max. current (A(o-p))			3	4						
Regenerative b	rake	Without option	1	9						
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 ($\times 10^{-4}$	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			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.

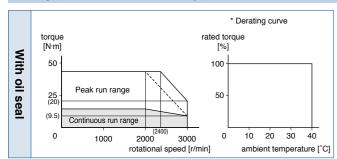
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

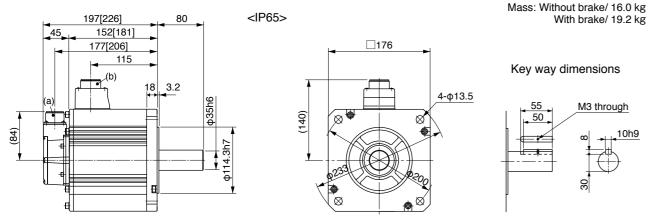
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC4	00 V
		IP65		MHME404GC	MHME404SC
Motor mode	el *1	IP67		MHME404G1□	MHME404S1
	Mode	A5II, A5	series	MFD◇	TA464
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unver	F	rame sym	bol	F-fra	ame
Power supp	oly capac	ty	(kVA)	6	.8
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	ak torque	(N·m)	57.3	
Rated current (A(rms))			10.5		
Max. current (A(o-p))				45	
Regenerativ	e brake	Without	option	17	
frequency (tir	nes/min) Note	¹ DV0PM2	0049×2	2 125	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	nal spee	d	(r/min)	3000	
Moment of	inertia	Without	brake	112	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	orake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le 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.

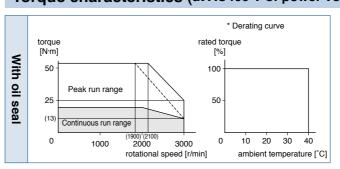
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

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



3.2

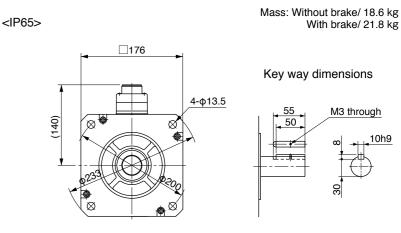
Dimensions

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]

			AC4	00 V	
Motor model		IP65		MHME504GC□	MHME504SC
*1		IP67		MHME504G1□	MHME504S1
Amaliaabla	Model	A5II, A5	series	MFD♦	TA464
Applicable 42	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_
anver	Fı	ame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	23	3.9
Momentary M	ax. pea	k torque	(N·m)	71.6	
Rated current		(A(rms))	13.0	
Max. current (A(o-p))			(A(o-p))	55	
Regenerative b	orake	Without	option	10	
frequency (times/	min) Note)1	DV0PM20049×2		76	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	ıl speed		(r/min)	3000	
Moment of ine	ertia	Without	brake	162	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	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 sing	le turn	1048576	131072

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

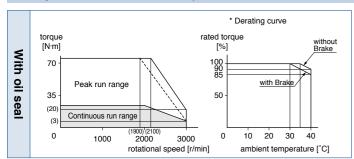
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

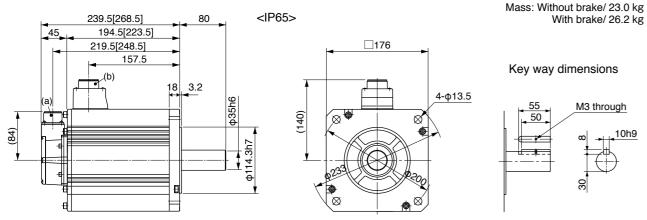
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V	
		IP65		-	-
Motor model		IP67		MHME754G1□	MHME754S1
	Model	A5II, A5	series	MGD♦	TB4A2
Applicable driver *2	No.	A5IIE, A	5E series	-	_
unven	Fi	ame sym	bol	G-fr	ame
Power supply	/ capacit	у	(kVA)	9	.0
Rated output			(W)	75	00
Rated torque			(N·m)	47	7.8
Momentary N	lax. pea	k torque	(N·m)	119	
Rated current (A(rms))			22.0		
Max. current (A(o-p))			8	3	
Regenerative	brake	Without	option	No lim	it Note)2
frequency (times	s/min) Note)1	DV0PM20049×3		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	1500	
Max. rotation	al speed		(r/min)	3000	
Moment of in	ertia	Without	t brake	273	
of rotor (×10	⁴ kg·m²)	With b	orake	279	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encod	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

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

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

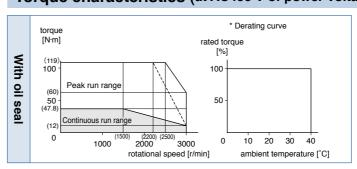
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

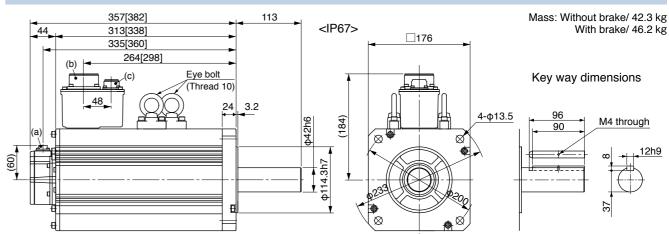
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
document	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

243[271]

199[227]

221[249]

141[168]

97[124]

66[63]

119[146]

162

[Unit: mm]

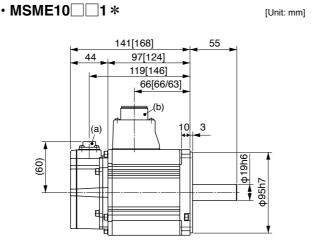
[Unit: mm]

65

12

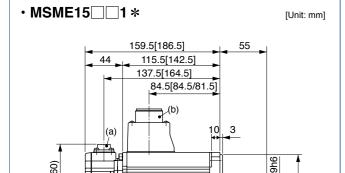
A5 Family

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

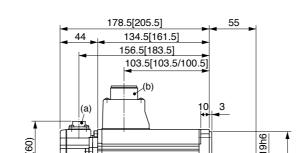


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

[Unit: mm]

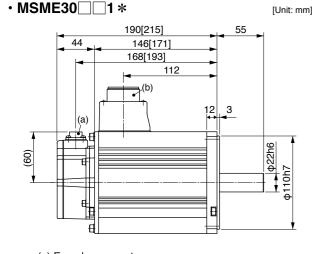


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



MSME20□□1*

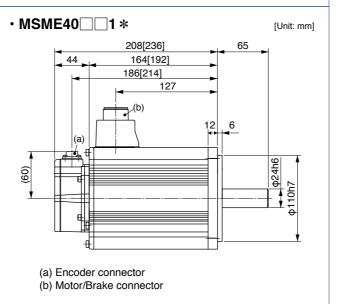
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



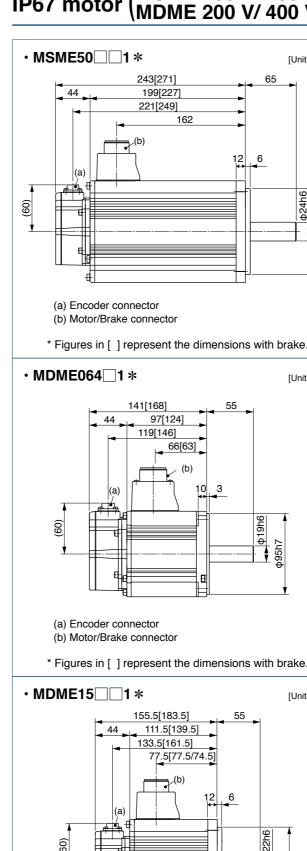
- (a) Encoder connector
- (b) Motor/Brake connector

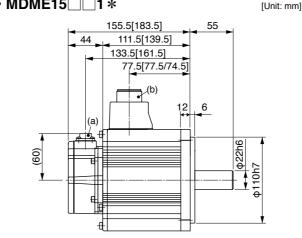
* For motor specifications, refer to IP65 motor page.

* Figures in [] represent the dimensions with brake.

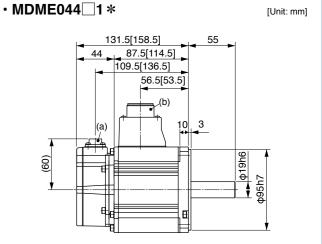


* Figures in [] represent the dimensions with brake.

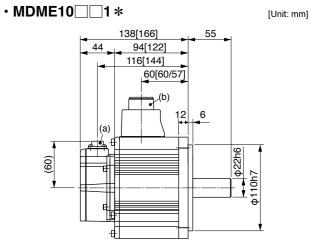




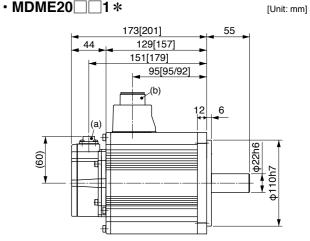
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.



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



- (a) Encoder connector (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.

137

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

Dimensions

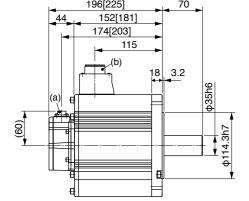
[Unit: mm]

• MDME30 □ 1 * [Unit: mm] 208[236] . 44 164[192] 186[214] 127

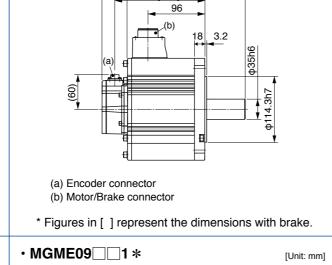
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

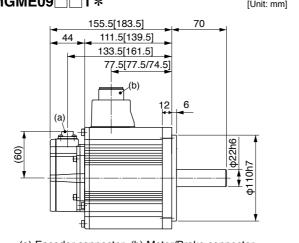
MDME40□□1* [Unit: mm] 177[206] 133[162] 155[184] (a) Encoder connector

MDME50□□1 * [Unit: mm] 196[225] 152[181] 174[203]

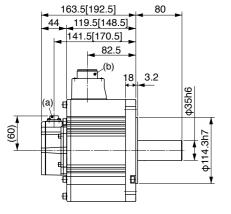


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake





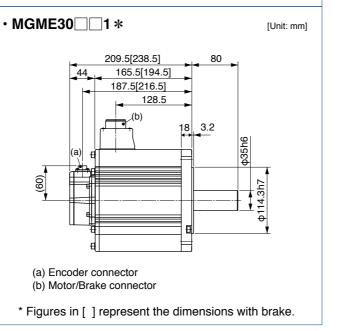
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.
- MGME20□□1 * [Unit: mm]



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

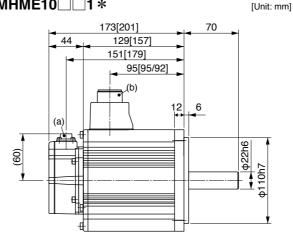
* For motor specifications, refer to IP65 motor page.

* Figures in [] represent the dimensions with brake.



• MHME10□□1 * 00 MHME20□□1* MHME40 □ □ 1 *

IP67 motor (MHME 200 V/ 400 V type)

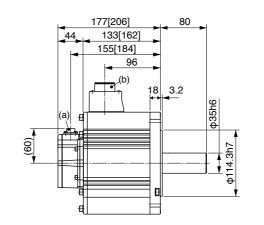


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

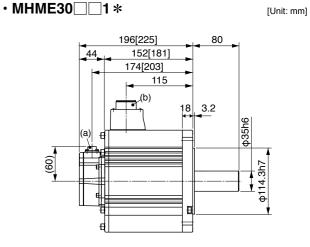
[Unit: mm]

[Unit: mm]

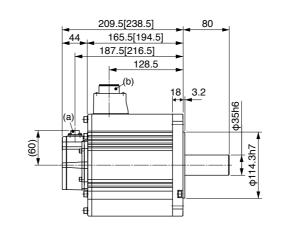
- MHME15□□1 * 190.5[218.5] 146.5[174.5] 168.5[196.5] 112.5[112.5/109.5] 9
 - (a) Encoder connector (b) Motor/Brake connector
 - * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



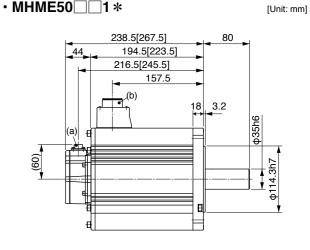
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector
 - (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

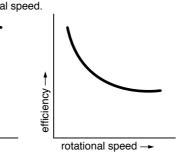


Type and Specifications

Reduction		Motor ou	ıtput (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.

, ,		following inclination in relation
to output torque and ro	itational speed.	
I		



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)	
Consideration and	Ambient humidity	85 %RH (free from condensation) or less	
Environment	Vibration resistance	49 m/s² or less (at motor frame)	
	Impact resistance	98 m/s ² or less	

output torque -

S	M	E	0	1	1	G	3	1	N

Type Symbol Specifications 100 W Low inertia MSMD 100 W to 750 W 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 -					
Symbol	Rated output				

Symbol	Rated output
1	100 V
2	200 V

Rotary encoder specifications

Model Designation

M

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

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

Motor types with gear reducer

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

^{*} MHMD 100 W is not prepared.

Motor structure

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

The Combination of the Driver and the Motor with gear reducer

	100	v	200 V		
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	Single/3-phase, 200 V	
	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	
		MADHT1107		MADHT1505	
100 W	MSME011□□□N	MADKT1107	MSME012 N	MADKT1505	
100 VV	MSMD011□□□N	MADHT1107E	MSMD012□□□N	MADHT1505E	
		MADKT1107E		MADKT1505E	
		MBDHT2110	MSME022 N MSMD022 N MHMD022 N	MADHT1507	
	MSME021	MBDKT2110		MADKT1507	
200 W		MBDHT2110E		MADHT1507E	
		MBDKT2110E		MADKT1507E	
		MCDHT3120	MSME042 \ \ \ \ \ \ \ \ \ \ \ \ \	MBDHT2510	
400 W	MSME041	MCDKT3120		MBDKT2510	
400 W	MSMD041□□□N MHMD041□□□N	MCDHT3120E		MBDHT2510E	
		MCDKT3120E		MBDKT2510E	
				MCDHT3520	
750 W			MSME082 N MSMD082 N MHMD082 N	MCDKT3520	
	_	_		MCDHT3520E	
				MCDKT3520E	

^{*} 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)	Ma	iss	Permissible radial load	Permissibl thrust load
			_							w/ brake	w/o brake	w/ brake		
		(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J(×10 ⁻	⁴kg∙m²)	(k	g)	(N)	(N)
	MSME01 1N		1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 2N	100	1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N		1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01 4N		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
MSME	MSME02	200	1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
≦ E	MSME02 3N	-	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
	MSME02 4N		1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
₹	MSME04 1N	-	1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 2N	400	1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
Ø.	MSME04 3N		1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04 4N		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	750	1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N		1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01 1N	-	1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 2N	100	1/9	80	333	555	2.25	6.86	0.0853	0.0883	1.02	1.23	588	294
	MSMD01 3N	-	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01 4N		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
_	MSMD02	_	1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
MSMD	MSMD02 2N	200	1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
₽	MSMD02 3N	-	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
٥	MSMD02 4N		1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low iner	MSMD04 DD 1N		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
ertia	MSMD04 DD 2N	400	1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
ש	MSMD04 3N	-	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04		1/25 1/5	332 672	120 600	200 900	26.4	79.2 32.1	0.56 1.583	0.58 1.683	4.4	4.9 5.2	2060 980	1030 490
	MSMD082		1/9	635	333	500	18.2	32.1 54.7	1.583	1.62	5.7	6.5	1470	735
	MSMD082 3N	750	1/15	635	200	300	30.4	91.2	1.52	1.67	6.1	6.9	1760	882
	MSMD082		1/25	635	120	180	50.4	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	-	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
≤	MHMD02		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
	MHMD04		1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
High inertia	MHMD04 3N	400	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
ine	MHMD04		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
rtia	MHMD082		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
-	MHMD082	-	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
-	MHMD082 3N	750	1/15	635	200	300	30.4	91.2	2.10	2.31	6.3	7.1	1760	882
		I	1/10	505	200	500	50.₹	V1.2	۱ ۲۰۰۲	2.01	0.0	7.1	1700	552

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 [r/min]	MSME011 2N torque [N·m] 8.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME011 3N torque [[N-m]] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME011 4N torque [N-m] 20 Peak 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 Continuous run range 0 500 1000 rotational speed [r/min]	MSME021 2N torque [N·m] 16.0 Peak run range Continuous run range 400 800 rotational speed [r/min]	MSME021 3N torque [N-m] 20 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME021 4N torque [N-m] 40 Peak run lange 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 1000 rotational speed [r/min]	MSME041 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME041 3N torque [N-m] 60 Peak run range Continuou run range 0 200 400 rotational speed [r/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 [r/min]	MSME012 2N torque [N·m] 8.0 Peak rurr range 4.0 Continuous run range 0 400 800 rotational speed [r/min]	MSME012 3N torque [N-m] 16.0 Peak rur range 0 200 400 rotational speed [r/min]	MSME012 4N torque [N-m] 20 Peak run range 10 Continuous run range 0 100 200 rotational speed [r/min]
200 1/	200 W	MSME022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 500 1000 rotational speed [r/min]	MSME022 2N torque [N·m] 16.0 Peak run tange Continuous run range 0 400 800 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak run range 10 Continuous run range 0 200 400 rotational speed [r/min]	MSME022 4N torque [N·m] 40 Peak rur range 20 Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MSME042 1N torque [N·m] 20 Peak run range Continuous tun range 0 500 1000 rotational speed [r/min]	MSME042 2N torque [N-m] 40 Peak run range Continuous run range 40 40 800 rotational speed [r/min]	MSME042 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME042 4N torque [N·m] 80 Peak rur range 40 Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MSME082 1N torque [N-m] 40 Peak rur range Continuous run range 0 500 1000 rotational speed [r/min]	MSME082 2N torque [N·m] 80 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME082 3N torque [N·m] 120 Peak run lange 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□□1N MSMD011□□2N MSMD011□□3N MSMD011 □ □ 4N 100 W MSMD021□□2N $MSMD021 \square \square 1N$ 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□□3N MSMD022□□1N MSMD022 2N MSMD022 4N 200 W 200 V MSMD042□□2N MSMD042 3N MSMD042□□1N MSMD042 4N 400 W $MSMD082 \square \square 3N$ MSMD082□□4N MSMD082□□2N MSMD082□□1N 750 W

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Dotted line	represents	the torque	e 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 Continuous run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run fange Continuous run fange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [N-m] 20 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD021 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
100 V	400 W	MHMD041 1N torque [N·m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD041 2N torque [N·m] 40 Peak Continudus run range 0 400 800 rotational speed [r/min]	MHMD041 3N torque [N-m] 60 30 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD041 4N torque [N·m] 80 Peak run range Continuous run range 100 200 rotational speed [r/min]
	200 W	MHMD022 1 1 N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 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 Continuous run range 0 200 400 rotational speed [r/min]	MHMD022 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MHMD042 1N torque [N-m] 20 Peak run tange Continuous run range 500 1000 rotational speed [r/min]	MHMD042 2N torque [N·m] 40 PBak 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	MHMD082 2N torque [N·m] 80 Peak run range Continuous run range	MHMD082 3N torque [N·m] 120 60 Peak run range Continuous run range	MHMD082 4N torque [N·m] 160 Peak run range Continuous run range

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

[Unit: mm]

MSME series

LL (LG) LR Brake connector Motor connector Encoder connecter LW

* The figure represents the dimensions with brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т	
MSME01		1/5	191.5	92														
WSWLOT		1/3	221.5	122										67.5				
MSME01 2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.5		4x4x16	2.5	
INCINEOT BELL	100	170	221.5	122	02	20	52	30		12	10	12	10			44410	2.0	
MSME01 3N	100	1/15	202	92										78				
			232	122														
MSME01 = 4N		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 79.5										100				
MSME02 U 4N]4N	1/25	229.5 266	79.5 116								M6	26				
			238.5	99	50	30	78	70	70 90	90 19	0 19	19 17		26			6×6×22	3.5
MSME04		1/5	275	135.5														
			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 = 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	
MONTON		4 /0	270.7	112.2										07.5				
MSME082□□2N	750	1/9	148.2										97.5					
MSME082 3N	/50	1/15	283.2	112.2	61	40	98	90	115	24	10	M8 Dopth	35		5	0,7,20	4	
IVISIVIEU0ZUSIN		1/15	319.2	148.2	61	40	98	90	115	∠4	24 18	Depth 20	ა၁	110	Э	8×7×30	4	
MSME082□□4N	1/25	283.2	112.2										110					
WIGIVIEUUZ		1/23	319.2	148.2														

Upper column: without brake

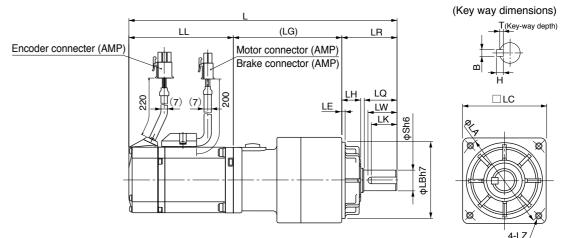
Lower column: with brake

MSMD series

[Unit: mm]

(Key way dimensions)

□LC



* The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	Т							
MSMD01		1/5	191.5	92																				
WISWIDOT IN		1/5	221.5	122										67.5										
MSMD01		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.5		4×4×16	2.5							
	100	1/0	221.5	122	02	20	52	50	00	12	10	12				744410	2.0							
MSMD01□□□3N	100	1/15	202	92										78										
		.,.0	232	122																				
MSMD01□□□4N		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5							
		1720	264	122	22		,,,	,,,	00		.,	20		02		ONONEL	0.0							
MSMD02 1N		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4x4x16	2.5							
		1/0	220.5	116	02	20	52	50	00	12	10	12		72.0		74410	2.0							
MSMD02 2N		1/9	219	79.5										89.5	3									
IIIOIIID02	200	.,,0	255.5	116																				
MSMD02 3N		1/15	229.5	79.5																				
			266	116										100										
MSMD02 4N		1/25	229.5	79.5																				
										266	116	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5
MSMD04		1/5	238.5	99		30	70	70	70 90	90 19	19		20				UXUXZZ	3.0						
			275	135.5										89.5										
MSMD04 2N		1/9	238.5	99																				
	400		275	135.5																				
MSMD04□□□3N		1/15	249	99										100										
			285.5	135.5								M8												
MSMD04□□□4N		1/25	264	99	61	40	98	90	115	24	18	Depth	35	104	5	8×7×30	4							
			300.5	135.5								20 M6												
MSMD082□□1N		1/5	255.7	112.2	50	30	78	70	90	19	17	Depth	26	93.5	3	6×6×22	3.5							
			292.7	149.2								20												
MSMD082□□2N		1/9	270.7	112.2										97.5										
	750	307.7	149.2								M8													
MSMD082□□3N		1/15	283.2	112.2	61	40	98	90	115	24	18	Depth	35		5	8×7×30	4							
	3	320.2	149.2			30	90 90	110 24	2-7 10	20		110												
MSMD082□□4N		1/25	283.2 320.2	112.2 149.2																				

Upper column: without brake Lower column: with brake

MHMD series

(Key way dimensions) (LG) LR Motor connector (AMP)
Brake connector (AMP) Encoder connecter (AMP)

□LC

[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													
MHMD02 3N		1/15	285.5	135.5										400			
			249	99										100	3		
MHMD02 4N		1/25	285.5	135.5	50 30	70	70	00	10	17	M6	00		3	0000	٥٠	
MUMDO4	258 1/5	118.5	50	30	78	70	90	19	''	Depth 20	26			6×6×22	3.5		
MHMD04		294.5 155	155										89.5				
MHMD04 2N		1/9	258	258 118.5										89.5			
		1/9	294.5	155													
MHMD04 3N	400	1/15	268.5	118.5										100			
MILIMIDO4		1/15	305	155										100			
			283.5	118.5								_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 1/9 322.7 164.2 298.2 127.2									97.5							
		298.2	127.2	١							M8			_			
MHMD082□□3N		1/15	335.2	164.2	61	40	98	90	115	24 18	18	Depth 20	35	35	5	8×7×30	4
			298.2	127.2										110			
MHMD082UU4N	HMD082□□4N	1/25	335.2	164.2													

Upper column: without brake	
Lower column: with brake	

MEMO

Features

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

[Please note]

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

Motor Lineup



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min Rated output: 200 W to 750 W

Enclosure : IP65



High inertia

Max. speed : 5000 r/min

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

Rated output: 200 W to 750 W Enclosure : IP65



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (from 4.0 kW)

Rated speed: 3000 r/min Rated output: 1.0 kW to 5.0 kW

Enclosure : IP65

Middle capacity



MGMF (Low speed/ High torque type)

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

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

High inertia

Middle inertia

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

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65



MHME High inertia

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

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65

Special Order Product

MSMJ (200 V)

200 W to 750 W....

1.0 kW to 5.0 kW P.164

1.0 kW to 5.0 kW P.176

Motor Contents

. P.155

MSME (200 V) 1.0 kW to 5.0 kW P.158

MDME (200 V)

MGME (200 V)

0.9 kW to 3.0 kW P.170

MHMJ (200 V)

200 W to 750 W P.173

MHME (200 V)

09 0.9 kW 10 1.0 kW

Voltage specifications

M A D K T 1 5 0 5

M A D K T 1 5 0 5 E **

2: 200 V

Type

Low inertia (200 W to 750 W)

Low inertia (1.0 kW to 5.0 kW)

High inertia (0.9 kW to 3.0 kW)

High inertia (200 W to 750 W)

MHME High inertia (1.0 kW to 5.0 kW)

200 W

400 W

750 W

1.5 kW

2.0 kW

3.0 kW

4.0 kW

5.0 kW

Middle inertia (1.0 kW to 5.0 kW)

Rotary encoder specifications

Model Designation

Servo Motor

Symbol

MSMJ

MSMF

MDMF

MGMF

MHMJ

02

04

08

15

20

30

40

50

Motor rated output Symbol Rated output

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

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

<Cautions>

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

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

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

MSMJ, MHMJ **Special specifications**

Special specifications

MSME, MDME, MGME, MHME M: Special Order Product

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		•	•			•	
V		•		•		•	

MSME, MDME, MGME, MHME

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

Special specifications

Special specifications

Current detector current rating

7.5 A

10 A

20 A

30 A

40 A

64 A

90 A

120 A

Symbol Specifications

07

10

40

64

90

A2

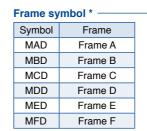
Design order

•	
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



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

Supply voltage specifications

Specifications Symbol 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

152

5	Single/3-phase, 200 V	20
	3 · · · · · · · · · · · · · · · · · ·	30

- Only position control

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

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

Part No.

