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

Repair

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

URL

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

Contact to



ISO9001 Certificate division

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

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

14001

ISO14001

Certificate

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

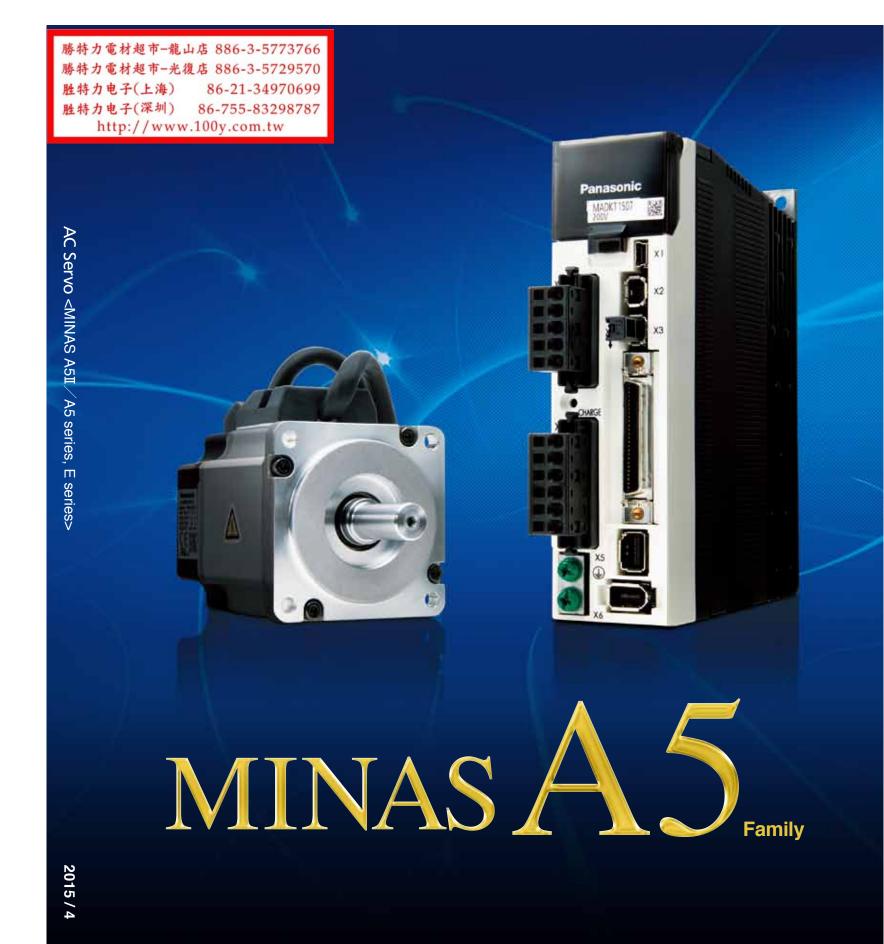
This product is for industrial equipment. Don't use this product at general household.

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

Specifications and design of the products are subject to change without notice for the product improvement.

Panasonic

AC Servo
MINAS A5 II / A5 series



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





Two-degree-of-freedom control system

All-in-one type



Rated output: 50 W to 15.0 kW

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

Full-closed*1 control type

All-in-one type

Rated output: 50 W to 15.0 kW

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

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

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

Position control type

Rated output: 50 W to 5.0 kW

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

Slim design and position control type





Rated output: 50 W to 400 W

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

High-speed communication "Realtime Express" support model

Ultra high-speed Network type



Rated output:

50 W to 15.0 kW

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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

DC 24 V type



Rated output:

10 W. 20 W. 30 W

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

EtherCAT communication driver type

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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



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

General-purpose RS485 communication AE-LINK support type

Contents

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

A5II Series Features -

Driver Specifications

Wiring to the Connector

Control Circuit Diagram

Dimensions of Driver

Special Order Product · Model Designation

Motor Specifications -

Cable part No. Designation Specifications of Motor connector -

Battery for Absolute Encoder

External Regenerative Resister-

Surge Absorber for Motor Brake

List of Peripheral Equipments

Encoder Cable

Motor Cable

Brake Cable-

Interface Cable

Mounting Bracket

Connector Kit-

Reactor

Sales Office

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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Motor Specifications, Description

Wiring Diagram

Safety Function

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

series



Rated output:

50 W to 5.0 kW

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

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

Quicker, Wiser and Friendlier A5II series

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

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







 The above is a measure based on our test environment





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

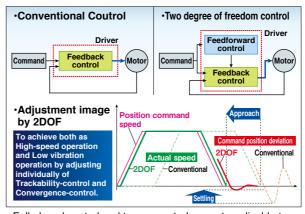


Realizes guick and accurate movement. Fast response & High-precision positioning

Adopted New Algorithm

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

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

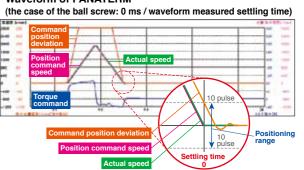


· Full-closed control and torque control are not applicable to 2DOF control system.

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

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

Waveform of PANATERM



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

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

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

· Adjustment is completed in only 3 processes

condition setting Load Stiffness Command response

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

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

· Fit gain adjustment window

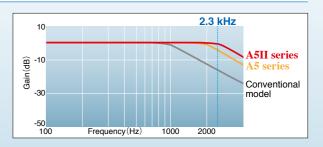
· Automatically proposes various settings

Recom	mendation setting M	onual petis	10	
Theore	resultiecomes es to	flows Pier	nie choose reco	mentator
Adv	etrestobjectve:Full	read, fie	espanse pielere	oksky, Middi
Select	Recommendation	Pigidity	Command response[ms]	Stabilization (me(ma)
2	Minimum stabilizati.	22	32	8.0
	Deskyrete overeft	22	34	10
10	Designeto stecala.	19	15	35
at at	Might girlly setting	22	34	1.0
	Meson sating	0.11		

Realized 2.3 kHz frequency response to improve productivity

Comparison* 1.15 times faster than conventional

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



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

Features

MINAS A5 Family



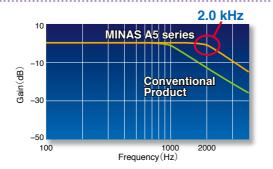


2.0 kHz Frequency Response

Example application Semiconductor production equipment, packaging, etc

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

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





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

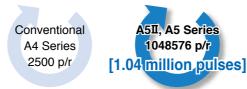
Example application Machine tools, textile machinery, etc.

<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.





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



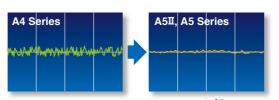




Example application Semiconductor production equipment, textile machinery, etc.

For the industry's most stable speed and lowest cogging

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



Vibration reduced to only 1/8

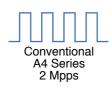


The Input/Output Pulse 4 Mpps

Example application Semiconductor production equipment, machine tools, etc.

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

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





Smart

Auto tuning

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

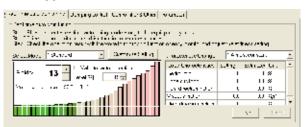
Example application Semiconductor production equipment, food processing machinery, etc.

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

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

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

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





Manual/Auto Notch Filters

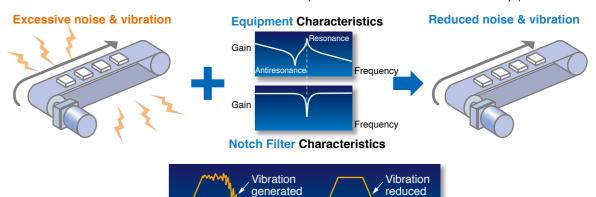
A5II

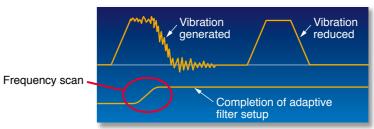
Example application Semiconductor production equipment, food processing machinery, etc.

Equipped with auto-setting notch filters for greater convenience.

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

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





Damping filter

automatic setup.

Safe

Equipped with a damping filter featuring simplified Without Damping Filter With Damping Filter

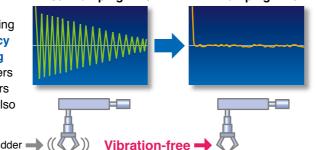
Chip mounters, food processing machinery, robots,

general production machinery, etc.

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.

Example application

Manual/Auto Damping Filter



Simulation

Motion Simulation

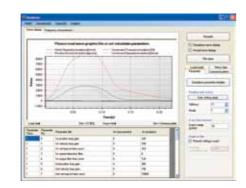




Example application General production machinery, etc.

Equipped with a simplified machine simulation function.

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



Light



New Structure/ Innovative Core/ Innovative Encoder A5II A5

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





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.



[Ex	8-
S	
MS	MSMA 2 kW
1	

	[Examples for MSM or MDM]							
۱	Series	A 4	A5II A5	Weight Reductio				
ı	MSM 1 kW	4.5 kg	3.5 kg	▲ 1 k				
	MSM 2 kW	6.5 kg	5.3 kg	▲1.2 k				
	MDM 1 kW	6.8 kg	5.2 kg	▲1.6 k				
	MDM 2 kW	10.6 kg	8.0 kg	▲ 2.6 k				

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.)



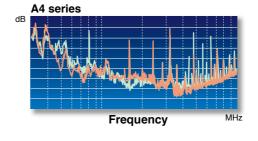
Low noise

Example application

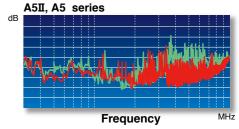
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

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.

MINAS A 5 Family

Features









PANATERM Set-up Support Software

A5II A5 A5IIE

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

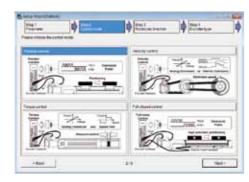
The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A5 Family through the USB interface.

Localized in 4 languages

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

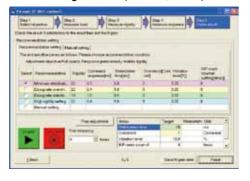
Setup Wizard

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.



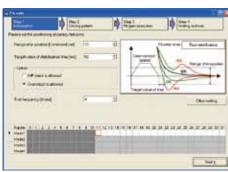
The fit gain function for setting two-degree-of-freedom control.

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



Fit gain

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



Service Life Prediction

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



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

Encoder Temperature Monitor

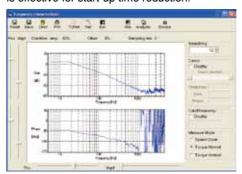
The Encoder Temperature Monitor is a new function capable of real-time measurement of the interior temperature of the encoder, something that has been difficult to achieve in the past. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with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

Other New Function

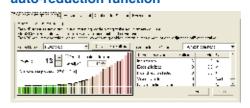
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

Frequency characteristics measurement function

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



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

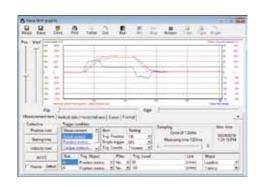


Trial run

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



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



<CAUTION>

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

	ODLI	Deat's a W. 540MH
	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
Dianley	Resolution	1024 × 768pix or more (desirably 1024 × 768)
Display	Number of colors	24bit colors (TrueColor) or more

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

Features



Command Control Mode A5II A5

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

Full-closed Control

A5II A5

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

SEMI F47





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

Inrush Current Preventive Function

A5II A5 A5IIE A5E



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

Regenerative Energy Discharge



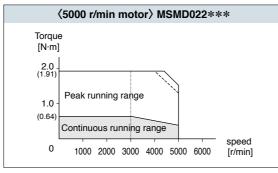
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not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

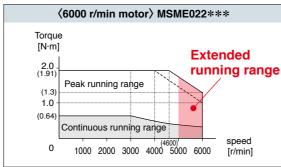
6000-rpm capability

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



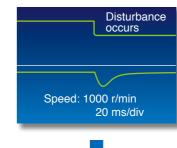
Using the front panel or by connecting a PC, you can restore the parameters to the factory settings.

Disturbance Observer A5II A5 A5IIE A5E

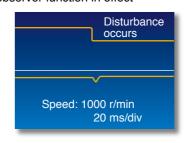


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

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

A5II A5 A5IIE

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

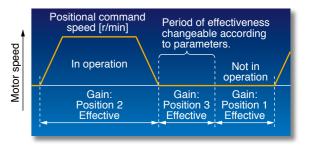
A5II A5

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

This chooses appropriate gain tunings at both stopping and running.

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

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





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 A5IIE A5I















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

IEC : International Electrotechnical Commission EN : Europaischen Normen

EMC : Electromagnetic Compatibility UL : Underwriters Laboratories CSA : Canadian Standards Association

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

Panasonic Testing Centre

Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

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
Coriol Time (Incremental)	Magnescale Co., Ltd.	SL700-PL101RP/RHP	0.1	10
Serial Type (Incremental)		SL710-PL101RP/RHP	0.1	10
		BF1	0.001/0.01	0.4/1.8
	Nidec Sankyo Corporation	PSLH	0.1	6
		LIC2197P/LIC2199P	0.05/0.1	10
	DR. JOHANNES HEIDENHAIN GmbH	LIC4193P/LIC4195P LIC4197P/LIC4199P	0.001 /0.005 /0.01	10
		SVAP	0.05	2.5
	Fagor Automation S.Coop.	SAP	0.05	2.5
		GAP	0.05	2.5
		LAP	0.1	2
Serial Type (Absolute)	Managed On Ital	SR77	0.01 to 1	3.3
	Magnescale Co., Ltd.	SR87	0.01 to 1	3.3
	Mit. days October 1981	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

Motor Line-up

MINAS A5 Family

Motor Line-up

IVIC	Motor Line-up Rated Rotary encoder									
				Data d autout	Rated rotational	Hotary 6	encoder	Faalaauua		
	Мо	tor	Voltage	Rated output (kW)	speed (Max. speed) (r/min)	20-bit incremental	17-bit absolute	Enclosure (*1)	Features	Applications
	MSMD		100 V 200 V	0.05 0.1 0.2 0.4	3000 (5000)	0	0	IP65	Leadwire typeSmall capacitySuitable for high speed application	
			200 V	0.75	3000 (4500)				Suitable for all applications	 Bonder Semiconductor production equipment
Low			100 V 200 V	0.05 0.1 0.2 0.4	3000	0	0	IP67	Small capacitySuitable for high speed application	Packing machines etc
Low inertia			200 V	0.75	(6000)	O		11 07	Suitable for all applications	
	MSME		400 V	0.75					Middle capacity Suitable for the	SMT machines
			200 V 400 V	1.0 1.5 2.0 3.0	3000 (5000)	0	0	IP65 ^(*2)	machines directly coupled with ball screw and high stiffness and high	• Food machines • LCD production
		40		4.0 5.0	3000 (4500)				repetitive applica- tion	equipment etc
			400 V	0.4 0.6	Ì		0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines	Conveyors Robots Machine tool etc
	MDME S		200 V 400 V	1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000) 1500 (3000)	0				
				7.5 (*3)					with belt driven	
Midd				11.0 (*3) 15.0 (*3)	1500 (2000)					
Middle inertia	MFME (Flat type)		200 V 400 V	1.5 2.5 4.5	2000 (3000)	0	0	IP67	Middle capacity Flat type and suitable for machines with space limitation	Robots Food machines etc
	MGME (Low speed/ High torque type		200 V 400 V	3.0 4.5 (*3) 6.0 (*3)	1000 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc
	MHMD			3000 (5000)	0	0	IP65	Leadwire type Small capacity Suitable for low	• Conveyors • Robots	
High inertia			200 V	0.75	3000 (4500)			00	stiffness machines with belt driven	etc
inertia	мнме		200 V 400 V	1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven, and large load	Conveyors Robots LCD manufacturing
				7.5	1500 (3000)				moment of inertia	equipment etc

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

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Model Designation

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

Servo Motor

Symbol

M S M E 5 A Z G 1 S ** Type MSMD Low inertia (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)

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		

MHME High inertia (1.0 kW to 7.5 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

Motor specifications 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

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

Design order

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

Motor with reduction gear

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

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

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

Voltage specifications					
Symbol	Specifications				
1	100 V				
2	200 V				

Rotary encoder specifications

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

Gear ratio, gear type

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

^{*} MHMD 100 W is not prepared.

Motor structure

Cumbal	Shaft	Holding	g 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	*	*
Position control type	M	Α	D	K	Т	1	5	0	5	E	*

* **Special specifications**

Frame symbol '

	-		
Symbol	Frame	Symbol	Frame
MAD	Frame A	MED	Frame E
MBD	Frame B	MFD	Frame F
MCD	Frame C	MGD	Frame G
MDD	Frame D	MHD	Frame H

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

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

current rating Symbol Current rating

11	10 A	Sup
T2	15 A	spe
T3	30 A	Sym
T4	35 A	1
T5	50 A	3
T7	75 A	4
TA	100 A	5
TB	150 A	
TC	300 A	

Power device Max.

└ Only position control **Current detector current rating** Symbol Specifications | Symbol Specifications

*

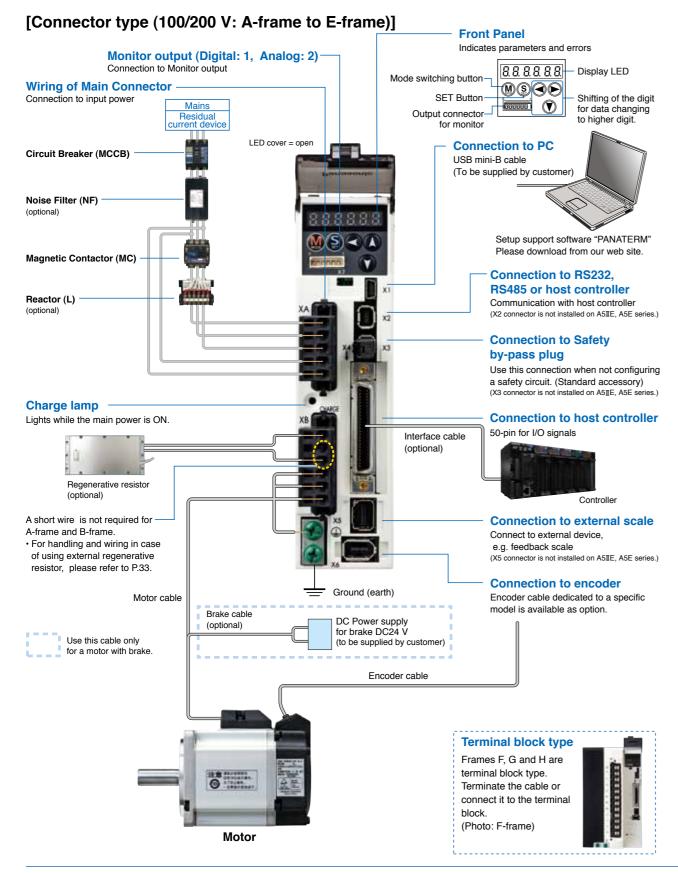
pply voltage ecifications				
mbol	Specifications			
1	Single phase, 100 V			
3	3-phase, 200 V			
4	3-phase, 400 V			
5	Single/3-phase, 200 V			

Cyllibol	opositioations	Cymbol	opodilioationo
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		

Special specifications

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

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



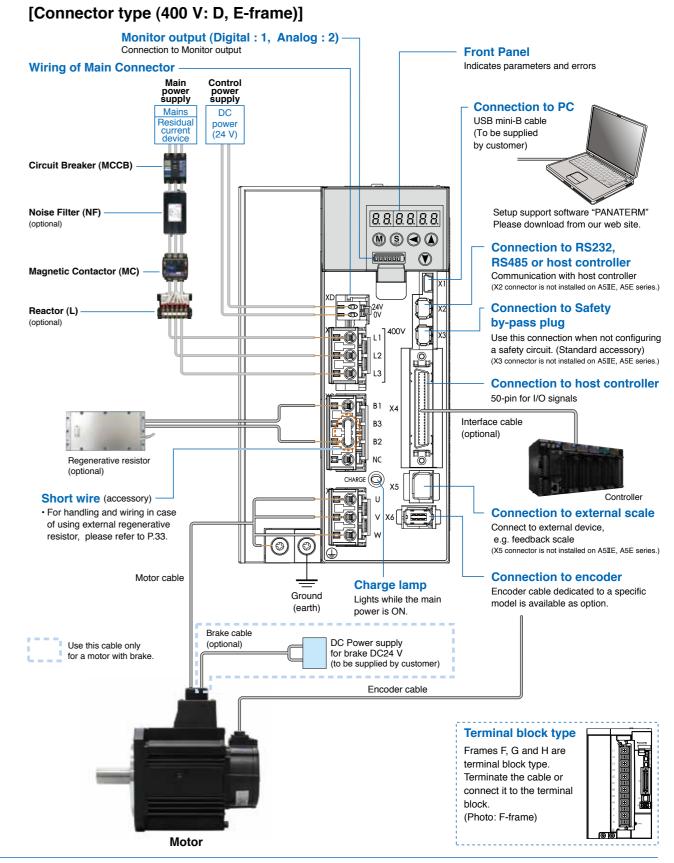
<Caution>

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.

MINAS A5 Family

Overall Wiring



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

Positive direction (CCW)



Driver and List of Applicable Peripheral Equipments

MINAS A5 Family

Driver	Applicable motor	Voltage *1	Rated output	Required Power (at the (rated load)	Circuit breaker (rated (current)	Noise filter (Single phase 3-phase	Surge absorber (Single phase 3-phase	Noise filter for signal	Rated operating current of magnetic (contactor Contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *4	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *5	Diameter and withstand voltage of brake cable
	MSME	Single phase,	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190								
MADH MADK	MSMD MHMD	100 V Single/ 3-phase,	50 W to 200 W	approx. 0.5 kVA		DV0P4170	DV0P4190								
		200 V Single	200 W	approx.	10 A	DV0PM20042 DV0P4170	DV0P1450 DV0P4190			0.75 mm²/				0.75 mm²/	0.28 mm ² to 0.75 mm ² /
MBDH MBDK	MSME MSMD MHMD	100 V Single/ 3-phase,	400 W	0.5 kVA approx.		DV0P4170	DV0P4190		20 A (3P+1a)	AWG18 600 VAC or more				AWG18 600 VAC or more	AWG22 to AWG18 100 VAC
	IVII IIVID	200 V Single	400 W	0.9 kVA approx.	-	DV0PM20042	DV0P1450 DV0P4190	-		of more		0.75 mm ² /		of more	or more
MCDH MCDK	MSME MSMD	100 V Single/		0.9 kVA approx.		DV0PM20042	DV0F4190					AWG18 600 VAC			
WODIC	MHMD	3-phase, 200 V	750 W	1.3 kVA	15 A							or more			
	MHME		1.0 kW	approx. 1.8 kVA approx.			DV0P4190						0		
	MGME	Single/	0.9 kW	1.8 kVA approx.		DV0D4000	DV0P4190 DV0P1450	DV0P1460	30 A		Conne		Conne		
	MHME	3-phase, 200 V	1.0 KVV	1.8 kVA	20 A	DV0P4220			(3P+1a)		ction		ction		
	MDME MFME MSME		1.5 kW	approx. 2.3 kVA approx.							Connection to exclusive connector		Connection to exclusive connector		
MDDH MDDK	MDME		400 W	0.9 kVA approx. 1.2 kVA	_						ve con		ve con		
	MSME		750 W	approx. 1.6 kVA							inecto	0.50	necto		
	MSME MDME	3-phase, 400 V	1.0 kW	approx.	10 A	FN258L-16-07 (Recommended)	DV0PM20050		20 A (3P+1a)	2.0 mm ² / AWG14 600V VAC	٦	0.52 mm ² / AWG20 100 VAC	٦	2.0 mm ² / AWG14 600V VAC	
	MHME	400 V	0.9 kW	1.8 kVA		(component /			(SF+1a)	or more		or more		or more	
	MSME MDME MFME MHME		1.5 kW	approx. 2.3 kVA											
	MDME MSME MHME	3-phase, 200 V	2.0 kW	approx. 3.3 kVA	30 A	DV0PM20043	DV0P1450	DV0P1460 RJ8035 (Recommended)	60 A (3P+1a)			0.75 mm²/ AWG18 600 VAC			
MEDH	MFME		2.5 kW	approx. 3.8 kVA				t component / *6	(51 1 1 1 1)			or more			
MEDK	MSME MDME MHME	3-phase,	2.0 kW	approx. 3.3 kVA	15 A	FN258L-16-07	DV0PM20050	DV0P1460	30 A			0.52 mm ² / AWG20			
	MFME	400 V	2.5 kW	approx. 3.8 kVA	1070	(Recommended) component	D VOI WIZOGGO	D VOI 1400	(3P+1a)			100 VAC or more			
	MGME		2.0 kW	approx. 3.8 kVA											
	MDME MHME MSME MGME		3.0 kW	approx. 4.5 kVA				DV0P1460	60 A (3P+1a)		11 mm or smaller	0.75 mm²/	11 mm or smaller		
	MDME MHME MSME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	RJ8035 (Recommended component *6			φ5.3 Terminal	AWG18 600 VAC or more	φ _{5.3}		0.75 mm²/
	MFME MGME		4.5 kW	approx. 6.8 kVA				-	100 A (3P+1a)		block M5		block M5		AWG18 100 VAC
	MDME MHME		5.0 kW	approx. 7.5 kVA						3.5 mm²/				3.5 mm²/	or more
MFDH MFDK	MSME MGME		2.0 kW	approx. 3.8 kVA						AWG12 600 VAC				AWG12 600 VAC	
	MSME MDME MGME		3.0 kW	approx. 4.5 kVA						or more	10 mm or smaller		7 mm or smaller	or more	
	MHME 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) (p3.2		
	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		M3		
	MDME		7.5 kW	approx. 11 kVA							11 mm or	0.75 mm ² /	10 mm or		
	MGME	3-phase, 200 V	6.0 kW	approx. 9.0 kVA	60 A	(Recommended component)	DV0P1450		100 A (3P+1a)	E 2 mm²/	smaller	AWG18 600 VAC	smaller		
MGDH MGDK			7.5 kW	approx. 11 kVA approx.		,				5.3 mm²/ AWG10 600 VAC		or more		13.3 mm²/ AWG6	
WIGDK	MDME MGME	3-phase,	7.5 kW 6.0 kW	11 kVA approx.	30 A	FN258-42-07 or	DV0PM20050		60 A	or more	<u>/ φ5.3</u> Terminal	0.75 mm ² / AWG18	<u>/ φ5.3</u> Terminal	600 VAC or more	
	MHME	400 V	7.5 kW	9.0 kVA approx. 11 kVA	. 30 A	FN258-42-33 (Recommended) component	D VOI WIEUUUU	DV0P1460 RJ8095	(3P+1a)		block M5	100 VAC or more	block M5		
			11 kW	approx. 17 kVA	100 A	-		(Recommended component T400-61D			10	0.75 mm²/	40		
		3-phase, 200 V	15 kW	approx. 22 kVA	125 A	(Recommended component	DV0P1450	(Recommended component)	150 A (3P+1a)	13.3 mm²/	16 mm or smaller	AWG18 600 VAC or more	10 mm or smaller	21.1 mm²/ AWG4 600 VAC or more	
MHDH	MDME	3-phase,	11 kW	approx. 17 kVA	50 A	FN258-42-07 or FN258-42-33	DV0PM20050		100 A	AWG6 600 VAC or more *3	/ φ6.4 Terminal block	0.75 mm²/ AWG18	/ φ4.3 Terminal block	13.3 mm²/ AWG6 600 VAC or more	
		400 V	15 kW	approx. 22 kVA	60 A	(Recommended component			(3P+1a)		M6	100 VAC or more	M4	21.1 mm ² / AWG4 600 VAC or more	

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

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

- *6 Use thses products to suit an international standard.
- Related page

About circuit breaker and magnetic contactor

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

<Remarks>

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

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

	Driver	Termina	al block screw		cover fastening screw
Frame	Terminal name	Nominal size	Fastening torque (N•m)	Nominal size	Fastening torque (N•m)
F(200 V)	L1, L2, L3, L1C, L2C, B1, B2, B3, NC, U, V, W	M5	1.0 to 1.7		
F(400 V)	24V,0V	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])

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

<Caution>

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

<Remarks>

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

Motor

(MSMD, MHMD: IP65) MSME: IP67) 50 W to 750 W

Driver

PM20033		
)PM20034	201	
P4290	202	
P4380	202	L
PM20035	203	
PM20040	206	

					Rating/	A5II series A5 series	A5IIE series A5E series		capacity	Encode	er Cable	Motor Cat	ble	Brake Cable	External	Reactor	Noise Filter
Мс	tor series	Power supply	Output (W)	Part No. Note) 1	Spec. (page)	Part No. (Speed, Position, Torque, Full-Closed type) Note) 2	Part No. (Position control type Note) 3,4	Frame	rated load (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase
			50	MSMD5AZ□1 *	49	MAD \diamondsuit T1105	MAD \diamondsuit T1105E	A-frame	Approx. 0.4						DV0P4280	DV0P227	
		Single phase	100	MSMD011 □ 1 *	51	MAD ◇ T1107	MAD \diamondsuit T1107E	A-lialile	Approx. 0.4						DV01 4200	D V 01 ZZ1	DV0P4170
		100 V	200	MSMD021 □ 1 *	53	MBD ◇ T2110	MBD ♦ T2110E	B-frame	Approx. 0.5						DV0P4283	DV0P228	
	MSMD		400	MSMD041 □ 1 *	55	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9						DV0P4282	D V 01 220	DV0PM20042
	(Leadwire) type		50	MSMD5AZ□1 *	50	MAD ◇ T1505	MAD ◇ T1505E		Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFMCA 0 * * 0EE		IFMCB * 0GET	DV0P4281	DV0D007	
	3000 r/min	Single	100	MSMD012 ☐ 1 *	52	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	A-frame	Approx. 0.5		Note) 7				2101 1201	DV0P227 DV0P220	DV0P4170
		phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD 🔷 T1507	MAD \diamondsuit T1507E		Approx. 0.5								DV0PM20042
_		200 V	400	MSMD042 ☐ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9						DV0P4283	DV0P228	
Low in			750	MSMD082 ☐ 1 *	57	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx. 1.3							DV0P220	DV0PM20042
inertia			50	MSME5AZ ☐ 1 *	65	MAD \diamondsuit T1105	MAD \diamondsuit T1105E	A-frame	Approx.	MFECA	MFECA	MFMCA 0 * * 0NJ		IFMCB * * 0PJT	DV0P4280	DV0P227	
		Single phase	100	MSME011 ☐ 1 *	67	MAD \diamondsuit T1107	MAD ◇ T1107E		Approx.	0 * * 0MJD /For movable, direction of	0 * * 0MJE (For movable, direction of	For movable direction of motor shaft	le,\ /For	r movable, rection of otor shaft			DV0P4170
		100 V	200	MSME021 □ 1 *	69	MBD 🔷 T2110	MBD ◇ T2110E	B-frame	Approx.	motor shaft / MFECA	\ motor shaft / MFECA	MFMCA 0 * * 0NK	(D 0 *	IFMCB * 0PKT	DV0P4283	DV0P228	
	MSME		400	MSME041 ☐ 1 *	71	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx.	O * * OMKD For movable, opposite direction	O * * OMKE For movable, opposite direction	For movable opposite direct of motor shall be a control of	ction oppo	r movable, site direction notor shaft	DV0P4282		DV0PM20042
	Connector type		50	MSME5AZ ☐ 1 *	66	MAD ◇ T1505	MAD ◇ T1505E	-	Approx.	MFECA	MFECA	MFMCA 0 * * 0RJ	JD 0 *	IFMCB * * 0SJT	DV0P4281	DV0P227	
	3000 r/min	Single phase/	100	MSME012 □ 1 *	68	MAD ◇ T1505	MAD ◇ T1505E	A-frame	Approx. O.5 Approx.	0 * * OTJD For fixed, direction of	0 * * 0TJE (For fixed, direction of	/ For fixed, direction of motor shaft	of di ft/ di	For fixed, rection of otor shaft		DV0P220	DV0P4170
		3-phase 200 V	200	MSME022 □ 1 *	70	MAD \diamondsuit T1507	MAD ◇ T1507E		0.5 Approx.	\motor shaft/ MFECA 0 * * 0TKD	\motor shaft/ MFECA 0 * * 0TKE	MFMCA 0 * * 0RK	(D 0 *	IFMCB * 0SKT			DV0PM20042
		200 V	400	MSME042 □ 1 *	72	MBD ◇ T2510	MBD ◇ T2510E		0.9 Approx.	For fixed, opposite direction of motor shaft	For fixed, opposite direction of motor shaft	For fixed, opposite direct of motor shall be a second of motor shall be a s	ction opposit	or fixed, site direction notor shaft	DV0P4283	DV0P228	
		0	750	MSME082 □ 1 *	73	MCD ♦ T3520			1.3 Approx.	V or motor ondit 7	(or motor onait)	Note) 6	5			DV0P220	DV0PM20042
		Single phase	200	MHMD021	59	MBD ♦ T2110	MBD ◇ T2110E		0.5 Approx.						DV0P4283	DV0P228	DV0P4170
High	MHMD (Leadwire)	100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120			0.9 Approx.	MFECA	MFECA	MFMCA	A M	IFMCB	DV0P4282	DV0P227	DV0PM20042
iner	type /	Single phase/	200	MHMD022 □ 1 *	60	MAD ◇ T1507	MAD ◇ T1507E	A-frame	0.5	0 * * 0EAM	0 * * 0EAE Note) 7	0 * * 0EE		* 0GET		DV0P220	DV0P4170
מ	3000 r/min	3-phase 200 V	400	MHMD042 ☐ 1 *	62	MBD \diamondsuit T2510	MBD \diamondsuit T2510E		Approx.		Note, i				DV0P4283	DV0P228	DV0PM20042
			750	MHMD082 ☐ 1 * cations: ☐ Motor s	63		MCD ♦ T3520E	C-frame	Approx.			Note) 6 Cables		_			DV0PM20042

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

Note) 3 ♦: Drivers series K: A5IE series H: A5E series

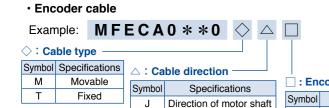
Note) 4 Because A5IIE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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

- 100 W motor.
- Note) 7 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.
- Note) 8 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box).

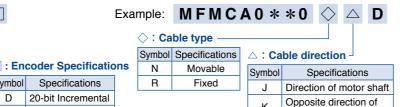
Please buy the battery part number "DV0P2990" separately.

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



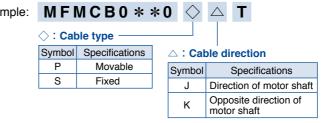
Opposite direction of

· Motor cable



• Bra

Optional parts



Brake cal	ole				
Example:	MF	MCB0 *	* 0	\Diamond	
	< : Cab	ole type ———			
	Symbol	Specifications		△:Cal	ole direction
	Р	Movable		Symbol	Specification
	S	Fixed		J	Direction of motor

- p				
	Title		Part No.	Pa
Interface Cable			DV0P4360	
			DV0P4120	
			DV0P4121	١.,
Interface Conve	rsion Cab	le	DV0P4130	19
			DV0P4131	1
			DV0P4132	1
Connector Kit	A-frame	Single row	DV0PM20032	Т
or Power	to	type	D V 01 1V120032	2
Supply Input Connection	D-frame	Double row type	DV0PM20033	-
Connector Kit for Motor Connection	A-frame	to D-frame	DV0PM20034	2
Connector Kit fo			DV0P4290	2
Motor/Encoder		n	DV0P4380	_
			DV0PM20035	2
Connector Kit fo Motor/Brake Co			DV0PM20040	2
	RS485, I	RS232	DV0PM20024	T
	Safety		DV0PM20025	1
_	Interface)	DV0P4350	1
Connector Kit	External		DV0PM20026	t
	Encoder		DV0PM20010	1
		lonitor Signal	DV0PM20031	1
Battery For Abs			DV0P2990	H
Battery Box No		- 30.	DV0P4430	2
Daniely Dox 140	A-frame		DV0PM20027	t
Mounting	B-frame		DV0PM20027	2
Bracket	C-frame		DV0PM20029	<u>'</u>
	C-II allie		MFECA0**0EAD	H
			MFECA0**0EAM	1
				H
	without E	Battery Box	MFECA0**0MJD	
			MFECA0**0MKD	1
			MFECA0**0TJD	-
Encoder Cable			MFECA0**0TKD	
			MFECA0**0EAE	1
	with Batt	ery Box	MFECA0**0MJE	
	Note) 8	-	MFECA0**0MKE	1
			MFECA0**0TJE	
			MFECA0**0TKE	L
			MFMCA0**0EED	
			MFMCA0**0NJD	
Motor Cable	without E	Brake	MFMCA0**0NKD	1
			MFMCA0**0RJD	
			MFMCA0**0RKD	
			MFMCB0**0GET	ľ
			MFMCB0**0PJT	
Brake Cable			MFMCB0**0PKT	1
			MFMCB0**0SJT	
			MFMCB0**0SKT	1
	50 Ω 25	W	DV0P4280	T
	100 Ω 25	5 W	DV0P4281	1
External	25 Ω 50	W	DV0P4282	1.
Regenerative Resistor	50 Ω 50	W	DV0P4283	2
1 10010[UI	30 Ω 100		DV0P4284	1
	20 Ω 130		DV0P4285	1
Reactor	DV0P22 DV0P22	0, DV0P221, 3, DV0P224,	DV0P222,	2
	DV0P41	70, DV0PM2	20042	2
Noise Filter		20, DV0PM2	:0043	L
_	DV0P34		D) (OD : : CC	2
_	Single pl	nase	DV0P4190	2
Surge				1.
Surge Absorber Noise Filter for S	3-phase	` '	DV0P1450 DV0P1460	2

Options

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E 17-bit Absolute

A5 Family Table of Part Numbers and Options

0.4 kW to 5.0 kW IP65 motor

		ı	Motor				Driver		Power				Optional	oarts				
		D	Outrant	Dowt No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		capacity	Encode	er Cable		Motor C	Cable	Brake Cable	External	Reactor	
N	lotor series	Power supply	Output (W)	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) 4,5,8		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter
		Single phase/ 3-phase	1000	MSME102 □ C *	74	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8			N	MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220
		200 V	1500	MSME152 □ C *	75	MDD ◇ T5540	•		Approx. 2.3	MFECA	MFECA	I I)**2ECD	0**2FCD	_	DV0P4285	DV0P222	
			2000	MSME202 □ C *	76		-	E-frame			0**0ESE					Note) 6		DV0PM20043
Low inertia	MSME 3000 r/min	3-phase 200 V		MSME302		MFD ♦ TB3A2	MFD \diamondsuit TA390E MFD \diamondsuit TB3A2E MFD \diamondsuit TB3A2E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5	_		I I	MFMCA)**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225 Note) 7	DV0P3410
rtia	0000 17111111	3-phase	750 1000 1500	MSME084	104 105 106	MDD \(\) T2412 MDD \(\) T3420 MDD \(\) T3420	MDD ♦ T2412E MDD ♦ T3420E MDD ♦ T3420E		Approx. 1.6 Approx. 1.8 Approx. 2.3		MFECA		MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048	Note) 7	Recommended
		400 V	3000 4000	MSME304 C * MSME404 C *	108 109	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MED \(\) T4430E MFD \(\) T5440E MFD \(\) TA464E		Approx. 4.5 Approx. 6	0**0ESD	0**0ESE		MFMCA)**3ECT	MFMCA 0**3FCT	_	DV0PM20049 DV0PM20049 ×2 in parallel	Note) 7	components P.252
		Single phase/ 3-phase	1000	MDME102 □ C *	80		MFD ♦ TA464E MDD ♦ T3530E	D-frame	Approx. 7.5 Approx. 1.8			N.	MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220
		200 V	1500 2000	MDME152 □ C * MDME202 □ C *	81 82	MDD ♦ T5540 MED ♦ T7364		E-frame	Approx. 2.3 Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE)**2ECD	0**2FCD	_	DV0P4285 Note) 7	DV0P222 DV0P223	DV0PM20043
	MDME	3-phase 200 V	3000 4000 5000	MDME302	83 84 85	MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E MFD ♦ TB3A2E		Approx. 4.5 Approx. 6 Approx. 7.5				MFMCA)**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410
Middle inertia	2000 r/min	3-phase 400 V	400 600 1000 1500 2000 3000 4000	MDME044	111 112 113 114 115 116 117	MDD \(\) T2407 MDD \(\) T2407 MDD \(\) T2412 MDD \(\) T3420 MED \(\) T4430 MFD \(\) T5440 MFD \(\) TA464	MDD \(\) T2407E MDD \(\) T2407E MDD \(\) T2412E MDD \(\) T3420E MED \(\) T4430E MFD \(\) T5440E MFD \(\) TA464E	E-frame	Approx. 0.9 Approx. 1.2 Approx. 1.8 Approx. 2.3	MFECA	MFECA 0**0ESE	O'	MFMCD p**2ECD MFMCA p**3ECT	MFMCE 0**2FCD MFMCA 0**3FCT	_	DV0PM20049 DV0PM20049 x2 in parallel	Note) 7 — Note) 7	Recommended components P.252
	MGME	Single phase/ 3-phase 200 V	900	MGME092 □ C *	92	MDD ◇ T5540	MDD ◇ T5540E	D-frame	Approx. 1.8	MFECA 0**0ESD	MFECA 0**0ESE		MFMCD)**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220
	Low speed/ High torque type	3-phase 200 V			94	MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 3.8 Approx. 4.5	-		0,	MFMCA)**3ECT MFMCD	MFMCA 0**3FCT MFMCE		DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410
	1000 r/min	3-phase 400 V		MGME094	126	MFD \diamondsuit T5440	MDD ♦ T3420E MFD ♦ T5440E MFD ♦ TA464E		Approx. 3.8 Approx. 4.5	MFECA 0**0ESD	MFECA 0**0ESE	O ³	v**2ECD MFMCA)**3ECT	0**2FCD MFMCA 0**3FCT	_	DV0PM20048 DV0PM20049 x2 in parallel	Note) 7	Recommended components P.252
		Single phase/ 3-phase 200 V		MHME102	97 98	<u> </u>	MDD ♦ T3530E MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3				MFMCD)**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228/ DV0P222 DV0PM20047/ DV0P222	DV0P4220
		3-phase		MHME202 C *	99		MED ♦ T7364E	E-frame		MFECA 0**0ESD	MFECA 0**0ESE		MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 6	DV0P223	DV0PM20043
High inertia	MHME 2000 r/min	200 V		MHME302	101	MFD ♦ TB3A2	MFD \diamondsuit TA390E MFD \diamondsuit TB3A2E MFD \diamondsuit TB3A2E		Approx. 4.5 Approx. 6 Approx. 7.5	_			MFMCA)**3ECT	MFMCA 0**3FCT		DV0P4285 x2 in parallel	DV0P224 DV0P225 Note) 7	DV0P3410
rtia		3-phase 400 V	1500 2000	MHME104	131 132	MDD ♦ T3420 MED ♦ T4430	MED ◇ T4430E			MFECA	MFECA 0**0ESE	0°	MFMCD ***2ECD MFMCE ***2ECD	MFMCE 0**2FCD MFMCE 0**2FCD	_	DV0PM20049	 Note) 7	Recommended components
			4000	MHME304	134	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5				MFMCA)**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	-	P.252

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

 Options 	(IP65	moto

	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	DV0PM20032
for Power Supply Input		type	
Connection	E-frame (,	DV0PM20044
	D-frame (` '	DV0PM20051
	E-frame (400 V)	DV0PM20052
Connector Kit for Control Power Supply Input Connection	D-frame a E-frame (DV0PM20053
Connector Kit	A-frame t	o D-frame	DV0PM20034
for Motor	E-frame (200 V)	DV0PM20046
Connection	D-frame (DV0PM20054
Connector Kit	E-frame	. ,	DV0PM20045
for Regenerative	D-frame ((400 \\)	DV0PM20055
Resistor	ים וומווופ ((1 00 V)	
			DV0P4310
Connector Kit fo			DV0P4320
Motor/Encoder (onnection	1	DV0P4330
			DV0P4340
	RS485, F	RS232	DV0PM20024
	Safety		DV0PM20025
Connector Kit	Interface		DV0P4350
COINICULOI NIL	External S	Scale	DV0PM20026
	Encoder		DV0PM20010
	Analog M	onitor Signal	DV0PM20031
Battery For Abso	olute Enco	der	DV0P2990
Battery Box No	te) 8		DV0P4430
Mounting	te) 8 D-frame		DV0P4430 DV0PM20030
Mounting Bracket	D-frame	attery Box	
Mounting Bracket	D-frame		DV0PM20030
Battery Box No Mounting Bracket Encoder Cable	D-frame without B		DV0PM20030 MFECA0**0ESD
Mounting Bracket	D-frame without B		DV0PM20030 MFECA0**0ESD MFECA0**0ESE
Mounting Bracket	D-frame without B with Batte Note) 8	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD
Mounting Bracket	D-frame without B	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD
Mounting Bracket	D-frame without B with Batte Note) 8	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**3ECT
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**3ECT MFMCA0**2FCD
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8	ery Box	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8 without B	ery Box rake	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCE0**2FCD MFMCA0**3FCT
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8 without B	ery Box rake e	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8 without B with Brak 50 Ω 25 V 100 Ω 25	ery Box rake e	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281
Mounting Bracket Encoder Cable	D-frame without B with Batte Note) 8 without B with Brak $50 \Omega 25 V$ $100 \Omega 25 \Omega 50 V$	ery Box rake e N W N	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282
Mounting Bracket Encoder Cable Motor Cable	D-frame without B with Batte Note) 8 without B with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 50 Ω 50 \	ery Box rake e W W N	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283
Mounting Bracket Encoder Cable Motor Cable	D-frame without B with Batte Note) 8 without B with Brak $50 \Omega 25 V$ $100 \Omega 25 \Omega 50 V$ $50 \Omega 50 V$ $30 \Omega 100$	ery Box rake e W W N W W	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130	ery Box rake e W W N W W	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4284
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 N 100 Ω 25 25 Ω 50 N 30 Ω 100 20 Ω 130 120 Ω 80	ery Box rake e N W N N W W W W	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190	ery Box rake e W W N W W W W	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P223	ery Box rake e W W W W W W W W D, DV0P221,	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P223 DV0P227 DV0P417	ery Box rake e W W W W W W W W D, DV0P221,	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20049 DV0P222, DV0PM20047 0042
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P223 DV0P227 DV0P417	ery Box rake e N W W W W W W W C, DV0P221, C, DV0P224, C, DV0PM220, CO, DV0PM2	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20049 DV0P222, DV0PM20047 0042
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P227 DV0P417 DV0P422	ery Box rake e N W W W W W W O, DV0P221, O, DV0P224, C, DV0P228, CO, DV0PM2 O, DV0PM2 O	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20049 DV0P222, DV0PM20047 0042
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P227 DV0P417 DV0P422 DV0P341 Single ph	ery Box rake e N W W W W W W O, DV0P221, O, DV0P224, C, DV0P228, CO, DV0PM2 O asse	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor	D-frame without B with Batte Note) 8 with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P227 DV0P417 DV0P422 DV0P341 Single ph	ery Box rake e N W W W W W W O, DV0P221, O, DV0P224, C, DV0P228, O, DV0PM2 O, DV0PM2 O asse (200 V)	DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043

Note) 2 \diamondsuit : Drivers series K: A5II series H: A5 series Note) 3 \diamondsuit : Drivers series K: A5IIE series H: A5E series Note) 4 Because A5IIE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification,

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

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

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

Note) 7 Reactor should be prepared by the user.

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

Please buy the battery part number "DV0P2990" separately.

400 W to 15.0 kW IP67 motor (MSME)

		ı	Motor				Driver		Power			Optional	parts				
		Power	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.		capacity		er Cable	Motor	Cable	Brake Cable	External	Reactor	
	Motor series	supply	(W)	Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type Note) 2	(Position control type Note) 3,4	Frame	(rated) load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter
		Single phase/	1000	MSME102 ☐ 1 *	74	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8			MEMOD	MEMOA		DV0P4284	DV0P228 DV0P222	DV0P4220
		3-phase 200 V	1500	MSME152 ☐ 1 *	75	MDD ◇ T5540	MDD \diamondsuit T5540E		Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	
			2000	MSME202 ☐ 1 *	76	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	0**0ETD	0**0ETE			_	DV0P4285 Note) 7	DV0P223	DV0PM2004
Low	моме	3-phase 200 V	3000 4000	MSME302 1 * MSME402 1 *		-	MFD ♦ TA390E MFD ♦ TB3A2E	F.	Approx. 4.5 Approx. 6			MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	D)/0D0440
v inertia	MSME 3000 r/min			MSME502 1 *				-trame	Approx. 7.5			0**3ECT	0**3FCT		x2 in parallel	Note) 8	DV0P3410
Tia	0000 17111111			MSME084 □ 1 *	104	MDD \diamondsuit T2412	MDD \diamondsuit T2412E		Approx. 1.6							Note) o	
				MSME104 1 *			MDD \diamondsuit T3420E	- 1				MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		
		3-phase		MSME154 1 * MSME204 1 *		-	MDD ♦ T3420E MED ♦ T4430E		Approx. 2.3 Approx. 3.3	MFECA	MFECA	U ZEOD	U ZFGD	_	DV0PM20049	_	Recommended components
		400 V		MSME304 □ 1 *		MFD 🔷 T5440	MFD \diamondsuit T5440E		Approx. 4.5	0**0ETD	0**0ETE	MFMCA	MFMCA		DV0PM20049	Note) 8	P.252
			4000 5000	MSME404 1 * MSME504 1 *		•	MFD ♦ TA464E	F-frame	Approx. 7.5			0**3ECT	0**3FCT		×2 in parallel		
		Single phase/		MDME102 □ 1 *		·	MDD ◇ T3530E	D-frame	Approx. 1.8						DV0P4284	DV0P228 DV0P222	DV0P4220
		3-phase 200 V	1500	MDME152 □ 1 *	81	MDD ◇ T5540	MDD \diamondsuit T5540E	D-liallie	Approx. 2.3			MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	DV01 4220
				MDME202 □ 1 *		MED ◇ T7364	MED ◇ T7364E	E-frame		MFECA	MFECA				DV0P4285 Note) 7	DV0P223	DV0PM2004
				MDME302			MFD ♦ TA390E MFD ♦ TB3A2E	F.framo	Approx. 4.5 Approx. 6	0**0ETD	0**0ETE	MFMCA	MFMCA	_	DV0P4285	DV0P224 DV0P225	DV0P3410
		3-phase 200 V		MDME502 1 *		•	MFD ♦ TB3A2E	1 -iraine	Арргох. 7.5			0**3ECT	0**3FCT		×2 in parallel	D VOI 220	B V 01 0 4 10
		200 V		MDME752 □ 1 *	86	MGD ♦ TC3B4	_	G-frame	Approx. 11			_	_		DV0P4285 ×3 in parallel	— Note) 8	Recommende
	MDME 2000 r/min		15000	MDMEC12	88	MHD ♦ TC3B4 MHD ♦ TC3B4		H-frame	Approx. 17 Approx. 22			Note) 6	Note) 6		DV0PM20058	-	P.252
			600	MDME044	112	* -		l)-framo	Approx. 1.2			MFMCD	MFMCE		DV0PM20048		
Middle				MDME154 \(\Boxed{1} \) 1 *				-	Approx. 1.8 Approx. 2.3			0**2ECD	0**2FCD				
dle i				MDME204 1 *		-	-	E-frame		MEEOA	MEEGA			-	DV0PM20049		Recommende
inertia		3-phase 400 V		MDME304 ☐ 1 * MDME404 ☐ 1 *			· ·	F-frame	Approx. 4.5 Approx. 6	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA	MFMCA	-	DV0PM20049	Note) 8	components
ש			5000	MDME504 □ 1 *	118	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5			0**3ECT	0**3FCT	-	x2 in parallel		P.252
			7500	MDME754 □ 1 *	119	MGD ♦ TB4A2	_	G-frame	Approx. 11			_	_		DV0PM20049 ×3 in parallel		
				MDMEC14 ☐ 1 * MDMEC54 ☐ 1 *			_	H-frame	Approx. 17 Approx. 22			Note) 6	Note) 6		DV0PM20059		
		Single phase/ 3-phase 200 V		MFME152 \(\text{1 } *			MDD ♦ T5540E	D-frame				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	MFECA 0**0ETD	MFECA 0**0ETE	MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 7	DV0P224	DV0PM2004
	(Flat type) 2000 r/min	200 V	4500	MFME452 □ 1 *	91	MFD \diamondsuit TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6.8			MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	— Note) 8	DV0P3410
				MFME154 □ 1 *			MDD ♦ T3420E					MFMCF	MFMCE		DV0PM20048	,-	Recommende
		3-phase 400 V		MFME254 \(\Boxed{1} \) 1 *		-	MED \diamondsuit T4430E			MFECA 0**0ETD	MFECA 0**0ETE	0**2ECD MFMCD	0**2FCD MFMCA	-	DV0PM20049 DV0PM20049	— Note) 8	components
		,	4500	MFME454 □ 1 *	124	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 6.8	JULID	O OLIL	0**3ECT	0**3FCT		×2 in parallel	110.07 0	P.252

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

	Title		Part No.
Interface Cable			DV0P4360
			DV0P4120
			DV0P4121
Interface Conve	rsion Cable	1	DV0P4130
interiace conve	olon oablo	•	DV0P4131
			DV0P4131
	g	Single row	
Connector Kit	to t	ype Double row	DV0PM20032
for Power	D-frame t	уре	DV0PM20033
Supply Input Connection	E-frame (2	,	DV0PM20044
	D-frame (4	400 V)	DV0PM20051
	E-frame (4	100 V)	DV0PM20052
Connector Kit for Control Power Supply Input Connection	D-frame a E-frame (4	-	DV0PM20053
Connector Kit	A-frame to	D-frame	DV0PM20034
for Motor	E-frame (2	200 V)	DV0PM20046
Connection	D-frame (4	400 V)	DV0PM20054
Connector Kit	E-frame		DV0PM20045
for Regenerative Resistor	D-frame (4	400 V)	DV0PM20055
nesisioi	2 (DV0PM20036
Connected 100	_		DV0PM20036 DV0PM20037
Connector Kit fo Motor/Encoder (DV0PM20037 DV0PM20038
Moton Endodor (3011110001011		
	DC40E D	6000	DV0PM20039 DV0PM20024
	RS485, R	3232	
	Safety		DV0PM20025
Connector Kit	Interface	1-	DV0P4350
	External S	cale	DV0PM20026
	Encoder	0. 1	DV0PM20010
5 		nitor Signal	DV0PM20031
Battery For Abso		ier	DV0P2990
Battery Box Not Mounting	D-frame		DV0P4430 DV0PM20030
Dunalist			
Bracket	without Ba	attony Boy	MEECA0**0ETD
	without Ba		MFECA0**0ETD
			MFECA0**0ETE
	with Batte		MFECA0**0ETE MFMCA0**2ECD
	with Batte		MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD
	with Batte	ry Box	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD
Encoder Cable	with Batte Note) 9	ry Box	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD
Encoder Cable	with Batte Note) 9	ry Box	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT
Encoder Cable	with Batte Note) 9	ry Box	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT
Encoder Cable	with Batte Note) 9 without Br	ry Box	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD
Encoder Cable	with Batte Note) 9	ry Box	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD
Encoder Cable	with Batte Note) 9 without Br	ry Box ake	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCE0**3FCT
Encoder Cable	with Batte Note) 9 without Br with Brake	ry Box ake	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280
Encoder Cable	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25	ake	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281
Encoder Cable Motor Cable	with Batte Note) 9 without Br with Brake $50 \Omega 25 W 100 \Omega 25 \Omega 50 W$	ake	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282
Encoder Cable Motor Cable External	with Brake with Brake $50 \Omega 25 W 100 \Omega 25 \Omega 50 W 50 \Omega 50 W$	ake W W V	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283
Encoder Cable Motor Cable External Regenerative	with Brake with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 50 Ω 50 W 30 Ω 100	ake W W W W	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284
Encoder Cable Motor Cable External Regenerative	with Brake with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 50 Ω 50 W 30 Ω 100 20 Ω 130	ake V W V V W W W	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285
Encoder Cable Motor Cable External Regenerative	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 50 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80	ry Box ake V W V W W W W	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048
Encoder Cable Motor Cable External Regenerative	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 50 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190	ake W W W W W W W W	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049
Encoder Cable Motor Cable External Regenerative Resistor	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223	ake W W W W W W W W DV0P221,	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,
Encoder Cable Motor Cable External Regenerative Resistor	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223, DV0P4176	ake W W W W W W W W DV0P221,	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047
Encoder Cable Motor Cable External Regenerative Resistor	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223, DV0P4176	ry Box ake W W W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047
Encoder Cable Motor Cable External Regenerative Resistor	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223, DV0P4170 DV0P4220	ry Box ake W W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2 D, DV0PM2 D, DV0PM2	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047
Encoder Cable Motor Cable External Regenerative Resistor Reactor	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223, DV0P2417, DV0P422t DV0P341t Single pha	ry Box ake V W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2 D, DV0PM2 D, DV0PM2 D asse	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043
Encoder Cable Motor Cable External Regenerative Resistor Reactor Noise Filter Surge Absorber	with Batte Note) 9 without Br with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223, DV0P2417, DV0P422t DV0P341t Single pha	ake W W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2 D, DV0PM2 D, DV0PM2 D asse	MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285

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

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

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

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

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

Note) 8 Reactor should be prepared by the user.

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

		ı	Motor				Driver		Dower			Optiona	parts								
		_	0	Dowl No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		Power capacity	Encode	er Cable	Motor	Cable	Brake Cable	External	Reactor					
	Motor series	Power supply	Output (W)	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	900	MGME092 □ 1 *	92	MDD \diamondsuit T5540	MDD ◇ T5540E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220				
			2000	MGME202 ☐ 1 *	93	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 3.8		145504			1		DV0P223					
			3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P224	DV0P3410				
_	MGME	3-phase	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5			0 JLO1	0 3101		XZ III PAI AIIEI						
Middle inertia	(Low speed/ High torque type	200 V	6000	MGME602 □ 1 *	96	MGD ♦ TC3B4	_	G-frame	Approx. 9.0			— Note) 6	— Note) 6		DV0P4285 ×3 in parallel	Note) 7	Recommended components P.252				
Tia.	1000 r/min		900	MGME094 ☐ 1 *	125	MDD ◇ T3420	MDD ◇ T3420E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048						
			2000	MGME204 ☐ 1 *	126	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 3.8	MEEOA	MEEOA	MEMOA	MEMOA]	D\/0D\/00040		Recommended				
		3-phase 400 V	3000	MGME304 □ 1 *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	Note) 7	Note) 7 components				
			4500	MGME454 ☐ 1 *	128	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5	0 02.2	0 02.2	0 020.	0.0.		7.2 paranoi		P.252	P.252			
			6000	MGME604 □ 1 *	129	MGD ♦ TB4A2	_	G-frame	Approx. 9.0	1			Note) 6	— Note) 6		DV0PM20049 ×3 in parallel					
		Single phase/ 3-phase	1000	MHME102 ☐ 1 *	97	MDD ◇ T3530	MDD ♦ T3530E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222	DV0P4220				
		200 V	1500	MHME152 ☐ 1 *	98	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 2.3			U ZEGD	U ZFGD			DV0PM20047 DV0P222					
			2000	MHME202 □ 1 *	99	MED ◇ T7364	MED ♦ T7364 E	E-frame	Approx. 3.3	MFECA	MFECA	MFMCE 0**2ECD	MFMCE 0**2FCD		DV0P4285 Note) 8	DV0P223	DV0PM20043				
			3000	MHME302 □ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5	0**0ETD	0**0ETE	MEMOA	MEMOA] _	D)/0D4005	DV0P224					
		3-phase	4000	MHME402 ☐ 1 *	101	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6	х. 6	3	3				MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
포		200 V	5000	MHME502 ☐ 1 *	102	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5						P						
High inertia	MHME 2000 r/min		7500	MHME752 ☐ 1 *	103	MGD ♦ TC3B4	_	G-frame	Approx. 11			– Note) 6	— Note) 6		DV0P4285 x3 in parallel	Note) 7	Recommended components P.252				
-				MHME104 □ 1 *		·	·	D-frame	Approx. 1.8			MFMCD			DV0PM20048						
			1500	MHME154 ☐ 1 *	131	MDD ◇ T3420	MDD ◇ T3420E	D-lialile	Approx. 2.3			0**2ECD	MFMCE		D V 01 1V120040						
		0	2000	MHME204 ☐ 1 *	132	MED <> T4430	MED ◇ T4430E	E-frame	Approx. 3.3	MEECA	MEEGA	MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommended				
		3-phase 400 V	3000	MHME304 ☐ 1 *	133	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MEMOA	MEMCA	_	DVODMOOOAO	Note) 7	components				
			4000	MHME404 ☐ 1 *		- v	MFD ♦ TA464E	464E F-frame Approx. 6		MFMCA MFMCA DV0PM20049 0**3ECT 0**3FCT ×2 in parallel		,	P.252								
			5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	164E Approx. 7.5													
			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)

0.9 kW to 7.5 kW IP67 motor (MGME)

	Title	Part No.	
Interface Cable		DV0P4360	
interface dable		DV0P4120	
		DV0P4121	
Interface Conve	roion Cablo	DV0P4130	
interface Conve	ISION Cable		
		DV0P4131	
	0: 1	DV0P4132	
0	A-frame to Single row	DV0PM20032	
Connector Kit for Power Supply Input	D-frame Double row type	DV0PM20033	
Connection	E-frame (200 V)	DV0PM20044	
	D-frame (400 V)	DV0PM20051	
	E-frame (400 V)	DV0PM20052	
Connector Kit for Control Power Supply Input Connection	D-frame and E-frame (400 V)	DV0PM20053	
Connector Kit	A-frame to D-frame	DV0PM20034	
for Motor	E-frame (200 V)	DV0PM20046	
Connection	D-frame (400 V)	DV0PM20054	
Connector Kit	E-frame	DV0PM20045	
or Regenerative			
Resistor	D-frame (400 V)	DV0PM20055	
		DV0PM20036	
Connector Kit fo	r	DV0PM20037	
Motor/Encoder (Connection	DV0PM20038	
		DV0PM20039	
	RS485, RS232	DV0PM20024	
	Safety	DV0PM20025	
	Interface	DV0P4350	
Connector Kit	External Scale	DV0PM20026	
	Encoder	DV0PM20010	
Dattam, Fan Abar	Analog Monitor Signal		
Battery For Abso		DV0P2990	
	Δ) U		
-	.6) 3	DV0P4430	
Battery Box Not Mounting Bracket	D-frame	DV0PM20030	
Mounting Bracket			
Mounting Bracket	D-frame	DV0PM20030	
Mounting Bracket	D-frame without Battery Box with Battery Box	DV0PM20030 MFECA0**0ETD	
Mounting Bracket	D-frame without Battery Box with Battery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE	
Mounting Bracket	D-frame without Battery Box with Battery Box Note) 9	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD	
Mounting Bracket	D-frame without Battery Box with Battery Box	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**3ECT	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9 without Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9 without Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake 50 Ω 25 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**3ECT MFMCA0**3FCT MFMCA0**3FCT MFMCA0**3FCT DV0P4280	
Mounting Bracket Encoder Cable	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake 50 Ω 25 W 100 Ω 25 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281	
Mounting Bracket Encoder Cable Motor Cable	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W 20 Ω 130 W	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4284	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $50 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048	
Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0P222, DV0P225, DV0PM20047	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without Battery Box with Battery Box Note) 9 without Brake without Brake $ \begin{array}{l} \text{without Brake} \\ \text{with Brake} \\ \hline 50 \Omega 25 W \\ 100 \Omega 25 W \\ 25 \Omega 50 W \\ 50 \Omega 50 W \\ 30 \Omega 100 W \\ 20 \Omega 130 W \\ 120 \Omega 80 W \\ 80 \Omega 190 W \\ DV0P220, DV0P221, DV0P224, DV0P227, DV0P228, DV0P4170, DV0PM2$	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0PP225, DV0PM20047	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0PP225, DV0PM20047	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0P222, DV0P225, DV0PM20047	
Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor	D-frame without Battery Box with Battery Box Note) 9 without Brake with Brake	DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0P225, DV0PM20047 0042 0043	

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

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

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

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

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

Note) 7 Reactor should be prepared by the user.