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

			Motor				Driver		Power			Opti	tional part	3				• Optior								
M	otor series	Power	Output	Part No.	Rating/	A5II series Part No. /Speed, Position,\	A5IIE series Part No. (Position control)	Erama	capacity		er Cable		tor Cable	Brake Cable	External Regenerative	Reactor	Noise Filter	Interface								
IVI	0.001 00.1100	supply	(W)	Note) 1	(page)	Torque, Full-Closed type	type Note) 2	rianic	(kVA)	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3,6	without Brake Note) 3	Bral	e Note) 3	Resistor	Single phase 3-phase	Single phase 3-phase	Interface								
	MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P227 DV0P220	DV0P4170									
	(Leadwire) type 3000 r/min				400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	0E B-frame Approx. 0.9 0**0EAM			//FMCA **0EED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20042									
		Single phase/	750	MSMJ082 □ 1 *	157	MCDKT3520	MCDKT3520E				Note) 4		V	0 00.2.		DV0P220	DV0PM20042	Connect for Pow								
-		3-phase 200 V		MSME102 □ C * M	158	MDDKT5540	MDDKT5540E		Approx. 1.8							DV0P228 DV0P222		Supply								
inertia			1500	MSME152 □ C * M	159	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3			MFMCD 0**2ECD			DV0P4284	DV0PM20047 DV0P222	DV0P4220	Connect for Moto Connect								
ט	MSME 3000 r/min		2000	MSME202 □ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3						DV0P4285 Note) 5	DV0P223	DV0PM20043	Connect for Rege Resistor								
		3-phase	3000	MSME302 ☐ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5							DV0P224		110010101								
		200 V	4000	MSME402 ☐ C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT			DV0P4285 ×2 in parallel	DV0P225	DV0P3410									
			5000	MSME502 ☐ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5							DV0F225		Connect Motor/E								
	pha 3-pl	Single phase/	1000	MDME102 □ C * M	164	MDDKT3530	MDDKT3530E	D-frame	Approx. 1.8						DV0P4284	DV0P228 DV0P222	DV0P4220									
Middle		3-phase 200 V	1500	MDME152 □ C * M	165	MDDKT5540	MDDKT5540E	D-trame	Approx. 2.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMCD 0**2ECD			DV0P4284	DV0PM20047 DV0P222	DV0P4220									
<u></u>			2000	MDME202 □ C * M	166	MEDKT7364	MEDKT7364E	E-frame	e Approx. 3.3 Approx. 4.5		ох. 3.3	ох. 3.3	rox. 3.3	Approx. 3.3	prox. 3.3	3.3								DV0P4285 Note) 5	DV0P223	DV0PM20043
in particular in the control of the	2000 1/111111	0 1	3000	MDME302 □ C * M	167	MFDKTA390	MFDKTA390E			Approx. 4.5	Approx. 4.5	Approx. 4.5						DV0P224								
	,	3-phase 200 V	4000	MDME402 □ C * M	168	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT			DV0P4285 ×2 in parallel		DV0P3410	Battery								
			5000	MDME502 □ C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5			0 020	71 0 01		AL III parallol	DV0P225		Battery								
/Low	MGME /Low speed/\ High torque	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8	me Approx. 1.8	рргох. 1.8		MFMCC 0**2ECC			DV0P4284	DV0P228 DV0P221	DV0P4220	Mountin Bracket							
	type	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	_	Approx. 3.8			MFMCA	A MFM	CA	DV0P4285	DV0P223	DV0P3410									
	1000 r/min		3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 4.5		5	Approx. 4.5		0**3EC			×2 in parallel	DV0P224	DV0P3410							
	MHMJ		200	MHMJ022 □ 1 *	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5		метол		451404	MEMOR		DV0P227 DV0P220	DV0P4170	Encode								
-	(Leadwire) type	Cinala	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0x. 0.9 0**0EAM	. 0.9 0**0EAM	0**0EAM	MFECA MFECA **0EAM 0**0EAE		//FMCA **0EED	MFMCB 0**0GET		DV0P228	DV0PM20042							
	3000 r/min	Single phase/	750	MHMJ082 □ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042									
		3-phase 200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E		Approx. 1.8			MFMCD	D MFM	CA		DV0P228 DV0P222	D./	Motor C								
			1500	MHME152 □ C * M	177	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3				D 0**2F		DV0P4284	DV0PM20047	DV0P4220									
	МНМЕ			MHME202 □ C * M		MEDKT7364	MEDKT7364E	E-frame		MFECA	MFECA	MFMCE			DV0P4285	DV0P222 DV0P223	DV0PM20043	Brake (
	2000 r/min		3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5	0**0ESD	0**0ESE	U-*2ECL	D 0**2F	טכ	Note) 5	DV0P224		Externa								
		3-phase 200 V		MHME402 □ C * M	180	MFDKTB3A2	MFDKTB3A2E	F-frame				MFMCA 0**3ECT			DV0P4285 ×2 in parallel		DV0P3410	Regene								
			5000	MHME502 \square C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5				0 3501 0 3501	-01		in parallel DV0P225										

Please buy the battery part number "DV0P2990" separately.

		THE		i uit ito.	ı ugu				
er	Interface Cable	DV0P4360							
\									
		DV0P4121							
'	Interface Conve	Interface Conversion Cable							
	mioriado convo								
0		DV0P4131 DV0P4132							
42	Connector Kit	A-frame	Single row	DV0PM20032					
42	for Power Supply Input	to D-frame	Double row type	DV0PM20033	200				
	Connection	E-frame	туро	DV0PM20044					
_	Connector Vit		to D-frame	DV0PM20044					
0	Connector Kit for Motor		to D-Iranie						
	Connection	E-frame		DV0PM20046	201				
43	Connector Kit for Regenerative Resistor	E-frame		DV0PM20045	201				
				DV0P4290	202				
_				DV0P4310					
0	Compostor Kit fo	_		DV0P4320	204				
	Connector Kit fo Motor/Encoder (n	DV0P4320					
\dashv	Wiotom Endodor (30111100110			205				
				DV0P4340					
0				DV0P4380	202				
		RS485, I	RS232	DV0PM20102					
		Safety		DV0PM20103	198				
		Interface	•	DV0P4350					
43	Connector Kit	External	Scale	DV0PM20026					
		Encoder		DV0PM20010	199				
			Ionitor Signal	DV0PM20031	.55				
0	D-4								
	Battery For Abso		oder	DV0P2990 DV0P4430	207				
	Battery Box No	Battery Box Note) 7							
		A-frame		DV0PM20027					
0	Mounting	B-frame		DV0PM20028	208				
	Bracket	C-frame		DV0PM20029	200				
		D-frame		DV0PM20030					
0				MFECA0**0EAD					
١		without E	Battery Box	MFECA0**0EAM	188				
\dashv	Encoder Cable			MFECA0**0ESD	189				
0		with Batt	ery Roy	MFECA0**0EAE	188				
.		Note) 7	•	MFECA0**0ESE	190				
42		,		MFMCA0**0EED	191				
\dashv					191				
42		without E	Brake	MFMCD0**2ECD	192				
	Motor Cable			MFMCE0**2ECD					
				MFMCA0**3ECT	193				
0		with Bral	ke	MFMCA0**2FCD	194				
		5.01		MFMCA0**3FCT	195				
	Brake Cable			MFMCB0**0GET	196				
43		A-frame							
		B-frame		DV0P4283					
	External	C-frame							
- 1	Regenerative			DV0P4284	210				
		D-fram△							
0	Regenerative	D-frame		D V 01 4204					
0		D-frame E-frame F-frame		DV0P4285					
	Resistor	E-frame F-frame DV0P22 DV0P22	0, DV0P221, 3, DV0P224, 7. DV0P228.	DV0P4285 DV0P222, DV0P225,	209				
	Resistor	E-frame F-frame DV0P22 DV0P22 DV0P22 DV0P41	3, DV0P224,	DV0P4285 DV0P222, DV0P225, DV0PM20047					
	Resistor	E-frame F-frame DV0P22 DV0P22 DV0P22 DV0P41	3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0P4285 DV0P222, DV0P225, DV0PM20047	250				
	Resistor	E-frame F-frame DV0P22 DV0P22 DV0P22 DV0P41 DV0P42	3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0P4285 DV0P222, DV0P225, DV0PM20047 0042 0043					
	Resistor	E-frame F-frame DV0P22 DV0P22 DV0P22 DV0P41 DV0P42 DV0P34 Single pl	3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0P4285 DV0P222, DV0P225, DV0PM20047 0042 0043 DV0P4190	209 250 251 253				
0 -bit	Resistor Reactor Noise Filter	E-frame F-frame DV0P22 DV0P22 DV0P22 DV0P41 DV0P42	3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	DV0P4285 DV0P222, DV0P225, DV0PM20047 0042 0043	250 251				

<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.

absolute encoder cable (with battery box).

 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	MSMJ022G1□	MSMJ022S1□	
*1		IP67	_	_	
A	Model	A5I series	MADK	T1507	
Applicable driver *2	No.	A5IE series	MADKT1507E	_	
anver	Fr	ame symbol	A-fra	ame	
Power supply	capacit	y (kVA)	0	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.	64	
Momentary Ma	ax. peal	k torque (N·m)	1.91		
Rated current		(A(rms))	1.6		
Max. current		(A(o-p))	6.9		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	0.	0.14	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.16		
Recommende ratio of the loa			30 times	s or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

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

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)

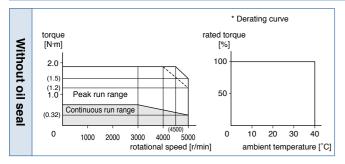
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
assembly	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

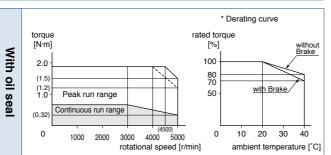
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

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

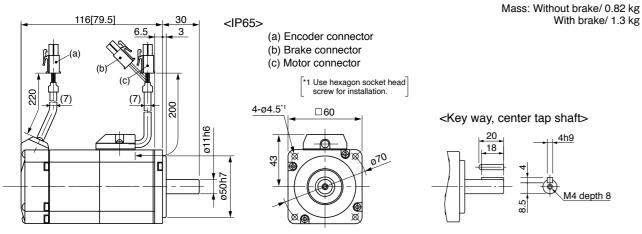
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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.

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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 MSMJ 400 W [Low inertia, Small capacity]

Please contact us for more information

Specifications

			AC200 V			
Mataumaa	-1	IP65		MSMJ042G1□	MSMJ042S1	
Motor mode	ÐI ⊧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 outp	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	DV0P	4283	No limit Note)2		
Rated rotat	ional spee	d	(r/min)	3000		
Max. rotation	nal speed	l	(r/min)	5000		
Moment of	inertia	Without brake		0.26		
of rotor (×1	0 ⁻⁴ kg·m²)	With b	orake	0.28		
Recommen ratio of the			30 times or less			
Rotary encoder specifications Note)5				20-bit Incremental	17-bit Absolute	
	Resolution	n per sind	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.

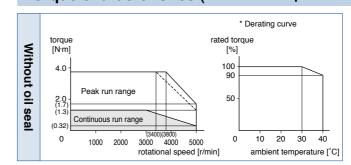
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

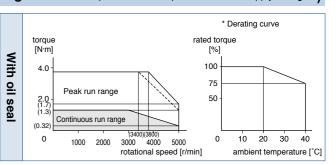
• Permissible load (For details, refer to P.183)

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

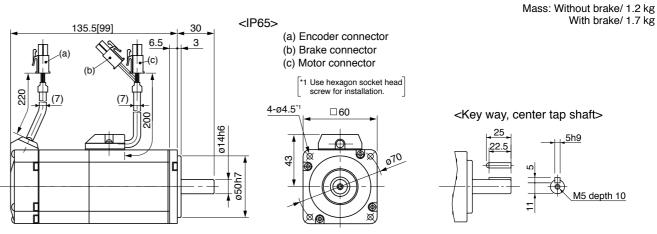
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions



* Figures in [] represent the dimensions without brake.

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

[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.

				AC2	00 V
Matauaraalal		IP65		MSMJ082G1□	MSMJ082S1□
Motor model		IP67		-	-
Amaliaalala	Model	A5II series		MCDKT3520	
Applicable driver *2	No.	A5IE serie	es	MCDKT3520E	_
unver	Fr	ame symb	ol	C-fr	ame
Power supply	capacit	у	(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(o-p))			17.0		
Regenerative b	orake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4	283	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	0.87	
of rotor (×10 ⁻⁴	kg·m²)	With br	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		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.

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)

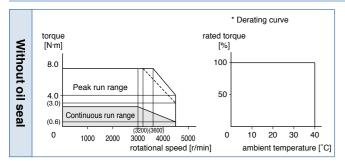
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
assembly	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

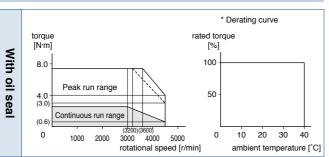
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

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

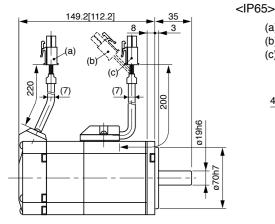
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





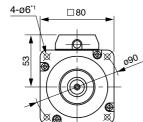
Dimensions



(a) Encoder connector

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

1 Use hexagon socket head



<Key way, center tap shaft>

Mass: Without brake/ 2.3 kg

With brake/ 3.1 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 MSME 1.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V
		IP65		MSME102GC□M	MSME102SC
Motor model		IP67		-	-
A Un a la la	Model	A5II series	S	MDDK	T5540
Applicable driver *2	No.	A5IIE ser	ies	MDDKT5540E	-
unven	Fi	ame sym	bol	D-fr	ame
Power supply	y capacit	у	(kVA)	1	.8
Rated output	:		(W)	10	00
Rated torque			(N·m)	3.	18
Momentary N	Лах. реа	k torque	(N·m)	9.55	
Rated curren	t	(.	A(rms))	6.6	
Max. current (A(o-p))			28		
Regenerative	brake	Without option No limit Note)2		t Note)2	
frequency (time	s/min) Note)1	DV0P4284		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	5000	
Moment of in	ertia	Without	brake	2.03	
of rotor (×10	⁴ kg·m²)	With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	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.

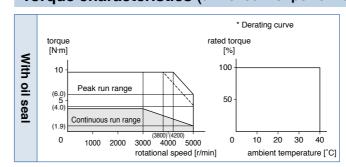
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

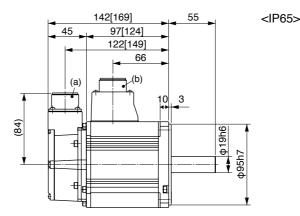
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



Dimensions



100

Key way dimensions

Mass: Without brake/ 3.5 kg

With brake/ 4.5 kg

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

[Unit: mm]

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

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

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

			AC2	00 V
		IP65	MSME152GC□M	MSME152SC□M
Motor model *1		IP67	-	-
Amaliaahla	Model	A5I series	MDDKT5540	
Applicable *2	No.	A5IIE series	MDDKT5540E	-
divei	Fr	ame symbol	D-fra	ame
Power supply	capacity	y (kVA)	2.	.3
Rated output		(W)	15	00
Rated torque		(N·m)	4.	77
Momentary Ma	ax. peal	k torque (N·m)	14.3	
Rated current		(A(rms))	8.2	
Max. current		(A(o-p))	35	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/n	nin) Note)1	DV0P4284	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotational	speed	(r/min)	5000	
Moment of ine	rtia	Without brake	2.84	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encoder specifications Note)5		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.

Please contact us for more information.

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

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

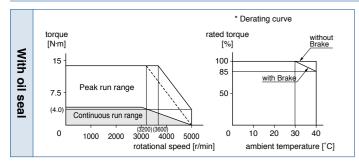
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

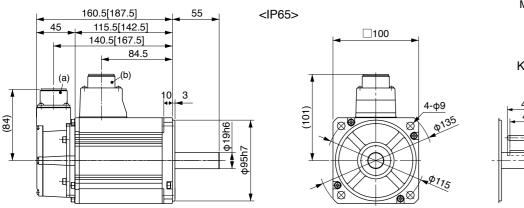
200 V MSME 1.5 kW [Low inertia, Middle capacity]

*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.>)

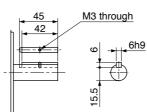


Dimensions



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

Key way dimensions



[Unit: mm]

(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

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

Please contact us for more information

Specifications

				AC2	00 V		
Matauaradal		IP65		MSME202GC□M	MSME202SC□N		
Motor mode	€I ∗1		IP67		-	-	
Amaliaahla		Model A5I series		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		
of rotor (×1	0-4	kg·m²)	With b	rake	4.0	01	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute				
Resolution per single turn			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.

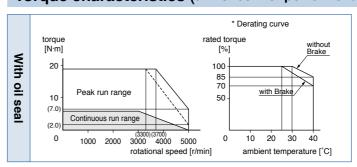
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

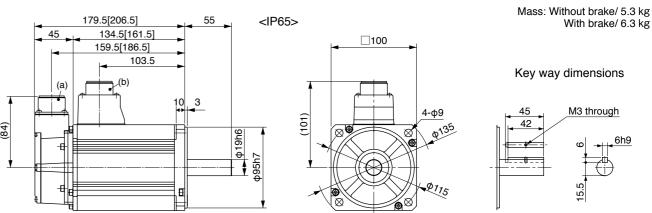
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

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

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With brake/ 6.3 kg

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V
Motor model	IP65		MSME302GC□M	MSME302SC□M
*1		IP67	-	-
Amaliaahla	Model	A5I series	MFDK	TA390
Applicable *2	No.	A5IE series	MFDKTA390E	-
unver	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	9.9	55
Momentary Ma	ıx. peal	k torque (N·m)	28.6	
Rated current		(A(rms))	18.1	
Max. current		(A(o-p))	77	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotationa	al spee	d (r/min)	3000	
Max. rotational	speed	(r/min)	5000	
Moment of iner	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	r 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.

Please contact us for more information.

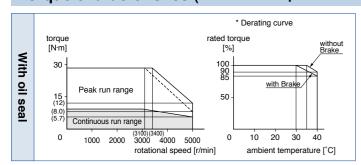
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

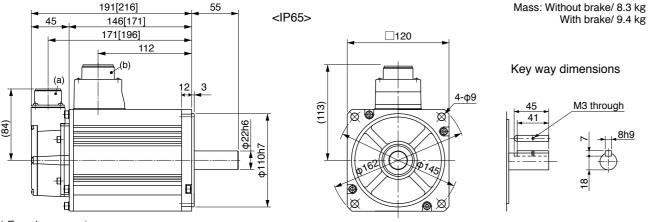
		Radial load P-direction (N)	980
	During assembly During	Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
	operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



Dimensions



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

[Unit: mm]

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

			AC200 V		
Mataumaad	-1	IP65		MSME402GC□M	MSME402SC□M
Motor mode	₽I *1	IP67		-	-
A L' l- l	Model	A5II series	s	MFDK	TB3A2
Applicable driver	*2 No.	A5IIE ser	ies	MFDKTB3A2E	_
diffoi	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	У	(kVA)	6	.0
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	12	2.7
Momentary	Max. pea	k torque	(N·m)	38.2	
Rated curre	ent	(A(rms))	19.6	
Max. current (A(o-p))			8	3	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tin	nes/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed	I	(r/min)	4500	
Moment of	inertia	Without brake		12.9	
of rotor (x1	0 ⁻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 enco	Rotary encoder specifications 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.

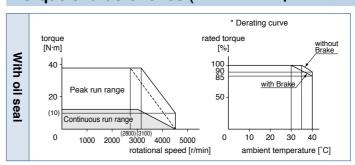
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

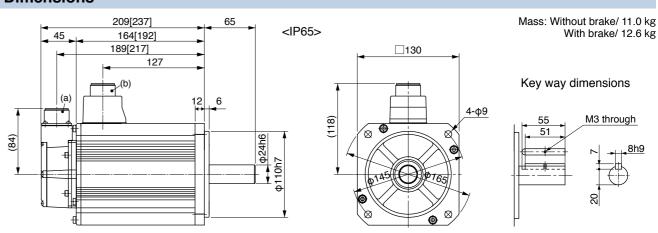
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
	docombry	Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- 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	
Mataumaadal	IP65		MSME502GC□M	MSME502SC□M	
Motor model *1		IP67		-	-
A	Model	A5II series		MFDKTB3A2	
Applicable driver *2	No.	A5IIE seri	ies	MFDKTB3A2E	_
unver	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	15	5.9
Momentary Ma	ax. peal	k torque	(N·m)	47.7	
Rated current		(/	A(rms))	24.0	
Max. current		((A(o-p))	102	
Regenerative b	rake	Without option		357	
frequency (times/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		Without	brake	17.4	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	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.

Please contact us for more information.

16.2 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)

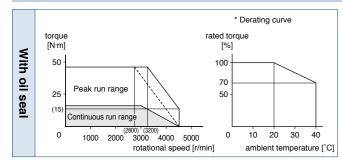
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

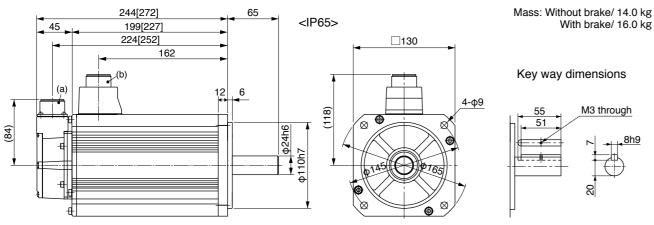
200 V MSME 5.0 kW [Low inertia, Middle capacity]

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

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



Dimensions



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

[Unit: mm]

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

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

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

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

Special Order Product

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

Please contact us for more information

Specifications

				AC2	00 V
M-4		IP65 I		MDME102GC□M	MDME102SC I
Motor mode	el ⊧1	IP67		-	-
	Model	A5II serie	s	MDDK	T3530
Applicable driver *	No.	A5IIE ser	ries	MDDKT3530E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supp	oly capacit	y	(kVA)	1.	.8
Rated outpo	ut		(W)	10	00
Rated torqu	ie		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated current (A(rms))			5.7		
Max. current (A(o-p)) Regenerative brake Without option		24			
		Without option		No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4284		No limit Note)2	
Rated rotati	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without brake		4.60	
of rotor (×10	0 ⁻⁴ kg·m ²)	With brake		5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5		10 times or less			
		fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolutio	n per sino	le turn	1048576	131072

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

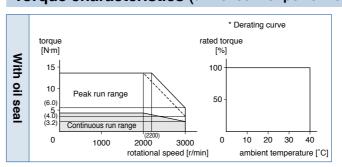
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

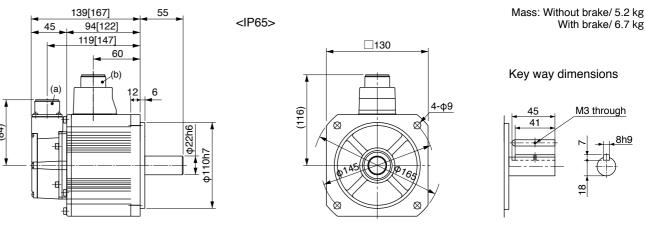
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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.

200 V MDME 1.5 kW [Middle inertia, Middle capacity] Please contact us for more information.

Specifications

			AC2	00 V	
		IP65	MDME152GC□M	MDME152SC□M	
Motor model		IP67	_	-	
Ammlianhla	Model	A5II series	MDDK	T5540	
Applicable driver *2	No.	A5IE series	MDDKT5540E	_	
anver	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))	9.4		
Max. current	Max. current (A(o-p))			40	
Regenerative b	rake	Without option	No limi	t Note)2	
frequency (times/	min) Note)1	DV0P4284	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	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	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

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

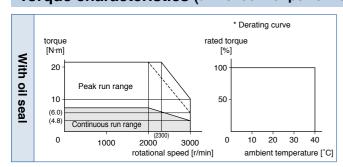
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

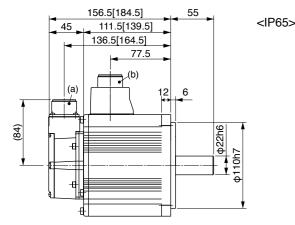
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



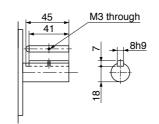
Dimensions



□130 (116)

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

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

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

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

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		
		IP65			MDME202GC□M	MDME202SC N
Motor mode	€I ∗1		IP67		-	-
Amaliaahla		Model	A5II serie	s	MEDK	T7364
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	-
anvoi		Fr	ame sym	bol	E-fra	ame
Power supp	ply o	capacity	y	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ле			(N·m)	9.	55
Momentary	м а	x. peal	k torque	(N·m)	28	3.6
Rated curre	ent		(A(rms))	11.5	
Max. currer	nt		((A(o-p))	49	
Regenerativ	ve b	rake	Without	option	No limit Note)2	
frequency (tir	mes/m	nin) Note)1	DV0P	0P4285 No limit Note)2		t 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 (×1	0-4	kg·m²)	With b	rake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution			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.

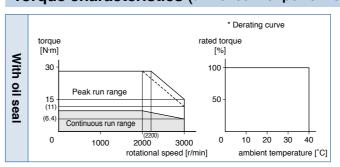
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

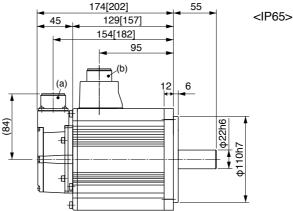
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
ı	During	Radial load P-direction (N)	490
C	operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



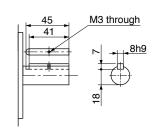
Dimensions



130

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

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

				AC200 V		
		IP65		MDME302GC□M	MDME302SC□M	
Motor model		IP67		-	-	
	Model	A5II series	3	MFDKTA390		
Applicable driver *2	No.	A5IIE seri	ies	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)	14	l.3	
Momentary M	ax. peal	k torque	(N·m)	43.0		
Rated current		(,	A(rms))	17.4		
Max. current		(A(o-p))	74		
Regenerative I	orake	Without	option	No limit Note)2		
frequency (times	min) Note)1	DV0P4	285×2	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	12.9		
of rotor (×10 ⁻²	kg·m²)	With b	rake	14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	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.

Please contact us for more information.

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

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

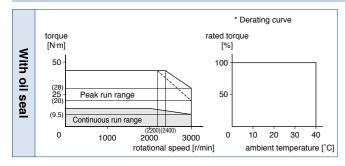
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

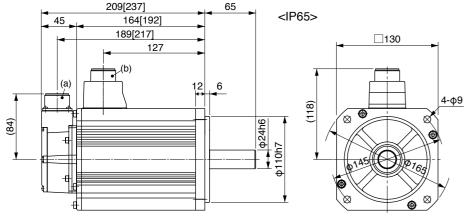
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

*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.>)



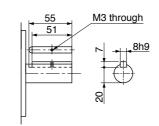
Dimensions



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		
M - A - · · · · · · · · · · · · · · · · · ·		IP65		MDME402GC□M	MDME402SC N	
Motor model		IP67		-	_	
A 15 1-1	Model	A5II serie	S	MFDK'	ГВЗА2	
Applicable driver *2	No.	A5IIE ser	ies	MFDKTB3A2E	_	
unven	Fr	ame sym	bol	F-fra	ame	
Power supply	y capacit	у	(kVA)	6.	0	
Rated output	:		(W)	40	00	
Rated torque	;		(N·m)	19	.1	
Momentary N	/lax. peal	k torque	(N·m)	57.3		
Rated curren	t	(A(rms))	21.0		
Max. current (A(o-p))				89		
Regenerative	brake	Without	option	No limi	t Note)2	
frequency (time	s/min) Note)1	DV0P4285×2		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	37	.6	
of rotor (×10	⁴ kg·m²)	With brake		42.9		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary encod	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.