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

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

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

	1					
	100 V	Main	circuit	Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz		
	100 V	Control 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	200 V	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		
	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)		
En	vironment	hum	nidity	Both operating and storage: 20 % to 85 %RH (free from condensation*1)		
			tude	Lower than 1000 m		
		Vibr	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)		
Co	ntrol meth	nod		IGBT PWM Sinusoidal wave drive		
En	coder feed	dback		17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial		
			A/B phase	A/B phase, initialization signal defferential input.		
	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		
ס	Ossalasal	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.		
00	A 1	-:I	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)		
önn	Analog	signai	Output	2 outputs (Analog monitor: 2 output)		
connector			Input	2 inputs (Photo-coupler input, Line receiver input)		
	Pulse si	gnai	Output	4 outputs (Line driver: 3 output、open collector: 1 output)		
			USB	Connection with PC etc.		
	mmunicat	tion	RS232	1 : 1 communication		
lui	ICTION		RS485	1 : n communication up to 31 axes to a host.		
Sa	fety functi	on		Used for functional safety.		
Fro	ont panel			(1) 5 keys (2) LED (6-digit) (3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))		
Re	generatio	n		A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C-frame to F-frame: Built-in regenerative resistor (external resistor is also enabled.)		
Dy	namic bra	ıke		A-frame to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only		
Co	ntrol mod	e		Switching among the following 7 mode is enabled, (1) Position control (2) Speed control (3) Toque control (4) Position/Speed control (5) Position/Torque control (6) Speed/Torque control (7) Full-closed control		

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

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Fullse input Fullse Input Electronic gear (Division/Multiplication of command pulse) 1/1000 times to 1000 times 1/1000 times 1/1						
Max. command pulse Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for fine diver: 4 Mpps			Control inpu	ıt		
Max. command pulse Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for fine diver: 4 Mpps			Control outp	out	Positioning complete (In-position) etc.	
Pulse input pulse signal format (in) Pulse input (in) Pulse (i				Max. command pulse	<u> </u>	
Pute input pulse signal format (1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction (2) A and B-phase, (3) Command and direction (2) Electronic gear (Division/Multiplication of command pulse) Input (Division/Multiplication of command pulse) Input (Division/Multiplication of command pulse) Instantaneous Speed Observer (2) Available (2) Selection of internal velocity setup 1 (2) Selection of internal velocity setup 2 (3) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (2) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (2) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (2) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (2) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (2) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (6) White (2) Selection of internal velocity setup 3 (4) Speed zero clamp (6) White (6) Whi						
Analog Torque lent command input Individual roque limit for both positive and negative direction is enabled. Individual roque limit for both positive and negative direction is enabled. Damping Control Damping Control Output (1) Selection of internal velocity setup 1 (2) Selection of internal velocity setup 2 (3) 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 output Speed arrival etc. Speed ar		Posit		Input pulse signal format	((1) Positive and Negative direction, (2) A and B-phase, (3) Command and	
Analog Torque lent command input Individual roque limit for both positive and negative direction is enabled. Individual roque limit for both positive and negative direction is enabled. Damping Control Damping Control Output (1) Selection of internal velocity setup 1 (2) Selection of internal velocity setup 2 (3) 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 output Speed arrival etc. Speed ar		ion contr	input	(Division/Multiplication of	1/1000 times to 1000 times	
Input		으		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input	
Input			Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.	
Instantaneous Speed Observer Damping Control Available Control input (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. Speed arrival etc. Speed command input Imput Torque limit command input Torque lead forward input Torque seed comp Speed arrival etc. Speed arrival			_			
Damping Control Available Control input Control input Speed arrival etc. Speed command input Individual setup of acceleration and deceleration is enabled. Torque limit command input Individual setup of acceleration and deceleration is also enabled. Torque feed forward input Speed arrival etc. Switching input Individual setup of acceleration and deceleration is enabled. Torque feed forward input Individual setup of acceleration and deceleration is enabled. Torque feed forward input Speed arrival etc. Switching input Speed arrival etc. Switching input Speed arrival etc. Switching input Switching input Speed arrival etc. Switching input Speed arrival etc. Speed command input Individual setup of acceleration and deceleration is enabled. Wallable Speed Control input Speed arrival etc. Speed control input Speed arrival etc. Speed arrival			Instantaneo		·	
Control input Control input Control output Control output Analog input Torque limit command input Internal velocity command input Increase are used for scale setting and command polarity. Analog instantaneous Speed Observer Instantaneous Speed Observer Analog input Torque filter Torque filter Analog instantaneous Speed Observer Analog input Torque command input Torque command input Torque command input Torque filter Analog instantaneous Speed Observer Available Torque filter Analog input Torque command input Torque command input Torque filter Available Torque filter Available Torque filter Available Torque command input Speed zero clamp input is enabled. Torque filter Available Torque command input Speed zero clamp input is enabled. Torque filter Available Torque command input Torque command input Torque command input Speed zero clamp. Torque command input Torque command input Speed zero clamp. Torque command input Torque command input Speed zero clamp. Torque command input Torque input					Available	
Control input Control output Torque limit command input landwidual torque limit for both positive and negative direction is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque command input landwidual setup of acceleration and deceleration is enabled. Torque limit or available Torque command input landwidual setup of acceleration is enabled. Torque limit or available Torque command input landwidual setup of acceleration is enabled. Torque limit or available Torque command input landwidual setup of acceleration is enabled. Torque command input landwidual setup of acceleration is also enabled. Torque command input landwidual setup of acceleration is also enabled. Torque command input landwidual setup of acceleration is also enabled. Torque command input landwidual setup of acceleration is also enabled. Torque command input landwidual setup of acceleration is enabled. Torque command input landwidual enable provided by means of analog voltage. Parameters are used for scale setting and command polaterion input landwidual enable landwidual enable. Torque ped forward input landwidual enable landwidual enable landwidual enable. Torque feed forward input landwidual enable landwidual enable landwidual enable. Torque feed forward input landwidual enable landwidual enable landwidual enable. Torque					1 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
Control output 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) Torque limit command input Torque feed forward input Analog voltage can be used as torque feed forward input. Internal velocity command Switching the internal speed is enabled by command input Analog voltage can be used as torque feed forward input. Internal velocity command Switching the internal speed is enabled by command input. Analog voltage can be used as torque feed forward input. Soft-start/down function Individual setup of acceleration and deceleration is enabled. Individual setup of acceleration and deceleration is enabled. Speed zero clamp input is enabled. Speed zero clamp. Torque command sign input etc. Speed zero clamp. Torque command polarity. (3 V/rated torque Default) Speed limit function Speed limit during and command polarity. (3 V/rated torque Default) Speed limit function Speed limit during gradual increase switching (4) Damping control switching etc. Full-closed positioning complete et					(1) Selection of internal velocity setup 1 (2) Selection of internal velocity setup 2	
Analog input internal velocity command input individual torque limit for both positive and negative direction is enabled. Torque limit command input individual torque limit for both positive and negative direction is enabled. Individual torque limit for both positive and negative direction is enabled. Individual torque limit for both positive and negative direction is enabled. Soft-start/down function Individual torque limit for both positive and negative direction is enabled. Soft-start/down function Individual setup of acceleration and deceleration is enabled, with 0 s to 10 s / 1000 r/min. Sigmoid acceleration is elaso enabled. With 0 s to 10 s / 1000 r/min. Sigmoid acceleration is elaso enabled. Speed Control filter Available Availa			Control outr	out		
Torque feed forward input Analog voltage can be used as torque feed forward input.		Spi	Analog		Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity.	
Torque feed forward input Analog voltage can be used as torque feed forward input.		ed	iriput	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.	
Soft-start/down function		00		Torque feed forward input	Analog voltage can be used as torque feed forward input.	
Soft-start/down function		ň	·			
Soli-statutown function to 10 s./1000 r/min. Sigmoid acceleration/deceleration is also enabled.		<u>o</u>	0-11-1-11-1	for all a		
Instantaneous Speed Observer Available			Son-start/do	own function	to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.	
Speed Control filter Available			Zero-speed	clamp	Speed zero clamp input is enabled.	
Control output Analog input Torque command input Speed arrival etc. Speed limit function Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Control output Full-closed positioning complete etc. Control output Full-closed positioning complete etc. Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Analog input Torque feed forward input Setup range of division/multiplication of feedback scale Damping Control Auto tuning Torque feedback pulse Division of encoder feedback pulse Speed arrival etc. 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) Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Input pulse signal format Electronic gear (Division/ Multiplication of torget pulse) Torque feed forward input Analog voltage can be used as torque feed forward input. Analog voltage can be used as torque feed forward input. The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-feat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error etc.			Instantaneo	us Speed Observer	Available	
Control output Analog input Torque command input Speed arrival etc. Speed limit function Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Control output Full-closed positioning complete etc. Control output Full-closed positioning complete etc. Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Analog input Torque feed forward input Setup range of division/multiplication of feedback scale Damping Control Auto tuning Torque feedback pulse Division of encoder feedback pulse Speed arrival etc. 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) Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Input pulse signal format Electronic gear (Division/ Multiplication of torget pulse) Torque feed forward input Analog voltage can be used as torque feed forward input. Analog voltage can be used as torque feed forward input. The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-feat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error etc.	핕			<u> </u>	Available	
Control output Analog input Torque command input Speed arrival etc. Speed limit function Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Control output Full-closed positioning complete etc. Control output Full-closed positioning complete etc. Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Analog input Torque feed forward input Setup range of division/multiplication of feedback scale Damping Control Auto tuning Torque feedback pulse Division of encoder feedback pulse Speed arrival etc. 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) Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Input pulse signal format Electronic gear (Division/ Multiplication of torget pulse) Torque feed forward input Analog voltage can be used as torque feed forward input. Analog voltage can be used as torque feed forward input. The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-feat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error etc.	nct		•		Only available at A5T Series	
Control output Analog input Torque command input Speed ommand input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3 V/rated torque Default) Speed limit function Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching etc. Control output Full-closed positioning complete etc. Exclusive interface for Photo-coupler: 500 kpps frequency Input pulse signal format Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Primary delay filter or FIR type filter is adaptable to the command input Inquut Torque feed forward input Setup range of division/multiplication of feedback scale Damping Control Available The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERIM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Setter or protective function Frotective function Soft error Soft error Soft error Speed arrival etc. Speed ocmmand input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3 V/rated torque Default) Speed limit value with parameter is enabled. (1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping control switching establed for interface for Photo-coupler: 500 kpps Exclusive interface for Photo-coupler: 500 kpps Individual torque interface for Photo-coupler: 500 kpps Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for Photo-coupler: 500 kpps Exclus	on	_		-		
Analog input Torque command input by the properties of the propert		org'				
Control input Control output Full-closed positioning complete etc. Full-closed position divisor of plotoner (sommand input inp		ue control	Analog		Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3 V/rated	
Control input Control output Control output Control output Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Primary delay filter or FIR type filter is adaptable to the command input Individual torque limit for both positive and negative direction is enabled. Setup range of division/multiplication of feedback scale Damping Control Auto tuning Control output Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Primary delay filter or FIR type filter is adaptable to the command input Individual torque limit for both positive and negative direction is enabled. Analog voltage can be used as torque feed forward input. Setup range of division/multiplication of feedback scale Damping Control Available The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Soft error Soft error Soft error Soft error Soft error Soft error		Ň	Speed limit	function	Speed limit value with parameter is enabled.	
Pulse input Pulse signal format Differential input Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Primary delay filter or FIR type filter is adaptable to the command input Individual torque limit for both positive and negative direction is enabled. Torque feed forward input Analog voltage can be used as torque feed forward input. Setup range of division/multiplication of feedback scale Damping Control Available The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Protective function Soft error Max. command pulse Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps Differential input Electronic gear (Division/ Multiplication of command pulse division error, EEPROM error etc. For Protective function Soft error Excess position deviation, command pulse division error, EEPROM error etc.					(3) Command dividing gradual increase switching (4) Damping control switching etc.	
Fulse input Input pulse signal format Differential input Individual torque limit for both positive and negative direction is enabled. Analog input Torque leed forward input Individual torque limit for both positive and negative direction is enabled. Torque feed forward input Analog voltage can be used as torque feed forward input. Setup range of division/multiplication of feedback scale Damping Control Available Auto tuning Division of encoder feedback pulse Division of encoder feedback pulse Frotective function Soft error First type filter is adaptable to the command input Individual torque limit for both positive and negative direction is enabled. Analog voltage can be used as torque feed forward input. Available The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error etc.			<u> </u>			
Analog input Torque limit command input Individual torque limit for both positive and negative direction is enabled. Torque feed forward input Analog voltage can be used as torque feed forward input. Setup range of division/multiplication of feedback scale Damping Control Available Auto tuning The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Soft error Excess position deviation, command pulse division error, EEPROM error etc.		Full-c		frequency	Exclusive interface for line driver : 4 Mpps	
Analog input Torque limit command input Individual torque limit for both positive and negative direction is enabled. Torque feed forward input Analog voltage can be used as torque feed forward input. Setup range of division/multiplication of feedback scale Damping Control Available Auto tuning The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Soft error Excess position deviation, command pulse division error, EEPROM error etc.		losed cont		Electronic gear (Division/ Multiplication of command pulse)	1/1000 times to 1000 times	
Analog input Torque limit command input Individual torque limit for both positive and negative direction is enabled. Torque feed forward input Analog voltage can be used as torque feed forward input. Setup range of division/multiplication of feedback scale Damping Control Available Auto tuning The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Soft error Excess position deviation, command pulse division error, EEPROM error etc.		<u>ro</u>		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input	
Setup range of division/multiplication of feedback scale Damping Control Available The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Protective function Hard error Soft error Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error etc.		Ň	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.	
The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Protective function Foft error Available The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in 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, over-heat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error etc.			input	Torque feed forward input	Analog voltage can be used as torque feed forward input.	
Auto tuning The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Soft error Excess position deviation, command pulse division error, EEPROM error etc.					1/40 times to 160 times	
Auto tuning Operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback pulse Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Soft error Soft error Excess position deviation, command pulse division error, EEPROM error etc.			Damping Co	ontrol	Available	
function Soft error Soft err			Auto tuning		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.	
function Soft error Soft err		e m	Division of e	encoder feedback pulse		
Soft error etc.		mon		Hard error	over-heat, over-current and encoder error etc.	
Traceability of alarm data The alarm data history can be referred to.						
			Traceability	of alarm data	The alarm data history can be referred to.	

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

A5IIE, A5E series (Position control type)

		100 V	Main circuit		Single phase, 100 V to 120 V $^{+10~\%}_{-15~\%}$ 50 Hz/60 Hz		
		100 V	Control circuit		Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz		
			Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	Input power	200 V	circuit	E-frame to F-frame	3-phase, 200 V to 230 V +10 % 50 Hz/60 Hz		
	ower	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
			circuit	E-frame to F-frame	Single phase, 200 V to 230 V $^{+10~\%}_{-15~\%}$ 50 Hz/60 Hz		
		400 V	Main circuit	D-frame to F-frame	3-phase, 380 V to 480 V		
		400 V	Control circuit	D-frame to F-frame	DC 24 V ± 15 %		
Basic	temperature			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	Env	ironment	humidity		Both operating and storage : 20 % to 85 %RH (free from condensation *1)		
ecific			Altitude		Lower than 1000 m		
Specifications	Vibratio			ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)		
S	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive		
	Encoder feedback				20-bit (1048576 resolution) incremental encoder, 5-wire serial		
	ק	Occaliant	Input		General purpose 10 inputs The function of general-purpose input is selected by parameters.		
	Parallel I/O	Control signal		Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.		
		Analog	oianal	Input	none		
	connector	Allalog	sigriai	Output	2 outputs (Analog monitor: 2 output)		
	ctor	Dulas si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)		
		Pulse si	griai	Output	4 outputs (Line driver: 3 output, open collector: 1 output)		
		mmunicat ction	ion	USB	Connection with PC etc.		
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)		
	Regeneration				A, B-frame: no built-in regenerative resistor (external resistor only) C-fram to F-frame: Built-in regenerative resistor (external resistor is also enabled.)		
	Dyr	namic bra	ke		Built-in		
	Cor	ntrol mod	е		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control		
*4 A:.	Air containing water wares will be a				ome esturated with water vapor as the temperature falls, equaing dow		

^{*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 control	Pulse input	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
) S		Damping Co	ontrol	Available
		2DOF setting	igs	Only available at A5IE Series
		Auto tuning		The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting.
	င္ပ	Division of e	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).
	Common	Protective	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.
		function	Soft error	Excess position deviation, command pulse division error, EEPROM error etc.
		Traceability	of alarm data	The alarm data history can be referred to.

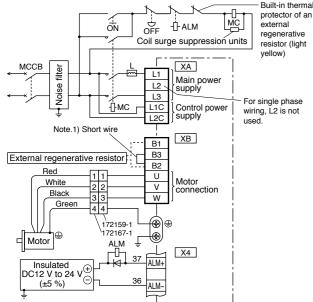
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Wiring Diagram

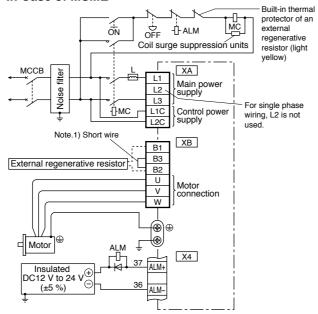
In case of not using

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





· In C	ase of	MSME
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1)

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

Note.1)

Built-in thermal

protector of an

regenerative

resistor (light

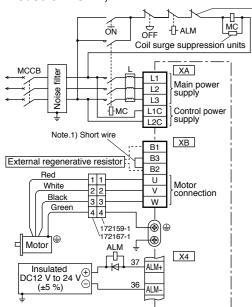
external

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

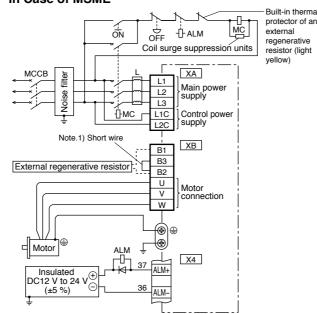
In Case of 3-phase, A-frame to D-frame, 200 V type

· In Case of MSMD, MHMD

Note.1



· In Case of MSME



Note.1)

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

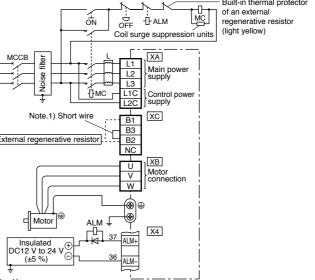
Note.1)

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

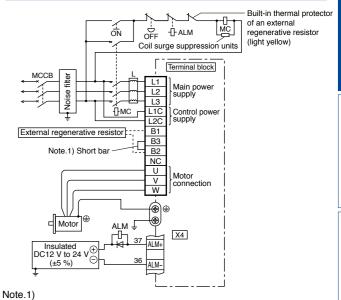
^{*} Refer to P.186, P.187, Specifications of Motor connector.

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



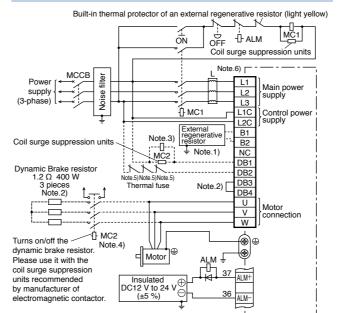
Note.	1)				
Frame No.	Short wire (Accessory)	Built-in	Connection of the connector XC		
		regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
E-frame	with	with	Remove the short wire accessory from between B2-B3. Connect an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



- O--- - f O --h--- O from - 000 V h----

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



lote 1	About	regenerative	resistor	
iolo. i	nooui	regenerative	16313101	

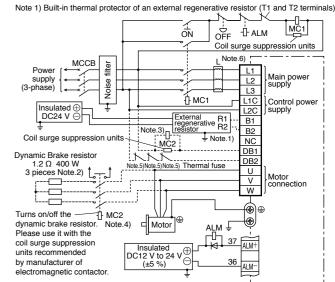
Frame	Short bar	Built-in	Connection of terminal block					
No. (Accessor		regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.				
G-frame	rame without without **Connect an external regenerative resistor between B1-B2		Open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

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

In case of using ernal regenerative resistor.

Remove the short bar accessory

from between B2-B3.
Connect an external regenerative



Note.1) About regenerative resistor

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

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

Note.2) About dynamic brake resistor

	,	-		
Frame	Short bar	Built-in	Connection of	terminal block
No.	(Accessory)	dynamic brake resistor.	In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.
H-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.

Shorted with attached short ha

between DB3-DB4
 Open between DB1-DB2

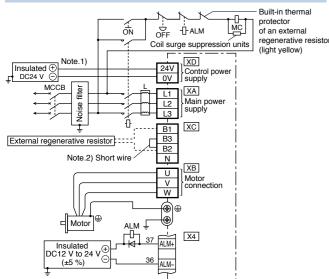
Note.5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor.

34

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

hetween DB3-DB4

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

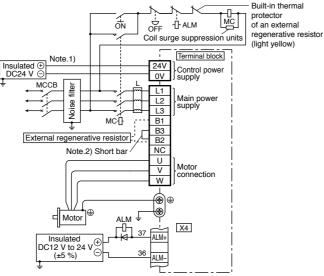


Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

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

Wiring to Connector, XA, XB, XC, XD

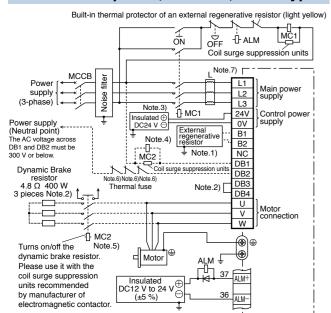
and Terminal Block



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

	•				
Frame	Short bar (Accessory)	Built-in regenerative resistor	Connection of terminal block		
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, 400 V type



Note.1) About regenerative resistor

Frame	Short bar	Built-in regenerative resistor	Connection of terminal block				
No.	(Accessory)		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	Short bar	Observation Built-in	Connection of terminal block				
	Jiioil Dai	alona a mai a la malon					

In case of using an external dynamic brake resistor

Remove attached short bar en DB3-DB4

<common for G & H frame>

namic brake

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.

35

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

In case of not using

Shorted with attached short ba

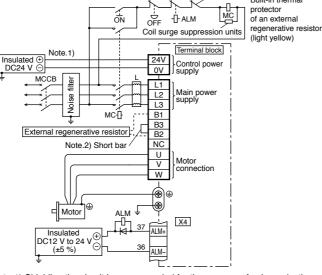
between DB3-DB4

Open between DB1-DB2

Note.7) Reactor should be prepared by the customer

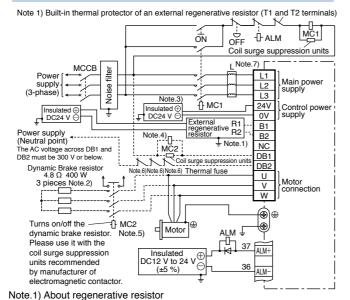
* Refer to P.186, P.187, Specifications of Motor connector

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



Note.2)

ı	n Case	of 3-	nhase	H-frame,	400 V	type
	II Gasc	טו ט־	pilase,	II-II allic,	700 V	LANC



	,	J		
Frame	Short bar	Built-in	Connection of tern	ninal block
	(Accessory)	regenerative resistor	iii dadd di ddiiig	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

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

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

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

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

Outline Description of Safe Torque Off (STO)

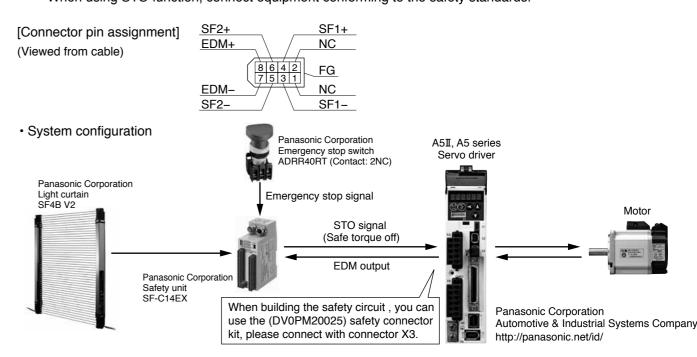
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

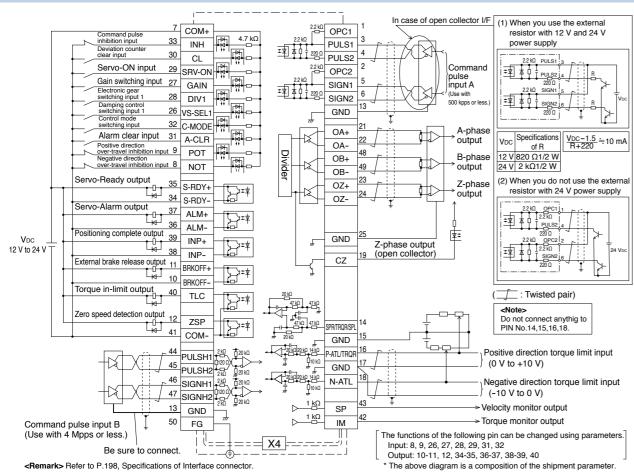
This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

Safety Precautions

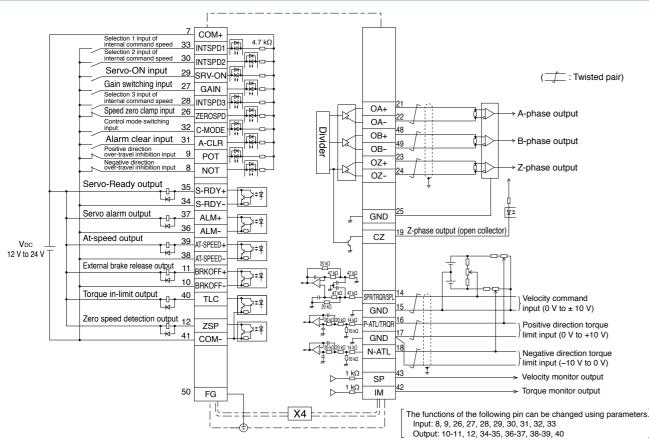
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external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



Wiring Example of Position Control Mode



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

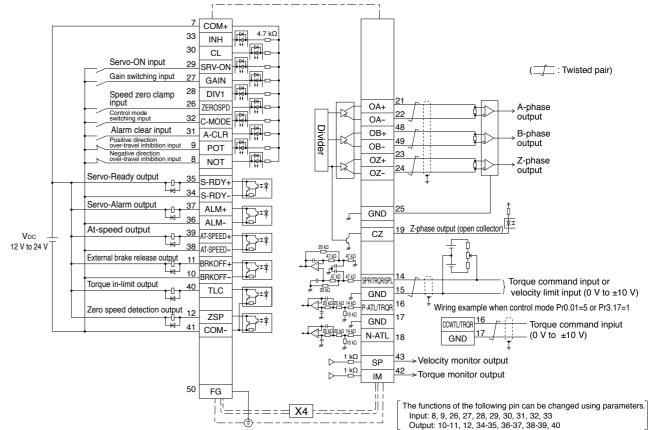


37

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

The above diagram is a composition of the shipment parameter.

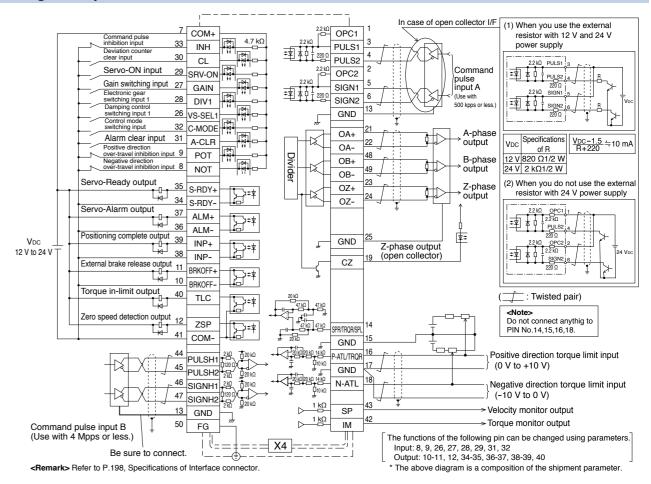
Wiring Example of Torque Control Mode (Excluding A5IIE, A5E series)



<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

Wiring to the Connector, X6

Motor

(Sumitomo 3M) or equivalent

A5 Family

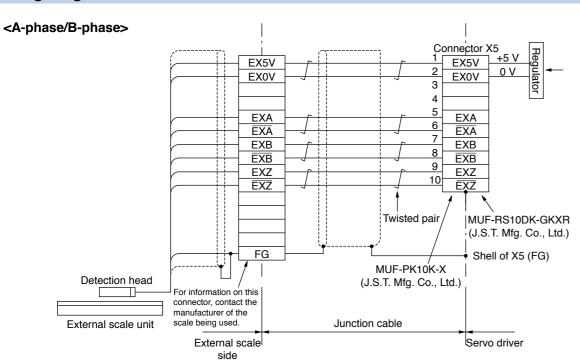
Applicable External Scale

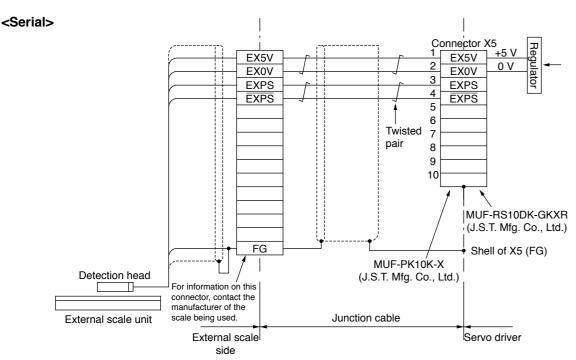
The manufacturers applicable external scales for this product are as follows.

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

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

Wiring Diagram of X5

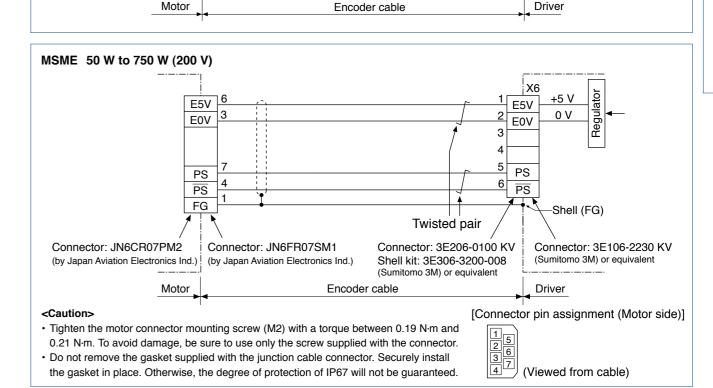


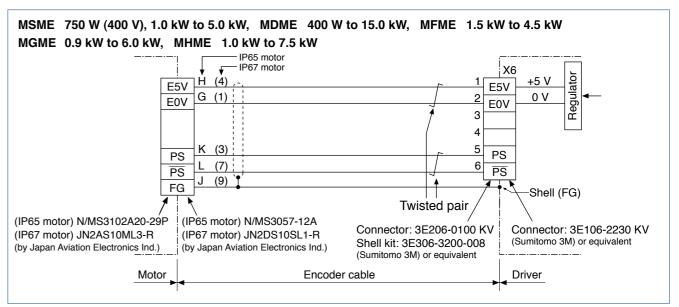


In Case of 20-bit Incremental Encoder MSMD 50 W to 750 W, MHMD 200 W to 750 W X6 White +5 V E5V E5V 2 <u>E0V</u> Black 0 V E0V Light blue PS PS Purple PS PS FG -Shell (FG) Twisted pair 172168-1 172160-1 Connector: 3E206-0100 KV Connector: 3E106-2230 KV (by Tyco Electronics) (by Tyco Electronics)

Shell kit: 3E306-3200-008

(Sumitomo 3M) or equivalent

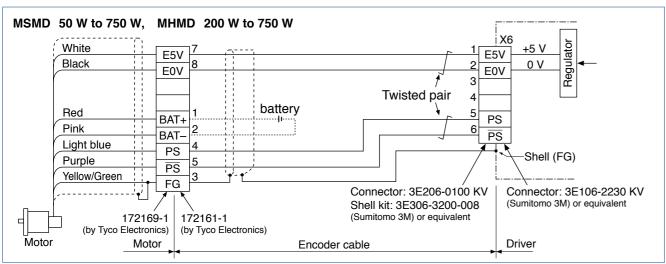




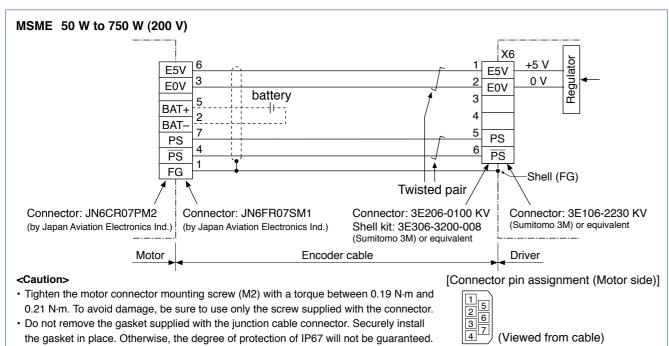
[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

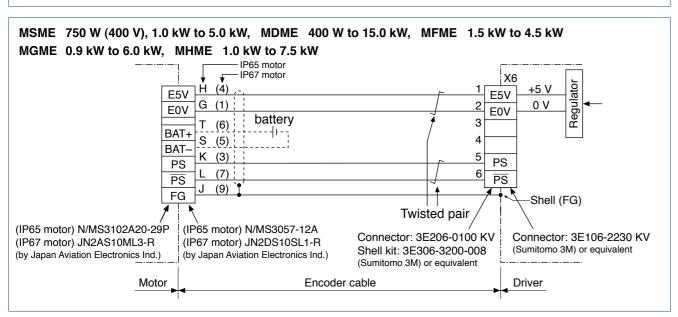
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

A5 Family



Wiring to the Connector, X6





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

A-frame Unit [mm] X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection Mounting bracket X7: For analog monitor signal connection (Option) **₹** 🚱 XA: Main power input terminals -X2 Control power -X3 Terminals for external Terminals for motor connection -X5 **¬**⊚-Mounting bracket 5.2 Name plate (Option) 5.2 _28 __6 Rack mount type Base mount type (Option: Front-end mounting) (Standard: Back-end mounting) Connector of driver side J.S.T. Mfg. Co., Ltd. J.S.T. Mfg. Co., Ltd. Connector XA S05B-F32SK-GGXR Connector XB S06B-F32SK-GGXR Connector X1 UB-M5BR-DMP14-4S (or equin ent) J.S.T. Mfg. Co., Ltd.

B-frame

Connector X3

Connector X4

1-2040537-1 (or equivalent)

10250-52A2PF (or equivalent

Tyco Electronics

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

Japan Molex Inc.

Sumitomo 3M

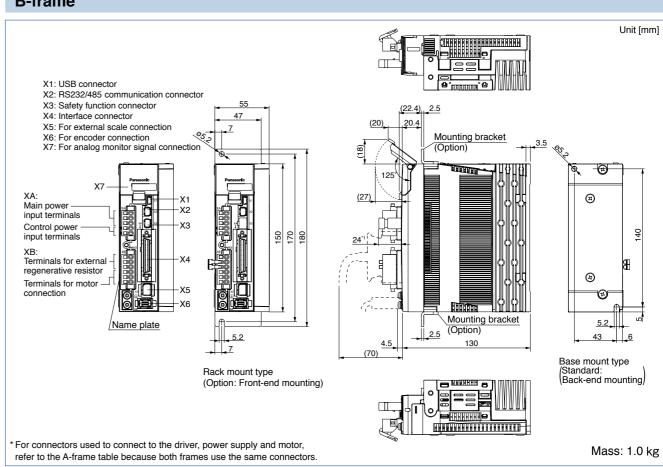
Sumitomo 3M

2040537-1 (or equivalent

Connector X5 MUF-RS10DK-GKXR (or equivalent)

Connector X6 3E106-2230 KV (or equivalent)

Connector X7 530140610 (or equivalent



Mass: 0.8 kg

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

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

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

X2: RS232/485 communication connector

X7: For analog monitor signal connection

-X2

-X3

-X5

* For connectors used to connect to the driver, power supply and motor,

refer to the A-frame table because both frames use the same connectors.

5.2

Rack mount type

(Option: Front-end mounting)

40

X3: Safety function connector

X6: For encoder connection

X5: For external scale connection

X4: Interface connector

C-frame

input terminals

Control power

input terminals

external regenerative

Terminals for

X1: USB connector

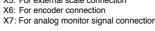
Unit [mm]

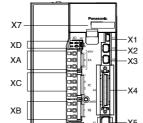
5.2

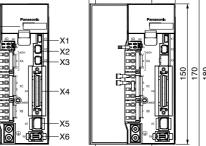
Base mount type

Back-end mounting

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



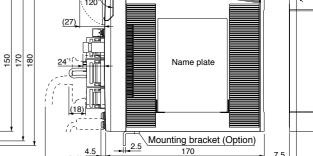




Rack mount type

2-05.2

(Option: Front-end mounting)



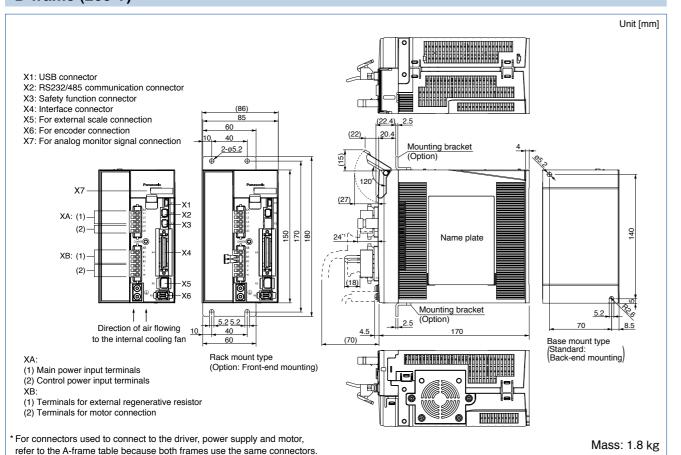
(Option)

Connector XA S03B-JTSMSS-GSANYR J.S.T. Mfg. Co., Ltd. Connector XB S03B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XD S02B-J25SK-GGR

Connector XA 03JFAT-SAYGSA-M J.S.T. Mfg. Co., Ltd. Connector XB 03JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd. Connector XC 04JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd. Connector XD 02MJFAT-SAGF J.S.T. Mfg. Co., Ltd. * 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.

Mass: 1.9 kg

D-frame (200 V)



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

(22.4) 2.5

,20.4

120

(27)

(18)

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

Mounting bracket

Name plate

Mounting bracket

5.2

Mass: 1.6 kg

50

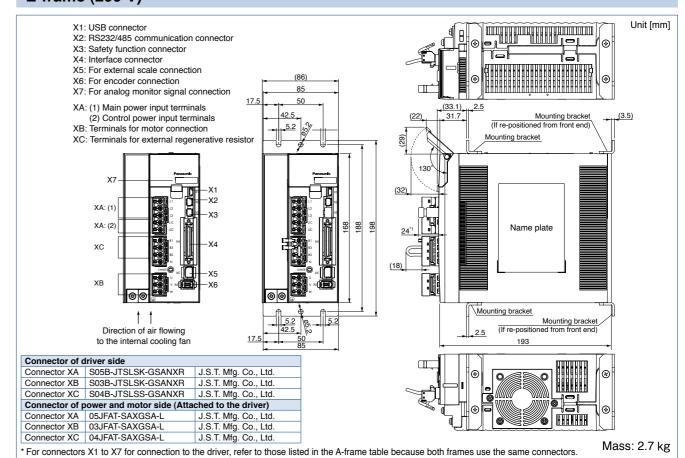
(Standard: Back-end mounting)

Base mount type

. 7.5

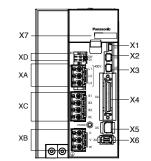
E-frame (200 V)

Connector of driver side



E-frame (400 V)

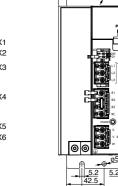
- X1: USB connector
- X2: RS232/485 communication connector
- X3: Safety function connector
- X4: Interface connector
- X5: For external scale connection
- X6: For encoder connection
- X7: For analog monitor signal connection
- XA: Main power input terminals
- XB: Terminals for motor connection
- XC: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

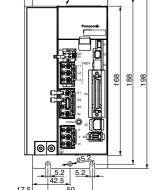


Direction of air flowing to the internal cooling fan

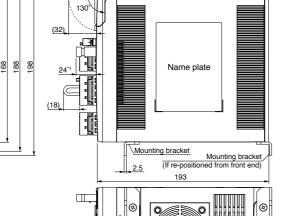
Connector of driver side
Connector XA | S03B-JTSLSS-GSANYR | J.S.T. Mfg. Co., Ltd. Connector XB S03B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd.
Connector XC S04B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd.

Connector of power and motor side (Attached to the driver)





42.5



(If re-positioned from front end)

Mass: 2.7 kg

Mounting bracket

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

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

Connector XD 02MJFAT-SAGF J.S.T. Mfg. Co., Ltd. * For connectors X1 to X7 for connection to the driver, refer to those listed in the A-frame table because both frames use the same connectors.

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

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

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

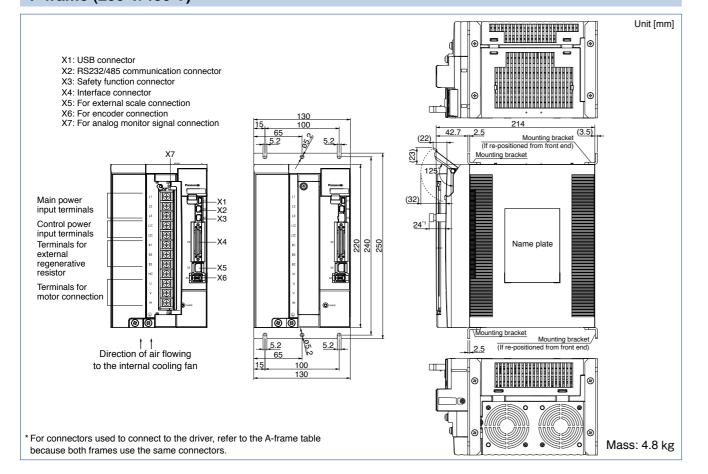
F-frame (200 V/400 V)

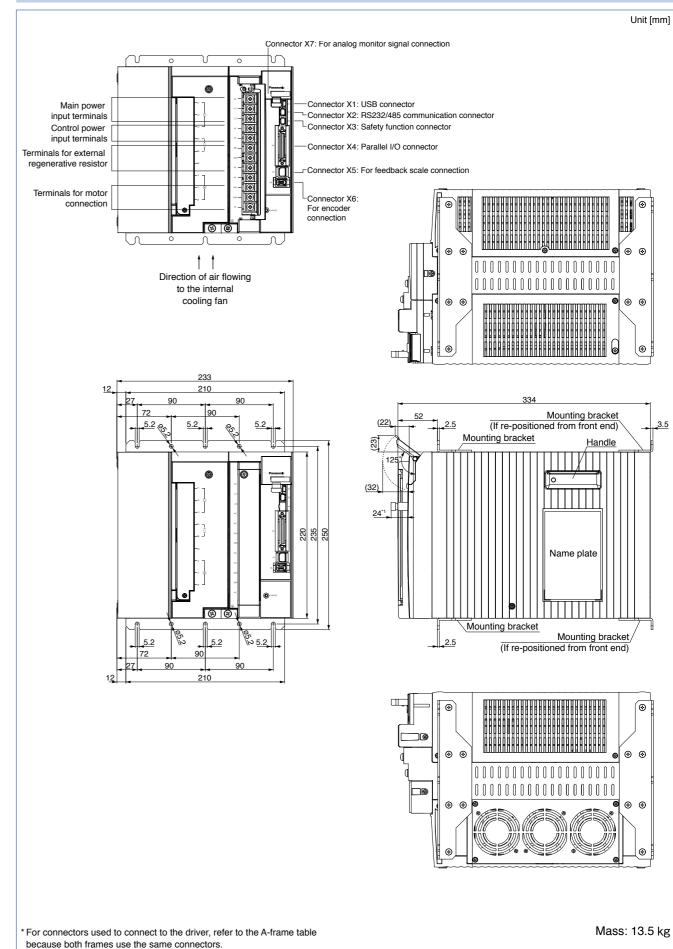
Connector XD S02B-J25SK-GGR

Connector XA 03JFAT-SAYGSA-L

Connector XB 03JFAT-SAXGSA-L

Connector XC 04JFAT-SAXGSA-L





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

MSMD (100 V/200 V)

MHMD (100 V/200 V)

200 W to 750 W.....

MSME (100 V/200 V)

50 W to 750 W......

1.0 kW to 5.0 kW.

1.0 kW to 15.0 kW.

MSME (200 V)

MDME (200 V)

MFME (200 V) 1.5 kW to 4.5 kW

MGME (200 V)

MHME (200 V)

MSME (400 V)

MDME (400 V) 400 W to 15.0 kW

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

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

MHME (400 V)

IP67 motor

dimensions...

1.0 kW to 7.5 kW P.130

Motors with Gear Reducer

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

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

Table of motor specifications... P.143

Torque Characteristics of Motor

Dimensions of Motor.....

and the motor.....

750 W to 5.0 kW.

1.0 kW to 7.5 kW

0.9 kW to 6.0 kW

50 W to 750 W.....

Motor Contents

. P.74

. P.80

. P.89

. P.92

. P.97

P.104

P.137

.P.144

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



MSMD Low inertia Max. speed: 5000 r/min

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



MHMD High inertia

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



Low inertia

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

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

Enclosure: IP65, IP67

Rated output



MDME Middle inertia

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

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

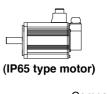


MFME (Flat type)* Middle inertia

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

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

Middle capacity motor has the IP67 type.



Compact

(IP67 type motor)

C: IP65 motor 1: IP67 motor

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

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

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

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

Motor Specification Description Environmental Conditions.... P.182 Notes on [Motor specification]

Permissible Load at Output Shaft... Built-in Holding Brake

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

				AC1	00 V	
Motor model		IP65		MSMD5AZG1□	MSMD5AZS1□	
*1		IP67		-	-	
Amaliaahla	Model	A5II, A5	series	MAD	T1105	
Applicable *2	No.	A5IIE, A	5E series	MAD ⊘T1105E	_	
unver	Fr	ame sym	bol	A-fra	ame	
Power supply	capacit	y	(kVA)	0	.5	
Rated output			(W)	5	0	
Rated torque			(N·m)	0.	16	
Momentary Ma	ax. peal	k torque	(N·m)	0.48		
Rated current		(A(rms))	1.1		
Max. current			(A(o-p))	4.7		
Regenerative b	rake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0P4280		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	rtia	Without	t brake	0.025		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3				30 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

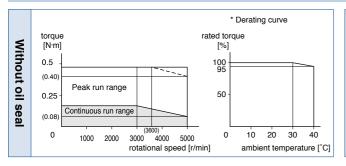
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

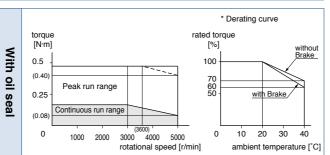
• Permissible load (For details, refer to P.183)

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

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

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

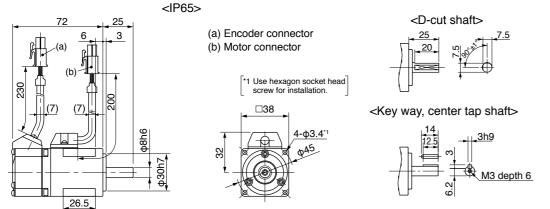




Dimensions

<Cautions>

<Without Brake> Mass: 0.32 kg



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

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

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

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

[Unit: mm]

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

Specifications

					AC2	00 V
		IP65		MSMD5AZG1□	MSMD5AZS1	
Motor mod	*1		IP67		-	-
A		Model	A5 I I, A5	series	MAD	T1505
Applicable driver	*2	No.	A5IIE, A	5E series	MAD ⊘T1505E	-
unver		Fr	ame sym	bol	A-fr	ame
Power sup	ply c	capacity	у	(kVA)	0	.5
Rated outp	ut			(W)	5	0
Rated torq	ue			(N·m)	0.	16
Momentary	/ Ma	x. peal	k torque	(N·m)	0.48	
Rated curr	ent		(.	A(rms))	1.1	
Max. curre	nt		((A(o-p))	4.7	
Regenerati	ve bi	rake	Without	option	tion No limit Note)2	
frequency (ti	mes/m	nin) Note)1	DV0P4281		No limit Note)2	
Rated rota	tiona	al spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	iner	tia	Without	brake	0.025	
of rotor (×1	0 ⁻⁴ l	kg·m²)	With brake		0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less			
Rotary encoder specification		fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolutio			n per sina	le turn	1048576	131072

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

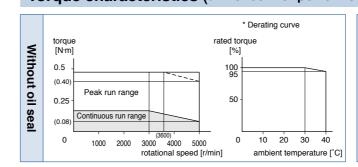
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

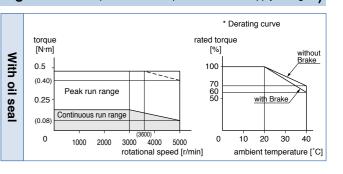
• Permissible load (For details, refer to P.183)

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

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

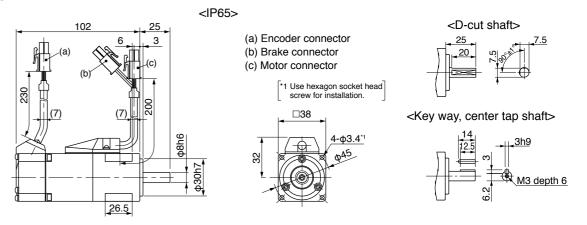
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<With Brake> Mass: 0.53 kg



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

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

[Unit: mm]

A5 Family

Specifications

				AC1	00 V
IP65			MSMD011G1	MSMD011S1	
Motor model *1		IP67		-	_
	Model	A5II, A5 series		MAD	T1107
Applicable driver *2	No.	A5IIE, A5E	series	MAD ⊘T1107E	_
unvei	Fr	ame symbo	ol	A-fra	ame
Power supply	capacit	/	(kVA)	0	.4
Rated output			(W)	10	00
Rated torque			(N·m)	0.:	32
Momentary M	ax. peal	c torque	(N·m)	0.95	
Rated current		(A	(rms))	1.7	
Max. current		(A	(o-p))	7.2	
Regenerative b	rake	Without o	ption	No limit Note)2	
frequency (times/	min) Note)1	DV0P42	280	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without b	rake	0.051	
of rotor (×10 ⁻⁴	kg·m²)	With bra	ake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	turn	1048576	131072

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

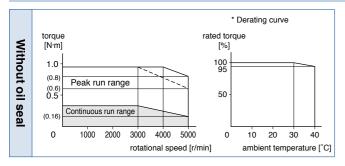
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

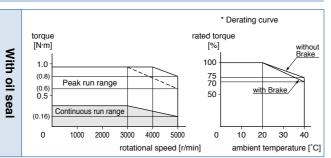
Permissible load (For details, refer to P.183)

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

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

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

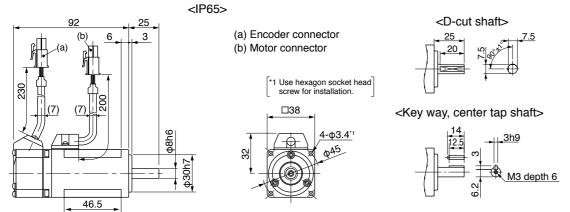




Dimensions

<Cautions>

Mass: 0.47 kg <Without Brake>



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

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

[Unit: mm]

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

Specifications

			AC2	00 V	
		IP65		MSMD012G1□	MSMD012S1
Motor mode	9I *1	IP67		-	_
	Model	Model A5II, A5 series		MAD<	T1505
Applicable driver	No.	A5IIE, A	5E series	MAD ◇T1505E	-
unven	F	rame sym	bol	A-fra	ame
Power supp	oly capaci	ty	(kVA)	0.	5
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	0.0	32
Momentary	Max. pea	k torque	(N·m)	0.95	
Rated curre	ent	(A(rms))	1.1	
Max. currer	nt	((A(o-p))	4.	7
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tir	nes/min) Note)	DV0P4281		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	3000	
Max. rotation	onal speed	d	(r/min)	5000	
Moment of	inertia	Without	brake	0.051	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary enc	oder spec	ifications	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.

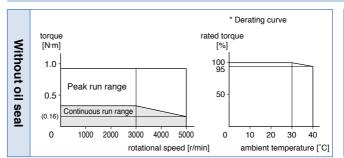
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

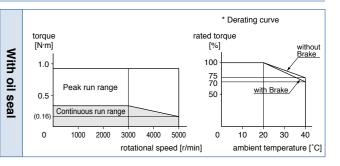
• Permissible load (For details, refer to P.183)

	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.

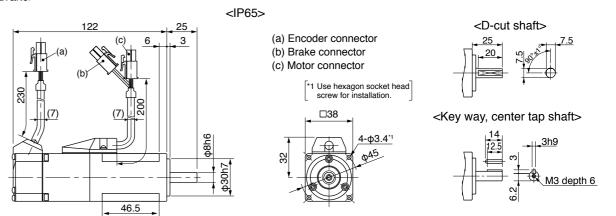
Torque characteristics (at AC200 V of power voltage)





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]

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Specifications

				AC1	00 V
Motor model		IP65		MSMD021G1□	MSMD021S1□
*1		IP67		-	-
Ammliaalala	Model	A5II, A5	series	MBD ⇔T2110	
Applicable driver *2	No.	A5IIE, A5	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 M	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	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 encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

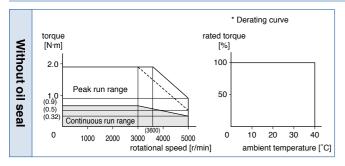
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

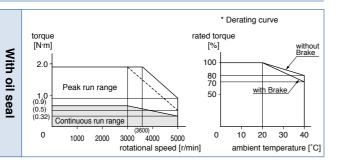
Permissible load (For details, refer to P.183)

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

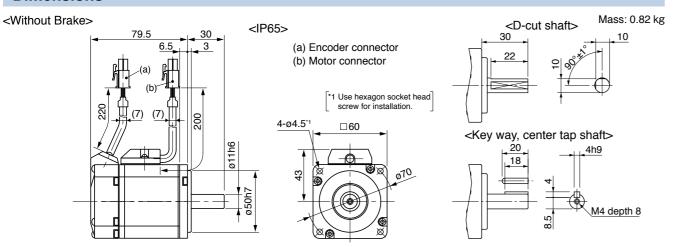
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

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

Specifications

				AC2	00 V	
Matanasadal		IP65			MSMD022G1□	MSMD022S1
Motor mode	EI *1		IP67		-	-
Annlinabla	ı	Model	A5 I I, A5	series	MAD	T1507
Applicable driver	*2 I	No.	A5IIE, A	5E series	MAD ◇T1507E	_
anvoi		Fr	ame sym	bol	A-fr	ame
Power supp	oly c	apacit	y	(kVA)	0.	.5
Rated outp	ut			(W)	20	00
Rated torqu	ıe			(N·m)	0.0	64
Momentary	Max	k. peal	k torque	(N·m)	1.91	
Rated curre	ent		(A(rms))	1.6	
Max. currer	nt		((A(o-p))	6.9	
Regenerativ	e bra	ake	Without option		No limit Note)2	
frequency (tin	nes/mi	n) Note)1	DV0P4283		No limit Note)2	
Rated rotat	iona	l spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	5000	
Moment of	inert	ia	Without	brake	0.	14
of rotor (×1	0⁻⁴ k	g·m²)	With b	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications 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.

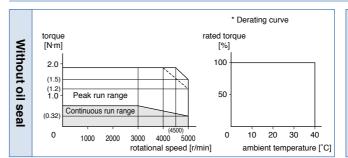
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

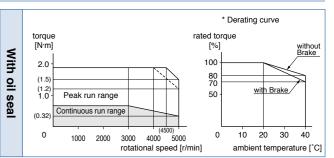
• Permissible load (For details, refer to P.183)

	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.

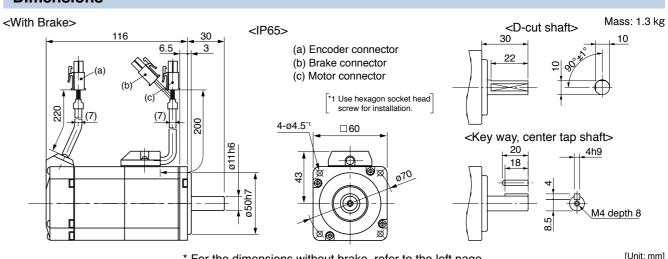
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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.

				AC1	00 V	
IP65				MSMD041G1□	MSMD041S1	
Motor model		IP67		-	-	
A !! !- ! -	Model	A5II, A5	series	MCD<	T3120	
Applicable driver *2	No.	A5IIE, A	5E series	MCD ♦T3120E	_	
unven	Fr	ame sym	bol	C-fr	ame	
Power supply	/ capacit	у	(kVA)	0	9	
Rated output			(W)	40	00	
Rated torque	!		(N·m)	1.	3	
Momentary N	/lax. peal	k torque	(N·m)	3.8		
Rated curren	t	(A(rms))	4.6		
Max. current		((A(o-p))	19.5		
Regenerative	brake	Without option		No limit Note)2		
frequency (times	s/min) Note)1	DV0P4282		No limit Note)2		
Rated rotatio	nal spee	d	(r/min)	3000		
Max. rotation	al speed		(r/min)	5000		
Moment of in	ertia	Without	brake	0.26		
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		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per single turn				1048576	131072	

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

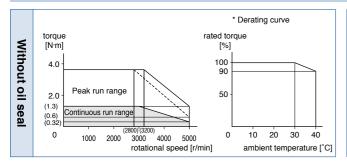
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

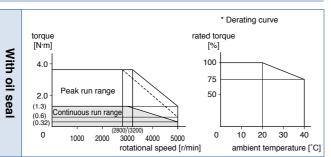
• Permissible load (For details, refer to P.183)

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

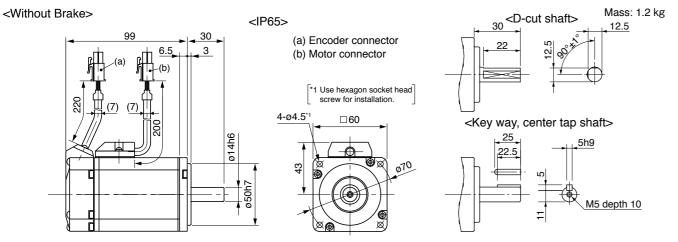
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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			MSMD042G1□	MSMD042S1
Motor mod	el *1		IP67		-	-
	М	odel	A5II, A5	series	MBD<	T2510
Applicable driver	*2 N	0.	A5IIE, A	5E series	MBD ⊘T2510E	-
unven		Fr	ame sym	bol	B-fra	ame
Power sup	ply ca	pacity	y	(kVA)	0	.9
Rated outp	ut			(W)	40	00
Rated torqu	ue			(N·m)	1.	.3
Momentary	/ Мах.	peal	torque	(N·m)	3.8	
Rated curre	ent		(A(rms))	2.6	
Max. curre	nt		((A(o-p))	11	.0
Regenerativ	ve bral	ке	Without	option	No limi	t Note)2
frequency (tir	mes/min)	Note)1	DV0P4283		No limit Note)2	
Rated rotat	tional	spee	d	(r/min)	3000	
Max. rotation	onal s	peed		(r/min)	5000	
Moment of	inertia	ì	Without	brake	0.26	
of rotor (×1	0 ⁻⁴ kg	·m²)	With b	rake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn			Note)5	20-bit Incremental	17-bit Absolute	
			n per sina	le turn	1048576	131072

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

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

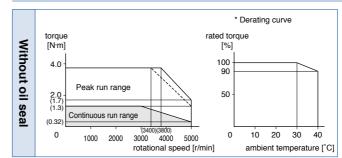
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

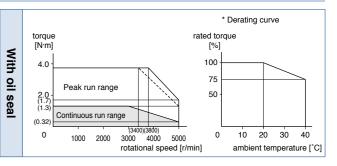
• Permissible load (For details, refer to P.183)

	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.

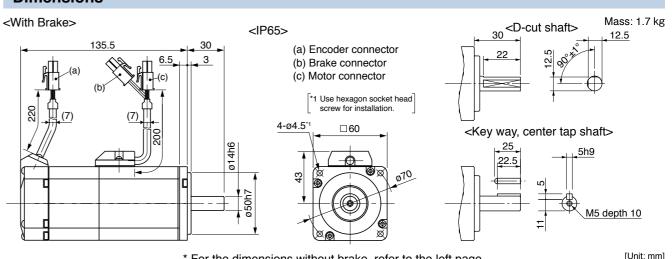
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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.

Specifications

				AC2	00 V
Matanasadal	IP65		MSMD082G1□	MSMD082S1□	
Motor model *1		IP67		-	-
Amuliaalala	Model	A5II, A5 serie	es	MCD<	T3520
Applicable 42	No.	A5IIE, A5E	series	MCD ⊘T3520E	-
divei	Fr	ame symbol		C-fra	ame
Power supply	capacity	y (F	(VA)	1.	.3
Rated output			(W)	75	50
Rated torque		1)	N·m)	2.	.4
Momentary Ma	ax. peal	k torque (f	N·m)	7.1	
Rated current		(A(rı	ms))	4.0	
Max. current		(A(c	o-p))	17.0	
Regenerative b	rake	Without op	tion	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)	4500	
Moment of ine	rtia	Without bra	ake	0.87	
of rotor (×10 ⁻⁴	kg·m²)	With brak	æ	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encode	er speci	fications N	lote)5	20-bit Incremental	17-bit Absolute
R	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.

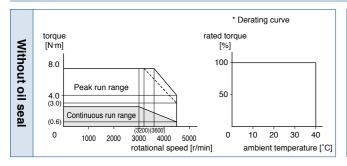
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

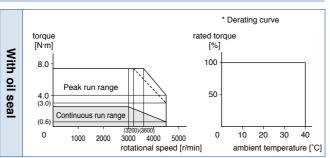
• Permissible load (For details, refer to P.183)

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

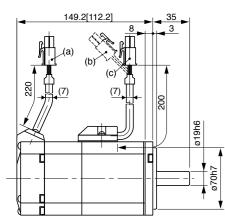
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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





Dimensions



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

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

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

Mass: Without brake/ 2.3 kg

* 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.

<IP65>

[Unit: mm]

MEMO

			AC1	00 V	
Motor model		IP65	MHMD021G1□	MHMD021S1	
*1		IP67	-	-	
Annlinghla	Model A5II, A5 series		MBD ⊘ T2110		
Applicable *2	No.	A5IIE, A5E series	MBD ⊘T2110E	_	
anver	Fr	ame symbol	B-frame		
Power supply	capacit	y (kVA)	0	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.64		
Momentary M	ax. peal	k torque (N·m)	1.91		
Rated current (A(rms))			2.5		
Max. current (A(o-p))			10.6		
Regenerative brake		Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	0.42		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.45		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	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.

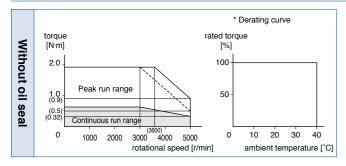
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

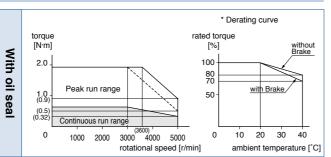
Permissible load (For details, refer to P.183)

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

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

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





Dimensions

Mass: 0.96 kg <Without Brake> <IP65> <D-cut shaft> (a) Encoder connector (b) Motor connector *1 Use hexagon socket head <Key way, center tap shaft>

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

[Unit: mm]

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

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

Motor Specifications

Specifications

			AC2	00 V		
		IP65			MHMD022G1□	MHMD022S1
Motor mod	€I *1		IP67		-	_
		Model	A5II, A5	series	MAD	T1507
Applicable driver	*2	No.	A5IIE, A	5E series	MAD ⊘T1507E	-
unver		Fr	ame sym	bol	A-fra	ame
Power sup	ply (capacity	у	(kVA)	0	.5
Rated outp	ut			(W)	20	00
Rated torq	ue			(N·m)	0.0	64
Momentary	/ Ma	ax. peal	k torque	(N·m)	1.91	
Rated current (A(rms))			A(rms))	1.6		
Max. current		((A(o-p))	6.9		
Regenerati	ve b	rake	Without	option	ption No limit Note)2	
frequency (ti	mes/n	nin) Note)1	DV0P4283		No limit Note)2	
Rated rota	tion	al spee	d	(r/min)	30	00
Max. rotati	ona	speed		(r/min)	50	00
Moment of	ine	rtia	Without	brake	0.42	
of rotor (×1	0^{-4}	kg·m²)	With brake		0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		tia Note)3	30 times	s or less		
Rotary encoder specification		fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		n per sina	le turn	1048576	131072	

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

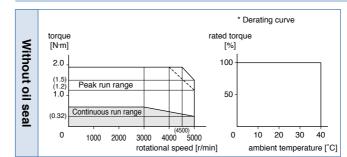
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

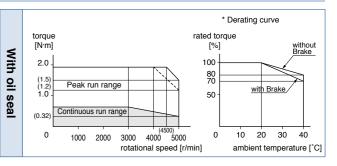
• Permissible load (For details, refer to P.183)

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

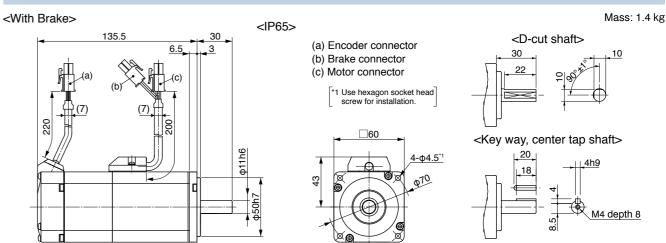
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

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

			AC1	00 V
M-4		IP65	MHMD041G1□	MHMD041S1
Motor model *1		IP67	_	-
A munica a la la	Model	A5II, A5 series	MCD<	T3120
Applicable *2	No.	A5IIE, A5E series	MCD ♦T3120E	_
unver	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1	.3
Momentary Max. peak torque (N·m)			3.8	
Rated current (A(rms))			4.6	
Max. current (A(o-p))			19.5	
Regenerative brake frequency (times/min) Note)1 Without option DV0P4282		No lim	t Note)2	
		DV0P4282	No limit Note)2	
Rated rotational speed (r/min)		3000		
Max. rotational speed (r/min)		(r/min)	5000	
Moment of ine	rtia	Without brake	0.67	
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

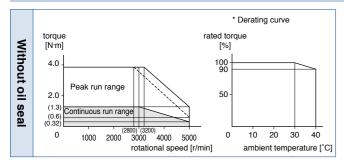
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

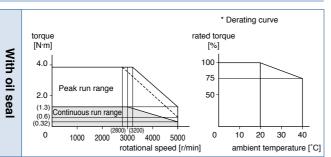
Permissible load (For details, refer to P.183)

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

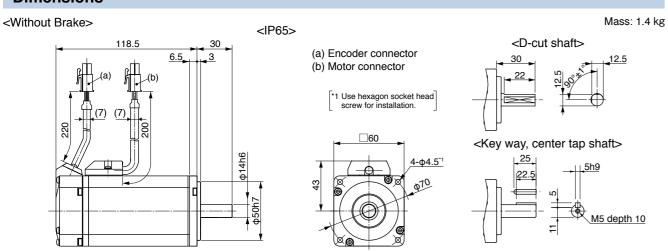
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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
M - t - · · · · · · · · · · · · · · · · · ·	-1	IP65		MHMD042G1□	MHMD042S1
Motor mode	€I *1	IP67		-	-
Amaliaahla	Model	A5II, A5 series		MBD ◇T2510	
Applicable driver	No.	A5IE, A5E series		MBD ⊘T2510E	_
unvei	Fr	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. current (A(o-p))		11.0			
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tir	nes/min) Note)1	DV0P4283		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed		(r/min)	5000	
Moment of	inertia	Without	brake	0.67	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake		0.70	
Recommer ratio of the			tia Note)3	30 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 MHMD 400 W [High inertia, Small capacity]

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

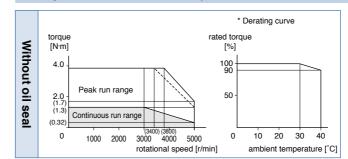
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

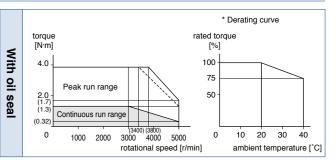
• Permissible load (For details, refer to P.183)

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

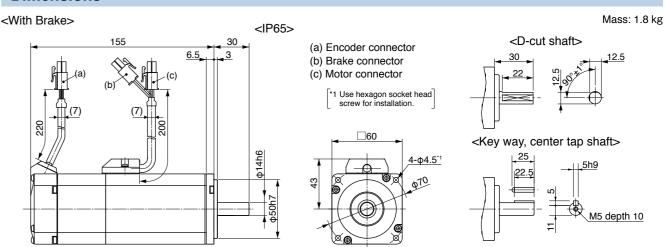
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

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

Specifications

			AC2	00 V
		MHMD082G1□	MHMD082S1	
Motor model *1		IP67	-	-
A mustice a late	Model	A5II, A5 series	MCD<	T3520
Applicable 42	No.	A5IIE, A5E series	MCD ⊘T3520E	-
divei	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1.	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2	.4
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current		(A(o-p))	17.0	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r		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 brake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

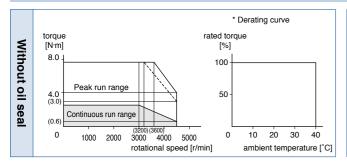
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

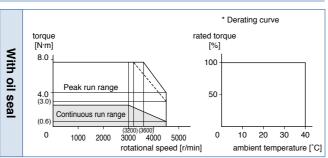
• Permissible load (For details, refer to P.183)

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

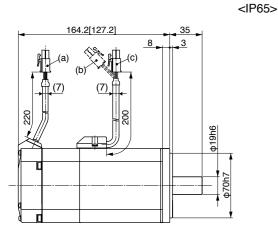
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



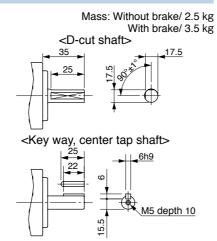


Dimensions



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

(a) Encoder connector



* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

MEMO

				AC1	00 V
Motor model	IP65		-	-	
*1		IP67		MSME5AZG1□	MSME5AZS1□
Amalianda	Model	A5II, A5 series		MAD	T1105
Applicable *2	No.	A5IIE, A5E series		MAD ⊘T1105E	_
dilvei	Fı	ame sym	ıbol	A-fra	ame
Power supply	capacit	у	(kVA)	0	.4
Rated output			(W)	5	0
Rated torque			(N·m)	0.	16
Momentary M	ax. pea	k torque	(N·m)	0.48	
Rated current (A(rms))		1.1			
Max. current (A(o-p))		4.7			
Regenerative	brake	Without	option	No limi	t Note)2
frequency (times	/min) Note)1	DV0P4280		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	6000	
Moment of ine	ertia	Withou	t brake	0.025	
of rotor (×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 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.