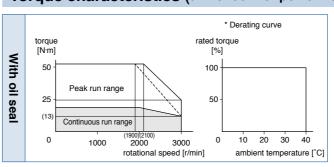
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

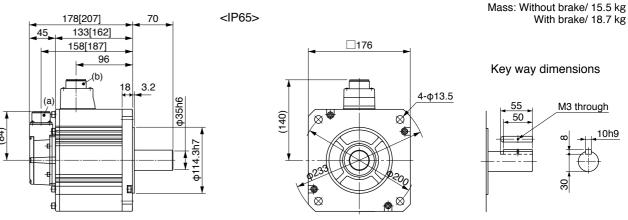
	During assembly	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- 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.

Please contact us for more information

Specifications

				AC2	00 V
Motor model	IP65			MDME502GC□M	MDME502SC□M
*1		IP67		-	_
A II I- I	Model	A5 I series		MFDKTB3A2	
Applicable *2	No.	A5IE series		MFDKTB3A2E	_
unver	Fr	ame symbol		F-fra	ame
Power supply of	capacit	/ (k\	/A)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·	m)	23.9	
Momentary Ma	ax. peal	torque (N-	71.6		
Rated current		(A(rm	s))	25.9	
Max. current		(A(o-	p))	11	10
Regenerative b	rake	Without option	on	120	
frequency (times/m	nin) Note)1	DV0P4285×2		No limit Note)2	
Rated rotations	al spee	d (r/m	in)	2000	
Max. rotational	speed	(r/m	in)	3000	
Moment of ine	rtia	Without brak	е	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With brake		53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications			e)5	20-bit Incremental	17-bit Absolute
Re	Resolution per single turn			1048576	131072

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

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)

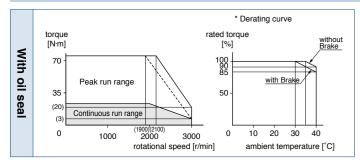
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

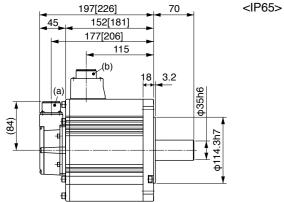
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

*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

Key way dimensions

Mass: Without brake/ 18.6 kg

With brake/ 21.8 kg

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

[Unit: mm]

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

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

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

Specifications

			AC200 V		
M-4		IP65		MGME092GC□M	MGME092SC□N
Motor mode	EI 1	IP67		-	-
A	Model	A5II serie	s	MDDKT5540	
Applicable driver *	No.	A5IIE ser	ies	MDDKT5540E	_
unvoi	F	rame sym	bol	D-fr	ame
Power supp	ly capacit	у	(kVA)	1.	.8
Rated outpu	ut		(W)	90	00
Rated torqu	ie		(N·m)	8.	59
Momentary	Max. pea	k torque	(N·m)	19.3	
Rated curre	ent	(A(rms))	7.6	
Max. curren	nt	((A(o-p))	24	
Regenerativ	e brake	Without option		No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0P4284		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	inertia	Without brake		6.70	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary enco	fications	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.

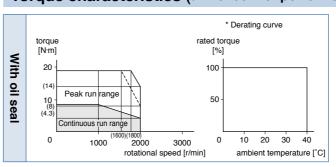
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

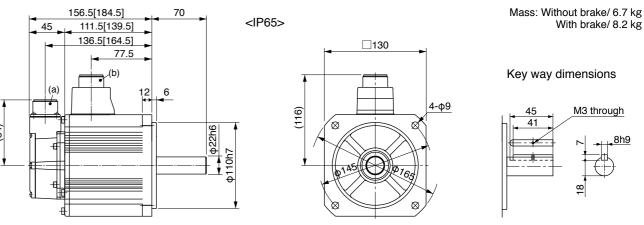
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	686
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



Dimensions



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

[Unit: mm]

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

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

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

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

Motor Specifications

Specifications

			AC2	00 V	
Motor model		IP65	MGME202GC□M	MGME202SC□M	
WIOTOT MODE!		IP67	-	-	
A mustic a late	Model	A5II series	MFDK	MFDKTA390	
Applicable driver *2	No.	A5IIE series	MFDKTA390E	-	
unver	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 Ma	ax. peal	k 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/r	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	35.6		
Recommende ratio of the loa			10 times or less		
Rotary encode	Rotary encoder specifications Note)5			17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

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

Please contact us for more information.

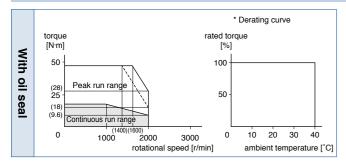
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

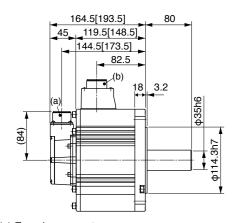
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

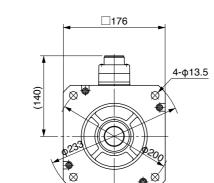
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



Dimensions





Key way dimensions

Mass: Without brake/ 14.0 kg

With brake/ 17.5 kg

[Unit: mm]

(a) Encoder connector

<Cautions>

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

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

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

<IP65>

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		
Mataranalal	IP65			MGME302GC□M	MGME302SC	
Motor model		IP67		-	-	
A Un a la la	Model	A5II series		MFDK.	ТВЗА2	
Applicable driver *2	No.	A5IIE series		MFDKTB3A2E	-	
anvoi	Fr	ame syml	ool	F-fra	ame	
Power supply	capacit	y	(kVA)	4.	.5	
Rated output			(W)	30	00	
Rated torque			(N·m)	28	3.7	
Momentary M	ax. peal	k torque	(N·m)	71.7		
Rated current		(/	A(rms))	22.6		
Max. current		(A(o-p))	80		
Regenerative b	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	al spee	d	(r/min)	1000		
Max. rotationa	l speed		(r/min)	2000		
Moment of ine	rtia	Without brake		48.4		
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 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.

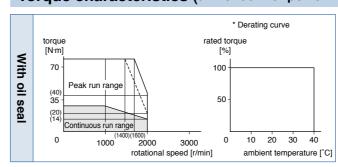
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

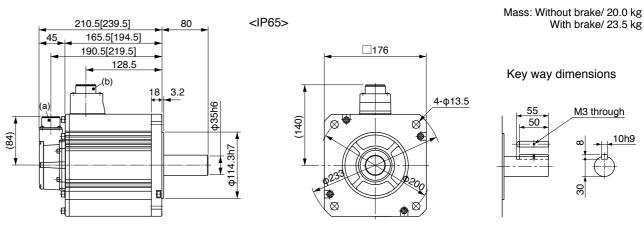
		Radial load P-direction (N)	2058
Duri	ng embly	Thrust load A-direction (N)	980
uooc	assembly	Thrust load B-direction (N)	1176
Duri	ng	Radial load P-direction (N)	1470
oper	ration	Thrust load A, B-direction (N)	490

- 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.

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

				AC200 V		
Matauaradal	IP65		MHMJ022G1□	MHMJ022S1□		
Motor model		IP67		-	-	
A !! !- ! -	Model	A5II series		MADK	T1507	
Applicable driver *2	No.	A5IE serie	s	MADKT1507E	-	
unver	Fr	ame symb	ol	A-fra	ame	
Power supply	capacit	y	(kVA)	0.	.5	
Rated output			(W)	20	00	
Rated torque			(N·m)	0.64		
Momentary M	ax. peal	k torque	(N·m)	1.91		
Rated current		(A	(rms))	1.6		
Max. current		(A	A(o-p))	6.9		
Regenerative b	orake	Without o	ption	No limi	t Note)2	
frequency (times/	min) Note)1	DV0P4	DP4283 No limit Note)2		t Note)2	
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	ıl speed		(r/min)	5000		
Moment of ine	ertia	Without I	brake	0.42		
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	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 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.

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)

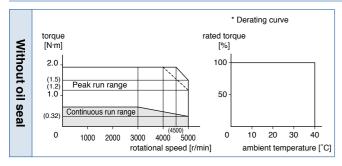
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
document	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

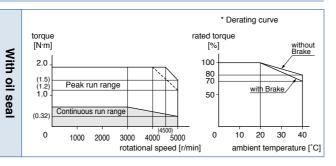
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

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

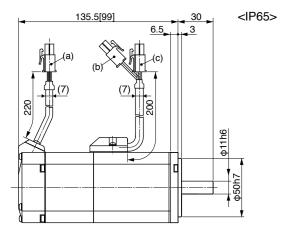
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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

<Key way, center tap shaft>

* 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

			AC200 V		
Mataumata		IP65		MHMJ042G1□	MHMJ042S1
Motor mode	EI ⊧1	IP67		-	_
A L' l. l .	Model	A5II serie	s	MBDK	T2510
Applicable driver *	No.	A5IIE ser	ries	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	ie		(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)	3000	
Max. rotation	nal speed	l	(r/min)	5000	
Moment of	inertia	Without	t brake	0.67	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
			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.

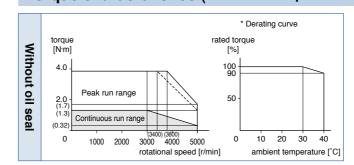
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2
0 0 (/(/	

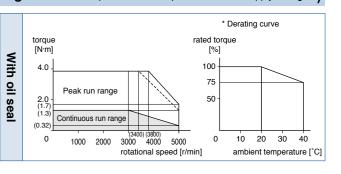
• Permissible load (For details, refer to P.183)

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

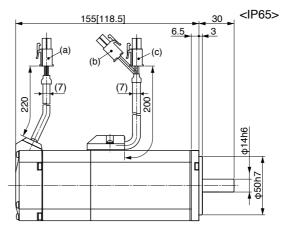
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





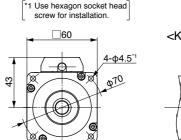
Dimensions



(a) Encoder connector

(b) Brake connector

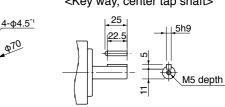
(c) Motor connector



<Key way, center tap shaft>

Mass: Without brake/ 1.4 kg

With brake/ 1.8 kg



* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

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

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

					00 V
Mataumandal	IP65			MHMJ082G1□	MHMJ082S1
Motor model *1		IP67		-	-
Amaliaabla	Model	A5II series		MCDK	T3520
Applicable driver *2	No.	A5IIE serie	es	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 Ma	ax. peal	k torque	(N·m)	7.1	
Rated current		(A	(rms))	4.0	
Max. current		(/	4(o-p))	17.0	
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)	4500	
Moment of ine	rtia	Without	brake	1.51	
of rotor ($\times 10^{-4}$	kg·m²)	With bi	rake	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
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.

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)

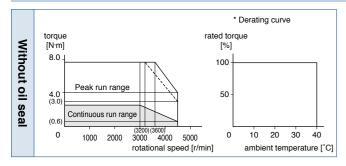
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
document	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

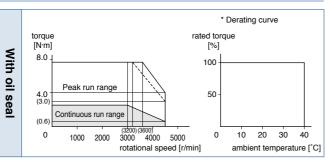
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

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

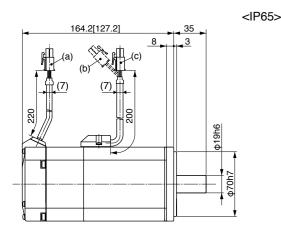
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



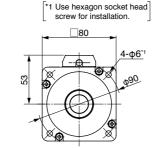


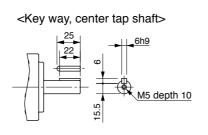
Dimensions



(a) Encoder connector

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





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

				AC200 V		
		IP65		MHME102GC□M	MHME102SC N	
Motor mode	:1	IP67		-	-	
A 1: 1-1	Model	A5II serie	S	MDDK	T3530	
Applicable driver *	No.	A5IIE ser	ies	MDDKT3530E	-	
unven	Fr	ame sym	bol	D-fr	ame	
Power supp	ly capacit	у	(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 curre	nt	(A(rms))	5.7		
Max. current (A(o-p))			2	4		
Regenerativ	e brake	Without	option	8	3	
frequency (tim	es/min) Note)1	DV0P4284		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	Without brake		24.7		
of rotor (×10	0 ⁻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 enco	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.

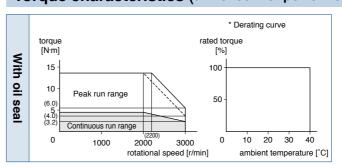
,
4.9 or more
80 or less
70 or less
0.59±10 %
2 or more
24±2.4

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

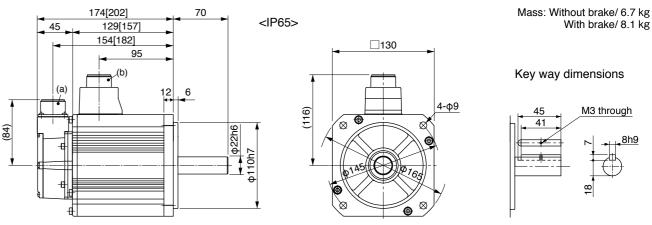
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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
Matauraadal		IP65	MHME152GC□M	MHME152SC□M
Motor model *1		IP67	-	-
Amaliaalala	Model	A5II series	MDDKT5540	
Applicable *2	No.	A5IIE series	MDDKT5540E	_
anver	Fr	ame symbol	D-fra	ame
Power supply	capacit	y (kVA)	2.	.3
Rated output		(W)	15	00
Rated torque		(N·m)	7.	16
Momentary Ma	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	9.4	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	22	
frequency (times/n	nin) Note)1	DV0P4284	130	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.1	
of rotor ($\times 10^{-4}$	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	
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.

Please contact us for more information.

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)

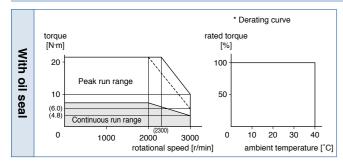
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

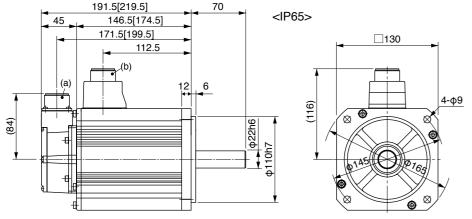
200 V MHME 1.5 kW [High inertia, Middle capacity]

*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.>)



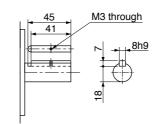
Dimensions



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.

Specifications

			AC2	00 V		
Matanasadal		IP65		MHME202GC□M	MHME202SC□M	
Motor mod	€I ∗1		IP67		-	-
A		Model	A5II series	S	MEDK	T7364
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	-
anvoi		Fr	ame sym	bol	E-fr	ame
Power sup	ply (capacity	/	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torq	ue			(N·m)	9.	55
Momentary	/ Ma	ax. peal	torque	(N·m)	28.6	
Rated curr	ent		(A(rms))	11.1	
Max. current (A(o-p))		4	7			
Regenerati	ve b	rake	Without	option	45	
frequency (ti	mes/n	nin) Note)1	DV0P4285		142	
Rated rota	tion	al spee	d	(r/min)	2000	
Max. rotati	ona	speed		(r/min)	3000	
Moment of	ine	rtia	Without brake		57.8	
of rotor (×1	0-4	kg·m²)	With b	rake	59	0.6
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sing	le turn	1048576	131072	

200 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.

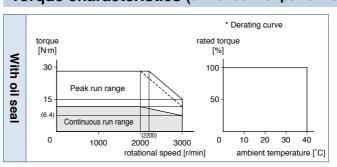
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

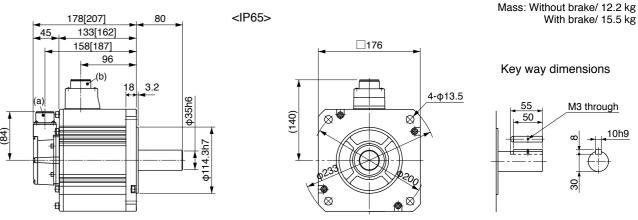
		Radial load P-direction (N)	1666
	During assembly	Thrust load A-direction (N)	784
	assembly	Thrust load B-direction (N)	980
	During	Radial load P-direction (N)	784
C	operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

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

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

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

Special Order Product

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

A5 Family

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V	
		IP65	MHME302GC□M	MHME302SC□M	
Motor model		IP67	_	_	
Ammliaalala	Model	A5II series	MFDK	MFDKTA390	
Applicable driver *2	No.	A5IE series	MFDKTA390E	_	
unvoi	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	4	.5	
Rated output		(W)	30	00	
Rated torque		(N·m)	14	l.3	
Momentary M	ax. peal	k torque (N·m)	43.0		
Rated current (A(rms))		16.0			
Max. current		(A(o-p))	68		
Regenerative b	orake	Without option	19		
frequency (times/	min) Note)1	DV0P4285×2	142		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	ıl speed	(r/min)	3000		
Moment of ine	ertia	Without brake	90.5		
of rotor (×10 ⁻⁴	kg·m²)	With brake	92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3		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.

Please contact us for more information.

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

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

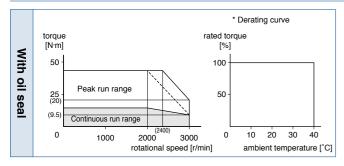
	During assembly During operation	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
		Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

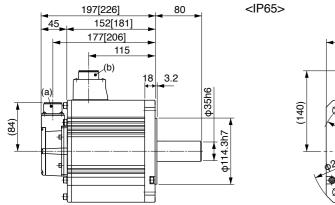
200 V MHME 3.0 kW [High inertia, Middle capacity]

*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



4-φ13.5

Key way dimensions

Mass: Without brake/ 16.0 kg

With brake/ 19.2 kg

- (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

			AC200 V		
Matawasala		IP65		MHME402GC□M	MHME402SC N
Motor mode	?I ⊧1	IP67		-	-
A 1: 1-1	Model	A5II serie	s	MFDK	TB3A2
Applicable driver *	No.	A5IIE ser	ies	MFDKTB3A2E	_
unvoi	Fi	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	6	.0
Rated outpu	ut		(W)	40	00
Rated torqu	ie		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	57.3	
Rated curre	ent	(A(rms))	21.0	
Max. current (A(o-p))		89			
Regenerativ	e brake	Without option		17	
frequency (tim	nes/min) Note)1	DV0P4285×2		125	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	inertia	Without brake		112	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	11	14
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072

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

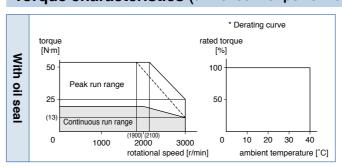
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

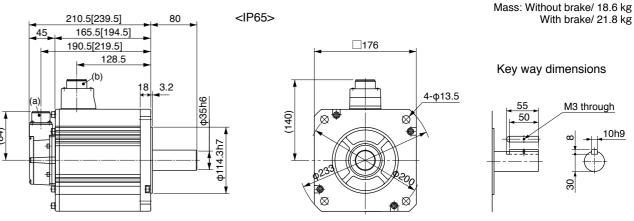
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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



Dimensions



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

[Unit: mm]

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

Dimensions are subject to change without notice. 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

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

Specifications

			AC2	00 V		
		IP65	MHME502GC□M	MHME502SC□M		
Motor model *1		IP67	-	-		
	Model	A5I series	MFDK	ГВЗА2		
Applicable *2	No.	A5IE series	MFDKTB3A2E	_		
anver	Fr	ame symbol	F-fra	ame		
Power supply	capacit	y (kVA)	7.	5		
Rated output		(W)	50	00		
Rated torque		(N·m)	23	.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/	min) Note)1	DV0P4285×2	DV0P4285×2 76			
Rated rotation	al spee	d (r/min)	20	2000		
Max. rotationa	l speed	(r/min)	3000			
Moment of ine	rtia	Without brake	162			
of rotor (×10 ⁻⁴	kg·m²)	With brake	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 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.

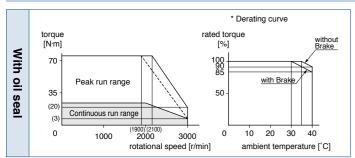
•	
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

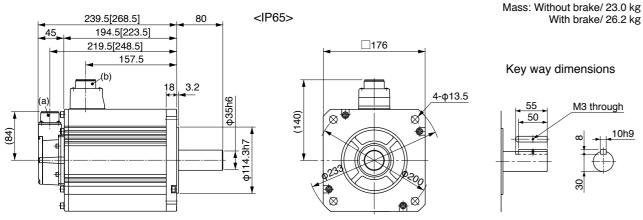
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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.

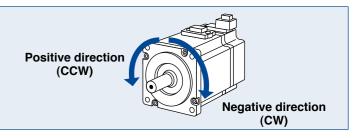
Environmental Conditions

Item		Conditions
Ambient ter	mperature *1	0 °C to 40 °C (free from freezing)
Ambient hu	midity	20 % to 85 % RH (free from condensation)
Storage ten	nperature *2	-20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation ⁵)
Storage hui	midity	20 % to 85 % RH (free from condensation ⁻⁵)
Vibration	Motor only	5.0 kW or less, MGME 3.0 kW or less: Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW or more, MGME 4.5 kW or more: 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.)
rating (Motor only)	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)
	IP67 *3*4	M * ME IP67 motor (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)
Alti	tude	Lower than 1000 m

- *1 Ambient temperature to be measured at 5 cm away from the motor.
- *2 Permissible temperature for short duration such as transportation.
- *3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in application where water proof performance is required such as continuous wash-down operation.
- *4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.
- *5 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

<Note>

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



Notes on [Motor specification] page

Note) 1. [At AC100 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC115 V (at 100 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

[At AC200 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC230 V (at 200 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

A5 Family Motor Specification

Description

[At AC400 V of power voltage]

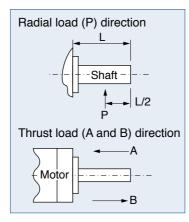
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- 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.

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· 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 × 10³ J	Permissible angular acceleration rad/s ²
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
MSMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	750 W(400 V)	2.5 or more				0.7				
MSME	1.0 kW, 1.5 kW, 2.0 kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	2 V or more	392	490	10000
	3.0 kW	11.8 or more		80 or less			24 ±2.4			10000
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200	
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7	2 V or more 24 ±2.4	392	490	10000
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	
	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less (130)	0.79		1176	1500	
MDME	3.0 kW	16.2 or more		110 or less		0.9		1470	2200	
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83	2 V or more 1372 24 ±2.4 1470	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 0. 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			5440
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372	2900	044 0
	4.5 kW, 6.0 kW				50 or less					5000
MHMD MSMJ	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	1 V or more	137	44.1	30000
MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	1.0 kW	4.9 or more	1.05	80 or less	70 or less (200)	0.59		588	780	10000
мнме	1.5 kW	13.7 or more	1.35	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

Type classification

C

MFECA: Encoder cable Cable length

0030

0050

0100

0200

Cable type

Α

3 m

5 m

10 m

20 m

A Tyco Electronics connector

S "S" shaped cannonplug

D Connector (Incremental) E Connector (Absolute)

M Connector (MSMD, MHMD)

0

3 m

5 m

10 m

20 m

Sectional area of cable core-

1.25 mm²

2.0 mm²

3.5 mm²

0 0.75 mm²

Cable end (Encoder side)

Cable end (Driver side)

Α

Design order

M

AC servo motor cable

C

Type classification A Standard

B Special

Cable length

003

005

010

020

1

2

Encoder Cable • For available optional items, please refer to P.188 to P.190.

0

M Hitachi Cable, Ltd. Highly bendable type

T Hitachi Cable, Ltd. Standard bendable type

T Japan Aviation Electronics Industry, Ltd. plug connector

Motor Cable, Brake Cable • For available optional items, please refer to P.191 to P.196.

5

0

2

Ν

Cable end at driver side

D Rod terminal

T Clamp terminal

Cable end at motor side

Cable type

C S type cannon plug

E Tyco Electronics connector

(Opposite direction of motor shaft)

(Direction of motor shaft)

Japan Aviation Electronics Industry, Ltd. connector

Japan Aviation Electronics Industry, Ltd. connector

E ROBO-TOP_® 4-wire by DYDEN CORPORATION

F ROBO-TOP_® 6-wire by DYDEN CORPORATION

G ROBO-TOP_® 2-wire by DYDEN CORPORATION N 4-wire by Hitachi Cable, Ltd. (Highly bendable type)

R 4-wire by Hitachi Cable, Ltd. (Standard bendable type)

ROBO-TOP® is a trade mark of DYDEN CORPORATION

P 2-wire by Hitachi Cable, Ltd. (Highly bendable type) S 2-wire by Hitachi Cable, Ltd. (Standard bendable type)

5

0

E PVC cable with shield by Oki Electric Cable Co., 0.20 mm² × 4P(8-wire), 3P(6-wire)

J Japan Aviation Electronics Industry, Ltd. connector (Direction of motor shaft)

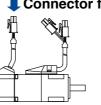
K Japan Aviation Electronics Industry, Ltd. connector (Opposite direction of motor shaft)

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.)

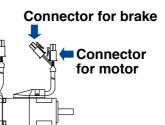


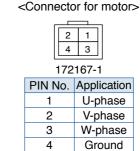


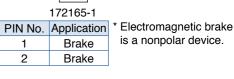
			,		PIN No.	Application		
	3	2	1		1	NC		
	6 5 4			2	PS			
					3	PS		
172168-1				4	E5V			
20-bit Incremental		5	E0V					
					6	FG(SHIELD)		

		_	,		PIN No.	Application
	3	2	1		1	BAT+
	6	5	4		2	BAT-
	9	8	7		3	FG(SHIELD)
470400.4			J	4	PS	
172169-1			_	5	PS	
17-bit Absolute		6	NC			
				7	E5V	
					8	E0V
ng	to N	NC.			9	NC

<Remarks> Do not connect anything to







<Connector for brake>

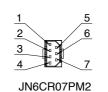
2

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

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

* Do not remove the gasket supplied with the junction cable connector. Securely install the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.

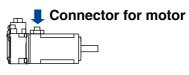


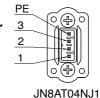


20-bit Incremental			17-bit <i>F</i>	Absolute
PIN No.	Application		PIN No.	Application
1	FG(SHIELD)		1	FG(SHIELD)
2	_		2	BAT-
3	E0V		3	E0V
4	PS		4	PS
5	_		5	BAT+
6	E5V		6	E5V
7	PS		7	PS

Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.