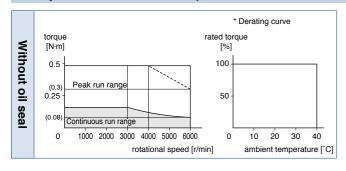
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

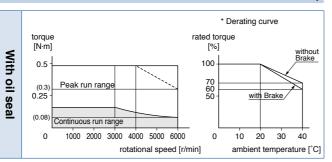
Permissible load (For details, refer to P.183)

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

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

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



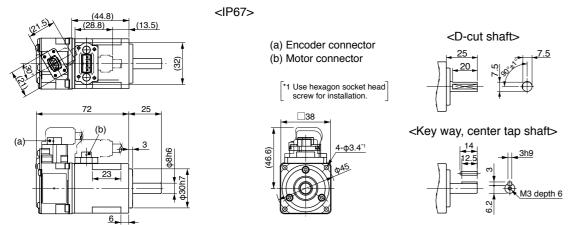


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.31 kg

[Unit: mm]



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

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSME 50 W [Low inertia, Small capacity]

Specifications

			AC200 V		
Mataumaada		IP65		-	-
Motor mode	•	IP67		MSME5AZG1	MSME5AZS1
A L' l- L -	Model	A5II, A5 series		MAD ⇔ T1505	
Applicable driver *	No.	No. A5IIE, A5E series		MAD ◇T1505E	_
divoi	Fr	ame sym	bol	A-fr	ame
Power supp	ly capacit	y	(kVA)	0	.5
Rated outpu	ıt		(W)	5	0
Rated torqu	е		(N·m)	0.	16
Momentary	Max. peal	k torque	(N·m)	0.48	
Rated curre	nt	(A(rms))	1.1	
Max. current (A(o-p))		4.7			
Regenerative	e brake	Without option		No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4280		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	6000	
Moment of i	nertia	Without	brake	0.025	
of rotor (×10) ⁻⁴ kg·m²)	With brake		0.027	
Recommend ratio of the I			tia Note)3	30 times	s or less
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

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

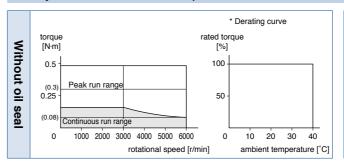
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

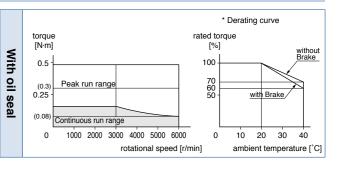
• Permissible load (For details, refer to P.183)

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

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

Torque characteristics (at AC200V of power voltage)

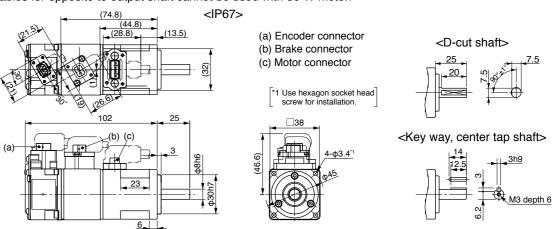




Dimensions < In Case of With Brake, Cable direction to output shaft.>

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

Mass: 0.51 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.

AC200 V

MAD<>T1505

A-frame

0.5

100

0.32

0.95

1.1

4.7

No limit Note)2

No limit Note)2

3000

6000

0.051

0.054

30 times or less

20-bit

Incremental

1048576

MSME012S1

MSME012G1

MAD \diamondsuit T1505E

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

Frame symbol

A5IIE, A5E series

(W)

(N·m)

(N·m)

(A(rms))

(A(o-p)) Without option

(r/min)

(r/min)

Note)3

DV0P4280

Without brake

With brake

Resolution per single turn

Model A5II, A5 series

No.

Momentary Max. peak torque

Specifications

				AC100 V		
M-4		IP65		-	-	
Motor model		IP67		MSME011G1	MSME011S1	
	Model	A5II, A5 series		MAD	T1107	
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1107E	_	
unven	Fı	ame sym	bol	A-fra	ame	
Power supply	capacit	y	(kVA)	0.	4	
Rated output			(W)	10	00	
Rated torque			(N·m)	0.32		
Momentary M	ax. pea	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/	min) Note)1	DV0P	4280	No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	6000		
Moment of ine	ertia	Without	brake	0.051		
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		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.

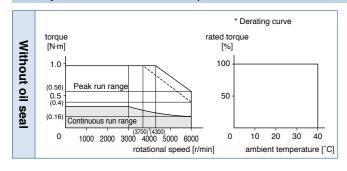
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

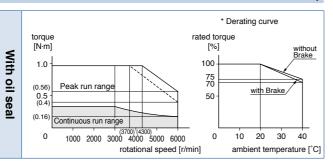
• Permissible load (For details, refer to P.183)

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.

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

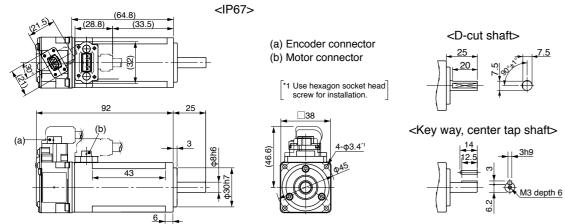




Dimensions < In Case of Without Brake, Cable direction to output shaft.>

• 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.

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

Dimensions are subject to change without notice. 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]

all canacity]

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

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

Do not use this for braking the motor in motion.

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

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

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

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

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

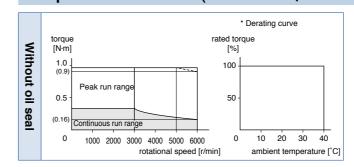
¥ith

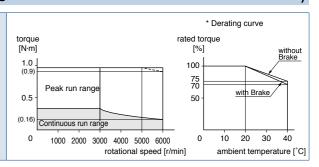
<u>e</u>

17-bit

Absolute

131072

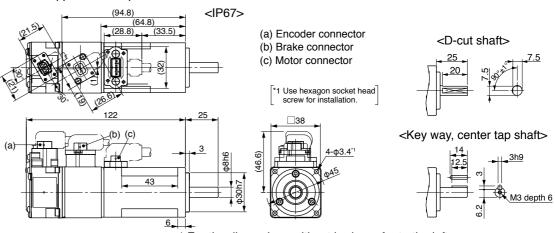




Dimensions < In Case of With Brake, Cable direction to output shaft.>

· 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]

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

A5 Family

Specifications

				AC100 V	
Motor model	IP65		-	-	
Motor model *1		IP67		MSME021G1□	MSME021S1
	Model	A5II, A5 series		MBD◇	T2110
Applicable driver *2	No.	A5IIE, A5E series		MBD ⊘T2110E	-
dilvei	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/i	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		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

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

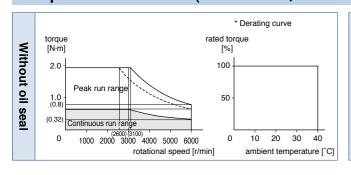
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

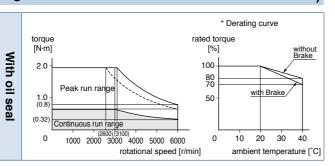
During assembly During operation	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

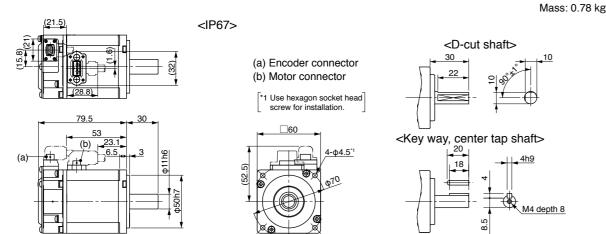
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

[Unit: mm]

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

Specifications

				AC2	00 V
		IP65		-	-
Motor model		IP67		MSME022G1□	MSME022S1
	Model	A5II, A5	series	MAD<	T1507
Applicable driver *2	No.	A5IIE, A5E series		MAD \diamondsuit T1507E	_
unver	Fr	ame sym	bol	A-fra	ame
Power supply	capacit	у	(kVA)	0.	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.0	64
Momentary M	lax. peal	k torque	(N·m)	1.91	
Rated current	t	(A(rms))	1.5	
Max. current			(A(o-p))	6.5	
Regenerative	brake	Without	option	No limit Note)2	
frequency (times	/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	6000	
Moment of inc	ertia	Without	t brake	0.14	
of rotor (×10	4 kg·m²)	With b	orake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

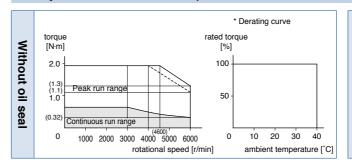
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

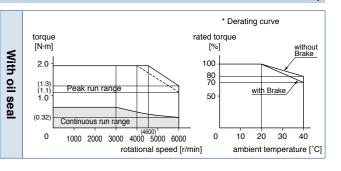
• Permissible load (For details, refer to P.183)

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

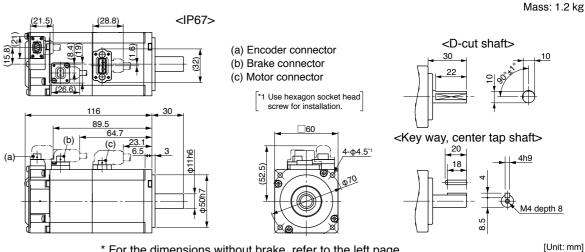
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



* 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.

<Cautions>

				AC1	00 V
		IP65		-	_
Motor model *1		IP67		MSME041G1□	MSME041S1
Amuliaabla	Model	A5II, A5	series	MCD<	T3120
Applicable driver *2	No.	A5IIE, A5E series		MCD ♦T3120E	_
unven	Fı	ame sym	bol	C-fra	ame
Power supply	capacit	у	(kVA)	0.	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1.	.3
Momentary M	ax. pea	k torque	(N·m)	3.8	
Rated current		(.	A(rms))	4.6	
Max. current		((A(o-p))	19.5	
Regenerative I	orake	Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0P4282		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	6000	
Moment of ine	ertia	Without	brake	0.26	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3				30 times or less	
Rotary encode	Rotary encoder specifications Not		Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn				131072

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

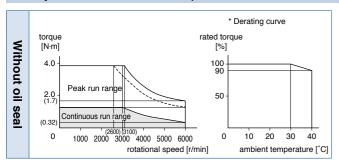
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

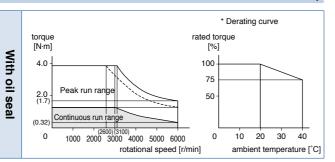
• Permissible load (For details, refer to P.183)

	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

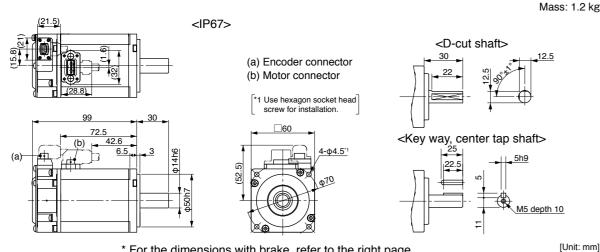
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





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



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

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.

				AC2	00 V		
Mataumandal		IP65			-	-	
Motor mod	ei ∗¹		IP67		MSME042G1□	MSME042S1	
Annlinable		Model	A5II, A5	series	МВО	T2510	
Applicable driver	*2	No.	A5IIE, A5E series		MBD ⊘T2510E	_	
divei		Fr	ame sym	bol	B-fra	ame	
Power supp	ply o	capacity	y	(kVA)	0.	.9	
Rated outp	ut			(W)	40	00	
Rated torqu	ue			(N·m)	1.	.3	
Momentary	/ Ma	x. peal	k torque	(N·m)	3	3.8	
Rated curre	ent		(A(rms))	2.4		
Max. curre	nt		((A(o-p))	10.2		
Regenerativ	ve b	rake	Without option		No limit Note)2		
frequency (tir	mes/m	nin) Note)1	DV0P4283		No limit Note)2		
Rated rotat	tiona	al spee	d	(r/min)	3000		
Max. rotation	onal	speed		(r/min)	6000		
Moment of	ine	rtia	Without brake		0.26		
of rotor (x1	0-4	kg·m²)	With brake		0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less				
Rotary enc	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.

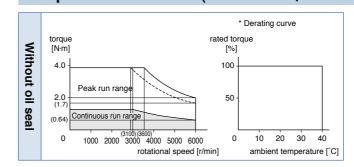
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

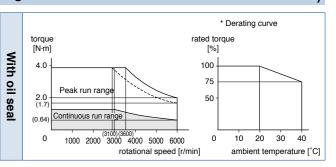
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
assembly	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

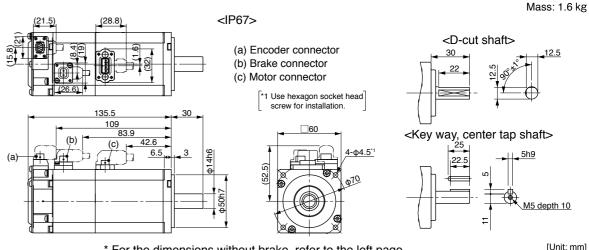
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

			AC2	00 V
		IP65	-	-
Motor model *1		IP67	MSME082G1□	MSME082S1
A	Model	A5II, A5 series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series	MCD ♦T3520E	-
unver	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))	4.1	
Max. current		(A(o-p))	17	.4
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4283	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	rtia	Without brake	0.87	
of rotor (×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
Re	esolutio	n per single turn	1048576	131072

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

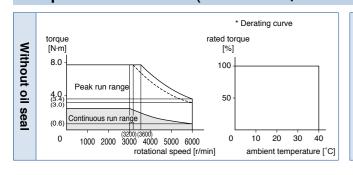
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

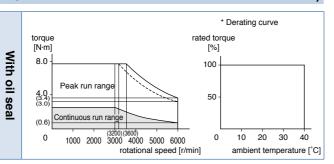
During assembly	Radial load P-direction (N)	686
	Thrust load A-direction (N)	294
accombiy	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

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

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

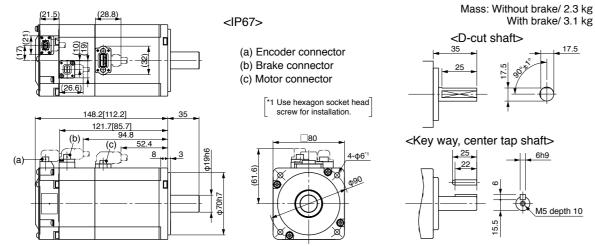


<Cautions>



[Unit: mm]

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



* Figures in [] represent the dimensions without brake.

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

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

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

Specifications

				AC2	00 V	
		IP65			MSME102GC□	MSME102SC
Motor mod	*1		IP67		MSME102G1□	MSME102S1
		Model	A5II, A5 series		MDD ◇T 5540	
Applicable driver	*2	No.	A5IIE, A5E series		MDD \diamondsuit T5540E	-
unver		Fr	ame sym	bol	D-fr	ame
Power sup	ply o	capacity	/	(kVA)	1.	.8
Rated outp	out			(W)	10	00
Rated torq	ue			(N·m)	3.	18
Momentary	у Ма	x. peal	c torque	(N·m)	9.55	
Rated current (A(rms))		6.6				
Max. curre	nt		((A(o-p))	28	
Regenerati	ve b	rake	Without option		No limit Note)2	
frequency (ti	imes/n	nin) Note)1	DV0P4284		No limit Note)2	
Rated rota	tiona	al spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	ine	rtia	Without brake		2.03	
of rotor (×1	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 end	Rotary encoder specifications Note)		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.

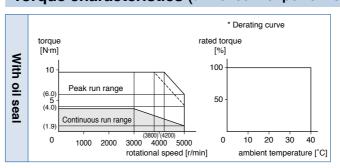
,
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

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

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

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

45

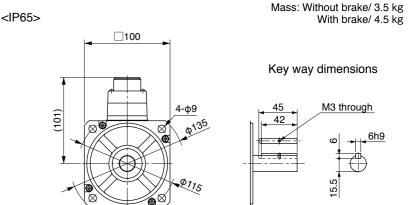
142[169]

97[124]

122[149]

66

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



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

[Unit: mm]

				AC2	00 V
		IP65		MSME152GC□	MSME152SC□
Motor model *1		IP67		MSME152G1□	MSME152S1
A !! - -	Model	A5II, A5	series	MDD \diamondsuit T5540	
Applicable driver *2	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	-
unver	Fr	ame sym	bol	D-fra	ame
Power supply	capacit	y	(kVA)	2.	.3
Rated output			(W)	15	00
Rated torque			(N·m)	4.	77
Momentary Ma	ax. peal	k torque	(N·m)	14.3	
Rated current		(A(rms))	8.2	
Max. current		((A(o-p))	35	
Regenerative b	orake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P	4284	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	2.84	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

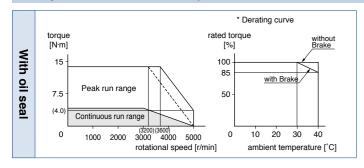
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

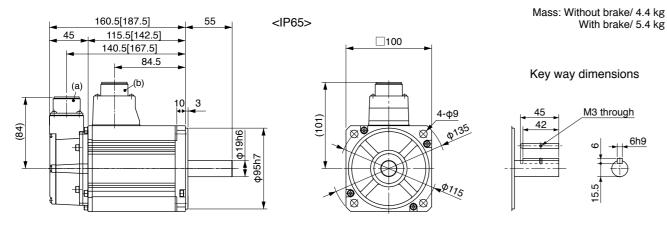
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

Specifications

				AC2	00 V
N 4 - 4		IP65		MSME202GC□	MSME202SC
Motor mode	:1	IP67		MSME202G1□	MSME202S1
A	Model	Model A5II, A5 series No. A5IIE, A5E series		MED<	T7364
Applicable driver *	No.			MED ⊘T7364E	-
unven	Fr	ame sym	bol	E-fra	ame
Power supp	ly capacit	у	(kVA)	3	.3
Rated outpu	ut		(W)	20	00
Rated torqu	е		(N·m)	6.:	37
Momentary	Max. peal	k torque	(N·m)	19.1	
Rated curre	nt	(A(rms))	11.3	
Max. curren	nt		(A(o-p))	4	8
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4285		No limi	t Note)2
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	inertia	Without	brake	3.68	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per		n per sina	le turn	1048576	131072

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

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

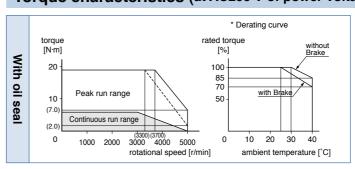
•	
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

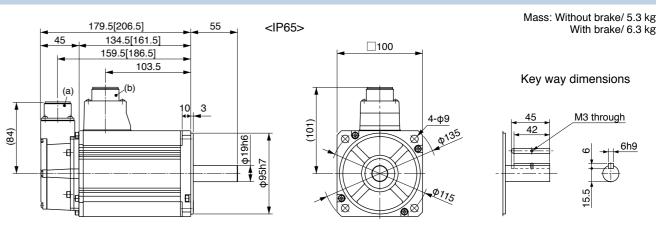
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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.137.)



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

[Unit: mm]

				AC2	00 V
Motor model		IP65		MSME302GC□	MSME302SC□
*1		IP67		MSME302G1□	MSME302S1□
Annlinable	Model	A5II, A5 ser	ies	MFD ⊘TA390	
Applicable driver *2	No.	A5IIE, A5E	series	MFD ⊘TA390E	_
unver	Fr	ame symbo	I	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output			(W)	30	00
Rated torque		(N·m)	9.55	
Momentary Ma	ax. peal	k torque (N·m)	28.6	
Rated current		1)A)	rms))	18.1	
Max. current		(A(o-p))	77	
Regenerative b	rake	Without op	tion	No limit Note)2	
frequency (times/r	min) Note)1	DV0P428	5×2	No limit Note)2	
Rated rotation	al spee	d (r	/min)	3000	
Max. rotationa	l speed	(r.	/min)	5000	
Moment of ine	rtia	Without br	ake	6.50	
of rotor ($\times 10^{-4}$	kg·m²)	With bra	ke	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.

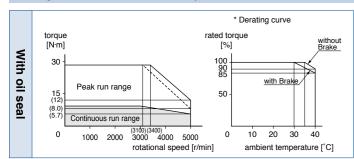
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

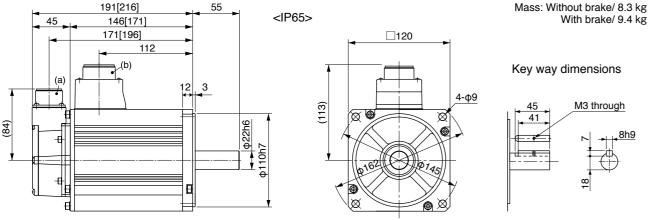
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MSME402GC□	MSME402SC
Motor mode *	.	IP67		MSME402G1□	MSME402S1
A I' In I .	Model	Model A5II, A5 series		MFD<	TB3A2
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
unven	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	.0
Rated outpu	t		(W)	40	00
Rated torque	е		(N·m)	12	2.7
Momentary	Max. peal	k torque	(N·m)	38.2	
Rated curre	nt	(A(rms))	19.6	
Max. current	t	((A(o-p))	8	3
Regenerative	e brake	Without option		No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	4500	
Moment of in	nertia	Without brake		12.9	
of rotor (×10) ⁻⁴ kg·m ²)	With brake		14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072

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

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

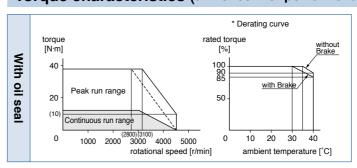
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

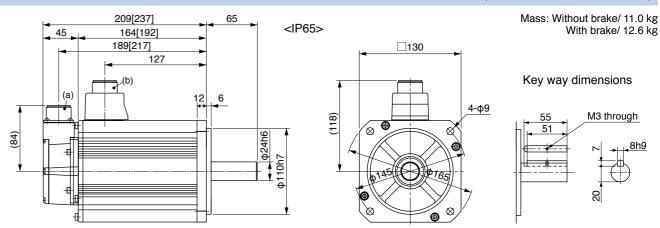
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

Torque characteristics (at 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]

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

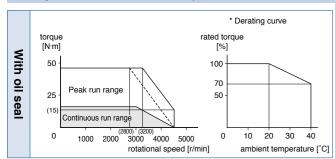
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

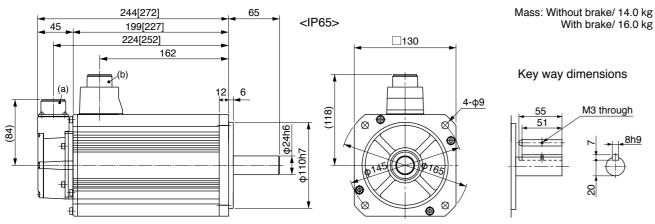
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

79

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

200 V MDME 1.0 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.

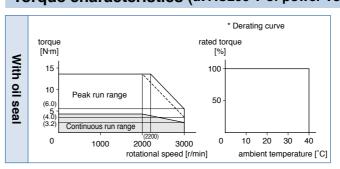
,	,
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

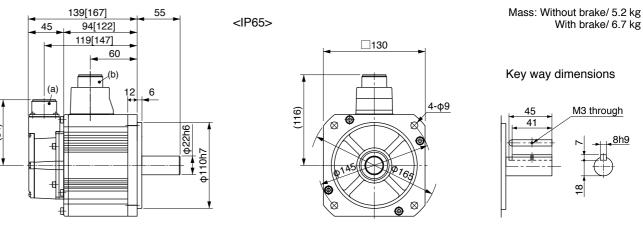
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

Motor model *1 IP67 MDME152G1 MDME152S1				AC2	00 V		
Applicable driver *2 Applicable No. ASIE, A5E series MDD T5540 ASIE, A5E series MDD T5540E — Frame symbol D-frame Power supply capacity (kVA) 2.3 Rated output (W) 1500 Rated torque (N·m) 7.16 Momentary Max. peak torque (N·m) 21.5 Rated current (A(rms)) 9.4 Max. current (A(o-p)) 40 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 6.70 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 MDD T5540 MDD T5540 MDD T5540 ASIE, A5 series MDD T5540 ADIE (N-m) 1500 Polici (N·m) 7.16 MDME152S1 ASIE, A5 series MDD T5540 ASIE, A5 series MDD T5	Motor mode			MDME152GC□	MDME152SC		
Applicable driver *2 Frame symbol D-frame Power supply capacity (kVA) 2.3 Rated output (W) 1500 Rated torque (N·m) 7.16 Momentary Max. peak torque (N·m) 21.5 Rated current (A(rms)) 9.4 Max. current (A(o-p)) 40 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5				IP67		MDME152G1□	MDME152S1
Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m) Rated current (A(rms)) Max. current (A(o-p)) Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Rotary encoder specifications Rated symbol D-frame Pohypacity (kVA) 2.3 Rated (N·m) 7.16 Moment of inertia of the load and the rotor Note)3 Postary encoder specifications Note) D-frame ASILE, A5E series MDD (T5540E) D-frame ACM (NVA) 2.3 Rated (N·m) 7.16 Moment of inertia of the load and the rotor Note)3 Postary encoder specifications Note)5 Postary encoder specifications Note)6 Postary encoder specifications Note)5 Postary encoder specifications Note)5	Ammliaahla	N	/lodel	A5II, A5	series	MDD<	T5540
Power supply capacity (kVA) 2.3 Rated output (W) 1500 Rated torque (N·m) 7.16 Momentary Max. peak torque (N·m) 21.5 Rated current (A(rms)) 9.4 Max. current (A(o-p)) 40 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5	• • •		Ю.	A5IIE, A	5E series	MDD ⊘T5540E	_
Rated output (W) 1500 Rated torque (N·m) 7.16 Momentary Max. peak torque (N·m) 21.5 Rated current (A(rms)) 9.4 Max. current (A(o-p)) 40 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 6.70 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5	unven		Fr	ame sym	nbol	D-fr	ame
Rated torque (N·m) 7.16 Momentary Max. peak torque (N·m) 21.5 Rated current (A(rms)) 9.4 Max. current (A(o-p)) 40 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5	Power supp	oly ca	apacity	/	(kVA)	2	.3
Momentary Max. peak torque (N·m) Rated current (A(rms)) Max. current (A(o-p)) Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Max. rotational speed (r/min) Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Note)5 Potary encoder specifications Note)5 Potary encoder specifications Note)5 Note)6 Potary encoder specifications Note)5 Potary encoder specifications Note)5	Rated outp	ut			(W)	15	00
Rated current (A(rms)) 9.4 Max. current (A(o-p)) 40 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Max. current (A(rms)) 9.4 No limit Note)2 Note)5 Note)6 Note)7 Note)8 20-bit 17-bit	Rated torqu	ıe			(N·m)	7.	16
Max. current (A(o-p)) Regenerative brake frequency (times/min) Note)1 Rated rotational speed Max. rotational speed (r/min) Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Recommended moment of inertia ratio of the load and the rotor (A(o-p)) 40 No limit Note)2 No limit No li	Momentary Max. peak torque (N·m)				21.5		
Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Without option No limit Note)2 No limit Note)2 Note)2 Note)5 No limit Note)2 Note)5 Note)6 No limit Note)2 Note)6 Note)6 Note)6 Note)7 Note)8 Note)6 Note)8 Note)8 Note)8 Note)9 Note)9 Note)9 Note)9 Note)9 Note)9 Note)9 Note)9	Rated current (A(rms))				9.4		
frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Note)5 Note)5 Note)6 No limit Note)2 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000	Max. current (A(o-p))				40		
Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Regenerativ	e bra	ıke	Without option		No limit Note)2	
Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 6.70 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Note)5 20-bit 17-bit	frequency (tir	nes/min)) Note)1	DV0P4284		No limit Note)2	
Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 7.99 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Rated rotat	ional	spee	d	(r/min)	2000	
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 encoder specifications Note)5 20-bit 17-bit	Max. rotation	onal s	speed		(r/min)	3000	
Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Moment of inertia		Without brake		6.70		
ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Note)5 10 times or less 20-bit 17-bit	of rotor (×10 ⁻⁴ kg·m ²)			With brake		7.99	
Rotary encoder enecitications Notols					10 times or less		
incicinental Absolute	Rotary encoder specifications Note		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per single turn 1048576 131072		Res	olutio	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.

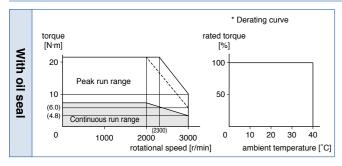
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

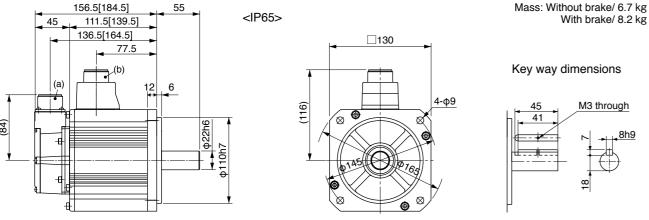
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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

Specifications

			AC2	00 V	
		IP65		MDME202GC	MDME202SC
Motor mod	el *1	IP67		MDME202G1□	MDME202S1
A	Model	A5II, A5	series	MED<	T7364
Applicable driver	*2 No.	A5IIE, A	5E series	MED ⊘T7364E	-
unvei	F	rame sym	bol	E-fra	ame
Power supp	oly capaci	ty	(kVA)	3	.3
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	9.	55
Momentary Max. peak torque (N·m)				28.6	
Rated current (A(rms))				11.5	
Max. current (A(o-p))				49	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tir	mes/min) Note)	DV0P4285		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	d	(r/min)	3000	
Moment of	inertia	Without	brake	8.72	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Resolution	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.

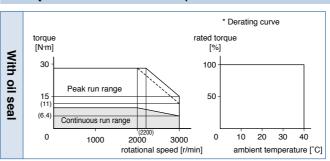
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

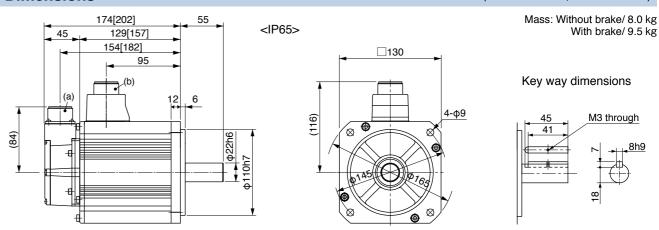
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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
IP65			MDME302GC□	MDME302SC	
Motor model *1		IP67		MDME302G1	MDME302S1
Ammliaabla	Model	A5II, A5	series	MFD<	TA390
Applicable 42	No.	A5IIE, A	5E series	MFD ⊘TA390E	_
anver	Fr	rame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	14	.3
Momentary Max. peak torque (N·m)			43.0		
Rated current (A(rms))			17.4		
Max. current (A(o-p))			74		
Regenerative brake Without option		No limit Note)2			
frequency (times/r	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	12.9	
of rotor (×10 ⁻⁴ kg·m²) With brake		orake	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
R	esolutio	n per sing	le turn	1048576	131072

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

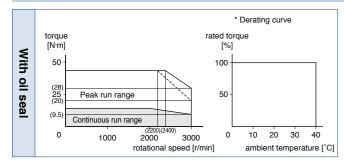
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

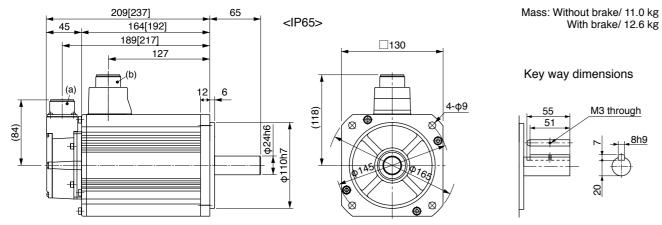
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V		
Matauaaaa		IP65		MDME402GC	MDME402SC	
Motor mode *	.	IP67		MDME402G1□	MDME402S1	
A I' l. l .	Model	A5 I I, A5	series	MFD♦	TB3A2	
Applicable driver *	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_	
unvoi	Fr	ame sym	bol	F-fra	ame	
Power supp	ly capacit	y	(kVA)	6	.0	
Rated outpu	t		(W)	40	00	
Rated torque	е		(N·m)	19).1	
Momentary	Max. peal	k torque	(N·m)	57.3		
Rated curre	nt	(A(rms))	21.0		
Max. current (A(o-p))			89			
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	2000		
Max. rotation	nal speed		(r/min)	3000		
Moment of in	nertia	Without	brake	37.6		
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	42	42.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
	Resolution per single turn			1048576	131072	

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

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

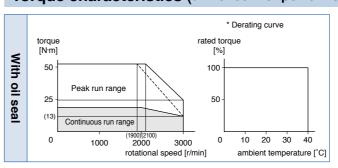
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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



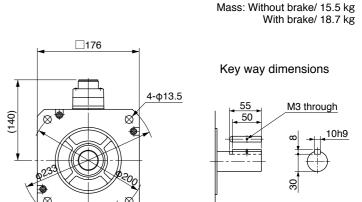
Dimensions

178[207]

133[162]

158[187]

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



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

[Unit: mm]

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

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

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

<IP65>

			AC2	00 V	
Motor model		IP65		MDME502GC	MDME502SC
*1		IP67		MDME502G1	MDME502S1
Amaliaalala	Model	el A5II, A5 series		MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5	E series	MFD ⊘TB3A2E	-
diivoi	Fr	ame symb	ool	F-frame	
Power supply	capacit	/	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	23	3.9
Momentary M	ax. peal	torque	(N·m)	71.6	
Rated current		(A	A(rms))	25.9	
Max. current (A(o-p))			110		
Regenerative b	rake	Without	option	12	20
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	48.0	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			e turn	1048576	131072

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

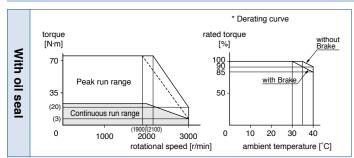
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

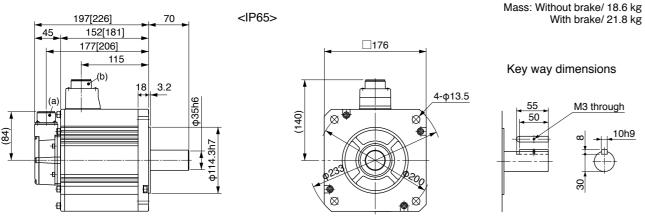
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
		IP65		-	-
Motor mod	1 e I *1	IP67		MDME752G1□	MDME752S1
	Mod	A5II, A5	series	MGD ⊘TC3B 4	
Applicable driver	*2 No.	A5IIE, A	5E series	-	-
unver		Frame sym	nbol	G-fr	ame
Power sup	ply capa	ity	(kVA)	1	1
Rated outp	out		(W)	75	00
Rated torq	ue		(N·m)	47	'.8
Momentary	y Max. pe	ak torque	(N·m)	119	
Rated current (A(rms))			44.0		
Max. current (A(o-p))			16	35	
Regenerati	ve brake	Withou	t option	No limit Note)2	
frequency (ti	imes/min) Not	DV0P4	285×3	No limit Note)2	
Rated rota	tional spe	ed	(r/min)	1500	
Max. rotati	onal spe	ed	(r/min)	30	00
Moment of	inertia	Withou	t brake	101	
of rotor (x1	10 ⁻⁴ kg·m	With I	brake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			ale 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.

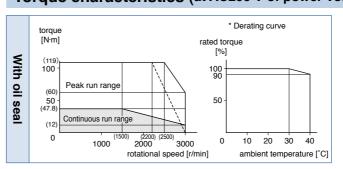
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

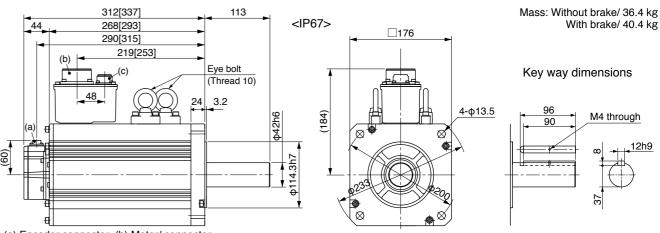
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
document	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- 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 \(\triangle\) 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
IP65		IP65	-	-
Motor model *1		IP67	MDMEC12G1	MDMEC12S1
	Model	A5II, A5 series	МНО⊘ТСЗВ4	
Applicable *2	No.	A5IIE, A5E series	_	_
divei	Fı	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	1	7
Rated output		(W)	110	000
Rated torque		(N·m)	70	0.0
Momentary Max. peak torque (N·m)			175	
Rated current		(A(rms))	54.2	
Max. current (A(o-p))			203	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0PM20058	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	212	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	220	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
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.

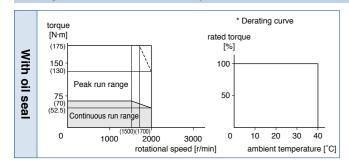
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

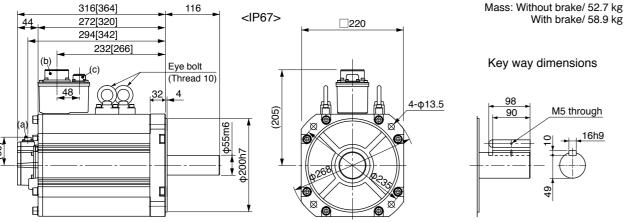
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- 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.

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	
Makananadal		IP65		-	-
Motor mode	ÐI ⊭1	IP67		MDMEC52G1	MDMEC52S1
A 1: 1- 1	Model	A5II, A5	series	MHD♦	TC3B4
Applicable driver	No.	A5IIE, A	5E series	_	_
unven	F	rame sym	bol	H-fr	ame
Power supp	oly capacit	ty	(kVA)	2	2
Rated outpo	ut		(W)	150	000
Rated torqu	ie		(N·m)	95	5.5
Momentary	Max. pea	k torque	(N·m)	224	
Rated curre	ent	(A(rms))	66.1	
Max. currer	nt		(A(o-p))	236	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0PN	120058	0058 No limit Note)2	
Rated rotat	ional spee	ed	(r/min)	1500	
Max. rotation	nal speed	i	(r/min)	2000	
Moment of	inertia	Without	t brake	302	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	orake	311	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn				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.

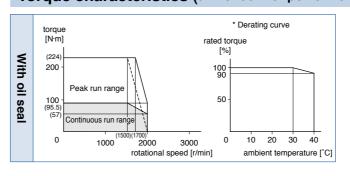
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

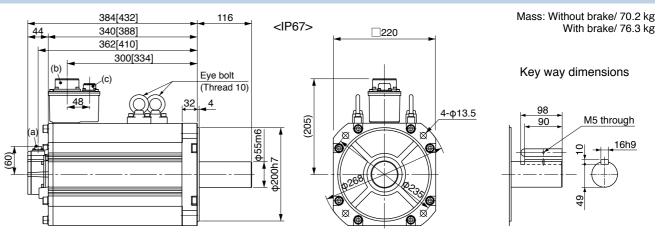
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
docombry	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- 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 \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		-	-		
*1		IP67		MFME152G1□	MFME152S1
A !! a a la l a	Model	A5II, A5 series		MDD<	T5540
Applicable driver *2	No.	A5IIE, A5E se	eries	MDD ⊘T5540E	_
unver	Fr	ame symbol		D-fr	ame
Power supply of	capacit	y (k'	VA)	2	.3
Rated output		(W)	15	00
Rated torque		(N	·m)	7.16	
Momentary Ma	Momentary Max. peak torque (N·m)			21.5	
Rated current (A(rms))		7.5			
Max. current (A(o-p))			32		
Regenerative br	rake	Without opti	on	100	
frequency (times/m	in) Note)1	DV0P4284		No limit Note)2	
Rated rotationa	al spee	d (r/n	nin)	2000	
Max. rotational	speed	(r/n	nin)	3000	
Moment of iner	tia	Without bra	ke	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	r speci	fications No	te)5	20-bit Incremental	17-bit Absolute
Re	solutio	n per single tu	rn	1048576	131072

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

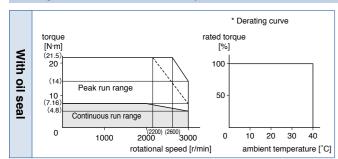
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

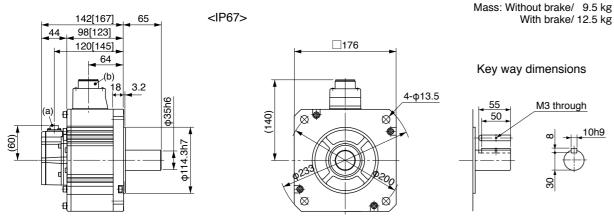
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
docombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions



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

[Unit: mm]

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

Specifications

				AC2	00 V	
		IP65		-	-	
Motor mod	1 C I *1		IP67		MFME252G1□	MFME252S1
		Model	A5II, A5	series	MED<	T7364
Applicable driver	*2	No.	A5IIE, A5E series		MED ⊘T7364E	_
unver		Fr	ame sym	bol	E-fra	ame
Power sup	ply c	apacit	/	(kVA)	3	.8
Rated outp	out			(W)	25	00
Rated torq	ue			(N·m)	11	.9
Momentary	у Ма	x. peal	c torque	(N·m)	30.4	
Rated current (A(rms))				13.4		
Max. current (A(o-p))				57		
Regenerati	ve br	rake	Without	option	75	
frequency (ti	imes/m	in) Note)1	DV0P4285		No limit Note)2	
Rated rota	tiona	al spee	d	(r/min)	20	00
Max. rotati	ional	speed		(r/min)	3000	
Moment of	f iner	tia	Without	brake	35.8	
of rotor (x1	10 ⁻⁴ l	kg·m²)	With b	orake	45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution 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.

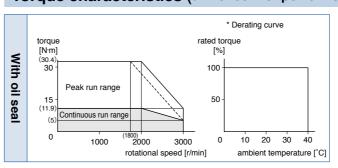
21.6 or more
150 or less
100 or less
0.75±10 %
2 or more
24±2.4

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

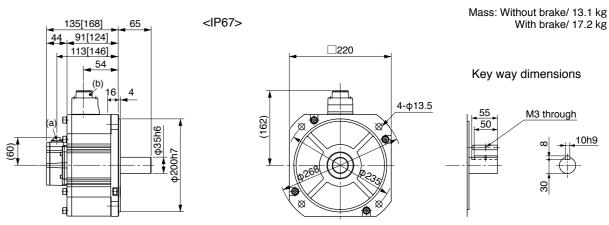
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

[Unit: mm]

				AC2	00 V
IP65			-	-	
Motor model *1		IP67		MFME452G1□	MFME452S1
A !! I- I -	Model	A5II, A5 series		MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unver	Fr	ame sym	nbol	F-fra	ame
Power supply	capacit	y	(kVA)	6	.8
Rated output			(W)	45	00
Rated torque			(N·m)	21	.5
Momentary Max. peak torque (N·m)			54.9		
Rated current		((A(rms))	24.7	
Max. current (A(o-p))			105		
Regenerative b	rake	Without	option	67	
frequency (times/r	min) Note)1	DV0P4285×2		375	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	t brake	63.1	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	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
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.

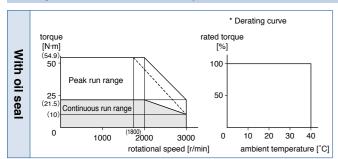
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

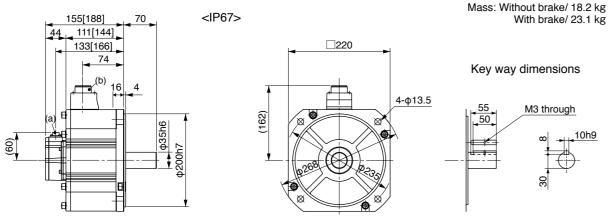
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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 \(\rightarrow \) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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



Dimensions



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

[Unit: mm]

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

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

Specifications

				AC2	00 V
		IP65		MGME092GC□	MGME092SC
Motor mode	:1	IP67		MGME092G1□	MGME092S1
	Model	A5II, A5	series	MDD ⊘ T5540	
Applicable driver *	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	_
unver	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	ıt		(W)	90	00
Rated torqu	е		(N·m)	8.	59
Momentary	Max. peal	k torque	(N·m)	19.3	
Rated curre	nt	(A(rms))	7.6	
Max. current (A(o-p))		24			
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/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	nertia	Without	brake	6.70	
of rotor (×10	0 ⁻⁴ kg·m²)	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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single tur			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.

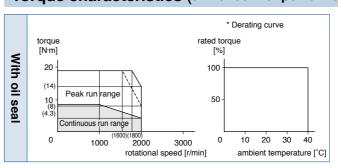
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

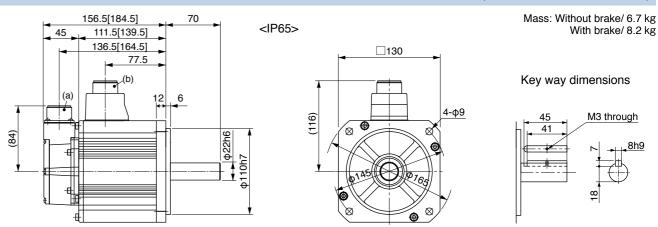
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC2	00 V
Motor model	IP65		MGME202GC□	MGME202SC□
*1		IP67	MGME202G1□	MGME202S1
A I' I- I -	Model	A5II, A5 series	MFD◇	TA390
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	-
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	Max. current (A(o-p))		60	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0P4285×2	4285×2 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	
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.

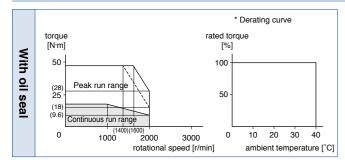
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

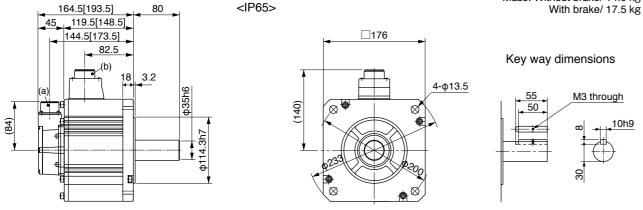
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

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

Mass: Without brake/ 14.0 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.

Specifications

			AC2	00 V	
		IP65		MGME302GC□	MGME302SC
Motor mode	ÐI ⊧1	IP67		MGME302G1□	MGME302S1
	Model	A5 I I, A5	series	MFD♦	TB3A2
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
ulivei	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	У	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ıe		(N·m)	28	3.7
Momentary	Max. pea	k torque	(N·m)	71.7	
Rated curre	ent	(A(rms))	22.6	
Max. current (A(o-p))			8	0	
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)	1000	
Max. rotation	nal speed	I	(r/min)	2000	
Moment of	inertia	Without	brake	48.4	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolution per sing			1048576	131072

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

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

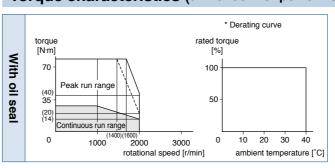
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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



Dimensions

210.5[239.5]

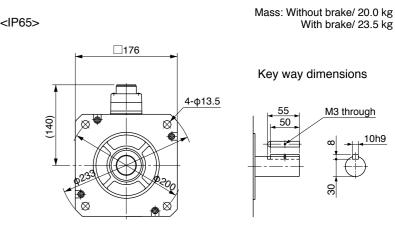
165.5[194.5]

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]

				AC2	00 V
		IP65		-	-
Motor model *1		IP67		MGME452G1□	MGME452S1
A	Model	A5II, A5	series	MFD ⊘TB3A2	
Applicable *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unver	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	7.	.5
Rated output			(W)	45	00
Rated torque			(N·m)	43	3.0
Momentary Max. peak torque (N·m)		107			
Rated current (A(rms))		29.7			
Max. current (A(o-p))		110			
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/r	nin) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without	brake	79.1	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	84.4	
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	
Re	Resolution per single turn			1048576	131072

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

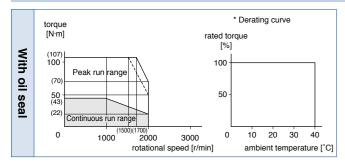
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

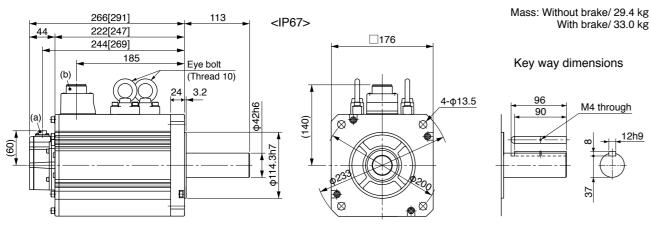
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- 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 \(\rightarrow \) 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
Motor mod	-1	IP65		-	_
	*1	IP67		MGME602G1□	MGME602S1
	Model	A5II, A5	series	MGD ⊘TC3B 4	
Applicable driver	*2 No.	A5IIE, A	5E series	_	_
anvoi	F	rame sym	bol	G-fr	ame
Power sup	ply capacit	у	(kVA)	9.	.0
Rated outp	ut		(W)	60	00
Rated torqu	ue		(N·m)	57	7.3
Momentary	Max. pea	k torque	(N·m)	143	
Rated current (A(rms))			38.8		
Max. current (A(o-p))			14	19	
Regenerativ	ve brake	Without	option	No limit Note)2	
frequency (ti	mes/min) Note)1	DV0P4	285×4	No limit Note)2	
Rated rotat	tional spee	d	(r/min)	1000	
Max. rotation	onal speed	l	(r/min)	2000	
Moment of	inertia	Without	brake	101	
of rotor (x1	0 ⁻⁴ kg·m ²)	With b	rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

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

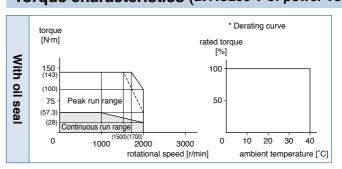
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

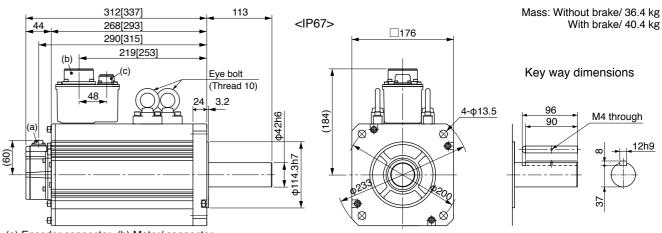
Radial load P-direction (N)	2058
Thrust load A-direction (N)	980
Thrust load B-direction (N)	1176
Radial load P-direction (N)	1764
Thrust load A, B-direction (N)	588
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



Dimensions



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

[Unit: mm]

			AC2	00 V	
Motor model	IP65		MHME102GC	MHME102SC	
wiotor model *1		IP67	MHME102G1□	MHME102S1	
Amaliaabla	Model	A5II, A5 series	MDD<	T3530	
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T3530E	_	
unver	Fr	ame symbol	D-fra	ame	
Power supply	capacit	y (kVA)	1.	8	
Rated output		(W)	10	00	
Rated torque		(N·m)	4.	77	
Momentary M	ax. peal	k torque (N·m)	14.3		
Rated current		(A(rms))	5.7		
Max. current		(A(o-p))	24		
Regenerative I	orake	Without option	83		
frequency (times/	min) Note)1	DV0P4284	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	ıl speed	(r/min)	3000		
Moment of ine	ertia	Without brake	24.7		
of rotor (×10 ⁻⁴	kg·m²)	With brake	26.0		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
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.

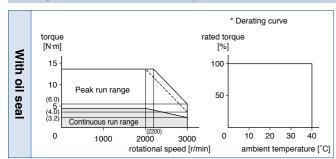
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

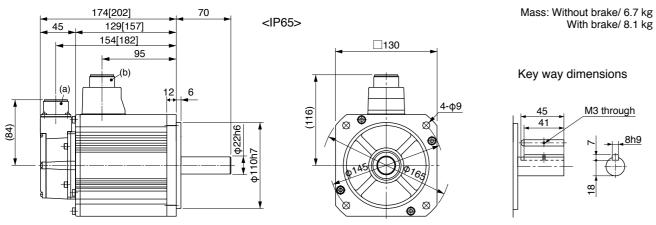
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\rightarrow \) in number of applicable 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	?I ⊧1	IP67		MHME152G1□	MHME152S1	
A I' l. l .	Model	A5II, A5 series		MDD ◇ T5540		
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T5540E	-	
unven	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	21.5	
Rated curre	ent	(.	A(rms))	9.4		
Max. currer	nt		(A(o-p))	4	0	
Regenerativ	e brake	Without	option	22		
frequency (tim	nes/min) Note)1	DV0P4284 130		30		
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	0 ⁻⁴ kg·m²)	With b	rake	38.4		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sing	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.

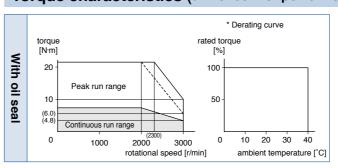
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

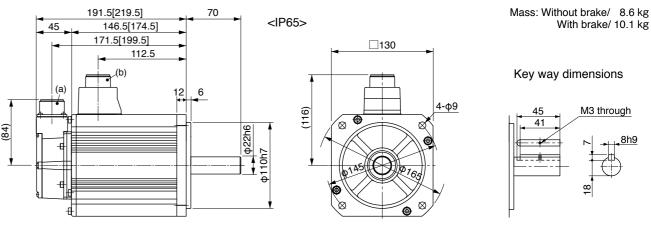
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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

Specifications

			AC200 V	
IP65		IP65	MHME202GC	MHME202SC
Motor model *1		IP67	MHME202G1□	MHME202S1
Amaliaabla	Model	A5II, A5 series	MED ⊘T7364	
Applicable *2	No.	A5IIE, A5E series	MED ⊘T7364E	-
divei	Fr	ame symbol	E-fra	ame
Power supply	capacit	y (kVA)	3.	.3
Rated output		(W)	20	00
Rated torque		(N·m)	9.	55
Momentary Ma	ax. peal	k torque (N·m)	28.6	
Rated current		(A(rms))	11.1	
Max. current (A(o-p))			4	7
Regenerative b	rake	Without option	45	
frequency (times/r	nin) Note)1	DV0P4285	142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	57.8	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

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

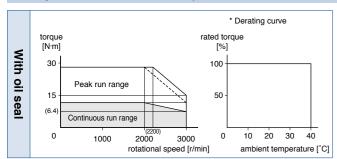
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	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 \(\rightarrow \) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

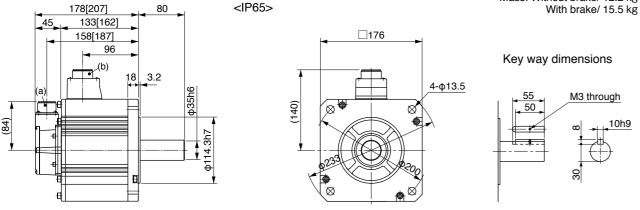
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

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

Mass: Without brake/ 12.2 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.

Specifications

				AC2	00 V	
Matax mada		IP65		MHME302GC□	MHME302SC	
Motor mode	₹1	IP67		MHME302G1	MHME302S1	
A I' l. I .	Model	A5II, A5	series	MFD◇	TA390	
Applicable driver *	No.	A5IIE, A	5E series	MFD ⊘TA390E	_	
anver	F	rame sym	bol	F-fra	ame	
Power supp	ly capacit	У	(kVA)	4.	.5	
Rated outpu	ut		(W)	30	00	
Rated torqu	ie		(N·m)	14	.3	
Momentary	Max. pea	k torque	(N·m)	43	43.0	
Rated curre	ent	(A(rms))	16.0		
Max. curren	nt		(A(o-p))	6	68	
Regenerativ	e brake	Without option 19		9		
frequency (tim	nes/min) Note)1	DV0P4285×2		142		
Rated rotati	onal spee	ed	(r/min)	2000		
Max. rotatio	nal speed	I	(r/min)	3000		
Moment of i	inertia	Without	t brake	90.5		
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per 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.

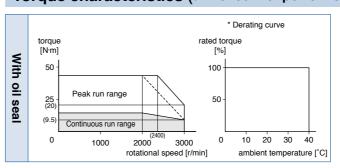
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

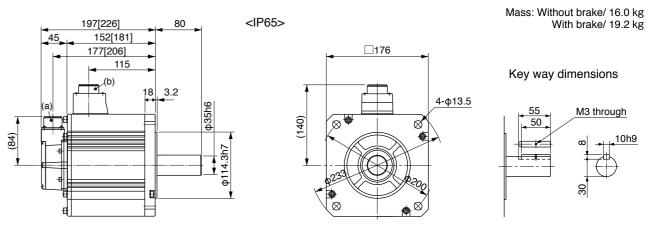
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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



Dimensions (For IP67 motor, refer to P.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
Amaliaabla	Model	A5I , A5 s	eries	MFD◇	TB3A2
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
unver	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	y	(kVA)	6	.0
Rated output			(W)	40	00
Rated torque			(N·m)	19).1
Momentary Ma	ax. peal	k torque	(N·m)	57.3	
Rated current (A(rms))			21.0		
Max. current (A(o-p))			89		
Regenerative brake Without option		17			
frequency (times/r	min) Note)1	DV0P42	85×2	125	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed	((r/min)	3000	
Moment of ine	rtia	Without b	orake	112	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	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		
R	esolutio	n per single	turn	1048576	131072

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

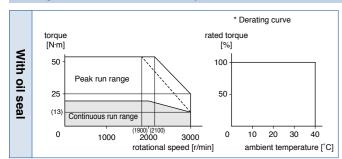
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

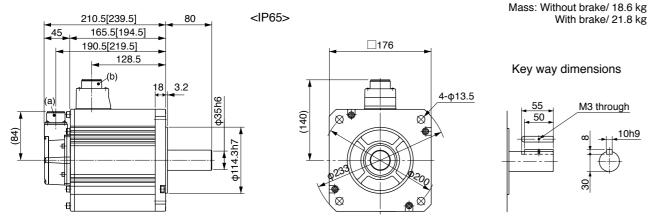
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

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

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

Specifications

			AC2	00 V	
Matanaaa	-1	IP65		MHME502GC□	MHME502SC
Motor mode	*1	IP67		MHME502G1□	MHME502S1
A 1: 1- 1 -	Model	A5II, A5	series	MFD ⊘TB3A2	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
unver	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	7.	.5
Rated outp	ut		(W)	50	00
Rated torqu	ıe		(N·m)	23	3.9
Momentary	Max. pea	k torque	(N·m)	71.6	
Rated curre	ent	(A(rms))	25.9	
Max. current (A(o-p))			11	10	
Regenerativ	e brake	Without	option	10	
frequency (tir	mes/min) Note)1	DV0P4285×2		76	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	onal speed	l	(r/min)	30	00
Moment of	inertia	Without	brake	162	
of rotor (×1	0 ⁻⁴ kg·m ²)	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		20-bit Incremental	17-bit Absolute		
Resolution per single tur			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.

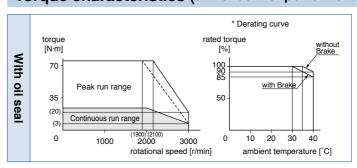
	•
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

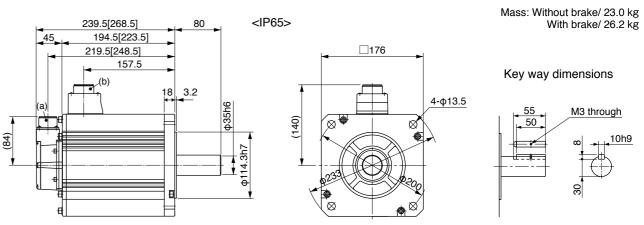
Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



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.

Ö

Informa

			AC2	00 V
Matanasadal		IP65	-	-
Motor model		IP67	MHME752G1□	MHME752S1
	Model	A5II, A5 series	MGD ⊘TC3B 4	
Applicable driver *2	No.	A5IE, A5E series	_	_
anver	Fr	ame symbol	G-fr	ame
Power supply	capacit	y (kVA)	1	1
Rated output		(W)	75	00
Rated torque		(N·m)	47.8	
Momentary 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/r	nin) 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		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 encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072

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

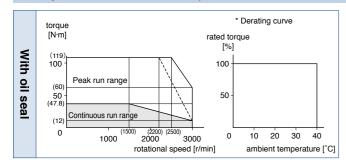
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

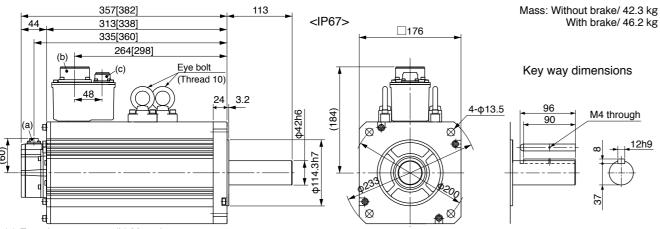
During assembly During operation	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

Specifications

				AC4	00 V
N 4-4		IP65		MSME084GC□	MSME084SC
Motor mode *	•	IP67		MSME084G1□	MSME084S1
A 11 1- 1	Model	A5 I I, A5	series	MDD<	T2412
Applicable driver *	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.6
Rated outpu	ıt		(W)	75	50
Rated torqu	е		(N·m)	2.:	39
Momentary	Max. peal	k torque	(N·m)	7.16	
Rated curre	nt	(A(rms))	2.4	
Max. current (A(o-p))			10		
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0PM20048		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	1.61	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	1.93	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		n per sing	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.

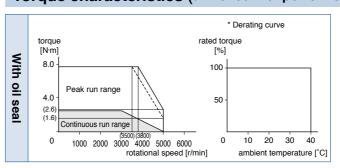
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

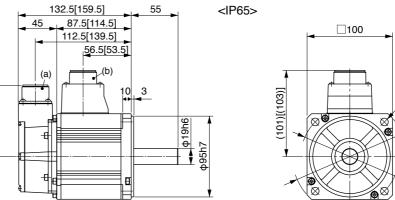
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions (For IP67 motor, refer to P.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]

				AC4	00 V
		IP65		MSME104GC□	MSME104SC□
Motor model		IP67		MSME104G1□	MSME104S1
A II I- I -	Model	A5II, A5	series	MDD T3420	
Applicable driver *2	No.	A5IIE, A5E series		MDD ⊘T3420E	-
unven	Fı	ame sym	bol	D-fr	ame
Power supply	capacit	у	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	3.	18
Momentary M	lax. pea	k torque	(N·m)	9.55	
Rated current (A(rms))		3.3			
Max. current (A(o-p))		14			
Regenerative brake		Without option		No limit Note)2	
frequency (times	/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	5000	
Moment of in	ertia	Without	brake	2.03	
of rotor (×10	4 kg·m²)	With b	orake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1048576	131072

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

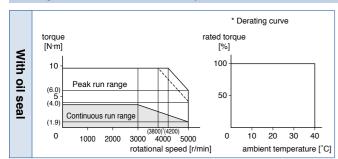
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

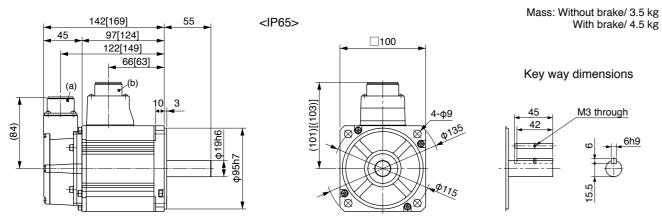
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

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



Dimensions

(For IP67 motor, refer to P.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
Matanaaala		IP65		MSME154GC□	MSME154SC
Motor mode *	•	IP67		MSME154G1□	MSME154S1
A 11 1- 1	Model	A5 I I, A5	series	MDD<	T3420
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	2	.3
Rated outpu	ıt		(W)	15	00
Rated torqu	е		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated curre	nt	(A(rms))	4.2	
Max. current (A(o-p))			18		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	2.84	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le 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.