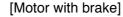


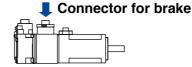


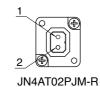
PIN No.	Application
1	U-phase
2	V-phase
3	W-phase
PE	Ground

Tightening torque of the screw (M2) 0.085 N·m to 0.095 N·m (screwed to plastic)

* Be sure to use only the screw supplied with the connector, to avoid damage.







PIN No.	Application	
1	Brake	* Electromagnetic brake
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.



Cable part No. Designation

Options

Options

[Unit: mm]

No.

0030EAE 0050EAE 0100EAE 0200EAE

[Unit: mm]

Part No. ECA0030EAD

ECA0050EAD ECA0100EAD

MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

For 20-bit incremental encoder (Without battery box)

Encoder Cable

Part No.

* It doesn't correspond to IP65 and IP67.

MFECA0 * * 0EAM

Compatible

motor output

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAM
Connector (Motor side)	172160-1	Tyco Electronics	10	MFECA0100EAM
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAE	Compatible motor output	l	50 W to 750 W, 200 W to 750 W,	
Specifications	For 17-bit absolute encode	er (With battery bo	ox) *		

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

	T ₂	L	_	l [Olini.
		110	300	
(4) (14) (4)		n-n	(08)	

Title	Part No.	Manufacturer	L (m)	Part I
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA00
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA00
Connector (Motor side)	172161-1	Tyco Electronics	10	MFECA01
Connector pin	170365-1	Tyco Electronics	20	MFECA02
Cable	0.20 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAD	Compatible motor output		50 W to 750 W, 200 W to 750 W,	
Specifications	For 17-bit incremental enc	oder (Without bat	tery box)		

	L_	→
	2	
	(06.	
9		
(4) (14) (4)		

Title	Part No.	Manufacturer	L (m)	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFE
Shell kit	3E306-3200-008	(or equivalent)	5	MFE
Connector (Motor side)	172161-1	Tyco Electronics	10	MFE
Connector pin	170365-1	Tyco Electronics	20	MFE
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

ECA0200EAD

• 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.)

IP67 motor

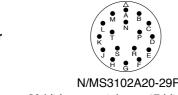
(Small type)

Connector for encoder









NC

		•		
	N/MS310	2	A20-29P	
20-bit Ir	cremental		17-bit A	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
M	NC		М	NC
N	NC		N	NC
	110		_	110

NC

BAT-

BAT+

<with Brake>

20-bit In	cremental	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

<Encoder connector for IP67 motor>

JN2AS10ML3-R

<Remarks>

* Electromagnetic brake

is a nonpolar device.

Do not connect anything to NC.

[6.0 kW or more] Connector for motor Connector for brake

<Motor>

JL04V-2E32-17PE-B-R

MDME 7.5 kW to 15.0 kW

PIN No. Application

N/MS3102A 14S-2P

MDME 7.5 kW to 15.0 kW

PIN No. Application

Brake Brake

U-phase

V-phase

W-phase

Ground

MGME 6.0 kW

MHME 7.5 kW

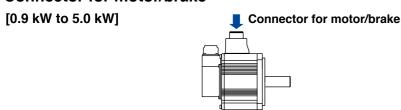
D

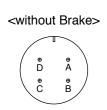
<Brake>

MGME 6.0 kW

MHME 7.5 kW

Connector for motor/brake

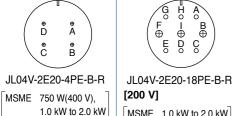




MDME 400 W (400 V),

600 W (400 V),

1.0 kW to 2.0 kW



3L04V-2L20-101 L-D-11
[200 V]
[
MSME 1.0 kW to 2.0 kW
MDME 1.0 kW to 2.0 kW
MFME* 1.5 kW
MGME 0.9 kW
MHME 1.0 kW to 1.5 kW

MGME 0.9 MHME 1.0	kW kW to 1.5 kW		MHME 1.0	kW to 1.5 kW
JL04HV-2E	22-22PE-B-F	1		
MSME 3.0	kW to 5.0 kW		PIN No.	Application
MDME 3.0) kW to 5.0 kW		G	Brake
MGME 2.0) kW to 4.5 kW		Н	Brake
) kW to 5.0 kW		Α	NC
	, KII 10 0.0 KII		F	U-phase
PIN No.	Application		I	V-phase
Α	U-phase		В	W-phase
В	V-phase		Е	Ground
С	W-phase		D	Ground
D	Ground		С	NC

	0	
	JL04V-2E2	24-11PE-B-R
[200 V]		[400 V]
MSME 3.0 kV	V to 5.0 kW	MSME 750 W,
MDME 3.0 kV	V to 5.0 kW	1.0 kW to 5.0 kW
MFME* 2.5 kV	V, 4.5 kW	MDME 400 W, 600 W,
MGME 2.0 kV	V to 4.5 kW	1.0 kW to 5.0 kW
MHME 2.0 kV	V to 5.0 kW	MFME* 1.5 kW to 4.5 kW
=	_	MGME 0.9 kW to 4.5 kW
		MHME 1.0 kW to 5.0 kW
	PIN No.	Application
	Α	Brake
	В	Brake
	С	NC
	D	U-phase
	Е	V-phase

PIN No.	Application
G	Brake
Н	Brake
Α	NC
F	U-phase
	V-phase
В	W-phase
Е	Ground
D	Ground
С	NC

	_	00		_	
* MFME is common to with or without brake.					
<rei< td=""><td>marks></td><th></th><td></td><td></td><th></th></rei<>	marks>				

* MFME is common to with or without brake.
<remarks></remarks>
Do not connect anything to NC.

		С	NC	
NC.		D	NC	
	*	Electrom	agnetic brak	е
187		is a nonp	olar device.	

W-phase

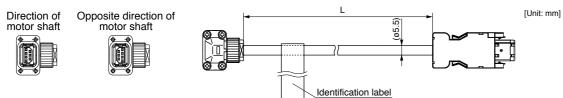
Ground

Ground

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

Pá	art 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)		MSME 50 W to 750 W (200 V)
Spe	ecifications	For 17-bit absolute encoder (With battery box) *		

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

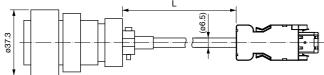
[Unit: mm] Direction of motor shaft 110 Opposite direction of motor shaft Identification label

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

L (m)	Part No.(ex.)	
3	MFECA0030MJE	
5	MFECA0050MJE	
10	MFECA0100MJE	
20	MFECA0200MJE	

[Unit: mm]

Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		



Connector

Connector (Motor side)

Cable clamp

Cable

itle	Part No.	Manufacturer
(Driver side)	3E206-0100 KV	Sumitomo 3M
ell kit	3E306-3200-008	(or equivalent)

N/MS3106B20-29S

N/MS3057-12A

0.2 mm² ×3P (6-wire)

Manufacturer		L (m)	Part No.
Sumitomo 3M		3	MFECA0030ESD
(or equivalent)		5	MFECA0050ESD
Japan Aviation		10	MFECA0100ESD
 Electronics Ind.		20	MFECA0200ESD
Oki Electric Cable Co., Ltd.	ľ		

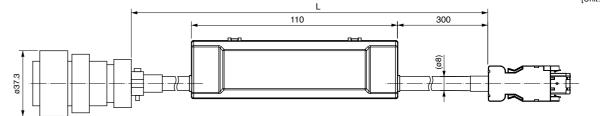
Part No.	MFECA0 * * 0ETD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V), MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)	
Specifications	For 20-bit incremental encoder (Without battery box)			

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 x3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ESE	Compatible motor output	0.9 kW to 5.0 kW (IP65 Motor)	
Specifications	For 17-bit absolute encoder (With battery box) *			

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

[Unit:	mm



Title		Part No.	Manufacturer	L (m)	Part No.
Connector (Driver sid	de)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESE
Shell kit		3E306-3200-008	(or equivalent)	5	MFECA0050ESE
Connector (Motor sid	de)	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)	Г
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

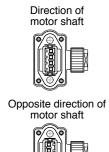
Title	Part No.	Manufacturer
Connector	172159-1	Tugo Floatronico
Connector pin	170366-1	Tyco Electronics
Rod terminal	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	ROBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION

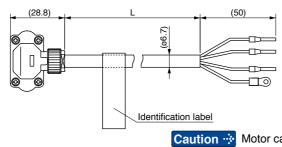
Part No.	
MFMCA0030EED	
MFMCA0050EED	
MFMCA0100EED	
MFMCA0200EED	

	MCA0 * * 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	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFMCA0030NJD
5	MFMCA0050NJD
10	MFMCA0100NJD
20	MFMCA0200NJD

Part No.	MFMCA0 * * 2ECD	Applicable model	MFME	1.5 kW(200 V)	
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191

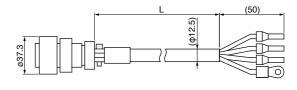
la.	Dord No.	
037.3		

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

Part No.
MFMCA0032ECD
MFMCA0052ECD
MFMCA0102ECD
MFMCA0202ECD

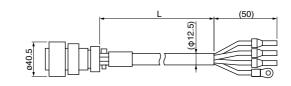
MSME 750 W(400 V), 1.0 kW to 2.0 kW, Applicable model MDME 400 W(400 V), 600 W(400 V), 1.0 kW to 2.0 kW MFMCD0 * * 2ECD Part No. MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	-6A20-4SE-EB-R Japan Aviation		MFMCD0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCD0052ECD
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCD0102ECD
Nylon insulated round terminal	N2-M4	J.S.1 Wilg. Co., Ltd.	20	MFMCD0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

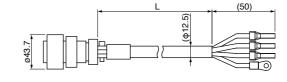
Part No. M		Applicable model	MHME 2.0 kW (200 V and 400 V commonness)	
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Title	Part No. Manufacturer		L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation		MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCE0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	1.5~kW(400~V),~2.5~kW(200~V~and~400~V~commonness)
----------	-----------------	------------------	------	---

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCF0032ECD
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCF0052ECD
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCF0102ECD
Nylon insulated round terminal	N2-M4	J.S.1 Milg. Co., Ltd.	20	MFMCF0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

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

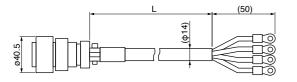
A5 Family

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 $\,$ 3.0kW to 5.0 kW MHME 3.0 kW to 5.0 kW, MGME 2.0kW to 4.5 kW (All model 200 V and 400 V commonness)



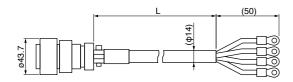
Applicable model

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.	MENICIDI * * 3EC.I	Applicable model	MFME 4.5 kW (200 V and 400 V commonness)	
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[Unit: mm]

[Unit: mm]



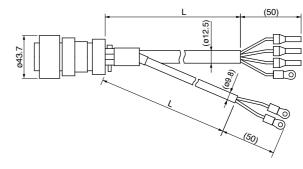
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Clastica lad		MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

art No. MFMCA0 * * 2FCD Applicable model	MSME 1.0 kW to 2.0 kW(200 V), MDME 1.0 kW to 2.0 kW(200 V), MFME 1.5 kW(200 V), MHME 1.0 kW(200 V) to 1.5 kW(200 V) MGME 0.9 kW(200 V)
--	--

Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032FCD
Cable clam	0	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052FCD
Rod termina	al	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCA0102FCD
Nylon insulated	Earth	N2-M4	LC T Mfa Co. Ltd	20	MFMCA0202FCD
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.	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)

[Unit: mm]



Title		Part No.	Manufacturer	
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	
Cable clam	р	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

Brake Cable

Part No. MFMCB0 * * 0GET

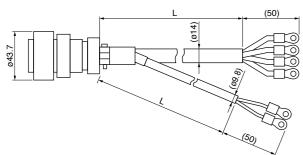
A5 Family Options

* It doesn't correspond to IP65 and IP67.

MHMD 200 W to 750 W

MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 4.5 kW, MHME 3.0 kW to 5.0 kW Applicable model MFMCA0 * * 3FCT Part No. MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)

Motor Cable (with Brake)



L (50)	[Unit: mm]
(50)	
~	

Part No.	Manufacturer	
JL04V-6A24-11SE-EB-R	Japan Aviation	
JL04-2428CK(17)-R	Electronics Ind.	
N5.5-5	LS T Mfa Co. Ltd	
N1.25-M4	3.3.1 Wilg. Co., Ltd.	
ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 3.5 mm ² 6-wire	DYDEN CORPORATION	
	JL04V-6A24-11SE-EB-R JL04-2428CK(17)-R N5.5-5 N1.25-M4 ROBO-TOP 600 V 0.75 mm ² and	JL04V-6A24-11SE-EB-R Japan Aviation Electronics Ind. N5.5-5 N1.25-M4 ROBO-TOP 600 V 0.75 mm² and

L (m)	Part No.
3	MFMCA0033FCT
5	MFMCA0053FCT
10	MFMCA0103FCT
20	MFMCA0203FCT

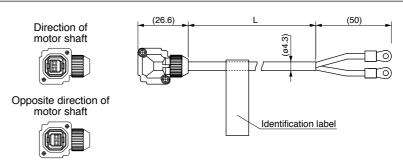
	(40)	L_		(50)
(5.6)			(49.8)	

Applicable model

Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Fleetrenies	3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ² 2-wire	DYDEN CORPORATION	20	MFMCB0200GET

MSMD 50 W to 750 W,

Part No.



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

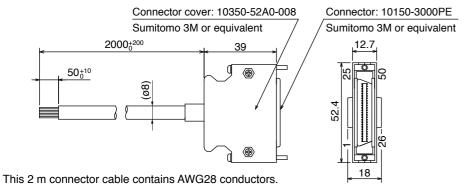
0PJT 50PJT DOPJT

[Unit: mm]

[Unit: mm]

Cable for Interface

Part No. DV0P4360



11113 2 111 601111661

Table for wiring

Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color
1	Orange (Red1)	11	Orange (Black2)	21	Orange (Red3)	31	Orange (Red4)	41	Orange (Red5)
2	Orange (Black1)	12	Yellow (Black1)	22	Orange (Black3)	32	Orange (Black4)	42	Orange (Black5)
3	Gray (Red1)	13	Gray (Red2)	23	Gray (Red3)	33	Gray (Red4)	43	Gray (Red5)
4	Gray (Black1)	14	Gray (Black2)	24	Gray (Black3)	34	White (Red4)	44	White (Red5)
5	White (Red1)	15	White (Red2)	25	White (Red3)	35	White (Black4)	45	White (Black5)
6	White (Black1)	16	Yellow (Red2)	26	White (Black3)	36	Yellow (Red4)	46	Yellow (Red5)
7	Yellow (Red1)	17	Yel (Blk2)/Pink (Blk2)	27	Yellow (Red3)	37	Yellow (Black4)	47	Yellow (Black5)
8	Pink (Red1)	18	Pink (Red2)	28	Yellow (Black3)	38	Pink (Red4)	48	Pink (Red5)
9	Pink (Black1)	19	White (Black2)	29	Pink (Red3)	39	Pink (Black4)	49	Pink (Black5)
10	Orange (Red2)	20	_	30	Pink (Black3)	40	Gray (Black4)	50	Gray (Black5)

<Remarks>

Color designation of the cable e.g.) Pin-1

[Unit: mm]

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.

<Caution>

Cable pin No. 50 is not connected to the connector shell (housing) or shielded wire (net wire).

Pin No. 50 of the Driver is connected to the shell (housing) of the connector.

The shielded wire (net wire) of the cable is connected to the shell (housing) of the connector of the cable, and by connecting the connector of the optional cable to the Driver, pin No. 50 of the cable and the shielded wire (net wire) of the cable gets connected via the Driver.

Interface Conversion Cable

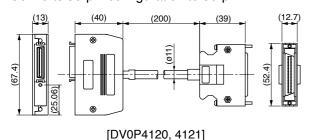
Dort No	DV0P4120, 4121, 4130, 4131, 4132
Part NO.	DVUP4120, 4121, 4130, 4131, 4132

Interface cables for old product (XX series or V series) can be connected to the current product by using the connector conversion cable shown below.

DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → 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.



(12.7) (40) (200) (39) (12.7)

[DV0P4130, 4131, 4132]

Connector Kit for Communication Cable (for RS485, RS232) (Excluding A5IE, A5E Series)

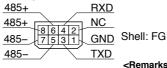
Part No. DV0PM20102

Connector Kit

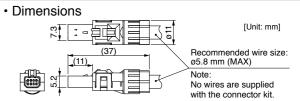
Components

Title	Part No.	Manufacturer	Note
Connector	CIF-PCNS08KK-072R	J.S.T Mfg. Co., Ltd.	For Connector X2 (8-pins)

Pin disposition of connector, connector X2



(Viewed from cable) CHEMARKS Do not connect anything to NC.



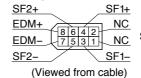
Connector Kit for Safety (Excluding A5IIE, A5E Series)

Part No. DV0PM20103

· Components

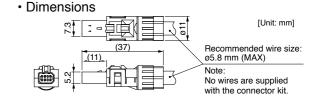
Title Part No.		Manufacturer	Note	
Connector	CIF-PCNS08KK-071R	J.S.T Mfg. Co., Ltd.	For Connector X3 (8-pins)	

· Pin disposition of connector, connector X3



IC IC Shell: FG

cable) <Remarks>
Do not connect anything to NC.



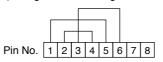
Safety bypass plug (Excluding A5IE, A5E Series)

Part No. DV0PM20094

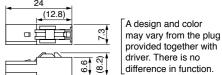
Components

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.)



• Dimensions (Resin color : black)



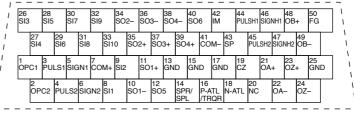
Connector Kit for Interface

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)



- 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 the crimping tools required for cable production, please check the manufacturer's website or contact the manufacturer. For manufacturer inquiries, refer to P.213 "Peripheral Device Manufacturer List".

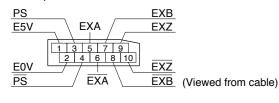
Connector Kit for External Scale (Excluding A5IE, A5E Series)

Part No.	DV0PM20026

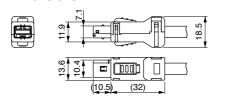
Components

Title	Part No.	Manufacturer	Note
Connector	MUF-PK10K-X	J.S.T Mfg. Co., Ltd.	For Connector X5 (10-pins)

• Pin disposition of connector, connector X5



Dimensions



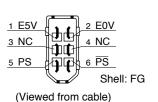
Connector Kit for Encoder

Part No. DV0PM20010

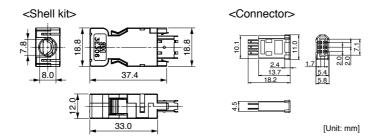
Components

Title	Part No.	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector X6
Shell kit	3E306-3200-008	(or equivalent)	For Connector X6

• Pin disposition of connector, connector X6



Dimensions



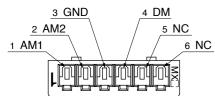
Connector Kit for Analog Monitor Signal

Part No.	DV0PM20031
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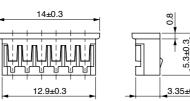
Components

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

• Pin disposition of connector, connector X7



Dimensions



<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B

[Unit: mm]

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

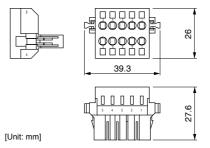
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LOTMe Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

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	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT	2		

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 Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	J.S.T Mfg. Co., Ltd.	For Connector XD
Handle lever	MJFAT-0T	1		

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. DV0PM20045 (For E-frame 200 V/400 V)

Components

	Title	Part No.	Number	Manufacturer	Note
	Connector	04JFAT-SAXGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XC
Ī	Handle lever	J-FAT-OT-L	2		* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	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	J.S.T Mfg. Co., Ltd.	For Connector XB
Handle lever	J-FAT-OT	2		* Jumper wire is included.

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

Components

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

Part No. | **DV0PM20054** (For D-frame 400 V)

Components

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

Connector Kit

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

Options

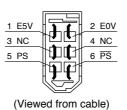
Connector Kit for Motor/Encoder Connection

Dort No	DV0P4290	Applicable	MSMD 50 W to 750 W, MHMD 200 W to 750 W
Part NO.	DV0F4290	model	(absolute encoder type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	
Connector	172161-1	1	Tyco Electronics	For Encoder cable
Connector pin	170365-1	9		(9-pins)
Connector	172159-1	1	Tyco Electronics	For Motor cable
Connector pin	170366-1	4		(4-pins)

• Pin disposition of connector, connector X6



Do not connect

· Pin disposition of connector for encoder cable

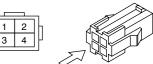
			1	. />
	1	2	3	
ſ	4	5	6	
	7	8	9	

(Viewed from cable)

	•	,		
IN No.	Application	PIN No.	Application	
1	BAT+	6	NC	
2	BAT-	7	E5V	
3	FG(SHIELD)	8	E0V	
4	PS	9	NC	
5	PS	<remarks></remarks>		
		Do not or	nnoot on thin	

Do not connect anything to NC.

· Pin disposition of connector for motor cable



(violitou iioiii o				
PIN No.	Application			
1	U-phase			
2	V-phase			
3	W-phase			
4	Ground			

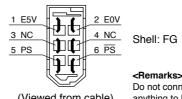
* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

Part No.	DV0P4380	Applicable model		200 W to 750 W 200 W to 750 W
			ental encoder type	

Components

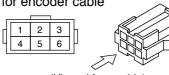
Title Part No.		Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Connector	172160-1	1	Type Fleetrenies	For Encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6-pins)
Connector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

• Pin disposition of connector, connector X6



Do not connect (Viewed from cable)

· Pin disposition of connector for encoder cable



(Viewed from cable)

(1.01.00 1.01.1.00.0)					
IN No.	Application				
1	NC				
2	PS				
3	PS				
4	E5V				
5	E0V	<remarks> Do not connect</remarks>			
6	FG(SHIELD)	anything to NC.			
		, ,			

· Pin disposition of connector for motor cable



(viewed from				
PIN No.	Application			
1	U-phase			
2	V-phase			
3	W-phase			
4	Ground			

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

Part No. DV0PM20035

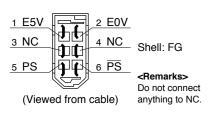
MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

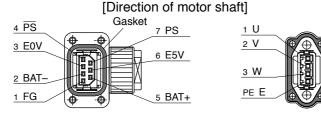
Components

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

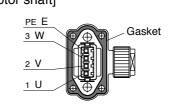
• Pin disposition of connector, • Pin disposition of connector connector X6 for encoder cable

· Pin disposition of connector for motor cable





[Opposite direction of motor shaft] Gasket 1 FG 5 BAT+ 2 BAT-6 E5V



Without

brake

* 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.

<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)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)	
Shell kit	3E306-3200-008	1 (or equivalent)		For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	Fau Facaday ashla	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A-20-4SE-EB-R	1 Japan Aviation		For Motor cable	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FOI WIOLOT CADIE	

<Remarks>

• For the crimping tools required for cable production, please check the manufacturer's website or contact the manufacturer. For manufacturer inquiries, refer to P.213 "Peripheral Device Manufacturer List".

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Components

Title Part No.		Manufacturer	Note	
3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
N/MS3057-12A	1	Electronics Ind.		
N/MS3106B20-4S	1	Japan Aviation	For Motor cable	
N/MS3057-12A	1	Electronics Ind.	For Motor Cable	
	3E206-0100 KV 3E306-3200-008 N/MS3106B20-29S N/MS3057-12A N/MS3106B20-4S	3E206-0100 KV 1 3E306-3200-008 1 N/MS3106B20-29S 1 N/MS3057-12A 1 N/MS3106B20-4S 1	3E206-0100 KV 1 Sumitomo 3M (or equivalent) N/MS3106B20-29S 1 Japan Aviation N/MS3057-12A 1 Electronics Ind. N/MS3106B20-4S 1 Japan Aviation	

Part 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 X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	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	

		A P b.1.	<ip65 motor=""></ip65>					
Part No.	11111111111111	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	Without	
		Illouci	MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 3.0 kW	brake	

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Francis coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor cobla	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.		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 V6 (6 nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

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	3E306-3200-008	1 (or equivalent)		For Connector A6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freeder coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1 Japan Aviation		For Motor coblo	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	06-0100 KV 1 Sui		For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1 (or equivalent)		For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	FOI MOTOL CADIE	

Part No.		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.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.		
Motor connector	N/MS3106B24-11S	1	Japan Aviation	For Motor cable	
Cable clamp	N/MS3057-16A	1	Electronics Ind.	FOI WIGGO CADIE	

<Remarks>

• For the crimping tools required for cable production, please check the manufacturer's website or contact the manufacturer. For manufacturer inquiries, refer to P.213 "Peripheral Device Manufacturer List".

Part No.		Applicable model	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	Without brake
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Components

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

* Cable cover size: Φ 22 to Φ 25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

[·] When manufacturing the motor extension cable, refer to "Driver and List of Applicable Penipheral Equipment" on pages 19 and 20 for thickness of the electric wire used and the size of the crimp terminal.

Part No. DV0PM20057 Applicab 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 Part No.		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	Fau Matau aabla	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	Far Drales askla	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable	

* Cable cover size: Φ 22 to Φ 25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

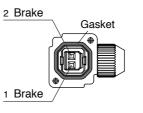
Part No. DV0PM20040 MSME 50 W to 750 W		1)V(1PM/20040	Applicable model	MSME 50 W to 750 W
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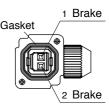
Components

Title	Part No.	Number	Manufacturer	Note	
Connector	JN4FT02SJM-R	1	Japan Aviation	For broke coble	
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.

[•] When manufacturing the motor extension cable, refer to "Driver and List of Applicable Penipheral Equipment" on pages 19 and 20 for thickness of the electric wire used and the size of the crimp terminal.

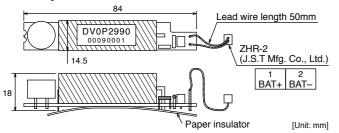
Mounting Bracket

A5 Family

Battery for Absolute Encoder

Part No. DV0P2990

· Lithium battery: 3.6 V 2000 mAh



<Caution>

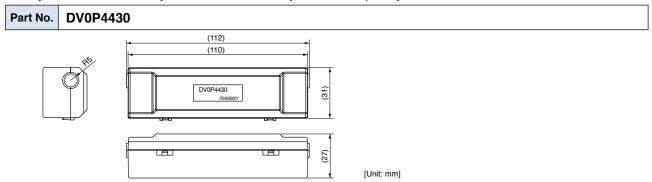
Battery for Absolute Encoder

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

This battery is categorized as hazardous substance, and you may be required to present an application of hazardous substance when you transport by air (both passenger and cargo airlines).

Battery Box for Absolute Encoder *

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



When waking a cable for 17-bit absolute encoder by yourself

When you make your own cable for 17-bit absolute encoder, connect the optional battery for absolute encoder, DV0P2990 as per the wiring diagram below. Connector of the battery for absolute encoder shall be provided by customer as well.

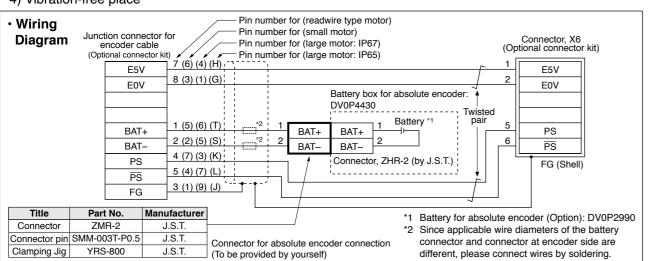
<Caution>

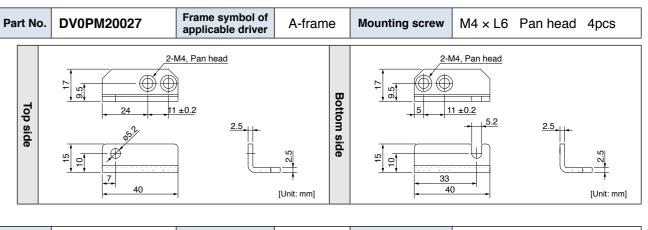
Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

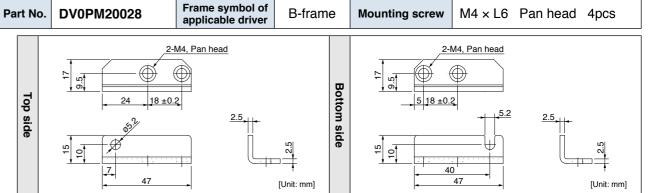
Refer to the instruction manual of the battery for handling the battery.

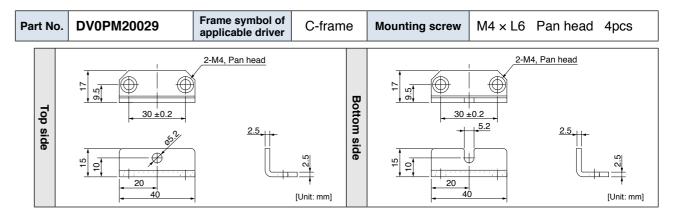
Installation Place of Battery

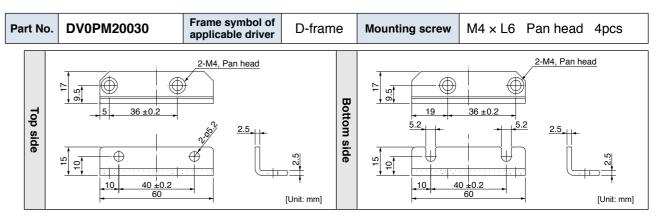
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable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



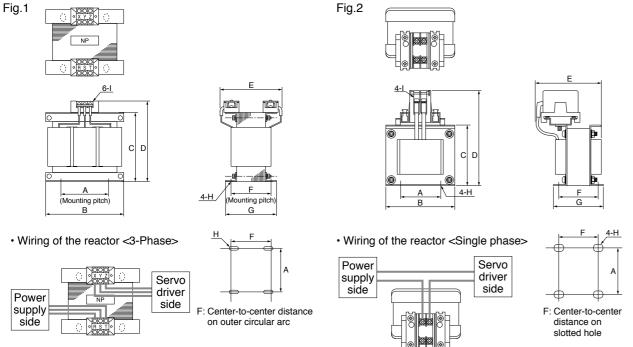








For E, F and G-frame, it is possible to make both a front end and back end mounting by changing the mounting direction of L-shape bracket (attachment).



												[UIIIL IIIII]
	Part No.	Α	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
Eia 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".

Harmonic restraint

Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers' Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. We are pleased to inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver was modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

			Spec				
Part No.	Manufacturer's part No.	Resistance	cable core	Weight		power nce) *1	Activation
Part NO.		nesistance	outside diameter	weight	Free air	with fan 1 m/s	temperature of built-in thermal protector
		Ω	mm	kg	W	W	
DV0P4280	RF70M	50		0.1	10	25	
DV0P4281	RF70M	100		0.1	10	25	
DV0P4282	RF180B	25		0.4	17	50	140±5 °C B-contact
DV0P4283	RF180B	50	φ1.27 / AWG18 \	0.2	17	50	Open/Close capacity
DV0P4284	RF240	30	stranded	0.5	40	100	(resistance load)
DV0P4285	RH450F	20	\ wire /	1.2	52	130	1 A 125 VAC 6000 times 0.5 A 250 VAC 10000 times
DV0PM20048	RF240	120		0.5	35	80	0.571250 V/10 10000 times
DV0PM20049	RH450F	80		1.2	65	190	

Manufacturer: Iwaki Musen Kenkyusho

External Regenerative Resistor

A built-in thermal fuse and a thermal protector are provided for safety.

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

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit, power supply voltage or load.

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed

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.

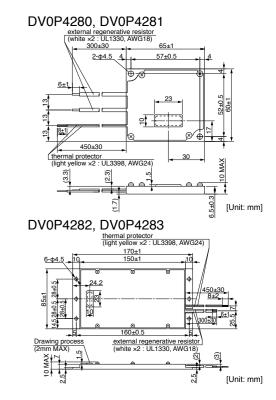
*2 Terminal block with screw tightening torque as shown below.

T1, T2, 24 V, 0 V, E: M4: 1.2 N·m to 1.4 N·m R1, R2 : M5: 2.0 N·m to 2.4 N·m

Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

		Power supply	supply			
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-phase, 400 V			
А	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	_			
В	DV0P4283	DV0P4283				
С	DV0P4282	DV0F4263				
D		DV0P4284	DV0PM20048			
E		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049			
F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel			
G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel			
Н		DV0P4285 × 6 in parallel	DV0PM20049 × 6 in parallel			

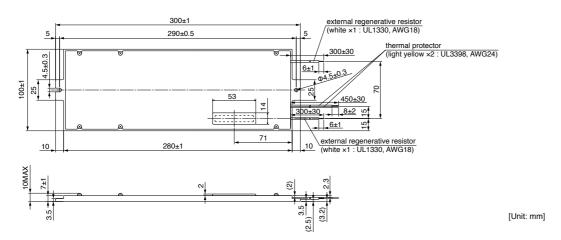


^{*1} Power with which the driver can be used without activating the built-in thermal protector.

Surge Absorber for Motor Brake

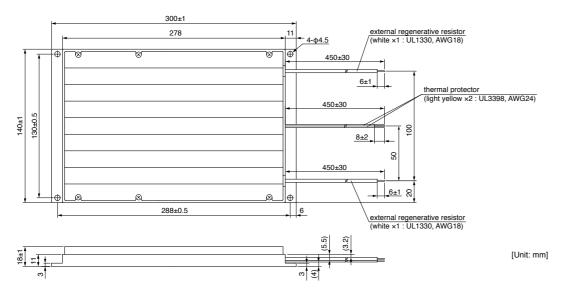
A5 Family

DV0P4284, DV0PM20048



External Regenerative Resistor

DV0P4285, DV0PM20049



<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		
MSMJ	200 W to 750 W	TND14V271K	NIPPON CHEMI-CON CORPORATION
	50 W to 750 W		
MSME	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation
	4.0 kW to 5.0 kW	NVD07SCD082	KOA Corporation
	400 W (400 V), 600 W (400 V)	Z15D151	SEMITEC Corporation
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	NVD07SCD082	KOA Corporation
MFME	1.5 kW	Z15D151	SEMITEC Corporation
IVIFIVIE	2.5 kW, 4.5 kW	NVD07SCD082	KOA Corporation
MGME	0.9 kW	NVD0/3CD062	KOA Corporation
MANIE	2.0 kW to 6.0 kW	Z15D151	SEMITEC Corporation
MHMD MHMJ	200 W to 750 W	TND14V271K	NIPPON CHEMI-CON CORPORATION
MHME	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation
IVIDIVIE	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation

List of Peripheral Devices

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	Surge absorber for holding brake
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/	Ferrite core
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	
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	Connector
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	
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/	- External scale
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/	
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	
Nidec Sankyo Corporation	+81-3-5740-3006 http://www.nidec-sankyo.co.jp/	
Renishaw plc	+44 1453 524524 www.renishaw.com	
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/	Noise filter
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	

^{*} The above list is for reference only. We may change the manufacturer without notice.

A5 Family

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

2

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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Lasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

MINAS E Series

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

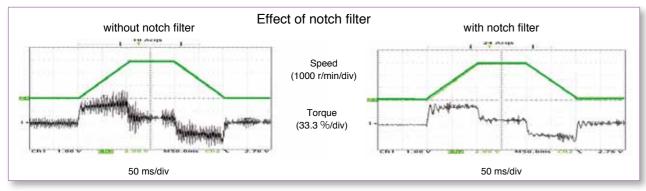
?. Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain 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.

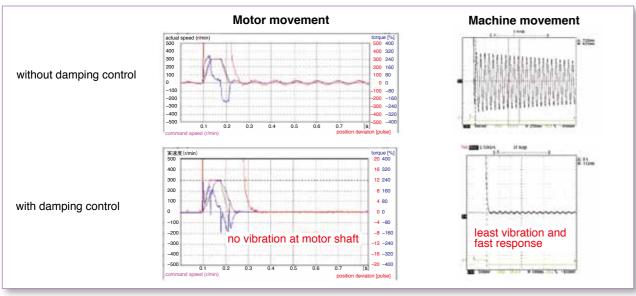
Notch filter (Note1)

- 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) 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	Conforms to
Matau	EC61000-4-2	Electrostatic Discharge Immunity Test	
Motor and driver	IEC61000-4-3	U-4-3 Hadio Frequency Electromagnetic Field Immunity Test	
unver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	EC61000-4-5 Lightening Surge Immunity Test	
	IEC61000-4-6 High Frequency Conduction Imr Test		
	IEC61000-4-11	Instantaneous Outage Immunity Test	

IEC : International Electrotechnical Commission

EN : Europaischen Normen

EMC : Electromagnetic Compatibility

UL : Underwriters Laborato

CSA: Canadian Standards Association

Pursuant to at 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 exporting this product, follow statutory provisions of the destination country.

Motor Line-up

MINAS E series

			Rated rotational	Rotary	encoder	Brake	Gear	111.7			
	Motor series	Rated output (kW)	speed (Max. (speed) (r/min)	2500 P/r incremental	17bit absolute/ incremental	Holding	High precision	UL/ CSA	Enclosure	Features	Applications
	MUMA										
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

Servo Motor

M U M A 5 A Z P 1 S **

Symbol MUMA Ultra low inertia (50 W to 400 W)

Motor rated output

Symbol	Rated output
5A	50 W
01	100 W
02	200 W
04	400 W

Voltage specifications

Symbol	Specifications
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		

Special specifications

Motor structure

motor off dotain							
	Shaft	Holding	g brake	e Oil seal			
Symbol	Key-way, center tap	without	with	without	with*		
S	•	•		•			
Т	•		•	•			

* Motor with oil seal is manufactured by order.

Design order

Symbol	Specifications
1	Standard

See P.227 for motor specifications

■ Motor with gear reducer

M U M A 0 1 1 P 3 1 N

Motor rated output Symbol Rated output Symbol Type 01 100 W Ultra low inertia MUMA (100 W to 400 W) 02 200 W 04 400 W

Voltage specifications

voltage specifications					
Symbol	Specifications				
1	100 V				
2	200 V				

Rotary encoder specifications

Total y chocae openione							
Symbol	Format	Pulse counts	Resolution	Wires			
Р	Incremental	2500 P/r	10000	5			

Gear reduction ration, gear type

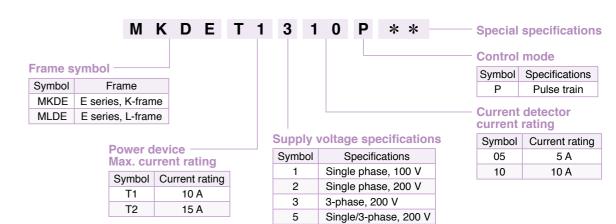
	Gear	Moto	r outpu		
Symbol	reduction ratio	100	200	400	Gear type
1N	1/5	•	•	•	Cau biala
2N	1/9	•	•	•	For high accuracy
4N	1/25	•	•	•	accuracy

Motor structure

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

See P.232 for motor with gear reducer specifications

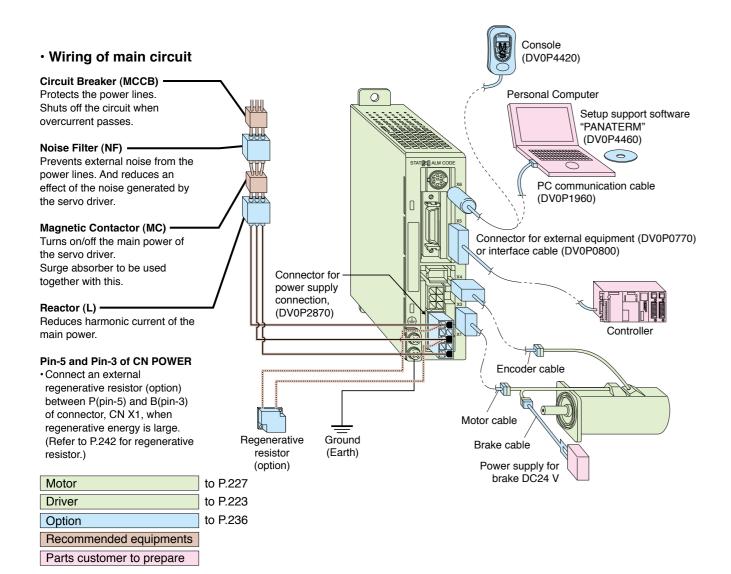
Servo Driver



See P.223 for driver specifications

Overall Wiring/ Driver and List of Applicable Peripheral Devices

MINAS E Series



List of recommended peripheral devices

	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	(5 A)		10.4				
phase,		100 W	0.4 kVA	(5 A)		10 A (3P+1a)				
100 V		200 W	0.5 kVA	(10 A)		(01 114)	_			
		50 W	0.3 kVA							
Single		100 W	0.5 KVA	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	15 A	
phase, 200 V	MUMA	200 W	0.5 kVA		DV0P4160	(3P+1a)	0.75 mm ² to 0.85 mm ² AWG18			
		400 W	0.9 kVA	(10 A)			AWGIO			
		50 W	0.017/4							
3-phase		100 W	0.3 kVA	(5 A)	(5 A) 10 A (3P+1a)	10 A				
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, (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								
	Opt	ions	•	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 E)rive	Power Supply	DV0P2870	239			
Encoder Cable			MFECA0 * *	0EAM	238			
Motor Cable			MFMCA0 * *	238				
Brake Cable			MFMCB0 * *	238				
Cable Set (3 m) ^{(No}	te 3)	DV0P37300	238				
Cable Set (5 m) ^{(No}	te 3)	DV0P39200	238				
DIN Rail Moun	t Un	it	DV0P3811		242			
External	10	0 V	50 Ω 10 W	DV0P2890	040			
Regenerative Resistor	20	0 V	100 Ω 10 W	DV0P2891	242			
			100 V	DV0P227				
Reactor	Reactor			DV0P228	243			
			200 V	DV0P220				
Noise Filter				DV0P4160	256			
		gle phase 0 V, 200 V	DV0P4190	256				
		3-p	hase 200 V	DV0P1450				
Ferrite core	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

			2500P/r, Inc	remental		Option																			
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable Note) 2		Brake Cable Note) 2	External Regenerative Resistor	Reactor	Noise Filter													
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)						DV0P227														
phase	100	MUMA011P1 \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)	MFECA0 * * 0EAM	MFECA0**0EAM	MFECA0 * * 0EAM	MFECA0**0EAM	MFECA0 * * 0EAM	MFECA0 * * 0EAM	MEEO A O de de OE ANA	MEECAO & & OEAM	MEECAO	MEECAON NOTAM	MEECAONNOCAM	MEEC AO * * OE AM	MEECAO * * OEAM M	MEECAO * *OEAM M	MEMOAO II II OA ED					D)/0D4400
	400	MUMA042P1	229	MLDET2510P	226 (L)							MFMCAU* *UAEB		MFMCB0 * * 0GET			DV0P4160								
	50	MUMA5AZP1	229	MKDET1505P	226 (K)					DV0P2891	DV0P220														
	100	MUMA012P1	229	MKDET1505P	226 (K)																				
3-phase 200 V	200	MUMA022P1	229	MKDET1310P	226 (K)					,															
	400	MUMAO40D4	000	MLDET2510P	000 (1)																				
	400	MUMA042P1 □	229	MLDET2310P	226 (L)																				

- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

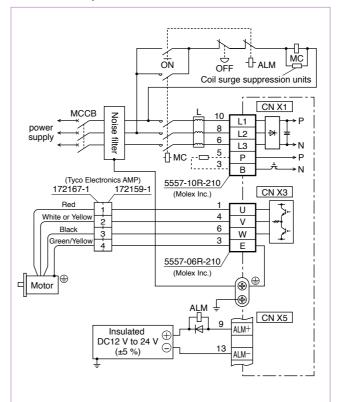
Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

E Series

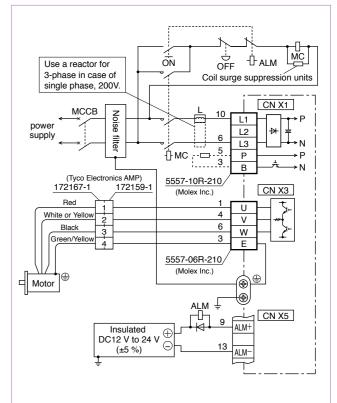
Wiring Diagram

Standard Wiring Example of Main Circuit

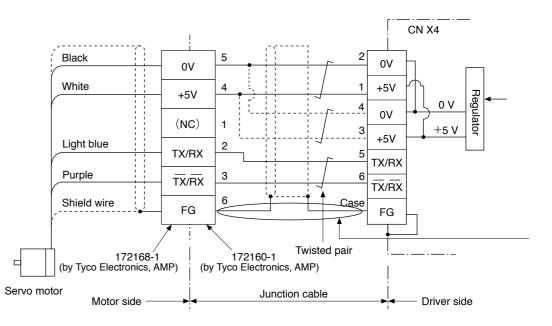
3-Phase, 200 V



■ Single Phase, 100 V / 200 V



Encorder Wiring Diagram



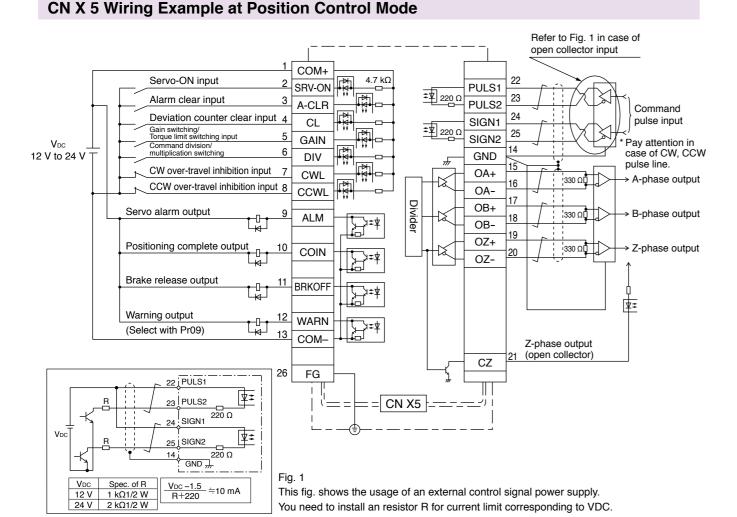
When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

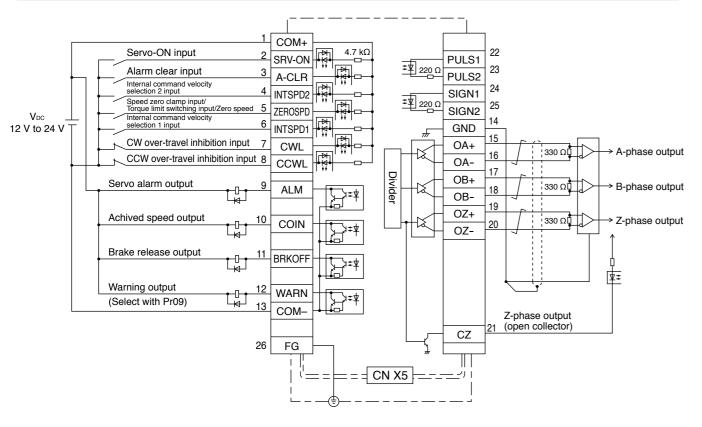
Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

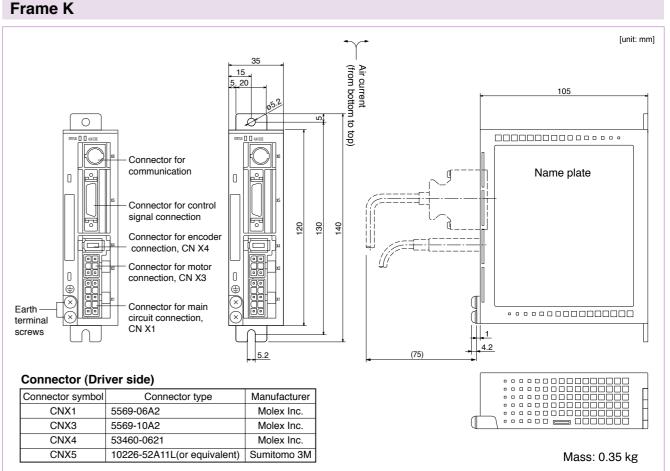
		Sing	le phase, 100 V	Single phase, 100 V to 115 V +10 % 50 Hz/60 Hz		
	nput	Oingle glasse 200 V		Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	Input power		le phase, 200 V			
		3-phase, 200 V		3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	Environment	Tem	perature	Operating: 0 °C to 55 °C, Storage: –20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>		
	ron	Hum	nidity	Both operating and storage : 90 %RH or less (free from condensation)		
	nen	Altitu	ıde	1000 m or lower		
=	Vibra	ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)			
	With	stand	voltage	Should be 1500 VAC (Sensed current: 20 mA) for 1 minute between Primary and Ground.		
	Cont	trol me	ethod	IGBT PWM Sinusoidal wave drive		
	Enco	oder fe	eedback	2500 P/r (10000 resolution) incremental encoder		
	ω C	Inpu	t	7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode.		
	Control signal	Outp	out	4 outputs (1) Servo alarm, (2) Alarm, (3) Release signal of external brake and other outputs vary depending on the control mod		
	σт	Inpu	t	2 inputs Supports both line driver I/F and open collector I/F.		
	Pulse signal	Outp	out	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.		
	Com	munic	cation function RS232	1 : 1 communication to a host with RS232 interface is enabled.		
	Disn	lay LE	:D	(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)		
		enerat		No built-in regenerative resistor (external resistor only)		
	_			Built-in		
		amic b trol mo		3 modes of (1) High-speed position control, (2) Internal velocity control and		
		Control input		(3) High-functionality positioning control are selectable with parameter. (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)		
	Positio		Max. command pulse frequency	Line driver : 500 kpps, Open collector : 200 kpps		
	Position control	Pulse input	Type of input pulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)		
	<u>0</u>		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	Con	trol input	(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Selection 1 of internal command speed,(4) Selection 2 of internal command speed,(5) Speed zero clamp		
	mal	Con	trol output	(1) Speed arrival (at-speed)		
	Speed	Inter	nal speed command	Internal 4-speed is selectable with control input.		
,	ed control	Soft	-start/down function	Individual setup of acceleration and deceleration are enabled, with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.		
	<u>8</u>	Zero	-speed clamp	0-clamp of internal speed command with speed zero clamp input is enabled.		
1			Real-time	Estimates the load inertia in real-time in actual operation and sets up the gain automatically corresponding to the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.		
		Auto-gain tuning	Normal mode	Estimates the load inertia with an action command inside of the driver, and sets up the gain automatically corresponding to setup of the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.		
		Mas inpu	king of unnecessary t	Masking of the following input signal is enabled. (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching		
	Common	puls	sion of encoder feedback e	1 P/r to 2500 P/r (encoder pulses count is the max.).		
	의	Protective function	Hardware error	Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.		
		otive	Software error	Excess position deviation, command pulse division error, EEPROM error etc.		
		Trac	eability of alarm data	Traceable up to past 14 alarms including the present one.		
		Dam	ping control function	Manual setup with parameter		
		Setup	Manual	Console		
		Ĕ	Setup support software	PANATERM (Supporting OS : Windows98, Windows ME, Windows2000, and WindowsXP)		

Control Circuit Standard Wiring Example

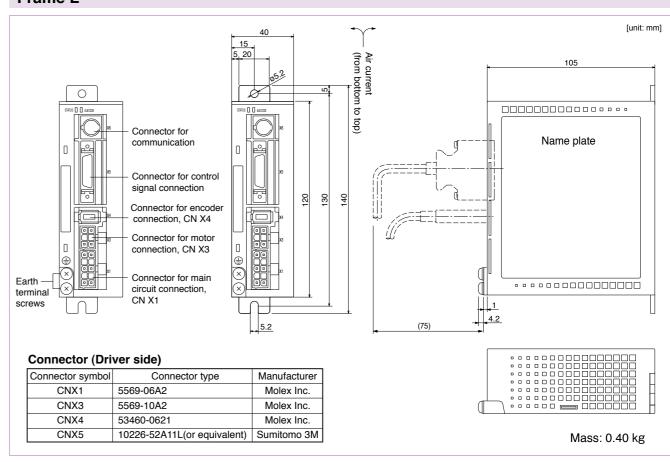


CN X 5 Wiring Example at Internal Velocity Control Mode





Frame L



Motor Specifications

100 V **MUMA** 50 W to 200 W

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 %				

0.5 (0.7)

0.4 (0.6)

Permissible load					
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
-	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

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

Mass (kg), () represents holding brake type

Model Designation

Symbol Type Ultra low inertia MUMA (50 W to 200 W)

Motor rated output Symbol Rated output 50 W 5A 01 100 W 02

200 W

Voltage specifications Symbol Specifications 100 V 100/200 V Z (50 W only)

Design order 1 : Standard

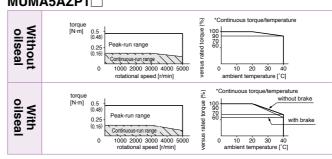
IVIOLOI SLI	Shaft	Holding	brake	Oil s	eal
Symbol	Key-way, center tap	without	with	without	with
S	•	•		•	
Т	•		•	•	

Rotary encoder specifications

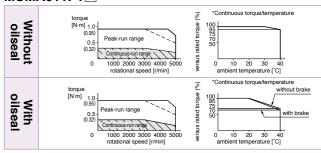
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

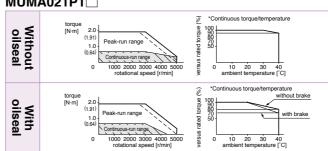
MUMA5AZP1



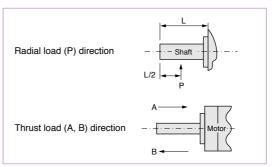
MUMA011P1



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)

Motor Specifications

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					
	Radial load P-direction (N)	147	392		
During assembly	Thrust load A-direction (N)	88	147		
,	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

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

Note) Driver for 50 W and 100 W has a common power supply of single phase and 3-phase 200 V.