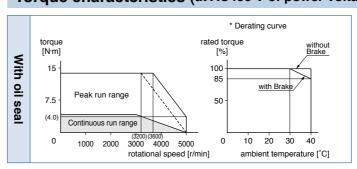
,
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

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

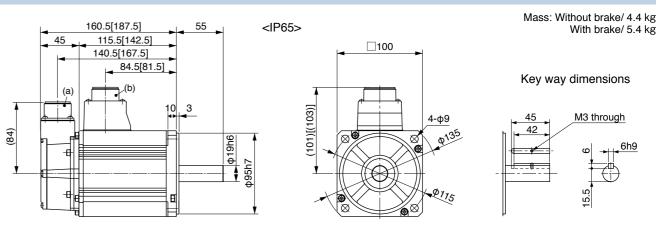
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

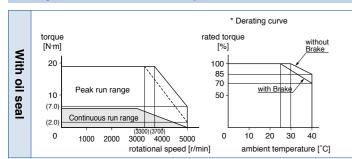
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

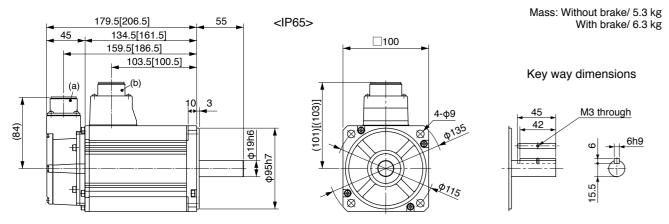
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.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 \(\rightarrow \) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

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

Motor Specifications

Specifications

			AC4	00 V	
Matanaaa		IP65		MSME304GC□	MSME304SC
Motor mode *	1	IP67		MSME304G1□	MSME304S1
A	Model	A5II, A5	series	MFD◇	T5440
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-
divoi	Fi	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	4.	.5
Rated outpu	ıt		(W)	30	00
Rated torqu	е		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	nt	(A(rms))	9.2	
Max. curren	t		(A(o-p))	39	
Regenerative	e brake	Without option No limit Note)2		t Note)2	
frequency (tim	es/min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	30	00
Max. rotatio	nal speed	ĺ	(r/min)	50	00
Moment of i	nertia	Without	brake	6.50	
of rotor (×10) ⁻⁴ kg·m ²)	With b	orake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less			
Rotary encoder specifications Resolution per single		Note)5	20-bit Incremental	17-bit Absolute	
		n per sing	le turn	1048576	131072

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

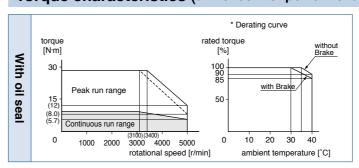
,	,
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

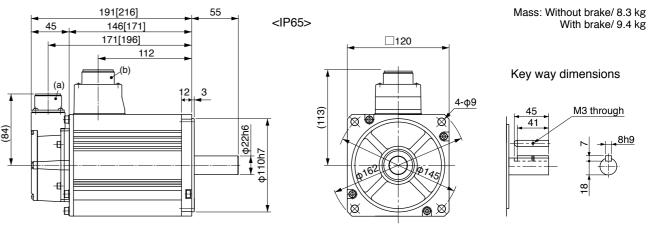
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
doscinory	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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

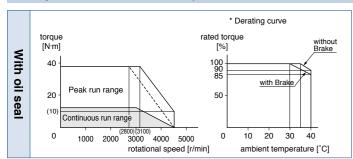
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

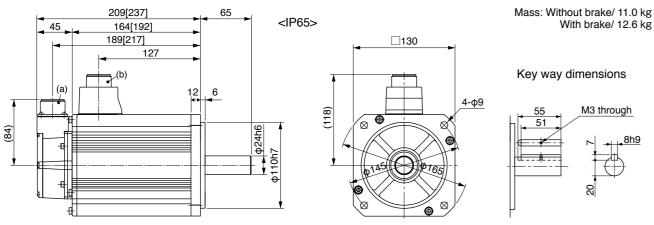
- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\rightarrow \) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

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

Specifications

Recommended moment of inertia

Resolution per single turn

ratio of the load and the rotor

Rotary encoder specifications

				AC4	00 V		specificat
Motor model		IP65		MSME504GC	MSME504SC□	This brake will be re Do not use this for b	
*1		IP67		MSME504G1□	MSME504S1□	Static fri	ction torque (I
	Model	A5II, A5	series	MFD⇔	TA464	Engagin	g time (ms)
Applicable driver *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-	Releasir	ng time (ms)
unver	Fı	ame sym	ıbol	F-fra	ame	Exciting	current (DC)
Power supply	capacit	y	(kVA)	7.5		Releasing voltage (D0	
Rated output			(W)	5000		Exciting voltage (DC)	
Rated torque (N·m)		(N·m)	15.9		LXCILITY	vollage (DC)	
Momentary Max. peak torque (N·m)		(N·m)	47	'.7	• Permi	ssible load	
Rated current ((A(rms))	12	2.0		Radial load	
Max. current			(A(o-p))	5	1	During	Thrust load
Regenerative b	orake Without option		n 357		assembly	Thrust load	
frequency (times/min) Note)1		DV0PM2	20049×2	No limi	t Note)2		
Rated rotational speed		d	(r/min)	30	00	During	Radial load
Max. rotational speed (r/min)		(r/min)	45	00	operation	Thrust load	
Moment of ine	rtia	Withou	t brake	17.4		 For deta 	ails of Note 1
of rotor (×10 ⁻⁴	kg·m²)	With I	orake	18	3.6	• Dimensi	ions of Drive

15 times or less

20-bit

Incremental

1048576

ations (For details, refer to P.183) eleased when it is energized. 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

d (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

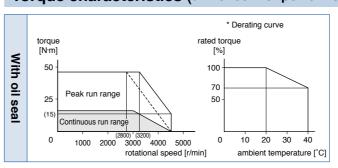
- 1 to Note 5, refer to P.182, P.183.
- er, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For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

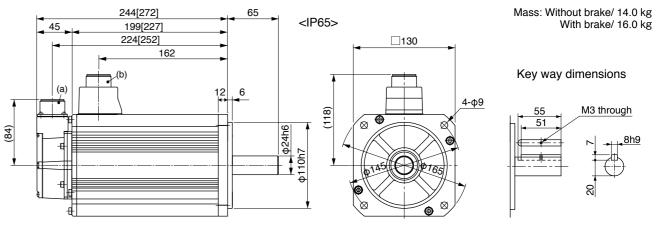
17-bit

Absolute

131072



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 15 1- 1	Model	A5II, A5 series	MDD<	T2407
Applicable 42	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	.9
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/n			No limit Note)2	
Rated rotation	al spee	d (r/min)	20	00
Max. rotationa	l speed	(r/min)	30	00
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		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.

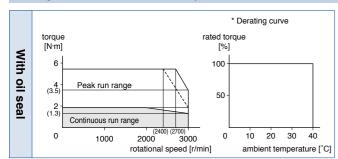
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

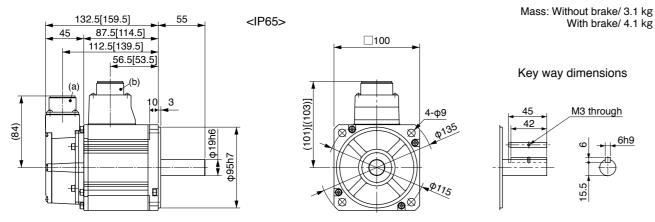
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\rightarrow \) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V	
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MDME064GC	MDME064SC
Motor mode	9I ⊧1	IP67		MDME064G1	MDME064S1
A II l. I .	Model	A5II, A5 series		MDD ⊘ T2407	
Applicable driver	No.	A5IIE, A5E series		MDD ⊘T2407E	-
diivei	Fi	ame sym	bol	D-fr	ame
Power supp	oly capacit	y	(kVA)	1.	.2
Rated outp	ut		(W)	60	00
Rated torqu	ıe		(N·m)	2.	86
Momentary	Max. pea	k torque	(N·m)	8.59	
Rated curre	ent	(A(rms))	1.5	
Max. currer	nt	((A(o-p))	6	.5
Regenerativ	e brake	Without option		No limi	t Note)2
frequency (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		2.03	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		2.35	
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		Note)5	20-bit Incremental	17-bit Absolute	
		n per single 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.

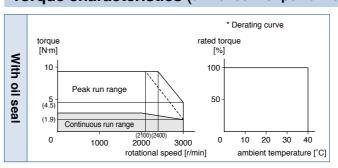
,	,
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

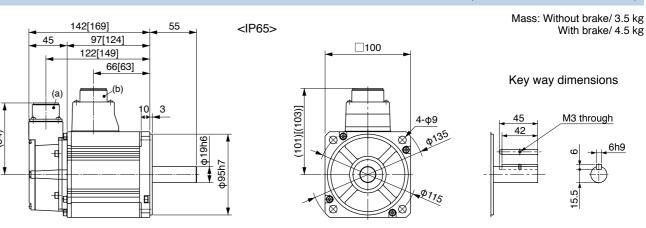
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

			AC4	00 V	
Motor model	IP65			MDME104GC	MDME104SC
*1		IP67		MDME104G1	MDME104S1
	Model	A5II, A5 series A5IIE, A5E series		MDD<	T2412
Applicable driver *2	No.			MDD \diamondsuit T2412E	-
divei	Fı	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. pea	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	min) Note)1	DV0PM	20048	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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072

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

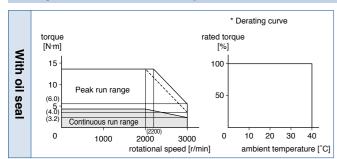
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

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

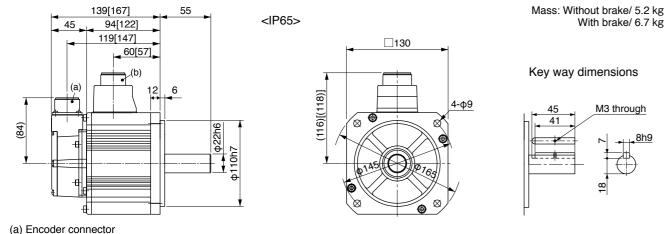
Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

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

[Unit: mm]



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

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

Specifications

				AC4	00 V	
Motor mode		IP65			MDME154GC	MDME154SC
	*1		IP67		MDME154G1	MDME154S1
A I' l. I .	Мо	del	A5II, A5 series		MDD<	T3420
Applicable driver	*2 No.	. /	A5IIE, A5E series		MDD ⊘T3420E	_
unver		Fra	me sym	bol	D-fr	ame
Power supp	oly capa	acity		(kVA)	2	.3
Rated outp	ut			(W)	15	00
Rated torqu	ıe			(N·m)	7.	16
Momentary	Max. p	oeak	torque	(N·m)	21.5	
Rated curre	ent		(.	A(rms))	4.7	
Max. currer	nt			(A(o-p))	2	0
Regenerativ	e brake	9	Without option		No limi	t Note)2
frequency (tir	nes/min) N	ote)1	DV0PM20048		No limit Note)2	
Rated rotat	ional s	peed		(r/min)	2000	
Max. rotation	onal sp	eed		(r/min)	3000	
Moment of	inertia		Without brake		6.70	
of rotor (×1	0 ⁻⁴ kg·r	n²)	With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			le turn	1048576	131072	

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

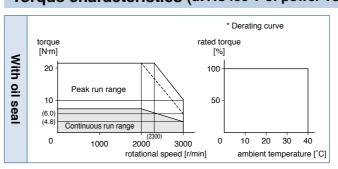
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

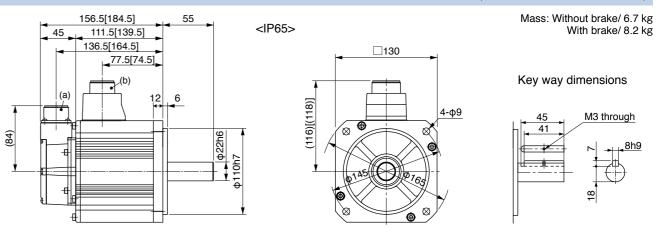
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V	
		IP65	MDME204GC	MDME204SC□	
Motor model *1		IP67	MDME204G1□	MDME204S1	
A madia a la la	Model	A5II, A5 series	MED ⊘ T4430		
Applicable 42	No.	A5IIE, A5E series	MED ⊘T4430E	_	
unver	Fr	ame symbol	E-fr	ame	
Power supply	capacit	y (kVA)	3	.3	
Rated output		(W)	20	00	
Rated torque		(N·m)	9.	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	rake	Without option	option No limit Note)2		
frequency (times/r		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 brake	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			131072	

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

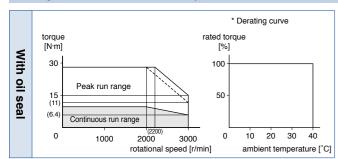
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

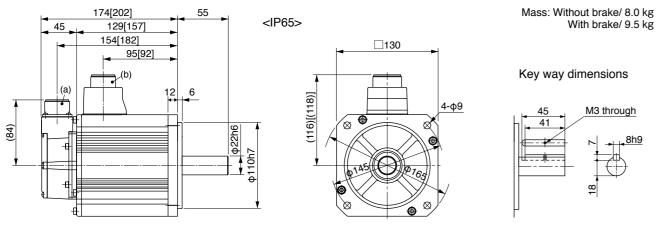
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V		
M-1		IP65		MDME304GC	MDME304SC	
Motor mode	•	IP67		MDME304G1	MDME304S1	
Annlinable	Model	A5II, A5 series		MFD \diamondsuit T5440		
Applicable driver *	No.	A5IIE, A5E series		MFD \diamondsuit T5440E	_	
divoi	Fr	ame sym	bol	F-fra	F-frame	
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 current (A(rms))			8.7			
Max. current (A(o-p))			37			
Regenerative	e brake	Without	option	No limi	t Note)2	
frequency (tim	es/min) Note)1	DV0PM2	0049×2	No limit Note)2		
Rated rotation	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	Without	brake	12.9		
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	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		

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

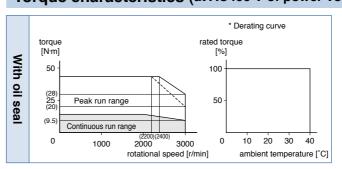
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

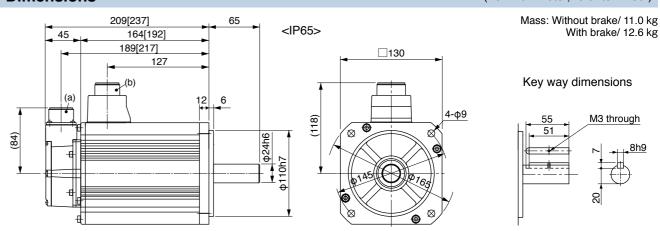
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

			AC400 V		
IP65			MDME404GC□	MDME404SC	
Motor model *1		IP67	MDME404G1□	MDME404S1	
Amaliaahla	Model	A5II, A5 series	MFD◇	TA464	
Applicable 42	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	-	
unver	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	6	.8	
Rated output		(W)	40	00	
Rated torque		(N·m)	19).1	
Momentary Ma	ax. peal	k torque (N·m)	57.3		
Rated current (A(rms))			10.6		
Max. current		(A(o-p))	4	5	
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/r	min) Note)1	DV0PM20049×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	37.6		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	42.9		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary 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.

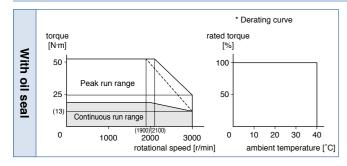
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

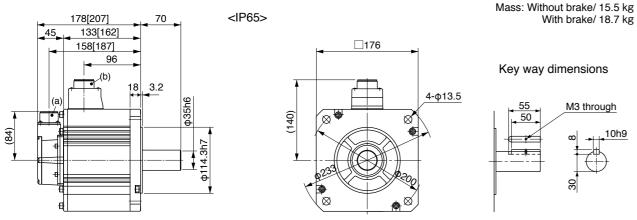
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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		
Matanasadal		IP65		MDME504GC	MDME504SC	
Motor mode	₽I ∗1		IP67		MDME504G1	MDME504S1
Amaliaahla		Model	A5II, A5	series	MFD◇	TA464
Applicable driver '	*2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_
anvoi		Fr	ame sym	bol	F-fra	ame
Power supp	oly c	apacit	y	(kVA)	7.	.5
Rated outp	ut			(W)	50	00
Rated torqu	ıe			(N·m)	23	3.9
Momentary	Max	x. peal	k torque	(N·m)	71.6	
Rated curre	ent		(A(rms))	13.0	
Max. currer	nt		((A(o-p))	5	5
Regenerativ	e br	ake	Without	option	12	20
frequency (tin	nes/mi	in) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotat	iona	l spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without	brake	48.0	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	53	3.3	
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.

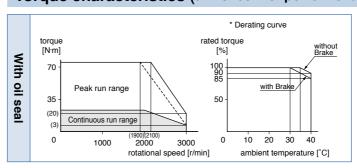
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

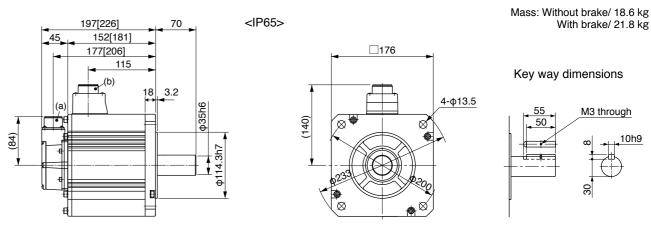
Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

A5 Family

Specifications

			AC400 V		
IP65		IP65	-	-	
Motor model *1		IP67	MDME754G1□	MDME754S1	
	Model	A5II, A5 series	MGD◇	TB4A2	
Applicable driver *2	No.	A5IIE, A5E series	-	_	
anver	Fr	ame symbol	G-fr	ame	
Power supply	capacit	y (kVA)	1	1	
Rated output		(W)	75	00	
Rated torque		(N·m)	47.8		
Momentary Max. peak torque (N·m)			119		
Rated current		(A(rms))	22		
Max. current (A(o-p))			83		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/min) Note)1 DV0PM20049×3		DV0PM20049×3	No limit Note)2		
Rated rotation	al spee	d (r/min)	1500		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	101		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary 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.

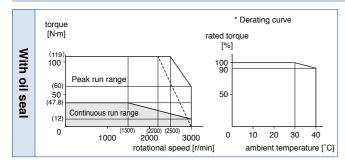
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

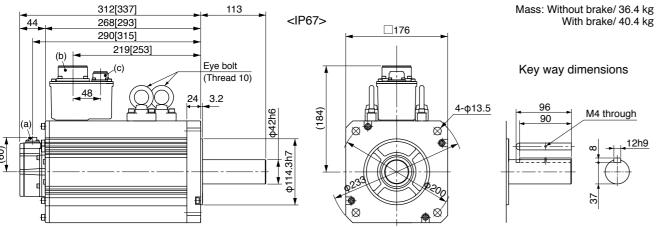
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

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

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

Specifications

			AC4	00 V	
Matauaaaalal		IP65		-	-
Motor model		IP67		MDMEC14G1	MDMEC14S1
A 1: 1- 1 -	Model	A5 I I, A5	series	МНО⊘ТВ4А2	
Applicable driver *2	No.	A5IIE, A	5E series	-	_
divei	Fr	ame sym	bol	H-fr	ame
Power suppl	y capacit	y	(kVA)	1	7
Rated output	t		(W)	110	000
Rated torque)		(N·m)	7	0
Momentary I	Max. peal	k torque	(N·m)	175	
Rated currer	nt	(A(rms))	27.1	
Max. current (A(o-p))			10)1	
Regenerative	brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0PM	120059	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	2000	
Moment of ir	nertia	Without	brake	212	
of rotor (×10 ⁻⁴ kg·m²) With brake		orake	220		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		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.

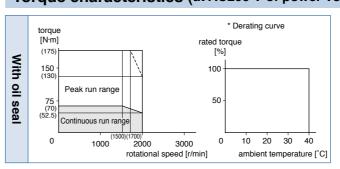
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

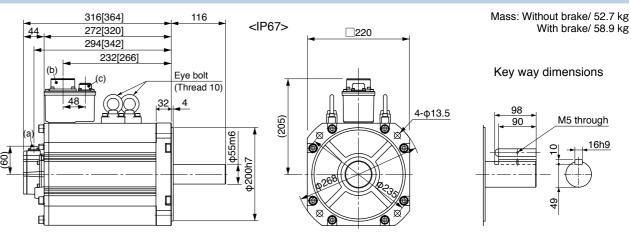
Radial load P-direction (N)	4508
Thrust load A-direction (N)	1470
Thrust load B-direction (N)	1764
Radial load P-direction (N)	2254
Thrust load A, B-direction (N)	686
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

Inform

		AC400 V		
Matanasadal		IP65	-	-
Motor model *1		IP67	MDMEC54G1	MDMEC54S1
Annliaghla	Model	A5II, A5 series	MHD \diamondsuit TB4A2	
Applicable *2	No.	A5IIE, A5E series	_	_
divei	Fr	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	2	2
Rated output		(W)	150	000
Rated torque		(N·m)	95	5.5
Momentary Ma	ax. peal	k torque (N·m)	224	
Rated current		(A(rms))	33.1	
Max. current		(A(o-p))	118	
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/	min) Note)1	DV0PM20059	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	302	
of rotor (×10 ⁻⁴	kg·m²)	With brake	211	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary 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.

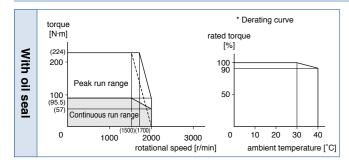
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

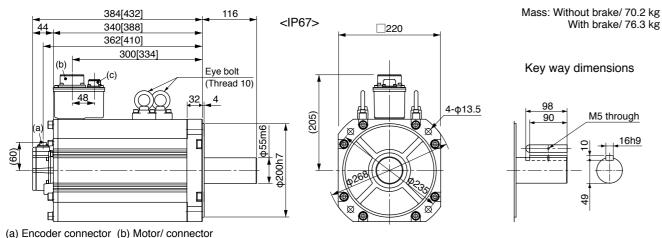
During assembly During	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



- (a) Product connector (b) Motor/ connect
- (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	
Matanasa		IP65		-	-	
Motor mode *	-	IP67		MFME154G1	MFME154S1	
	Model	A5II, A5	series	MDD<	T3420	
Applicable driver *	No.	A5IIE, A5E series		MDD ⊘T3420E	-	
unvei	Fr	ame sym	bol	D-fr	ame	
Power supp	ly capacity	y	(kVA)	2	.4	
Rated outpu	it		(W)	15	00	
Rated torque	е		(N·m)	7.	16	
Momentary	Max. peal	k torque	(N·m)	21.5		
Rated current (A(rms))		3.8				
Max. current (A(o-p))		16				
Regenerative	e brake	Without	option	1(100	
frequency (time	es/min) Note)1	DV0PM20048		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	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 or less				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn		le turn	1048576	131072		

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

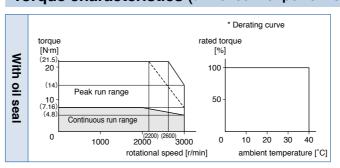
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

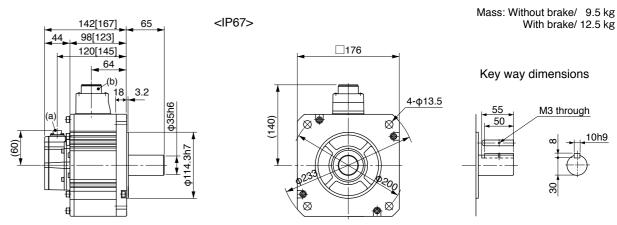
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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



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

[Unit: mm]

				AC400 V		
		IP65		-	-	
Motor model		IP67		MFME254G1□	MFME254S1	
Amaliaalala	Model	A5II, A5 s	series	MED ⇔ T4430		
Applicable driver *2	No.	A5IIE, A5	E series	MED ⊘T4430E	_	
unvei	Fr	ame symb	ool	E-fr	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	A(rms))	6.7		
Max. current		(,	A(o-p))	29		
Regenerative b	orake	Without	option	7	5	
frequency (times/	min) Note)1	DV0PM2	20049	No limit Note)2		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	35.8		
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			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.

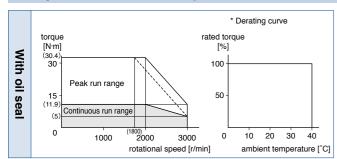
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

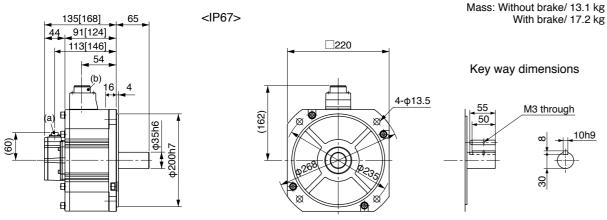
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

[Unit: mm]

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

Specifications

			AC4	00 V		
		IP65			-	-
Motor mod	1 C I *1		IP67		MFME454G1□	MFME454S1
		Model	A5II, A5	series	MFD◇	TA464
Applicable driver	*2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unver		Fr	ame sym	bol	F-fra	ame
Power sup	ply (capacit	у	(kVA)	6	.9
Rated outp	out			(W)	45	00
Rated torq	ue			(N·m)	21	.5
Momentary	у Ма	ax. peal	k torque	(N·m)	54.9	
Rated current (A(rms))			A(rms))	12.4		
Max. current (A(o-p))			(A(o-p))	5	3	
Regenerati	ve b	rake	Without	option	67	
frequency (ti	imes/n	nin) Note)1	DV0PM20049×2		375	
Rated rota	tion	al spee	d	(r/min)	2000	
Max. rotati	ona	speed		(r/min)	3000	
Moment of	ine	rtia	Without brake		63.1	
of rotor (x1	10-4	kg·m²)	With b	rake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
	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.

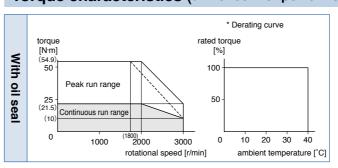
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

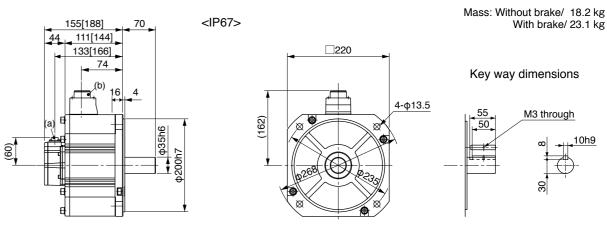
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

[Unit: mm]

			AC4	00 V	
Mataumaadal	IP65		MGME094GC□	MGME094SC□	
Motor model		IP67		MGME094G1□	MGME094S1
Amaliaahla	Model	A5I , A 5 s	eries	MDD<	T3420
Applicable 42	No.	A5IIE, A5I	E series	MDD ⊘T3420E	-
anver	Fr	ame symb	ol	D-fr	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	90	00
Rated torque			(N·m)	8.	59
Momentary M	ax. peal	k torque	(N·m)	19.3	
Rated current		(A	(rms))	3.8	
Max. current		(A	۸(o-p))	12	
Regenerative b	orake	Without o	ption	No limit Note)2	
frequency (times/	min) Note)1	DV0PM2	0048	No limit Note)2	
Rated rotation	al spee	d ((r/min)	1000	
Max. rotationa	ıl speed	((r/min)	2000	
Moment of ine	ertia	Without b	orake	6.70	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single	turn	1048576	131072

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

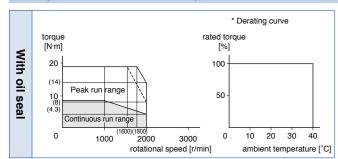
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

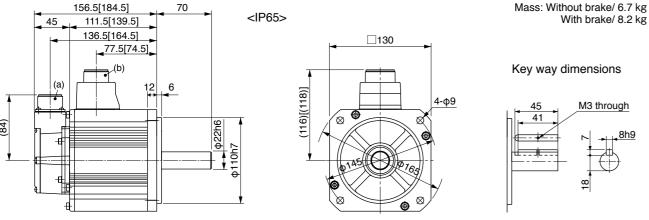
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable 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.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	ÐΙ ∗1	IP67		MGME204G1□	MGME204S1
	Model	A5II, A5	series	MFD◇	T5440
Applicable driver	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unven	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	ty	(kVA)	3	.8
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	47.7	
Rated curre	ent	(A(rms))	8.5	
Max. currer	nt		(A(o-p))	3	0
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	ed	(r/min)	1000	
Max. rotation	onal speed	d	(r/min)	2000	
Moment of	inertia	Without brake		30.3	
of rotor (×1	0 ⁻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 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sinale 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.

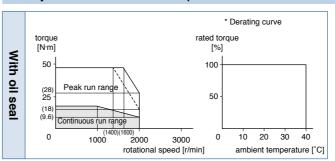
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

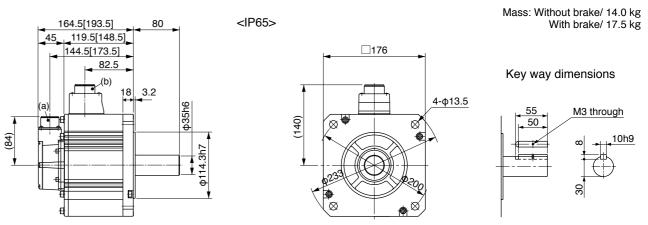
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- 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.

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]

			AC400 V		
Motor model		IP65		MGME304GC□	MGME304SC□
*1		IP67		MGME304G1□	MGME304S1□
Amaliaabla	Model	A5II, A5	series	MFD♦	TA464
Applicable *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unver	Fr	ame sym	ıbol	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))			(A(rms))	11.3	
Max. current (A(o-p))			(A(o-p))	40	
Regenerative I	orake	Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	1000	
Max. rotationa	al speed		(r/min)	2000	
Moment of ine	ertia	Without brake		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 encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
F	Resolutio	n per sing	le turn	1048576	131072

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

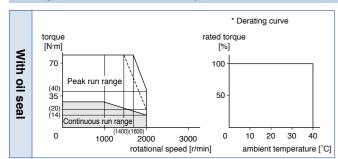
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

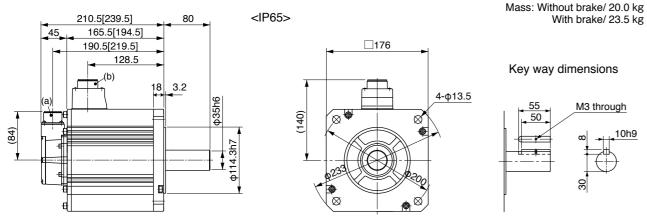
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC400 V		
Mataumaad		IP65		-	-
Motor mode	∂ I ⊧1	IP67		MGME454G1□	MGME454S1
A 1: 1- 1 -	Model	A5II, A5 series		MFD ◇TA46 4	
Applicable driver	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-
diivei	Fr	ame sym	bol	F-fra	ame
Power supp	oly capacit	y	(kVA)	7.	.5
Rated outpo	ut		(W)	45	00
Rated torqu	ie		(N·m)	43	3.0
Momentary	Max. peal	k torque	(N·m)	107	
Rated curre	ent	(.	A(rms))	14.8	
Max. current (A(o-p))			5	5	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotational speed (r/min)		(r/min)	1000		
Max. rotation	nal speed		(r/min)	2000	
Moment of	inertia	Without	brake	79.1	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	84.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		le turn	1048576	131072	

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

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

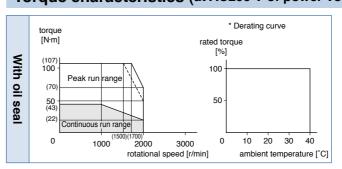
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

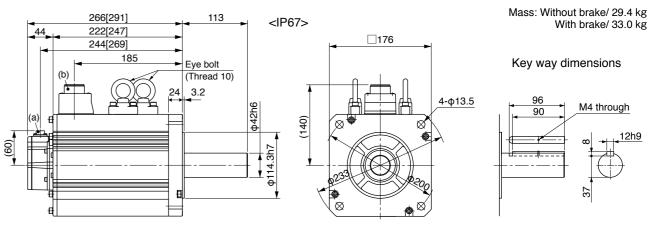
Radial load P-direction (N)	2058
Thrust load A-direction (N)	980
Thrust load B-direction (N)	1176
Radial load P-direction (N)	1470
Thrust load A, B-direction (N)	490
	Thrust load A-direction (N) Thrust load B-direction (N)

- 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]

			AC400 V		
IP65		-	-		
Motor model *1		IP67		MGME604G1□	MGME604S1
	Model	A5II, A5 series		MGD♦	TB4A2
Applicable driver *2	No.	A5IIE, A5E series		_	-
unver	Fı	ame symbo	I	G-fr	ame
Power supply	capacit	у (kVA)	9.	.0
Rated output			(W)	60	00
Rated torque		(N·m)	57.3	
Momentary Max. peak torque (N·m)			143		
Rated current		1)A)	rms))	19.4	
Max. current (A(o-p))			74		
Regenerative brake Without option			No limit Note)2		
frequency (times/min) Note)1 DV0PM20049×3		49×3	No limit Note)2		
Rated rotation	al spee	d (r	/min)	1000	
Max. rotationa	l speed	(r.	/min)	2000	
Moment of ine	rtia	Without br	ake	101	
of rotor ($\times 10^{-4}$	kg·m²)	With bra	ke	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	
Resolution per single turn			turn	1048576	131072

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

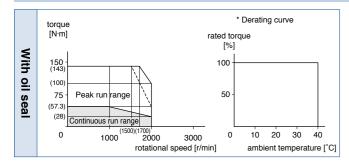
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

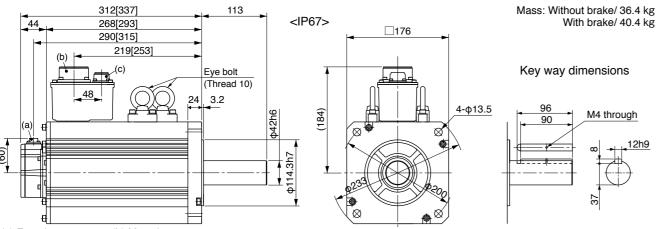
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1764
	Thrust load A, B-direction (N)	588

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

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



Dimensions



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

[Unit: mm]

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

Dimensions are subject to change without notice. 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-1		IP65		MHME104GC	MHME104SC
Motor mode	1	IP67		MHME104G1□	MHME104S1
	Model	A5II, A5	series	MDD<	T2412
Applicable driver *	No.	A5IIE, A5E series		MDD \diamondsuit T2412E	_
unven	Fr	ame sym	bol	D-fra	ame
Power supp	ly capacity	y	(kVA)	1.	8
Rated outpu	ıt		(W)	10	00
Rated torqu	е		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated curre	nt	(.	A(rms))	2.9	
Max. current (A(o-p))			1	2	
Regenerative	e brake	Without option		83	
frequency (tim	es/min) Note)1	DV0PM20048		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		24.7	
of rotor (×10) ⁻⁴ kg·m²)	With brake		26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		n per sing	le turn	1048576	131072

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

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

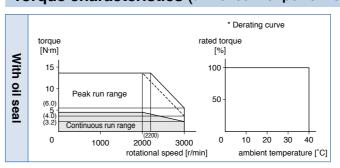
4.9 or more
80 or less
70 or less
0.59±10 %
2 or more
24±2.4

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

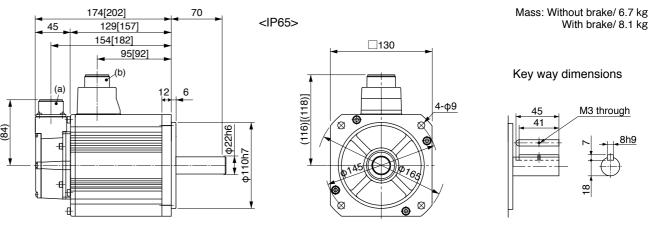
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

			AC400 V		
IP65		IP65	MHME154GC	MHME154SC	
Motor model *1		IP67	MHME154G1□	MHME154S1	
	Model	A5II, A5 series	MDD<	T3420	
Applicable *2	No.	A5IE, A5E series	MDD ⊘T3420E	-	
unver	Fr	ame symbol	D-fr	ame	
Power supply of	capacity	y (kVA)	2	.3	
Rated output		(W)	15	00	
Rated torque		(N·m)	7.16		
Momentary Ma	ıx. peal	k torque (N·m)	21.5		
Rated current		(A(rms))	4.7		
Max. current (A(o-p))			2	20	
Regenerative b	rake	Without option	22		
frequency (times/m	nin) Note)1	DV0PM20048	130		
Rated rotations	al spee	d (r/min)	2000		
Max. rotational	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.