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

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

Model Designation

M S Design order

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)

1 : Standard

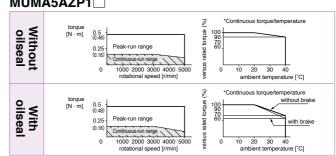
Symbol	Shaft	Holding	brake	Oil seal			
	Key-way, center tap	without	with	without	with		
S	•	•		•			
Т	•		•	•			

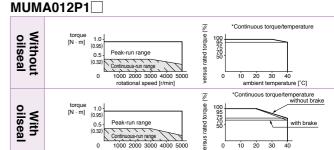
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

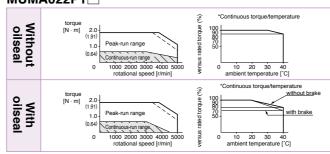
Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

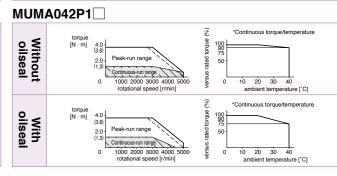
MUMA5AZP1

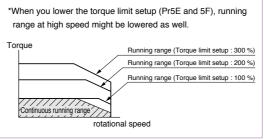


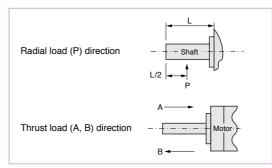


MUMA022P1









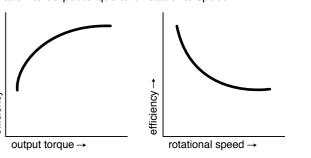
- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC240 V (at 200 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in regenerative brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent).
 - () represents the actually measured value using a diode (200 V, 1 A or equivalent)

MINAS E Series Motors with Gear Reducer

Motor Types with Gear Reducer

Reduction	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.



Encoder Motor connector connector LL LR LE Brake connector (Key way dimensions) □LC

[Unit: mm]

MUMA 50 W to 400 W

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

						[Unit: mm]			
				MUMA series	(Ultra low inertia)				
Motor outpu	ıt		50 W	50 W 100 W 200 W		400 W			
Motor mode	əl	MUMA	5A□P1□	01□P1□	02□P1□	04□P1□			
Rotary encoder specifications		2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental				
LL		Without brake	75.5	92.5	96	123.5			
LL		With brake	107	124	129	156.5			
	LR		24	24	30	30			
	S		8	8	11	14			
LA			48	48	70	70			
LB			22	22	50	50			
LC		42	42	60	60				
	LE		2	2	3	3			
	LF		7	7	7	7			
	LH		34	34	43	43			
	LZ		3.4	3.4	4.5	4.5			
	LW		14	14	20	25			
	LK		12.5	12.5	18	22.5			
	ΚW		3h9	3h9	4h9	5h9			
Key way	KH		3	3	4	5			
	RH		6.2	6.2	8.5	11			
	TP		M3 × 6 (depth)	M3 × 6 (depth)	M4 × 8 (depth)	M5 × 10 (depth)			
Mana (kg)		Without brake	0.40	0.50	0.96	1.5			
Mass (kg) With bra		With brake	0.60	0.70	1.36	1.9			
Connector/I	Plug spec	ifications	refer to Options, P.239, P.240.						

<Cautions>

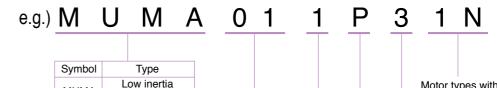
Reduce the moment of inertia ratio if high speed response operation is required.

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

Model No. Designation

MUMA

04



(100 to 400 W) Motor rated output Symbol Rated output 100 W 02 200 W

400 W

Voltage specifications Symbol Specifications 100 V 200 V

Rotary encoder specifications									
Symbol	Format	Pulse counts	Pulse counts	Wire					
Р	Incremental	2500 P/r	10000	5					

Motor structure Holding brake 4

Motor types with gear reducer

Reduction

ratio

1/5

1/9

1/25

2N

4N

100

200

400

reducer

For High

Specifications of Motor with Gear Reducer

	Motor type	MUMA					
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer					
	Composition of gear	Planetary gear					
	Gear efficiency	65 % to 85 %					
0	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft					
Gear	Composition of gear	Planetary gear					
reducer	Mounting method	Flange mounting					
	Permissible moment of inertia of the load	10 times or smaller than rotor moment of inertia of the motor					
	(conversion to the motor shaft)	To times of smaller than rotor moment of mertia of the motor					
	Protective structure	IP44 (at gear reducer)					
	Ambient temperature	0 °C to 40 °C					
F	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					

Torque Characteristics

E Series

Motors with Gear Reducer

Table of Motor with Gear Reducer Specifications

	Motor					MU	JMA with g	ear reduc	er				
Model	Output	Reduction	Output	Rated	Max.	Rated	Peak max. torque	Moment of inertia (motor + reducer/converted) to motor shaft				Permissible radial load	Permissible thrust load
	•	ratio	•	speed	speed	torque		w/o brake	w/ brake	w/o brake	w/ brake	raulai luau	tiliust 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

Table of Motor Specifications/

The Combination of the Driver and the Motor

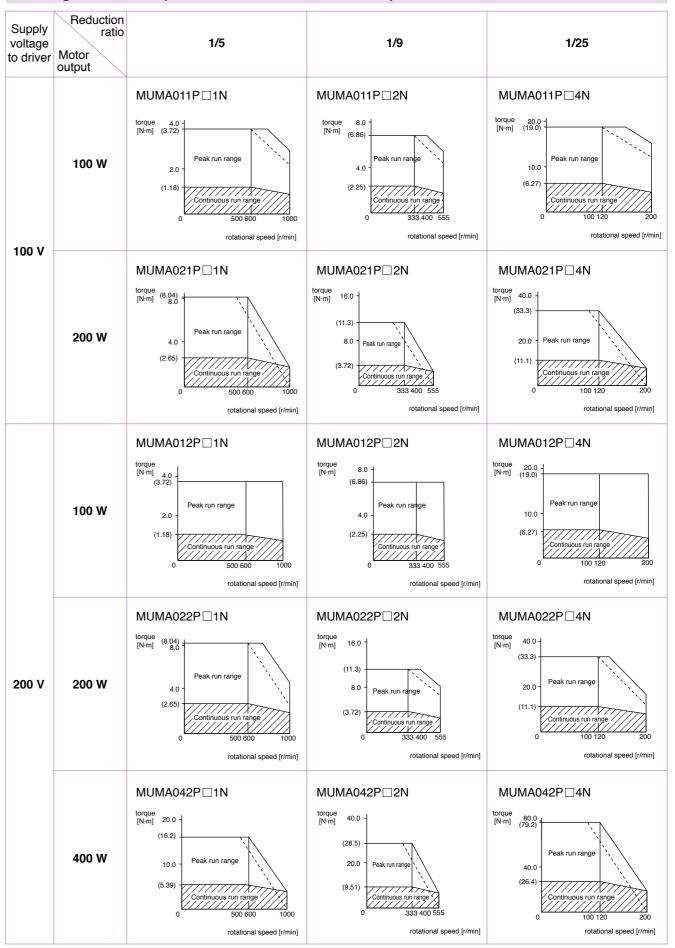
For dimensions, refer to P.235.

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		
	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	MILDE 125 TUP		

For dimensions, refer to P.235.

For High Precision (MUMA Series 100 W to 400 W)



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

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

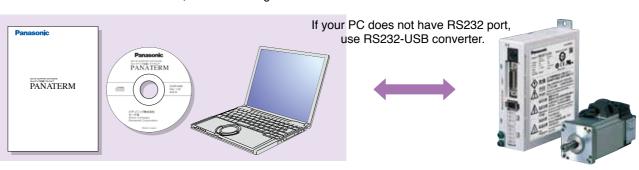
	Motor	Reduction														Key way	Jnit: mm]	
Model	output	ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	B×H×LD	T	
MUMA01□P□1N		1/5	192	92.5														
WOW/YOTE ETT		173	223.5	124	32	2 20	52	50	60	12	12 10	M5	18	67.5		4×4×16	2.5	
MUMA01□P□2N	100 W	1/9	192	92.5	52	32 20 32 30	00	12	10	(Depth: 12)	10	07.5		424210	2.5			
WOW/OILI LEV	100 44	173	223.5	124														
MUMA01□P□4N		1/25	234.5	92.5	50	50 30	78	70	90	19	17	M6	26	92	3	6×6×22	3.5	
WOWAUTET EN		1/23	266	124	50		30 76	00 70	10			''	(Depth: 20)	20	32	3	ONONEL	3.5
MUMA02□P□1N		1/5	200.5	96	32	32 20 52	20 52	50	60	12	10	M5 (Depth: 12)	18	72.5		4×4×16	2.5	
WOW/WOZEIT EITY		173	233.5	129	52			50 (00							4,4,10	2.5	
MUMA02 P 2N	200 W	1/9	235.5	96										89.5				
WOWAOZ I ZIV	200 W	173	268.5	129											00.0			
MUMA02 P 4N		1/25	246	96							9 17	M6		100				
WOWAUZ_I4IV		1/23	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	70	90	19	17	(Depth: 20)	20			0x0x22	3.5	
WOWA0421 LITT		173	296	156.5										89.5				
MUMA042P□2N	400 W	.00 W 1 / 9 263 123.5						89.5										
IVIOIVIAU42FZIN	400 W	1/9	296	156.5														
MUMA042P□4N		1/25	288.5	123.5	0.1 10		90	0 115	24	40	, M8	35	104	5	0700			
		1/23	321.5	156.5	61	40	98	90	115	24	18	(Depth: 20)	ან	104	5	8×7×30	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

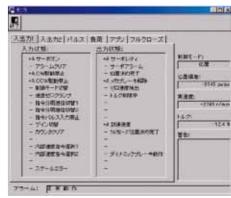
Frequency analysis

• Measures frequency characteristics of the machine, and displays Bode diagram.

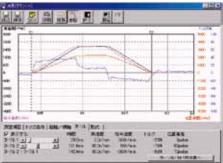
■ Can not use with A5 family.

HEROLDHICH - SPED. M.O.S. (HEROLD) HY. ADA-DED II MIGRA STAG 2 MINUS-TRACTOR D ROBBERSON 4 MINNODOWNERS 15 ##3+-#3+9-# 15 24-#2+9-#2453#\$\$

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

C

Α

Type classification

Α

Type classification

A Standard

Design Oder

B Special

0

F

M

C

Ε

Encoder Cable • For available optional items, please refer to P.238.

0

0

5

6 7 8 9 10 11 12

0

Cable type

Cable length

Motor Cable, Brake Cable • For available optional items, please refer to P.238.

8

5

Cable length

0

7

0

MFECA: Encoder cable

Ε

Α

Cable end

(Encoder side)

0050

0100

0200

9 10 11 12

Α

Ε

Cable type

Cross section of cable core

В

Cable end

at motor side

Cable end at driver side

0

2

3

003

005

010

0.75 mm²

1.25 mm²

2.0 mm²

3.5 mm²

3 m

5 m

10 m

Cable end (Driver side)

3 m

5 m

10 m

20 m

M Connector (MUMA)

A Tyco Electronics, AMP connector

E PVC cable with shield by Oki Electric Cable Co., 0.20 mm² × 3P

B Molex Inc.

T Clamp terminal

E Tyco Electronics, AMP connector

A ROBO-TOP_® 4-wire (DYDEN CORPORATION) G ROBO-TOP_® 2-wire (DYDEN CORPORATION) [Unit: mm]

 $\mathsf{ROBO}\text{-}\mathsf{TOP}_{\otimes}$ is a trade mark of DYDEN CORPORATION

[Unit: mm]

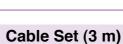
Part No. L (m) MFMCA0030AEB MFMCA0050AEB 5 MFMCA0100AEB 10 MFMCA0200AEB 20

 $\mathsf{ROBO}\text{-}\mathsf{TOP}_{\otimes}$ is a trade mark of DYDEN CORPORATION

[Unit: mm]



	L (m)	Part No.
	3	MFMCB0030GET
	5	MFMCB0050GET
	10	MFMCB0100GET
	20	MFMCB0200GET



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

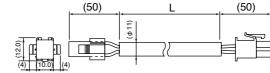
Part No. MFECA0 * * 0EAM

	-	L	-	
		2		
		96.		
			→ 🛌	
(4) (14) (4)		'		

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	or equivalent		MFECA0050EAM
Connector	172160-1	Tues Flacturation		MFECA0100EAM
Connector Pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² × 3P	Oki Electric Cable Co., Ltd.	<u></u>	

Motor Cable (ROBO-TOP® 105 °C 600 V. DP)

MFMCA0 * * 0AEB	Part No.
-----------------	----------



Title	Part No.	Manufacturer
Connector	172159-1	
Connector Pin	170362-1, 170366-1	Tyco Electronics
Connector	5557-06R-210	Molex Inc
Connector Pin	5556T	IVIOLEX IIIC
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden Co.,Ltd.

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

Part No. MFMCB0 * * 0GET

(40)	L	(50)

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

020 20 m AC servo motor cable ROBO-TOP® is a trade mark of DYDEN CORPORATION

Cable part No. Designation

Connector Kit

Connector Kit for Power Supply Connection

Part No. DV0P2870

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (10 pins)	5557-10R-210	1	Molex Inc.	For connector, CN X1
Connector pin	5556PBTL	6	iviolex IIIc.	(10 pins)

Pin configuration of connector CN X1

7						73
- 1	10	9	8	7	6	ı i
- 1	L1	(NC)	L2	(NC)	L3	
- 1	5	4	3	2	1	
- 1	Р	(NC)	В	(NC)	Е	



 Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material
i ait ivo.	Cable Illaterial
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.)

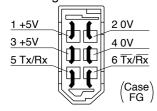
Parts composition

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	Tugo Floatronico	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tugo Floatronico	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		(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

Title	Part No.	Manufacturer	Cable material
For encoder cable junction	755330-1	Type Floatronics	
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.	UL1015

<Remarks>

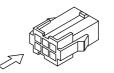
1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.

239

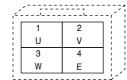
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

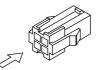
Pin configuration of encoder cable junction

<u>, </u>	,,,,,,,,,,			
	1	2	3	-
	NC	TX/RX	TX/RX	:
	4	5	6	i
	+5V	0V	FG	1,

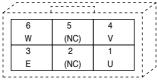


Pin configuration of motor power cable junction





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.

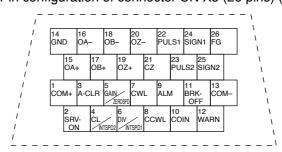
Connector Kit for External Peripheral Equipment

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.

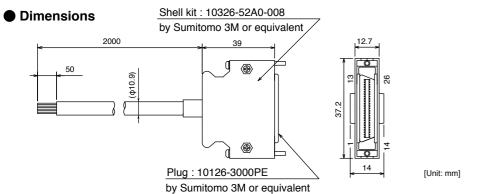
DIN Rail Mounting Unit/ External Regenerative Resistor

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)			

<Notes>

e. q. 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.

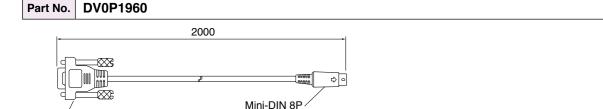
<Caution>

Cable pin No. 26 is not connected to the connector shell (housing) or shielded wire (net wire).

Pin No. 26 of the Driver is connected to the shell (housing) of the connector.

The shielded wire (net wire) of the cable is connected to the shell (housing) of the connector of the cable, and by connecting the connector of the optional cable to the Driver, pin No. 26 of the cable and the shielded wire (net wire) of the cable gets connected via the Driver.

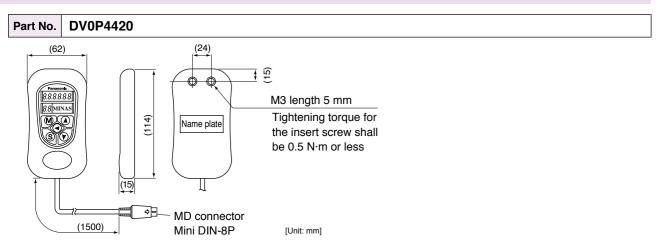
Communication Cable (For Connection with PC)



MD connector

Console

D-sub connector 9P

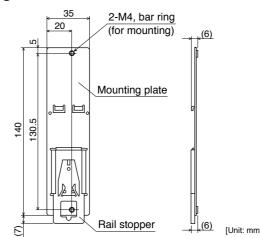


[Unit: mm]

DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

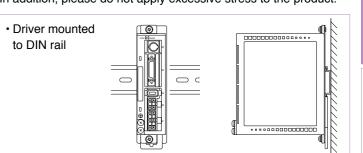


<Notes>

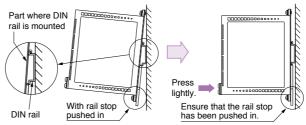
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<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.

With the rail stop released pull out the lower part of the driver to the near side

· Removing from DIN Rail

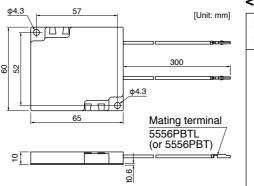
By lifting the driver, you can Pull out the lower part of the driver to

External Regenerative Resistor

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

Manufactured by Iwaki Musen Kenkyuusho Co., Ltd.

Dimensions



<Caution of when using external regeneration resistor>

Since it becomes high temperature, external regeneration resistor must be installed according to the contents shown below.

- · Attach to incombustibles, such as metal.
- · Install in the place which cannot touch directly by covering with incombustibles etc.
- · Do not install near the combustibles.

Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in driver failure. The thermal cutoff is for preventing ignition of the regeneration resistor in driver 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 Devices

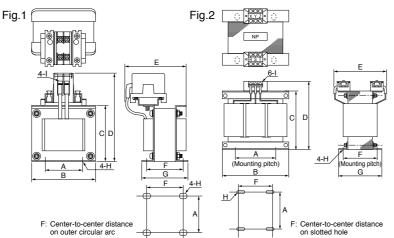
E Series

\5 Family

•

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.
	Single phase, 100 V	50 W to 100 W	DV0P227	1
MKDE	Single phase, 200 V	50 W to 100 W	DV0P220	2
	3-phase, 200 V	50 W to 200 W	DV0P220	
	Single phase, 100 V	200 W	DV0P228	1
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2
	3-phase, 200 V	400 W		



Surge Absorber for Motor Brake

[Unit: mm]

	Part No.	А	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
F: 4	DV0P227	55±0.7	80±1	66.5±1	110 Max	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.1	DV0P228	55±0.7	80±1	66.5±1	110 Max	95	46±2	60±2	4-5φ×10	M4	2	8
Fig.2	DV0P220	65±1	125±1	(93)	136 Max	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3

Harmonic restraint on general-purpose inverter and servo driver

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 devices

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 Devices

Manufacturer	Tel No. / Home Page	Peripheral Devices
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/	Ferrite core
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).

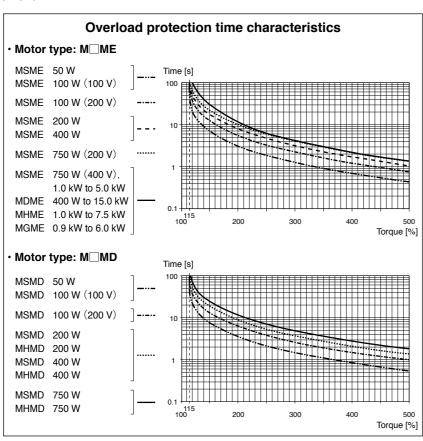
- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Make sure to install a circuit breaker or fuse which are UL recognized (Listed (1) marked) between the power supply and the noise filter.
 - For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Devices"

Use a copper cable with temperature rating of 75 °C or higher.

(3) Over-load protection level

Over-load protective function will be activated when the effective current exceeds 115 % or more than the rated current based on the time characteristics (see the graph). Confirm that the effective current of the driver does not exceed the rated current.

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
EC	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
Directives	Machinery Directives Functional safety *1	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standard	ls	UL508C (E164620)	UL1004-1, UL1004-6 (E327868)
CSA Standards		C22.2 No.14	C22.2 No.100
Radio Waves (South Kore		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.

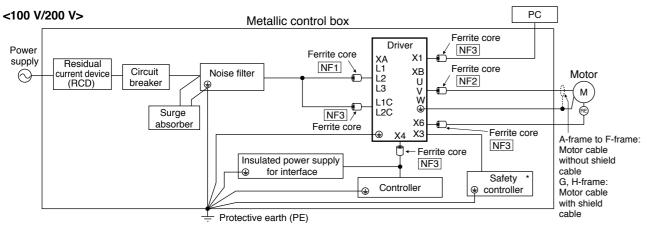
A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종: Servo Driver)

Installation Environment

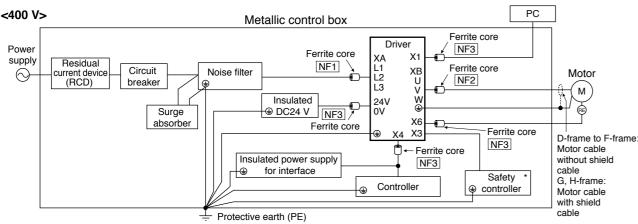
Use the servo driver in the environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)

Composition of Peripheral Devices



For NF1 to NF3, refer to the Table "Ferrite core" (P.254).

^{*} A5IE, A5E is not provided with X3 terminal.



For NF1 to NF3, refer to the Table "Ferrite core" (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 $^{+10~\%}_{-15~\%}$ to 480 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
400 V type [Control power supply] (D-frame to H-frame)	DC 24 V ±15 %	

- (1) This product is designed to be used in over-voltage category (installation category) **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.

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.

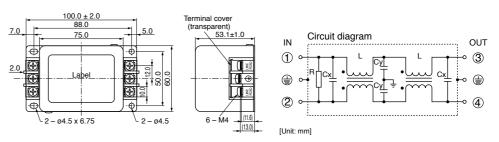
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

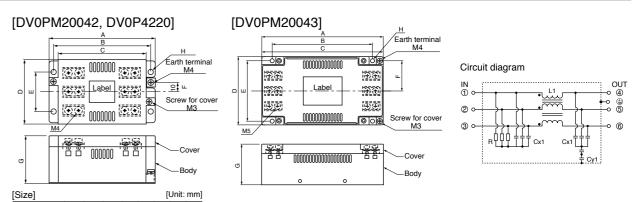
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	ption part No. Voltage specifications for driver		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	



A B C D E F G H

DV0PM20042 115 105 95 70 43 10 52 5.5

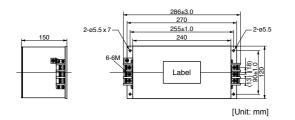
DV0P4220 145 135 125 70 50 10 52 5.5

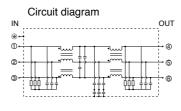
DV0PM20043 165 136 165 90 80 40 54 5.5

Eaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

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.

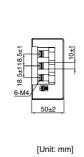


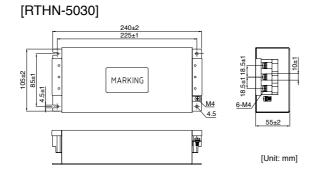


Recommended components

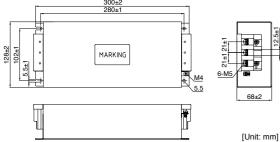
Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A-frame to C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E-frame and F-frame	

[RTHN-5010] 210±2 195±1 MARKING MARKING M4 4.5





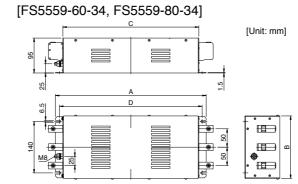
[RTHN-5050]

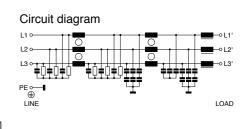


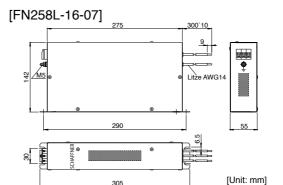
<Remarks>

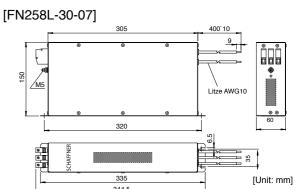
- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise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

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
FS5559-60-34	2 phase 200 V	60	G-frame	
FS5559-80-34	3-phase 200 V	80	H-frame	
FN258L-16-07		16	D-frame and E-frame	Cohoffnor FMC Inc
FN258L-30-07	2 phase 400 V	30	F-frame	Schaffner EMC, Inc.
FN258-42-07	3-phase 400 V	42	G-frame and H-frame	
FN258-42-33		42	G-II allie alla H-Ilallie	



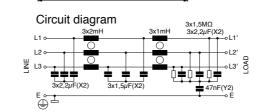


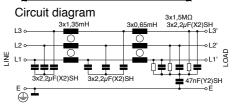


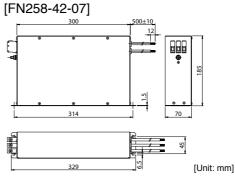


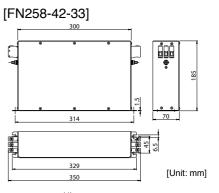
A B C D

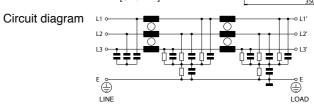
FS5559-60-34 410 170 370 388 FS5559-80-34 460 180 420 438











<Remarks>

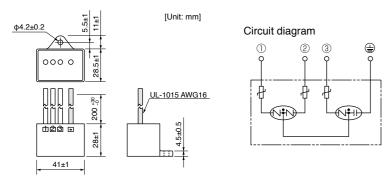
- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise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

Composition of Peripheral Devices

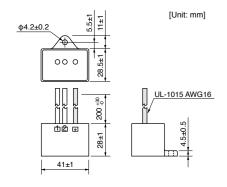
Surge Absorber

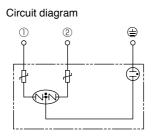
Provide a surge absorber for the primary side of noise filter.

	Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
	DV0P1450	3-phase 200 V	R·A·V-781BXZ-4	Okaya Electric Ind.
Ì	DV0PM20050	3-phase 400 V	R·A·V-801BXZ-4	Okaya Electric iliu.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.





Ferrite core

Install ferrite core 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 cable Encoder cable Interface cable USB cable Control power cable	Comm (to all fra		DV0P1460	ZCAT3035-1330	TDK Corp.	4

^{*1} For symbols, refer to the Block Diagram "Installation Environment" (P.249).

To connect the ferrite core to the connector XB connection cable, adjust the sheath length at the tip of the cable, as required.

<Caution>

Fix the ferrite core in order to prevent excessive stress to the cables.

<Fig.2: Dimensions>

Part No.	Current	100 kHz	Size [Unit: mm]								
rail No.	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)

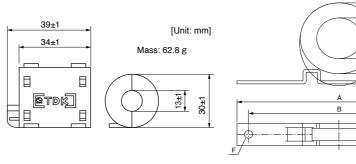
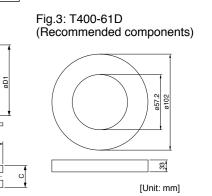


Fig.2: RJ8035, RJ8095 (Recommended components)



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 ((1)) of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals (). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral devices, refer to P.19 "Driver and List of Applicable Peripheral Devices".

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]
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to
Motor	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references
and 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	1
	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

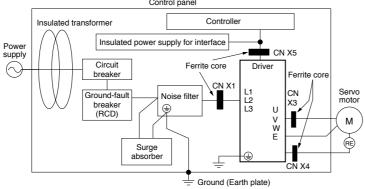
Composition of Peripheral Components

<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.

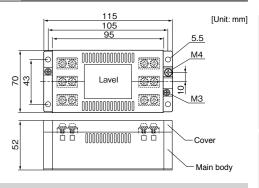
Noise Filter

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.	Manufacturer
DV0P1450	3-phase, 200 V	R·A·V-781BXZ-4	Okaya Electric		DV0P4190	Single phase, 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric
Circuit diagr		288-1-1	[Unit: mm] UL-1015 AWG16	l	Circuit diagr		200.5 0.00 0.00 0.00 0.00 0.00 0.00 0.00	[Unit: mm
		12 12 12 14 14 14 14 14 14 14 14 14 14 14 14 14	4.5±0.5				12 9 F# 82 41±1	4.5±0.5

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged.

Ferrite Core

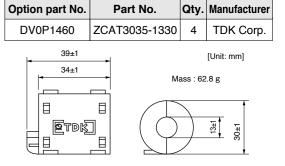
Install ferrite core to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- Please fix a ferrite core 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 ferrite core between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "Composition of Peripheral Components".)



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 driver, and details of reason for

determination are displayed and may be printed out.



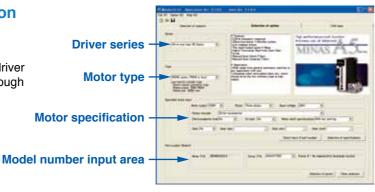
Option Selection Software for AC Servo Motor

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.



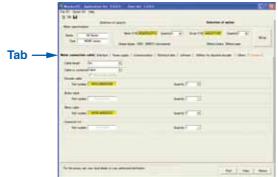
2. Entry of model number

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

Organization of the System of Units

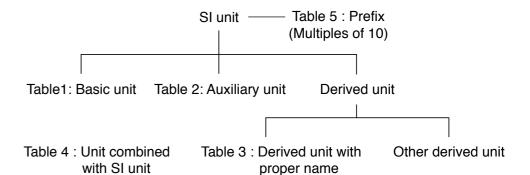


Table1: Basic unit

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	1	
	second	"	
Volume	liter	I, L	
Weight	ton	t	

Table 5: Prefix

Multiples powered	Pr	efix
to unit	Name	Symbol
10 ¹⁸	exa	Е
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	а

Informat

Symbol of Symbol of SI unit and Quantity Conversion value conventional unit compatible unit Length μ (micron) μm 1 μ = 1 μ m (micrometer) Acceleration Gal m/s² 1 Gal = 10^{-2} m/s² G m/s² $1 G = 9.80665 \text{ m/s}^2$ Hz 1 c/s = Hz Frequency c/s. c Revolving speed, Number of revolutions rpm s⁻¹ or min⁻¹, r/min 1 rpm = 1 min⁻¹ Weight kgf Same value Mass kg Weight flow rate kgf/s Same value Mass flow rate kg/s Specific weight kgf/m³ Same value Density kg/m³ m³/kgf m³/kg Same value Specific volume 1 kgf = 9.80665 N Load kgf Ν 1 kgf = 9.80665 N kgf Ν Force $1 \text{ dyn} = 10^{-5} \text{ N}$ dyn Ν Moment of force kgf·m N∙m 1 kgf·m = 9.806 N·m $1 \text{ kgf/cm}^2 = 9.80665 \times 10^4 \text{ Pa}$ Pressure kgf/cm² Pa, bar (1) or kgf/cm² = 0.980665 bar 1 at = $9.80665 \times 10^4 \text{ Pa}$ at (Engineering atmospheric pressure) Pa atm (Atmospheric pressure) Pa $1 \text{ atm} = 1.01325 \times 10^5 \text{ Pa}$ 1 mH₂O = 9.80665 x 10³ Pa mH₂O, mAq Pa Pa or mmHg (2) 1 mmHg = 133.322 Pa mmHg Torr Pa kgf/mm² Pa or N/m² $1 \text{ kgf/mm}^2 = 9.80665 \times 10^6 \text{ Pa}$ Stress =9.80665 x 10⁶ N/m² $1 \text{ kgf/cm}^2 = 9.80665 \times 10^4 \text{ Pa}$ kgf/cm² Pa or N/m² $= 9.80665 \times 10^4 \text{ N/m}^2$ 1 kgf/m² = 9.80665 Pa = 9.80665 N/m² Elastic modulus kgf/m² Pa or N/m² $1 \text{ kgf/cm}^2 = 9.80665 \times 10^4 \text{ N/m}^2$ 1 kgf·m = 9.80665 J Energy, Work kgf⋅m J (joule) 1 erg = 10^{-7} J erg Work efficiency, Power kgf·m/s W (watt) 1 kgf·m/s = 9.80665 W 1 PS = 0.7355 kW PS W PP Pa·s 1 P = 0.1 Pa·s Viscosity 10^{-2} St = 1 mm²/s St mm²/s Kinetic viscosity K (kelvin) 1 K = 1 K Thermodynamic temperature K K (3) 1 deg = 1 K Temperature interval deg 1 cal = 4.18605 J Amount of heat J. cal J/K (3) 1 cal/°C = 4.18605 J/K Heat capacity cal/°C 1 cal/ (kgf· $^{\circ}$ C) = 4.18605 J/ (kg·K) Specific heat, Specific heat capacity cal/ (kgf·°C) cal/ (kgf·K)(3) 1 cal/K = 4.18605 J/K Entropy cal/K J/K 1 cal/ (kgf·K) = 4.18605 J/ (kg·K)Specific entropy cal/ (kgf·K) J/(kg·K) 1 cal = 4.18605 J Internal energy (Enthalpy) cal 1 cal/kgf = 4.18605 J/kgSpecific internal energy (Specific enthalpy) cal/kgf J/kg W 1 kcal/h = 1.16279 W Heat flux cal/h Heat flux density cal/ (h·m²) W/m² 1 kcal/ (h·m²) = 1.16279 W/m² 1 kcal/ (h·m·°C) = 1.16279 W/ (m·K) W/ $(m \cdot K)^{(3)}$ Thermal conductivity cal/ (h·m·°C) Coefficient of thermal conductivity cal/ (h·m²·°C) W/ (m²·K) (3) 1 kcal/ ($h \cdot m^2 \cdot C$) = 1.16279 W/ ($m^2 \cdot K$) 1 Oe = $10^3 / (4\pi) \text{ A/m}$ Intensity of magnetic field Oe A/m Mx $1 \text{ Mx} = 10^{-8} \text{ Wb}$ Magnetic flux Wb (weber) $1 \text{ Gs} = 10^{-4} \text{ T}$ Magnetic flux density Gs,G T (tesla)

Major Compatible Unit

Note

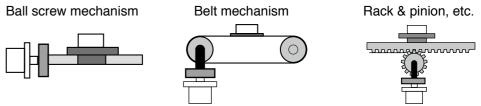
- (1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.
- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

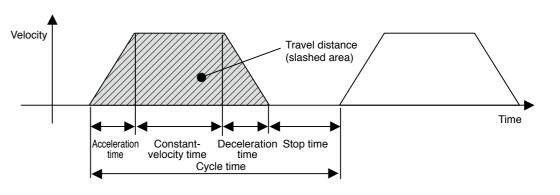
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<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

Ball screw mechanism

Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{P}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W} + \mathsf{F})$

W: Weight [kg]

η: Mechanical efficiency μ: Coefficient of friction

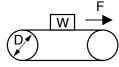
P:Lead [m]

F: External force [N] g: Acceleration of gravity 9.8[m/s²]

Belt mechanism

Traveling torque

$$Tf = \frac{D}{2\pi \eta} (\mu gW + F)$$



W: Weight [kg]

P : Pulley diameter [m]

F: External force [N]

η: Mechanical efficiency μ: Coefficient of friction

g: Acceleration of gravity 9.8[m/s2]

(3) Effective torque

Indicates a root-mean-square value of the total torque required for running and stopping the motor per unit time. The reference value is approx. 80% or less of the rated motor torque.

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

Ta: Acceleration torque [N·m]

ta: Acceleration time [s]

tc: Cycle time [s]

Tf: Traveling torque [N·m]

tb: Constant-velocity time [s]

(Run time + Stop time)

Td: Deceleration torque [N·m]

td: Deceleration time [s]

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition.

Inertia ratio is calculated by dividing load inertia by rotor inertia.

Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less.

If you need quicker response, a lower inertia ratio is required.

/ For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further \increased.

General inertia calculation method

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" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[kg \cdot m^2]$ $n_1 : \text{A rotational speed of a shaft } [r/min]$ $n_2 : \text{A rotational speed of b shaft } [r/min]$		
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	$J = J_B + \frac{W \cdot P^2}{4\pi^2} [kg \cdot m^2]$ $W : \text{Weight } [kg]$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$

If weight (W [kg]) is unknown, calculate it with the following formula:

Weight W[kg]=Density ρ [kg/m³] x Volume V[m³]

Density of each material

Iron $\rho = 7.9 \times 10^3 \, [kg/m^3]$

Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass $\rho = 8.5 \times 10^3 \, [kg/m^3]$

Deceleration torque $Td = \frac{(JL + JM) \times 2\pi N[r/s]}{Deceleration time [s]}$ - Traveling torque

 $=\frac{(1.73\times10^{-4}+0.14\times10^{-4})\times2\pi\times16.7}{0.1}-0.035$ $= 0.196 - 0.035 = 0.161 [N \cdot m]$

10. Verification of maximum torque

To Drive Ball Screw Mechanism

Example of Motor Selection

Acceleration torque = $Ta = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

11. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

To Drive Ball Screw Mechanism

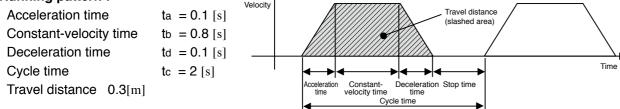
1. Example of motor selection for driving ball screw mechanism

Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$

Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :



BW =
$$\rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$$

= 1.24 [kg]

4. Load inertia

$$JL = JC + JB = JC + \frac{1}{8}BW \times BD^{2} + \frac{WA \cdot BP^{2}}{4\pi^{2}}$$

$$= 0.00001 + (1.24 \times 0.02^{2}) / 8 + 10 \times 0.02^{2} / 4\pi^{2}$$

$$= 1.73 \times 10^{-4} [kg \cdot m^{2}]$$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-4} Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: JM = 0.051×10^{-4} Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

 $\frac{1}{2}$ ×Acceleration time×Vmax+Constant-velocity time×Vmax+ $\frac{1}{2}$ ×Deceleration time×Vmax = Travel distance

$$\frac{1}{2}$$
 × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 0.3
0.9 × Vmax = 0.3

$$Vmax = 0.3 / 0.9 = 0.334 [m/s]$$

8. Calculation of motor velocity (N [r/min]) Ball screw lead per resolution: Bp = 0.02 [m]

$$N = 0.334 / 0.02 = 16.7 [r/s]$$

= 16.7 × 60 = 1002 [r/min] < 3000 [r/min] (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque
$$T_f = \frac{BP}{2\pi B \, \eta} \ (\mu gWA + F) = \frac{0.02}{2\pi \ x \ 0.9} \ (0.1 \times 9.8 \times 10 + 0)$$

$$= 0.035 \ [\text{N·m}]$$
Acceleration torque
$$T_a = \frac{(\text{JL} + \text{JM}) \times 2\pi \text{N} [\text{r/s}]}{\text{Acceleration time [s]}} + \text{Traveling torque}$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 \ [\text{N·m}]$$

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.)

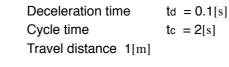
Mechanical efficiency $B\eta = 0.8$

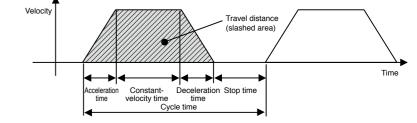
Coupling inertia Jc = 0 (Direct connection to motor shaft)

Belt mechanism inertia Pulley inertia

2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time Cycle time tc = 2[s]





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")

Request for motor selection I: Ball screw drive

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.

1. Driven mechanism and running data

12) Total length of the ball

13) Lead of the ball screw

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	
2)	Cycle time	to:	S	Running pattern
	(Fill in items 3) and 4) if required.)			All ocitions of the second of the second ocitions ocitions of the second ocitions of the second ocitions oci
3)	Acceleration time	ta:	s	♥ / ℓ₁
4)	Deceleration time	td:	s	ta to tim
5)	Stopping time	ts:	s	* **
6)	Max. velocity	V: m	m/s	F ~ .
7)	External force	F:	N	Wa
8)	Positioning accuracy of the work load	±	mm	
9)	Total weight of the work load and the table	W _A :	kg	
10)	Power supply voltage		V	
11)	Diameter of the ball screw		mm	

mm

14) Traveling direction (horizontal, vertical etc.)

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

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

Request for motor selection II: Timing pulley + Ball screw drive

1. Driven mechanism and running data

1\	Travel distance of the work
1)	load per one cycle

ravei distance of the work	
oad per one cycle	

ℓ ₁ :	mm	15)	Di

iameter of

(or item 17) and 18))

	Motor side		Ball screw side	
15) Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
16) Weight of the pulley	W1:	kg	W2:	kg

(Fill in items 3) and 4) if required.)

ta:	s	

17) Width of the pulley

L1: mm		
	L1:	mm

4) Deceleration time

3) Acceleration time

2) Cycle time

ts:	S

19) Weight of the belt

18) Material of the pulley

W _M :	kg

6) Max. velocity

7) External force

5) Stopping time

V:	mm/
E.	

8) Positioning accuracy of the

work load		
Total weight of the work load and the table	WA:	k

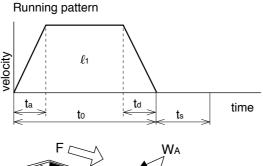
10) Power supply voltage

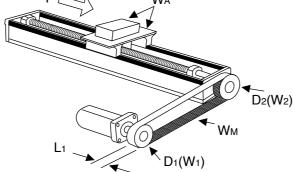
11) Diameter of the ball screw	mm

12) Total length of the ball screw

13)	Lead of the ball screw	mm

Traveling direction (horizontal, vertical etc.)





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

mm

mm

1	
	Company name :
	Department/Section :
	Name :
	Address:
	Tel:
	Fax:
	E-mail address:

Request Sheet for Motor Selection

Request for motor selection **II**: Belt drive

N

٧

1. Driven mechanism and running data

Travel distance of the work load per one cycle	ℓ ₁ :	mm
) Cycle time	to:	S

(Fill in items 3) and 4) if required.)

Acceleration time	ta:	S
Deceleration time	td:	S

5) Stopping time

6) Max. velocity	V:	mm/s
	l l	

F: 7) External force

Positioning accuracy of the work load	±	mm

9) Total weight of the work load WA: kg

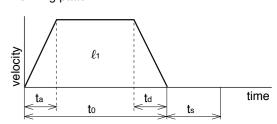
10) Power supply voltage

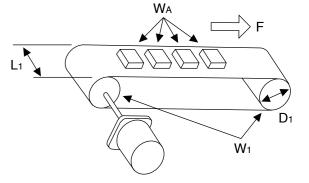
11) Weight of the belt	W _M :	kg

12) Diameter of the driving pulley D₁: mm

13)	Total weight of the pulley	W ₁ :	kg
. 0,	rotal troight of the pulley	•••	.,0

Running pattern





(or item 14) and 15))

14)	Width	of the	pulley
-----	-------	--------	--------

15)	Material of the pulley	

16)	Traveling direction
10)	(horizontal vertical

4)	Width of the pulley	L ₁ :	mm
5)	Material of the pulley		

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

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

Request for motor selection V: Turntable drive

1. Driven mechanism and running data

Travel distance of the work load per one cycle	d ₁ :	de

Dimensions of the

Prism		Cylinder	
a:	mm	a:	mm
b:	mm	b:	mm
c:	mm	c:	mm

(Fill in items 3) and 4) if required.)

15) Number of work loads

kg

mm

mm

kg

 mm

٧

pcs

3) Acceleration time

2) Cycle time

4) Deceleration time td: 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 R₁:

10) Diameter of the table D₁:

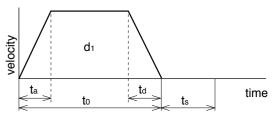
W₁: 11) Mass of the table

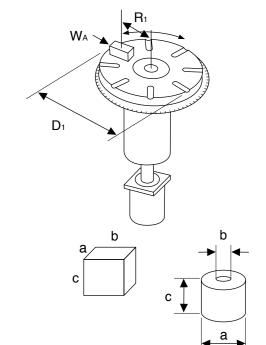
T₁:

Diameter of the table support

13) Power supply voltage

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 IV: Timing pulley + Belt drive

1. Driven mechanism and running data

1) Travel distance of the work load per one cycle	ℓ ₁ :	mm
2) Cycle time	to:	S

s	17)

Ν

mm

16)	Diameter of the pulley	
		_

18) Width of the pulley

19) Material of the pulley

Traveling direction

(horizontal, vertical etc.)

20) Weight of the belt

Running pattern

Diameter of the pulley D ₃ :		
) Weight of the pulley W3:	kg W4:	kg

Motor side

WL:

Belt side

mm

kg

(or item 18) and 19))

3) Acceleration time s 4) Deceleration time td: S

ts:

V: mm/s 6) Max. velocity

F: 7) External force Positioning accuracy of the 8) Work load

(Fill in items 3) and 4) if required.)

5) Stopping time

9) Total weight of the work load WA: kg ٧

11) Weight of motor side belt W_M: kg

	Moto	or side	Bel	t side
Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
Weight of the pulley	W ₁ :	kg	W2:	kg

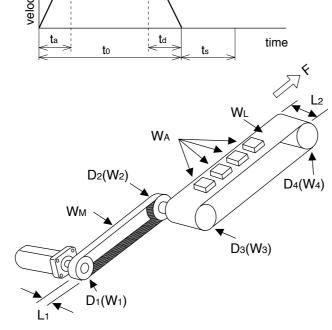
mm

(or item 14) and 15))

10) Power supply voltage

Width of the 14) L1:

Material of the 15) pulley



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

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

Request for motor selection VI: Timing pulley + Turntable drive

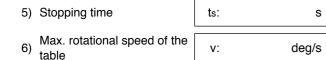
1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	d ₁ :	deg
2)	Cycle time	to:	S

one cycle	Q1:	deg
ne	to:	s

td:

3)	Acceleration time	ta:	s
			,



(Fill in items 3) and 4) if required.)

4) Deceleration time

table		
(or)	V:	r/s
7) Positioning accuracy of the work load	±	deg

8) Weight of one work load	W _A :	kg
Driving radius of the center	R ₁ ·	mm

of gravity of the work		
10) Diameter of the table	D ₁ :	mm

W₁:

T₁:

11)	Mass of the	e table		

12)	Diameter of the table
12)	support

13)	Power supply voltage
- /	

14)

15)

Power supply voltage					V
		(Prisr	n)		(Cylinder)
Dimension of the work load	a:		mm	a:	mm
	b:		mm	b:	mm
	c:		mm	c:	mm
Number of work loads					pcs

Motor side 16) Diameter of the pulle

	Moto	or side	Turnt	able side
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))

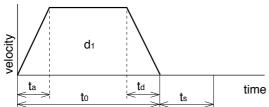
18)	Width of the pulley	
.0,	main or the pulley	

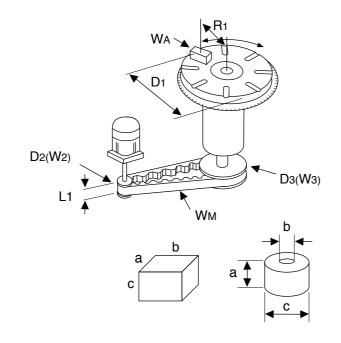
19)	Material of the pulley
19)	Material of the pulley

L1:	mm
-----	----

Weight of the belt W _M :







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

mm

kg

mm

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

Request Sheet for Motor Selection

Request for motor selection VII: Roller feed drive

1. Driven mechanism and running data

12) Mass of the roller

1)	Travel distance of the work load per one cycle	ℓ ₁ : mm	Running pattern		
2)	Cycle time	to: s			
	(Fill in items 3) and 4) if required.)		νelocity ℓ_1		
3)	Acceleration time	ta: s	t_a t_b	time	- е
4)	Deceleration time	td: S	< " " " " >	ts >	
5)	Stopping time	ts: s			
6)	Max. velocity	v: mm/s		F	
7)	External pulling force	F: N		L1	
8)	Positioning accuracy of the work load	± mm		D ₁ (W ₁)	
9)	Number of rollers	pcs			
10)	Power supply voltage	V	(or item 13) and 14))		
11)	Diameter of the roller	D ₁ : mm	13) Width of the roller	L ₁ :	mm

14) Material of the roller

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

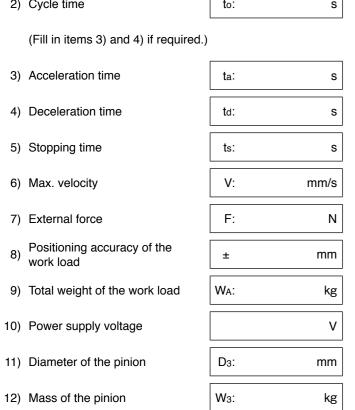
W₁:

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

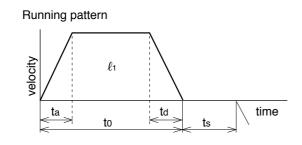
Request for motor selection III: Driving with Rack & Pinion

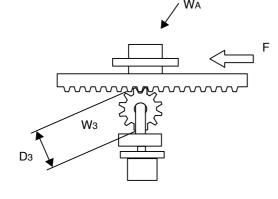
1. Driven mechanism and running data

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.)		

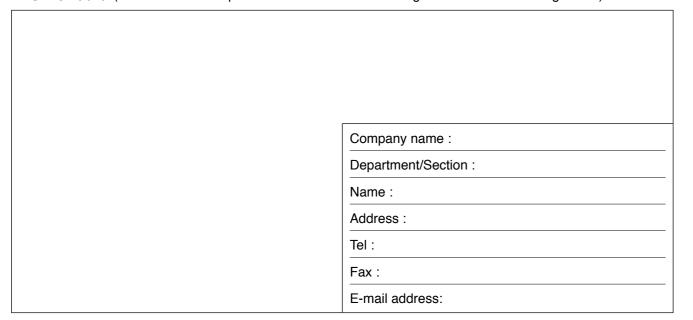


Traveling direction (horizontal, vertical, etc.)

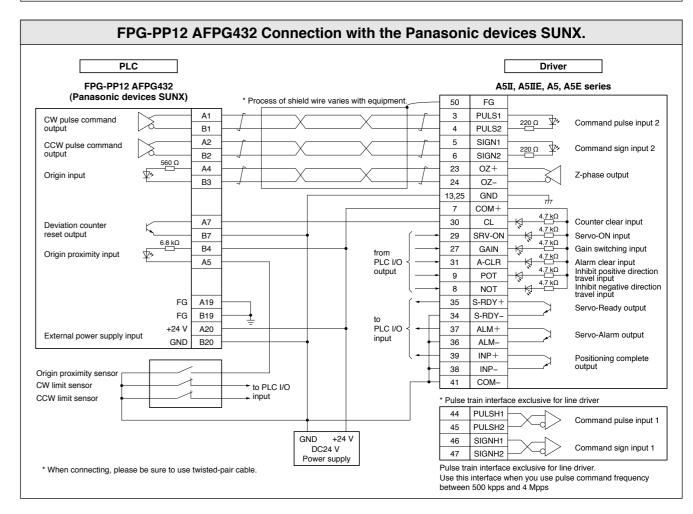


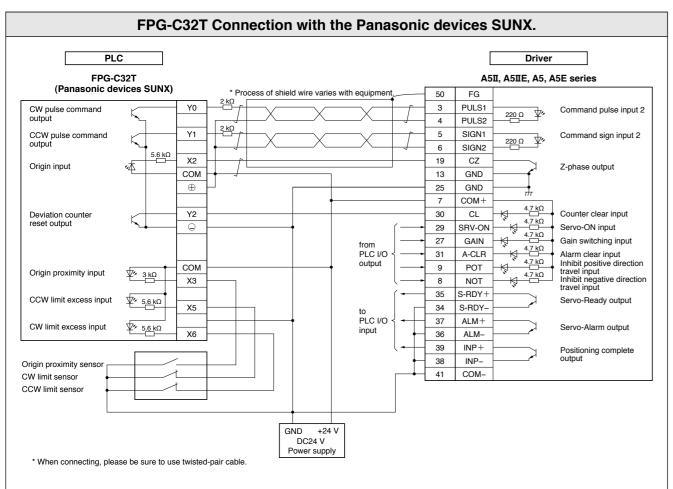


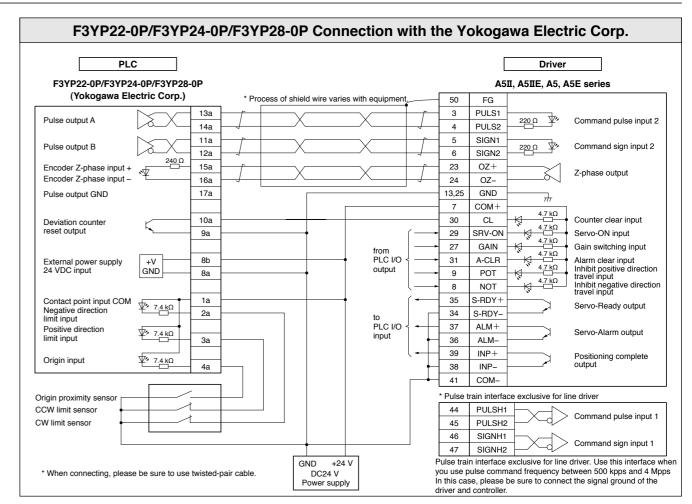
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

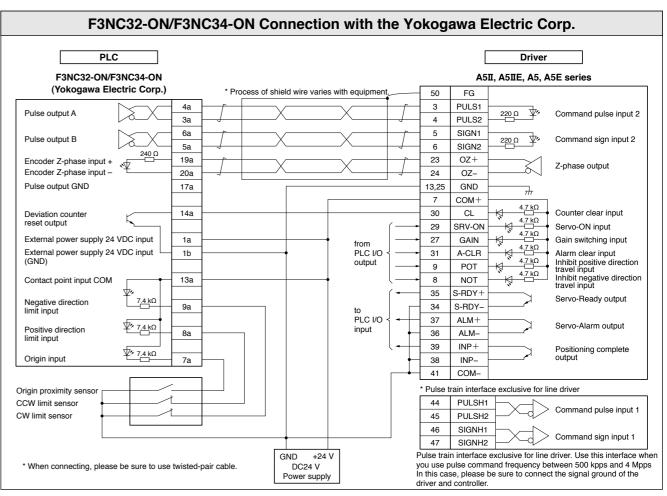


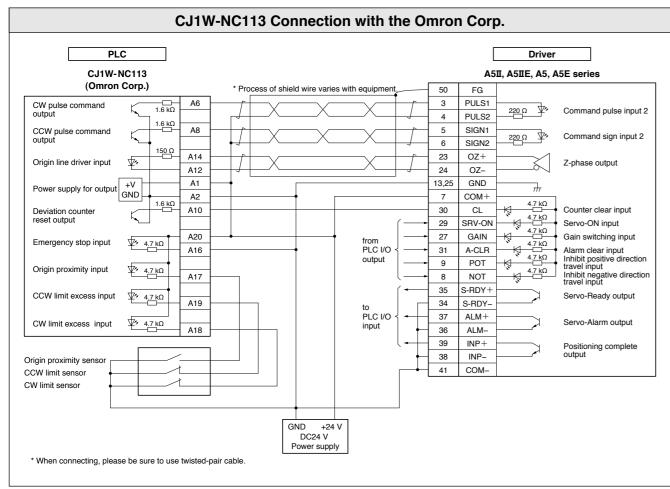
FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) Connection with the Panasonic devices SUNX. PLC Driver FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) A5II, A5IIE, A5, A5E series (Panasonic devices SUNX) Process of shield wire varies with equipr PULS1 A1 A10 3 CW pulse command 220 Ω 💯 Command pulse input 2 B1 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 Origin input (5 VDC) Z-phase output A4 A13 24 OZ-B3 B12 13,25 GND B5 B14 COM+ Servo-ON output A7 A16 30 CL Counter clear input Deviation counter reset output B7 B16 29 SRV-ON Servo-ON input 3.6 kΩ GAIN B4 B13 27 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

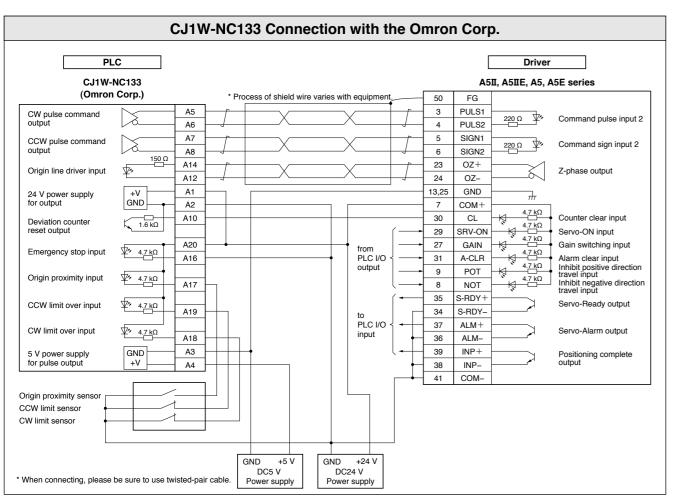


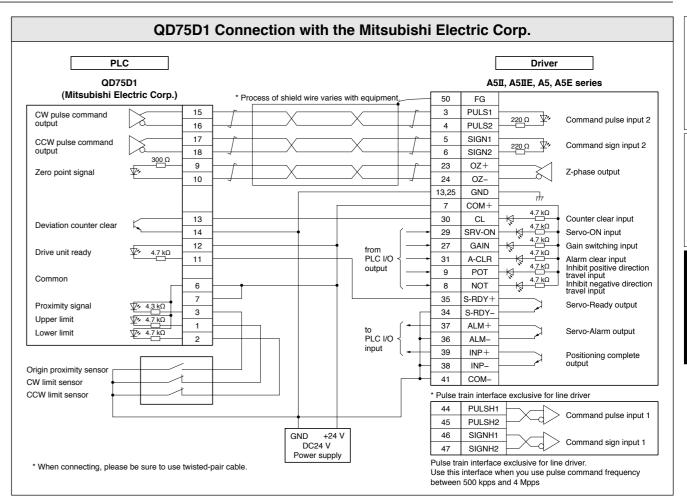


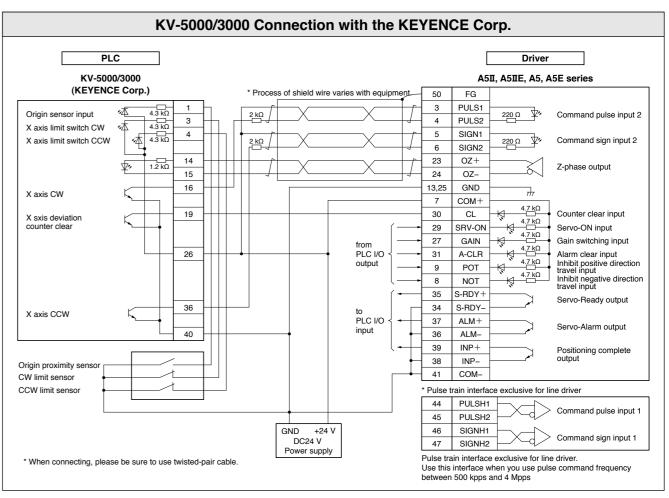








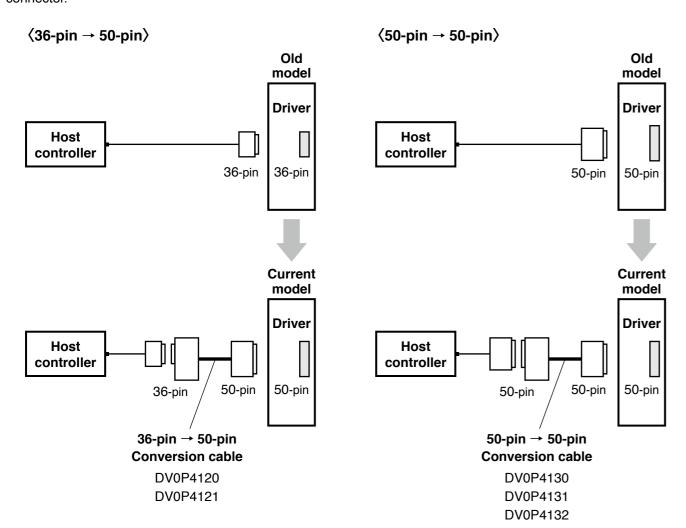




For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion connector.

Replacing Old Model Servo Driver

with MINAS A5II, A5 series



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	P.260	
	Position control	DV0P4130	P.281	
V series (50-pin)	Velocity control	DV0P4131	F.201	
	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 C Speed arrival output A			
26	37	Servo-Alarm output	ALM+	37	<u> </u>			
27	35	Servo-Ready output	S-RDY+	35	5 Servo-Ready output S-			
	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 (–)			
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.

Replacing Old Model Servo Driver with MINAS A5II, A5 series

	DV0P4130			DV0P4131			
Pin No. on Old Model	Pin No. on Current	Signal Name	Symbol	Pin No. on Current	Signal Name	Symbol	
	Model	OW and a distriction of	OM	Model	OW to - dishtrict t	OM	
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	ZEROSPE	
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN	
28	NC NC	Cain switching input	C/ III V	33	Selection 1 input of internal command speed	INTSPD1	
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
30	30	·	CL CL	-	Servo-Olv input	JAV-ON	
		Deviation counter clear input		NC 24	Alarm alaar innut	A CLD	
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	33	Command pulse inhibition input	INH	NC			
34	NC			NC			
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
36	NC			NC			
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
38	NC			NC			
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED	
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC	
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (-)	BRK-OFF-	
	34	Positioning complete output (–)	COIN-	34	Speed arrival output (-)	AT-SPEED	
41	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-	
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (–)	S-RDY-	
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (–)	COM-	
42	42	Torque monitor output	IM	42	Torque monitor output	IM	
43	43	Speed monitor output	SP	43	Speed monitor output	SP	
44	25	Signal ground	GND	25	Signal ground	GND	
45	25	Signal ground	GND	25	Signal ground	GND	
46	25	Signal ground	GND	25	Signal ground	GND	
47	NC	3.10. 3.00.10	3110	NC NC		J15	
	48	R-phase output	OB+		R-phase output	OB+	
48	1	B-phase output		48	B-phase output	_	
49	49	B-phase output	OB-	49	B-phase output	OB-	
50	50	Frame ground	FG	50 Frame ground FG		FG	

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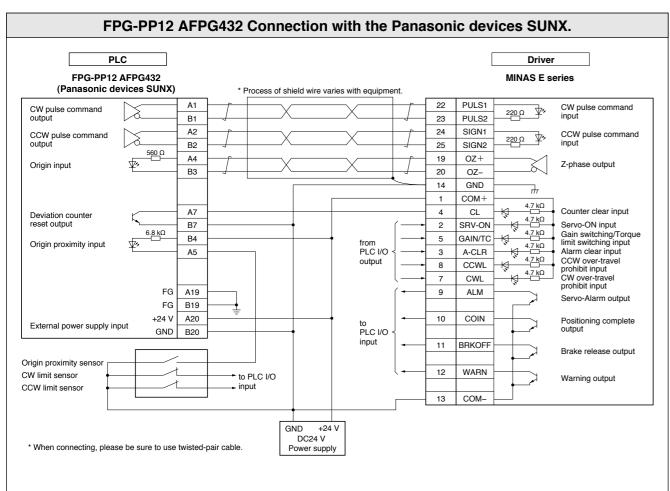
A5 Family

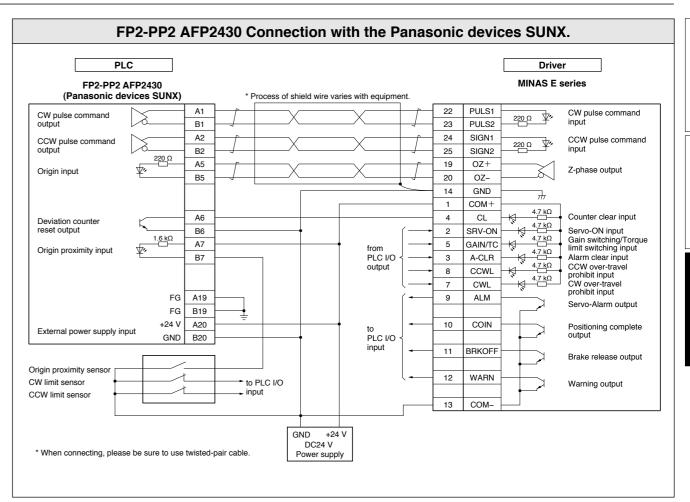
Connection Between Driver and Controller

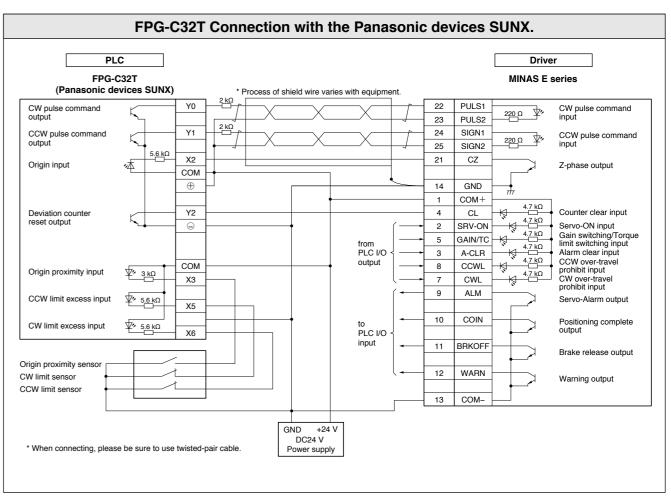
		DV0P4132				
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol			
1	8	CW over-travel inhibit input	CWL			
2	9	CCW over-travel inhibit input	CCWL			
3	NC					
4	NC					
5	NC					
6	NC					
7	7	Power supply for control signal (+)	COM+			
8	NC					
9	NC					
10	NC					
11	11	External brake 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	A decree to t				
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	0.000	051/01/			
29	29	Servo-ON input	SRV-ON			
30	NC		1.0.5			
31	31	Alarm clear input	A-CLR			
32	32	Control mode switching input	C-MODE			
33	NC					
34	NC					
35	35	Servo-Ready output	S-RDY+			
36	NC					
37	37	Servo-Alarm output	ALM+			
38	NC					
39	39	Speed arrival output	AT-SPEED+			
40	40	Torque in-limit signal output	TLC			
	10	External brake release signal (–)	BRK-OFF-			
	34	Speed arrival output (–)	AT-SPEED-			
41	36	Servo-Alarm output (–)	ALM-			
	38	Servo-Ready output (–)	S-RDY-			
47	41	Power supply for control signal (–)	COM-			
42	42	Torque monitor output	IM			
43	43	Speed monitor output	SP			
44	25	Signal ground	GND			
45	25	Signal ground	GND			
46	25	Signal ground	GND			
47	NC					
48	48	B-phase output	OB+			
49	49	B-phase output	OB-			

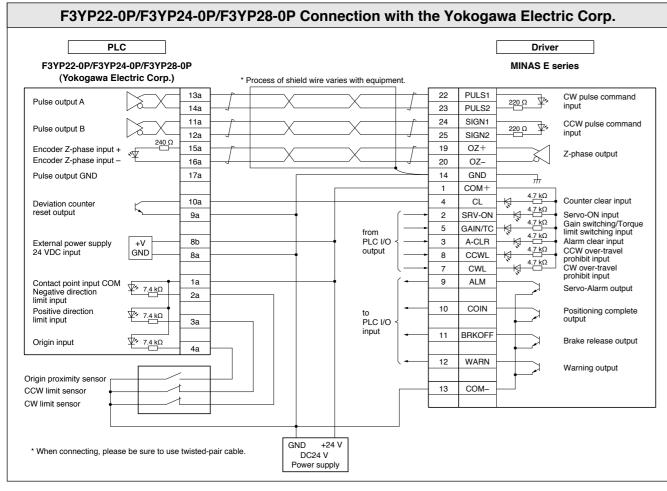
^{* &}quot;NC" is no connect.

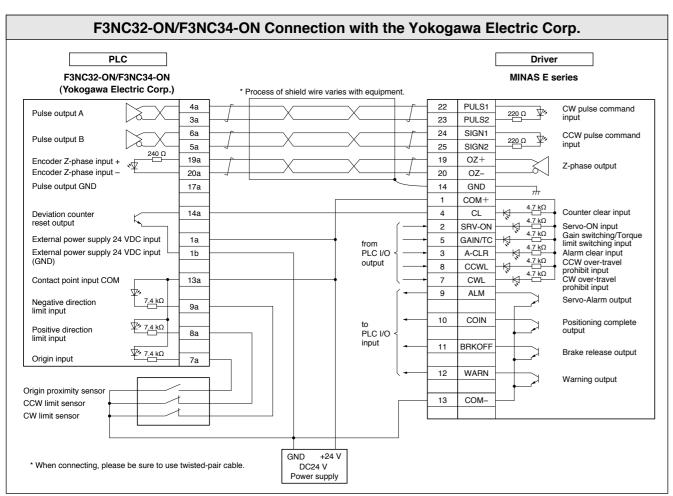
^{* &}quot;NC" is no connect.

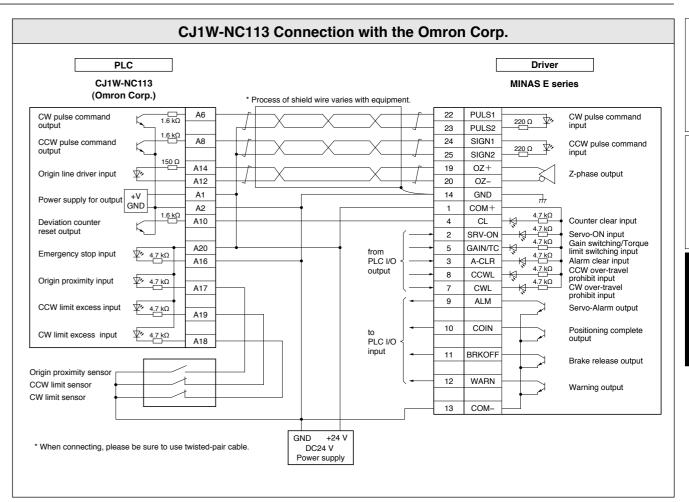


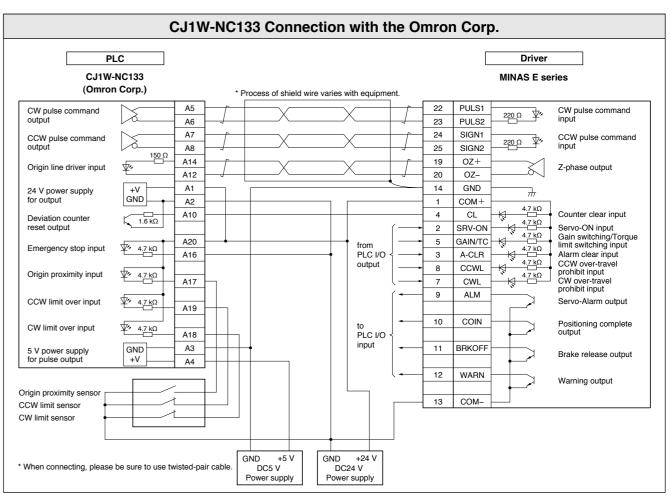












Proximity signal

Origin proximity senso

* When connecting, please be sure to use twisted-pair cable.

Upper limit

Lower limit

CW limit sensor

CCW limit sensor

Connection Between Driver and Controller QD75D1 Connection with the Mitsubishi Electric Corp. PLC Driver QD75D1 MINAS E series (Mitsubishi Electric Corp.) * Process of shield wire varies with equipment CW pulse command input CW pulse command output 22 PULS1 220 Ω 💯 16 23 PULS2 24 SIGN1 CCW pulse command output CCW pulse command 220 Ω 💯 25 SIGN2 18 300 Ω 9 19 OZ+ Z-phase output Zero point signal 20 10 OZ-14 GND 1 COM+ CL K Counter clear input 13 4 Deviation counter clear 4.7 kΩ 4.7 kΩ 4.7 kΩ Servo-ON input SRV-ON Gain switching/Torque limit switching input Alarm clear input 5 GAIN/TC 12 A-CLR 4.7 kΩ CCWL 4.7 kΩ CCWL 4.7 kΩ from PLC I/O Drive unit ready CCW over-travel prohibit input CW over-travel prohibit input Common 6 CWL

to PLC I/O

input

GND +24 V

Power supply

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ALM

12 WARN

13 COM-

Servo-Alarm output

Positioning complete output

Brake release output

Warning output

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			Web site	https://www.ghv.de/	
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Romania	C.I.T. Automatizari SRL	Bucuresti	RO-077055, ROMANIA	+40-21-255-0544
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			Web site http://www.citautomatizari.ro	
			Neumann J. u. 1., 1117 Budapest, Hungary	+36(0)19998926
	Panasonic Electric Works Hungary			+36(0)19998927
Hungary	[Sales office]	Budapest	e-mail info.peweuh@eu.panasonic.com	
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			Web site servosystemes-et-servomoteurs.htm	
			15A Novolitovskaya str., office 44 194100 St.	+7-8123278654
Russia	EFO Ltd.	St.Petersburg	Petersburg, Russia	+7-8123201819
nussia	[Distributors]	St. Fetersburg	e-mail eve@efo.ru	
			Web site http://www.efo.ru	
			DES Sanayi Sitesi 102 Sk. B-06 Blok No: 6-8	+90-216-466-3683
	Savior Kontrol Otomasyon		34776 Yukarı Dudullu Ümraniye İstanbul Turkey	+90-216-466-3685
	[Distributors]	Istanbul	e-mail info@savior.com.tr	1 110 210 110 110
Turkey			Web site http://www.savior.com.tr	
Turkey			10042 SOK.NO:10 A.O.S.B CIGLI-IZMIR,	+90 232 433 8515
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			Web site http://www.bostek.com.tr	
	Panasonic Hong Kong Co., Ltd. Panasonic Industrial Device Sales (HK)		Suite 301, 3/F., Chinachem Golden Plaza,	+852-2367-0181
		Hong kong	77 Mody Road, T.S.T. East, Kowloon, Hong	
	Division [Sales office]		Kong.	+852-2865-3697
	Panasonic Industry (China) Co.,Ltd.	Shanghai	Floor 7, China Insurance Building, 166	+86-21-3855-2000
China	(PICN)		East Road LuJiaZui PuDong New District,	+00-21-3033-2000
	[Sales office]		Shanghai, 200120, China	_
	Panasonic Industry (China) Co.,Ltd.		10F, Tower D, China Resources Land	+86-755-22074488
	(PICN)	Shenzhen	Building, No.19 Kefa Road, Nanshan District,	+86-755-22074498
	[Sales office] Panasonic India Industrial Division		Shenzhen, 518057, China	
	(Head Office)	Delhi	12th Floor, Ambience Tower, Ambience	+91-124-4751300
	[Sales office]		Island, NH-8, Gurgaon, Haryana 122002	+91-124-4751333
	Panasonic India Industrial Division		J.P Chambers 2nd Floor, #276/22-1, 46th	+91-80-6576-0014
	(Bangalore Branch)	Bengaluru	Cross, 5th Block, Jayanagar, Bengaluru, Karnataka-560041	
	[Sales office]		Sardar Patel Ring Road, Near Karai Gam	+91-79-3984-5300
	Lubi Flactuaria		Patia, Nana Chiloda, Gandhinagar, Gujarat	
	Lubi Electronics [Distributors]	Ahmedabad	382330	+91-79-3984-5599
	[เกเลนเทนเบเล]		e-mail info@lubielectronics.com	
India			Web site http://www.lubielectronics.com	
			No.59, 2nd Floor, Moiz Manzil, Bibijan Street,	+91-22-4078-6110
	Luna Bearings	Mumbai	Mumbai, Maharashtra 400003	+91-22-2342-7773
	[Distributors]		e-mail sales@lunabearings.com	
			Web site http://www.lunabearings.com	
			A-6, Shree Ganesh Complex, Behind Gupta +91-25-2266-	
	Vashi Electricals	Mumbai	Compound, Dapode Road, Mankoli Naka, Bhiwandi, Mumbai, Maharashtra 421305	+91-25-2266-1620
	[Distributors]	IVIUITIDAI	e-mail buyonline@vashielectricals.com	
			Web site http://www.vashielectricals.com	

Region		Company Name [Category]	City	Address	TEL
				Address	FAX
Korea		Panasonic Industrial Devices Sales Korea Co., Ltd. (PIDSKR)	Seoul	6F DONG-IL Tower 38, Teheran-ro 114-gil,	+82-2-795-9600
		[Sales office]	Occur	Gangnam-gu, Seoul, 135-851, Korea	+82-2-2052-1053
Taiwan		Panasonic Industrial Devices Sales Taiwan Co.,Ltd. [Sales office]	Taipei	12F, No.9, SongGao Rd., Taipei 110, Taiwan, R.O.C.	+886-2-2757-1900
					+886-2-2758-7502
		Panasonic Industrial Devices Sales Asia	Singapore	No.3 Bedok South Road Singapore 469269	+65-6390-3718
	Singapore	[Sales office] Intermech Machinery Pte.Ltd. [Distributors]	Singapore		+65-9435-6844
				2 Woodlands Sector 1 #03-25, Woodlands Spectrum 1 Singapore 738068	+65-6751-5088
				e-mail sales@intermech.com.sg	+65-6759-2122
				Web site http://www.intermech.com.sg	
				18, Persiaran Mahsuri 1/2, Sunway Tunas,	+60-4-645-1635
	Malaysia	Panamech (Penang) Sdn. Bhd. [Distributors]	Penang	Penang, 11900	+60-4-645-1639
				e-mail sales.pg@panamech.com.my	100 4 040 1000
Southeast Asia				Web site http://panamech.com.my	
	Thailand	Premier Automation Center Co.,Ltd. [Distributors]	Bangkok	87, Soi Lakrabang 30, Ladkrabang,	+66-2181-2299
				Ladkrabang, Bangkok 10520	+66-2181-2288
				e-mail sales@premier-ac.co.th	100 2101 220
				Web site http://www.premier-ac.co.th	
		JW Tech Co., Ltd. [Distributors]	Bangkok	697 Soi Senavilla Village, Nawamin RD Klongchan, Bangkapi, Bangkok 10240	+66-2733-7702
					+66-2733-7703
				e-mail info@jwtech.co.th	
				Web site http://www.jwtech.co.th	
		Sang Chai Meter Co., Ltd. [Distributors]	Bangkok	888 Phaholyothin Road, Samsennai,	+66-2299-3333
				nayathai, Bangkok 10120	+66-2299-3000
				e-mail sales@sangchaimeter.com	
				Web site https://www.sangchaimeter.com	
	Indonesia	PT. Handal Yesindo Sejahtera [Distributors]	Surabaya	Jl. Raya Kutisari 8A, Surabaya 60291	+62-31-843-8844
					+62-31-841-4333
				e-mail info@handalyesindo.com	
				Web site http://www.handalyesindo.com	
		PT.Riasarana Electrindo [Distributors]	Jakarta	Jl. Prof. Dr. Latumenten Grogol Permai blok	+62-21-564-9178
				D No. 8-15 Jakarta 11460	+62-21-566-7405
				Web site http://www.risacorps.com	.04.0.00554457
	Vietnam -	Pavina Corporation [Distributors] KSMC Co., Ltd. [Distributors]	Ho Chi Minh	005 C1 Ly Thuong Kiet Blog, Vinh Vien Street, Ward 07, District 11, Ho Chi Minh	+84-8-39554457 +84-8-39550033
				e-mail pavina@sieuthitudong.com	+84-8-39550033
				Web site http://sieuthitudong.com	
				A10-No 06B, HH6, Viet Hung Urban Area,	+84-4-38771700
				Long Bien, Ha Noi	+84-4-38770229
				e-mail support@ksmc.com.vn	101100110220
				Web site http://ksmc.com.vn	
	Philippines	Movaflex Designs Unlimited, Inc. [Distributors]	Manila	136 Calbayog Street, Mandaluyong City,	+63-2-998-3881
				Metro Manila 1552	+63-2-633-7526
				e-mail sales@movaflex.com	
Australia		Motion Technologies Pty. Ltd. [Distributors]	Sydney	24/22-30 Northumberland Road, Caringbah,	+61-2-9524-4782
				NSW, 2229	+61-2-9525-3878
				e-mail web_enquiry@motiontech.com.au	
				Web site http://www.motiontech.com.au	