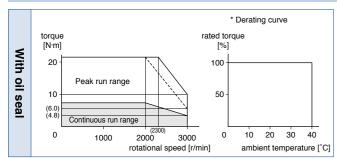
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

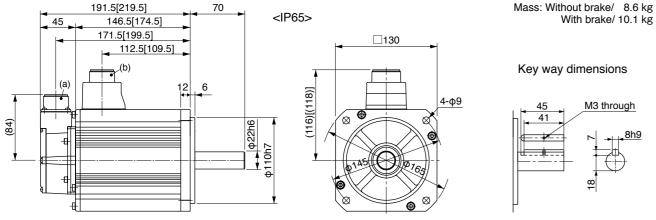
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

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[Unit: mm]

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

Specifications

			AC4	00 V	
M -4		IP65		MHME204GC	MHME204SC
Motor model		IP67		MHME204G1□	MHME204S1
A 1: 1- 1 -	Model	A5 I I, A5	series	MED<	T4430
Applicable driver *2	No.	A5IIE, A5E series		MED ⊘T4430E	-
unven	Fr	ame sym	bol	E-fra	ame
Power suppl	y capacit	y	(kVA)	3	.3
Rated output	t		(W)	20	00
Rated torque)		(N·m)	9.	55
Momentary N	Max. peal	k torque	(N·m)	28.6	
Rated currer	nt	(A(rms))	5.5	
Max. current			(A(o-p))	2	4
Regenerative	brake	Without	option	45	
frequency (time	s/min) Note)1	DV0PM20048		142	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	57.8	
of rotor (×10 ⁻⁴ kg·m²) With brake		orake	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			1048576	131072	

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

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

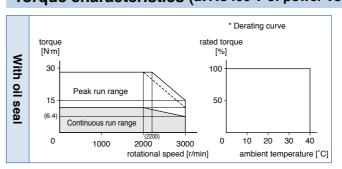
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

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

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

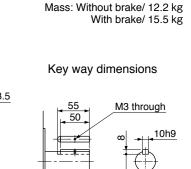


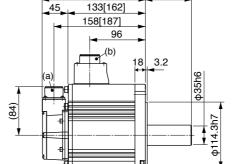
Dimensions

(a) Encoder connector

(b) Motor/Brake connector

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





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<IP65>

[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.

* Figures in [] represent the dimensions with brake.

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			AC400 V		
Makanasadal		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	-
divei	Fr	rame sym	ibol	F-fra	ame
Power supply	capacit	у	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	14.3	
Momentary Ma	ax. peal	k torque	(N·m)	43.0	
Rated current (A(rms))			8.0		
Max. current			(A(o-p))	34	
Regenerative brake Without option			option	19	
frequency (times/r	min) Note)1	DV0PM2	20049×2	142	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Withou	t brake	90.5	
of rotor ($\times 10^{-4}$	kg·m²)	With I	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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			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.

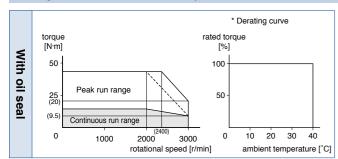
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

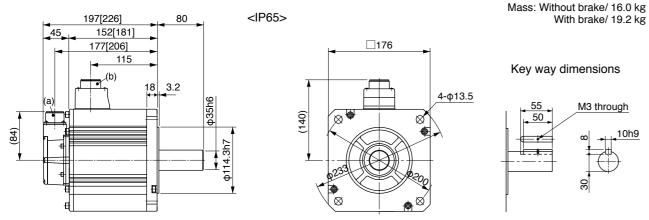
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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	
Matanaaa	-1	IP65		MHME404GC	MHME404SC
Motor mode	€I *1	IP67		MHME404G1	MHME404S1
	Model	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 capaci	ty	(kVA)	6	.8
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	57.3	
Rated curre	ent	(A(rms))	10.5	
Max. currer	nt		(A(o-p))	4	5
Regenerativ	e brake	Without	option	17	
frequency (tir	nes/min) Note)	DV0PM2	0049×2	125	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	t	(r/min)	3000	
Moment of	inertia	Without	brake	112	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sina	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.

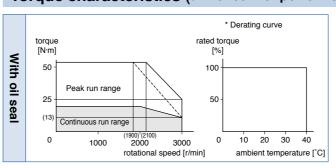
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• 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

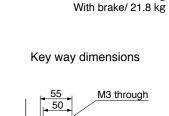
- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver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

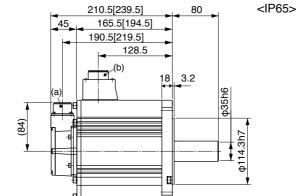


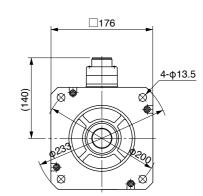
Dimensions

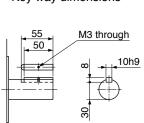
(For IP67 motor, refer to P.140.)



Mass: Without brake/ 18.6 kg







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

[Unit: mm]

				AC4	00 V
IP65			MHME504GC	MHME504SC	
Motor model *1		IP67		MHME504G1□	MHME504S1
	Model	A5II, A5 ser	ries	MFD<	TA464
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_
divei	Fr	ame symbo	ı	F-fra	ame
Power supply	capacit	у ((kVA)	7.	.5
Rated output			(W)	50	00
Rated torque		((N·m)	23.9	
Momentary M	ax. peal	k torque ((N·m)	71.6	
Rated current		(A(rms))	13.0	
Max. current (A(o-p))			55		
Regenerative b	rake	Without op	otion	10	
frequency (times/	min) Note)1	DV0PM200	49×2	76	
Rated rotation	al spee	d (r	/min)	2000	
Max. rotationa	l speed	(r	/min)	3000	
Moment of ine	rtia	Without bi	rake	162	
of rotor (×10 ⁻⁴	kg·m²)	With bra	ke	164	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn			turn	1048576	131072

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

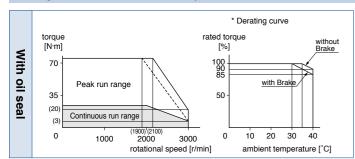
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

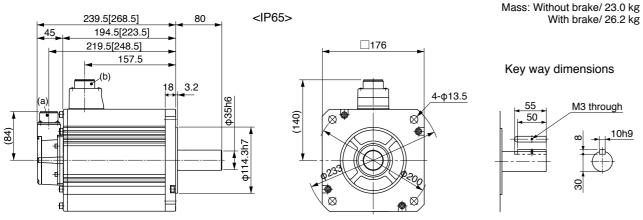
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

Specifications

				AC4	00 V	
M -4	-1	IP65		-	-	
Motor mode	€I *1	IP67		MHME754G1□	MHME754S1	
	Model	A5Ⅱ, A5	series	MGD♦	TB4A2	
Applicable driver	No.	A5IIE, A	5E series	-	-	
unven	F	rame sym	bol	G-fr	ame	
Power supp	oly capacit	у	(kVA)	9	.0	
Rated outpo	ut		(W)	75	00	
Rated torqu	ıe		(N·m)	47	'.8	
Momentary	Max. pea	k torque	(N·m)	119		
Rated curre	ent	(A(rms))	22.0		
Max. currer	nt	((A(o-p))	83		
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tin	nes/min) Note)1	DV0PM2	0049×3	No limit Note)2		
Rated rotat	Rated rotational speed (r/min)			15	00	
Max. rotation	onal speed	al speed (r/min)		30	00	
Moment of	inertia	Without	brake	273		
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	279		
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		
	Resolutio	n per sing	le turn	1048576	131072	

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

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

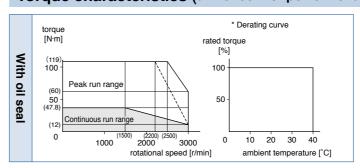
,	,
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

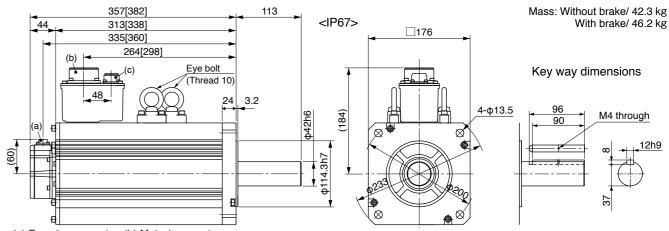
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

162

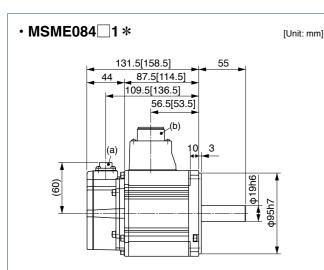
[Unit: mm]

[Unit: mm]

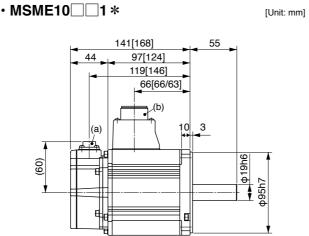
138

65

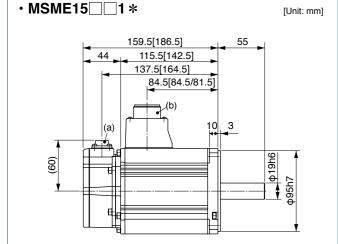
12



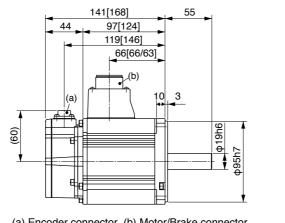
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



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

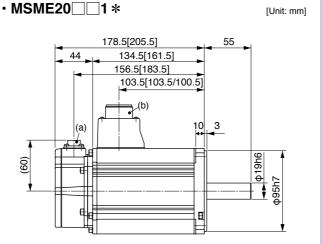


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

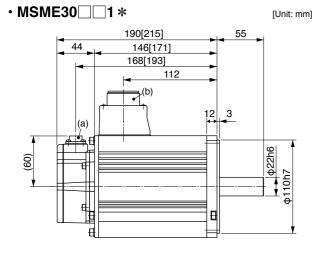


IP67 motor (MSME 200 V/ 400 V type)

If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

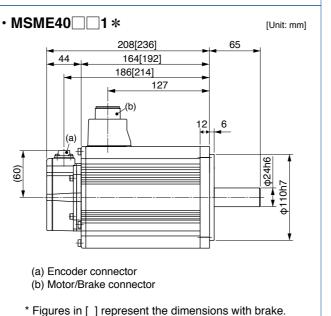


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



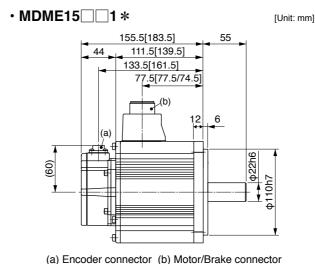
(a) Encoder connector (b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

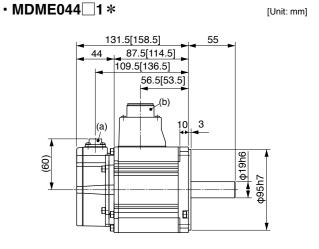


MSME50□□1* 243[271] 199[227] 44 221[249] (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. MDME064 □ 1 * 141[168] 97[124] 119[146] 66[63] (a) Encoder connector (b) Motor/Brake connector MDME15□□1 * 44

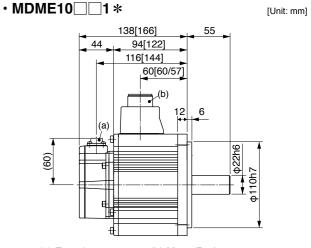
- * Figures in [] represent the dimensions with brake.



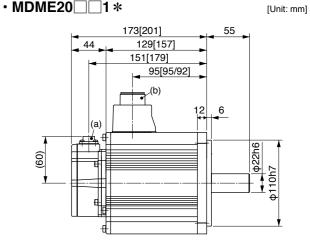
* Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.



- (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.

* For motor specifications, refer to IP65 motor page.

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

[Unit: mm]

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

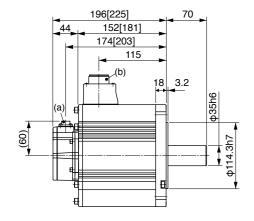
 MDME40□□1* [Unit: mm] 177[206] 133[162] 155[184] (a) Encoder connector

(b) Motor/Brake connector

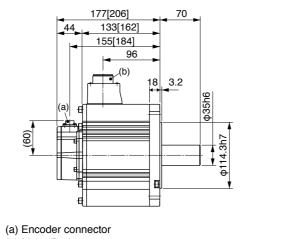
IP67 motor (MDME 200 V/ 400 V type) MGME 200 V/ 400 V type)

* Figures in [] represent the dimensions with brake.

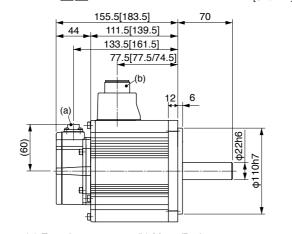
 MDME50□□1 * [Unit: mm]



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



MGME09□□1 * [Unit: mm]

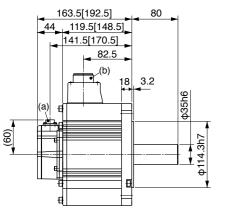


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

[Unit: mm]

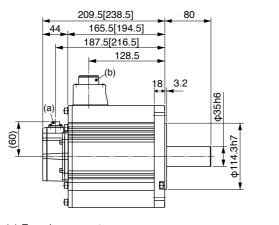
• MGME20 ☐ 1 *

[Unit: mm]



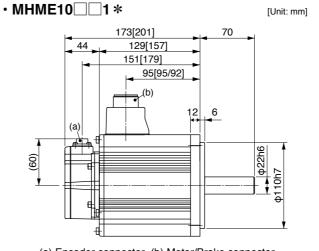
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

MGME30□□1 *

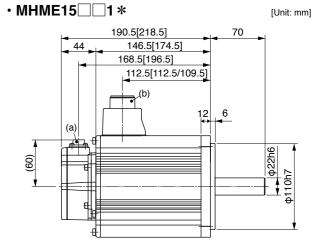


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

* For motor specifications, refer to IP65 motor page.

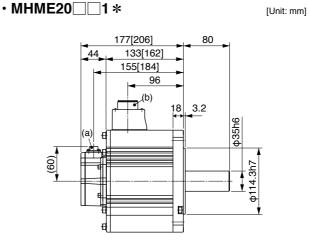


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.



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

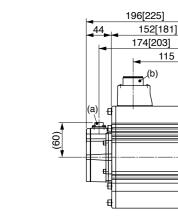
3.2



- (a) Encoder connector

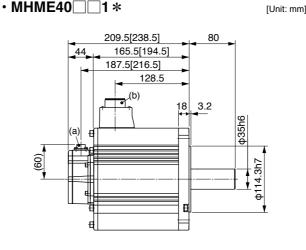


- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

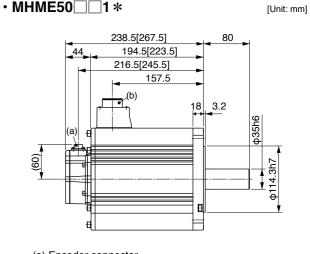


• MHME30□□1 *

- (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

140

- (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

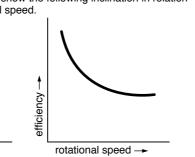


Type and Specifications

Reduction		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.

Efficier	ncy of the gear reducer show the	following inclination in relation
to outp	out torque and rotational speed.	
		A



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 %				
Coorradiio	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)				
	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 -

M	S	M	Ε	0	1	1	G	3	1	N

Symbol	Туре		Symbol	Specifications
MSMD	Low inertia		01	100 W
IVIOIVID	100 W to 750 W		02	200 W
MSME	Low inertia 100 W to 750 W		04	400 W
	High inertia		08	750 W
MHMD	000 W += 750 W			

Voltage specifications

Symbol	Rated output			
1	100 V			
2	200 V			

The Combination of the Driver and the Motor with gear reducer

Rotary encoder specifications

* S: can be used in incremental.

200 W to 750 W

Model Designation

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

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

Motor types with gear reducer

Symbol	Reduction	М	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 brake	
	Key way	without	with
3	•	•	
4	•		•

Motor output	100 V		200 V	
	Part No. of motor with gear reducer	Single phase, 100 V	Part No. of motor with gear reducer	Single/3-phase, 200 V
		Part No. of driver		Part No. of driver
100 W	MSME011 N MSMD011 N	MADHT1107	MSME012□□□N	MADHT1505
		MADKT1107		MADKT1505
		MADHT1107E	MSMD012□□□N	MADHT1505E
		MADKT1107E		MADKT1505E
200 W	MSME021	MBDHT2110	MSME022 N MSMD022 N MHMD022 N	MADHT1507
		MBDKT2110		MADKT1507
		MBDHT2110E		MADHT1507E
		MBDKT2110E		MADKT1507E
400 W	MSME041	MCDHT3120	MSME042 _ _ N MSMD042 _ _ N MHMD042 _ _ N	MBDHT2510
		MCDKT3120		MBDKT2510
		MCDHT3120E		MBDHT2510E
		MCDKT3120E		MBDKT2510E
750 W	_	_	MSME082 N MSMD082 N MHMD082 N	MCDHT3520
				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 + conv to moto	r shaft)		iss	Permissible radial load	Permissible thrust load
				<i>f</i> >					w/o brake				<i>t.</i> >	
		(W)		(W)	(r/min)	, ,	(N·m)	(N·m)	J(×10 ⁻⁴		(k		(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		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
MSME	MSME02 2N	200	1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
M	MSME02 3N	-	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
<u>-</u>	MSME02 4N		1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
¥ <u>+</u>	MSME04		1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 DD 2N	400	1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
ä	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 □□ 4N		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
S S	MSMD02 2N	200	1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 3N	200	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02		1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low iner	MSMD04 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
	MSMD04 🗆 🗆 2N	400	1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
lia	MSMD04 🗆 🗆 3N	100	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082 □□ 1N		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082 □□ 3N	, 50	1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082 □□ 4N		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02 🗆 🗆 🗆 1N		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02	200	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02 🗆 🗆 3N		1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
ĭ	MHMD02 🗆 🗆 4N		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
	MHMD04 🗆 🗆 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
gh i	MHMD04 🗆 🗆 3N	100	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
High inertia	MHMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
tia	MHMD082 □□ 1N		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082 □□ 3N	7.50	1/15	635	200	300	30.4	91.2	2.21	2.31	6.3	7.1	1760	882
	MHMD082 🗆 🗆 4N		1/25	635	120	180	50.7	152	2.16	2.26	6.3	7.1	2650	1320

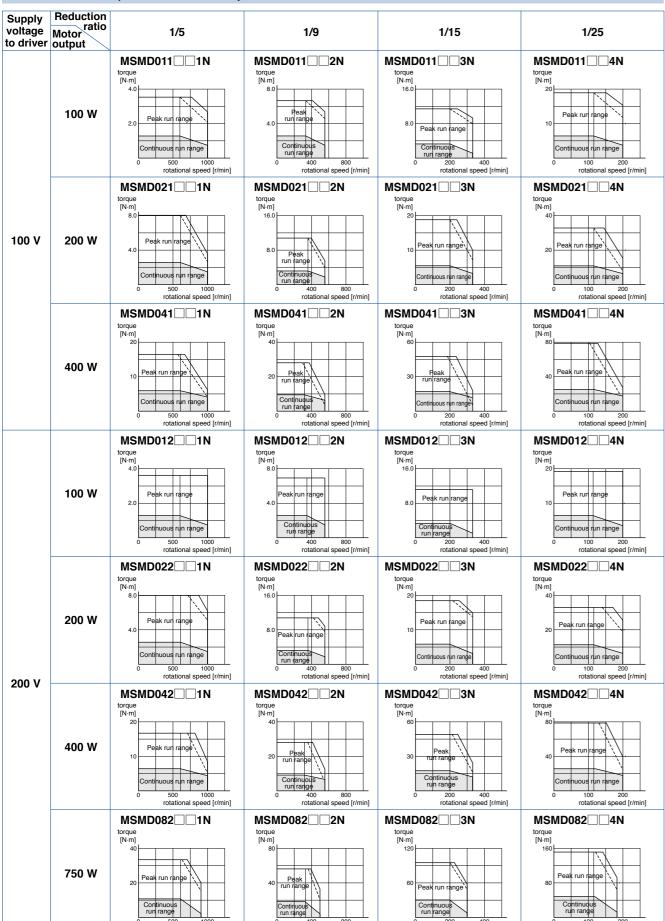
Table of Motor Specifications

MSM	E series	(100 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor	1/5	1/9	1/15	1/25
	100 W	MSME011 1N torque [N·m] 4.0 Peak run range Continuous run range 500 1000 rotational speed [r/min]	MSME011 2N torque [N·m] 8.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME011 3N torque [N·m] 16.0 Peak run range Continuous µn range 0 200 400 rotational speed [//min]	MSME011 4N torque [N-m] 20 Peak rur range 10 Continuous run range 0 100 200 rotational speed [r/min]
100 V	200 W	MSME021 1 N torque [N·m] 8.0 Peak run renge 4.0 Continuous run renge 0 500 1000 rotational speed [r/min]	MSME021 2N torque [N-m] 16.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME021 3N torque [N-m] 20 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME021 4N torque [N-m] 40 Peak run range 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 [//min]	MSME041 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME041 3N torque [N-m] 60 Peak run range Continuous run range 0 200 400 rotational speed [//min]	MSME041 4N torque [N·m] 80 Peak run range 40 Continuous run tange 0 100 200 rotational speed [r/min]
	100 W	MSME012 1N torque [N·m] 4.0 Peak run range 2.0 Continuous run tange 0 500 1000 rotational speed [//min]	MSME012 2N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 400 800 rotational speed [r/min]	MSME012 3N torque [N-m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME012 4N torque [N·m] 20 Peak rur range 10 Continuous tun range 0 100 200 rotational speed [r/min]
	200 W	MSME022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 500 10000 rotational speed [r/min]	MSME022 2N torque [N·m] 16.0 Peak run tange Continuous run range 0 400 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak rur range 10 Continuous run range 0 200 400 rotational speed [r/min]	MSME022 4N torque [N·m] 40 Peak rur range 20 Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MSME042 1N torque [N-m] 10 Peak run range Continuous tun tange 0 500 1000 rotational speed [r/min]	MSME042 2N torque [N-m] 40 Peak run range Continuous run range 400 rotational speed [r/min]	MSME042 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME042 4N torque [N·m] 80 Peak run range 40 Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MSME082 1N torque [N·m] 40 Peak run range Continuous run range 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 $\square \square \square$ of the motor model number. Refer to "Model designation".

MSMD series (100 W to 750 W)



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

Supply	Reduction				
voltage to driver	Motor ratio output	1/5	1/9	1/15	1/25
100 V	200 W	MHMD021 1N torque [N·m] 8.0 Peak run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run frange 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 run range Continudus run qange 0 400 800 rotational speed [r/min]	MHMD041 3N torque [N-m] 60 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 0 100 200 rotational speed [r/min]
	200 W	MHMD022 1N torque [N-m] 8.0 Peak rur range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MHMD022 2N torque [N-m] 16.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N·m] 20 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD022 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MHMD042 1N torque [N·m] 20 Peak run range 0 500 1000 rotational speed [r/min]	MHMD042 2N torque [N·m] 40 PBalk vin 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] Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MHMD082 1N torque [N·m] 40 Peak run range	MHMD082 2N torque [N·m] 80 Paak 40 run rinnge	MHMD082 3N torque [N·m] 120 Peak run range	MHMD082 4N torque [N·m] 160 Peak run range

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

Dimensions of Motor

Encoder connecter

Brake connector

Motor connector

LE

LW

LK

(Key way dimensions)

T(Key-way depth)

H

LC

[Unit: mm]

 $^{^{\}star}$ 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																
			221.5	122										67.5						
MSME01□□□2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18			4×4×16	2.5			
	100		221.5	122								12								
MSME01 = 3N		1/15	202	92 122										78						
			234	92								M6								
MSME01 = 4N		1/25	264	122	50	30	78	70	90	19	17	Depth 20	26	92		6×6×22	3.5			
			184	79.5								M5								
MSME02 1N		1/5	220.5	116	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5			
			219	79.5																
MSME02 2N	000	1/9	255.5	116										89.5	3					
MCMEOO	200	1/1E	229.5	79.5																
MSME02 3N		1/15	266	116										100						
MSME02		1/25	229.5	79.5									<i>1</i> 6	100						
momeoz		1725	266	116	50	30	78	70	70 90	19	17	M6 Depth	26			6×6×22	3.5			
MSME04		1/5	238.5	99			. •	. •				20				onon	0.0			
					275	135.5											89.5			
MSME04□□□2N		1/9	238.5	99																
	400		275 249	135.5 99																
MSME04□□□3N		1/15	285.5	135.5										100						
		3	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			
			270.7	112.2																
MSME082□□2N	⊇N 750	1/9	306.7	148.2										97.5						
MSME082□□3N	750	1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4			
IVISIVIEU0ZSN		1/15	319.2	148.2	01	40	98	90	115	∠4	ΙĎ	Depth 20	აე	110	э	0×1×30	4			
MSME082□□4N			283.2	112.2										110						
IVIOIVILUUZ 4IV		1/25	319.2	148.2																

Upper column: without brake [

Lower column: with brake

MSMD series

* The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	Т						
MSMD01□□□1N		1/5	191.5	92																			
			221.5	122								145		67.5									
MSMD01□□□2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18			4×4×16	2.5						
	100		221.5	122								12											
MSMD01□□□3N		1/15	202	92 122										78									
			232	92								M6											
MSMD01□□□4N		1/25	264	122	50	30	78	70	90	19	17	Depth 20	26	92		6×6×22	3.5						
			184	79.5								M5											
MSMD02□□□1N		1/5	220.5	116	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5						
			219	79.5								12			_								
MSMD02□□□2N		1/9	255.5	116										89.5	3								
	200		229.5	79.5																			
MSMD02 3N		1/15	266	116										400									
MCMD00			1/05	229.5	79.5										100								
MSMD02 U 4N					1/25	266	116	50	30	78	70	90	19	17	M6	26			6×6×22	3.5			
MSMD04		1/5	238.5	99	50	30	70	70	90	19	17	Depth 20	20			0x0x22	3.5						
WISWIDO4III								1/3	275 13	135.5										89.5			
MSMD04□□□2N			•	1/9	238.5	99										03.5							
IIIOIIID04ZIV	400	.,,	275	135.5																			
MSMD04□□□3N	100	1/15	249	99										100									
			285.5	135.5								140											
MSMD04□□□4N		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4						
			300.5	135.5								20 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						
			292.7 270.7	112.2								20											
MSMD082□□2N		1/9	307.7	149.2										97.5									
	750		283.2	112.2								M8											
MSMD082□□3N		1/15	320.2	149.2	61	40	98	90	115	24	18	Depth	35		5	8×7×30	4						
			283.2	112.2								20		110									
MSMD082□□4N		1/25	320.2	149.2																			

Upper column: without brake

Lower column: with brake

[Unit: mm]

MHMD series

Encoder connecter (AMP)

Brake connector (AMP)

Brake connector (AMP)

A-1 7

* 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 D D 1N		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5						
		1 10	238.5	99										20.5									
MHMD02 D2N	200	1/9	275	135.5										89.5									
MUMPOO	200	4/45	249	99																			
MHMD02 3N		1/15	285.5	135.5										100									
MUMDOO		1/05	249	99										100	3								
MHMD02 4N		1/25	285.5	135.5	50	30	78	70	90	19	17	M6	26			6×6×22	3.5						
MHMD04		1/5	258	118.5	50	30	/8	70	90	19	17	Depth 20	20			0x0x22	3.5						
		1/5	294.5	155										89.5									
MHMD04 2N			1/9	258	118.5										69.5								
	400	1/9	294.5	155																			
MHMD04	400	400	400	400	400	400	400	1/15	268.5	118.5										100			
		1/15	305	155										100									
						1 /05	283.5	118.5		40			445			M8		404	_				
MHMD04 4N		1/25	320	155	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4						
			270.7	127.2								_M6			_								
MHMD082 1N		1/5	307.7	164.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5						
			285.7	127.2																			
MHMD082□□2N	750	1/9	322.7	164.2	1									97.5			3.5						
	750	4/45	298.2	127.2		40	00		445		40	M8	0.5		_	0 7 00							
MHMD082□□3N		1/15	335.2	164.2	61	40	98	90	115	24	18	Depth 20	35	440	5	8×7×30	4						
		1/05	298.2	127.2										110									
MHMD082□□4N		1/25	335.2	164.2	1																		

Upper column: without brake	9
Lancian and consequent of the language	
Lower column: with brake	

MEMO

Model Designation

Type

Middle inertia (1.0 kW to 5.0 kW)

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

0.9 kW

1.0 kW

1.5 kW

2.0 kW

3.0 kW

4.0 kW

5.0 kW

Servo Motor

Symbol

MSMJ

MSMF

MDMF

MGMF

MHMJ

02

04

08

09

10

15

20

30

40

50

Motor rated output Symbol Rated output **A5 Family**

Special Order Product

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

Features

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

[Please note]

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

Motor Lineup



Low inertia

Max. speed : 5000 r/min

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

Enclosure : IP65



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

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

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

(Low speed/ High torque type) High inertia

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

MSMJ (200 V)

200 W to 750 W.....

MSME (200 V)

1.0 kW to 5.0 kW P.158

MDME (200 V)

1.0 kW to 5.0 kW P.164

MGME (200 V)

1.0 kW to 5.0 kW P.176



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

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65

Special Order Product Motor Contents

0.9 kW to 3.0 kW P.170

MHMJ (200 V)

200 W to 750 W..... ... P.173

MHME (200 V)

Rotary encoder specifications

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

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

<Cautions>

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

Special specifications

MSMJ, MHMJ **Special specifications** MSME, MDME, MGME, MHME

M: Special Order Product

Motor specifications MSMJ, MHMJ

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

Voltage specifications

M A D K T 1 5 0 5

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

2: 200 V

	Sh	aft	Holding	g brake	Oil seal		
Symbol A B C D S T	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		•		•		•		

Design order

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

- Only position control

Servo Driver

Speed, Position, Torque, Full-closed type

Position control type

Frame symbol * ———						
Symbol	Frame					
MAD	Frame A					
MBD	Frame B					
MCD	Frame C					
MDD	Frame D					
MED	Frame E					
MFD	Frame F					

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

Specifications Symbol 3-phase, 200 V Single/3-phase, 200 V

Power device Max. current rating

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

Symbol Specifications Supply voltage specifications

07	7.5 A
10	10 A
20	20 A
30	30 A
40	40 A
64	64 A
90	90 A
A2	120 A

Special specifications

Special specifications

Current detector current rating

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

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

			Motor				Driver		Power				Option	nal parts																				
Mata	or series	Power	Output	Part No.	Rating/ Spec.	A5II series Part No. /Speed, Position,	A5IIE series Part No. (Position control)	Frame	capacity at rated		er Cable			Cable	Brake Cable	External	Reactor	Noise Filte																
supply		supply	(W)	Note) 1	(page)	Torque, Full-Closed type	type Note) 2	Frame	(kVA)	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3,7		without Brake Note) 3	with Brake Note) 3	Note) 3	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase																
	MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5								DV0P227 DV0P220	DV0P417																
(Leadwire)		400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	MFECA 0**0EAM	MFECA 0**0EAE			MCA EED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM200																	
,	000 r/min	Single phase/	750	MSMJ082 □ 1 *	157	MCDKT3520	MCDKT3520E		Approx. 1.3	0 02/	Note) 4				0 00.21		DV0P220	DV0PM200																
_		3-phase 200 V	1000	MSME102 □ C * M	158	MDDKT5540	MDDKT5540E		Approx. 1.8								DV0P228																	
2			1000	IVISIVIL TOZ 🖂 O * IVI	130	WIDDI(13340	WIDDIN 13340L	D-frame	Арргох. Т.О				MFMCD	MFMCA		DV0P4284	DV0P222	DV0P422																
inortin			1500	MSME152 ☐ C * M	159	MDDKT5540	MDDKT5540E		Approx. 2.3				0**2ECD	0**2FCD			DV0PM20047 DV0P222																	
	MSME 000 r/min		2000	MSME202 □ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3						_	DV0P4285 Note) 5	DV0P223	DV0PM20																
		3-phase	3000	MSME302 □ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5							DV0P224																		
		200 V	4000	MSME402 ☐ C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P34																
			5000	MSME502 ☐ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5								Note) 6																	
		Single phase/	1000	MDME102 □ C * M	164	MDDKT3530	MDDKT3530E	Approx. 1.8	''	''	''			'	рргох. 1.8	3						DV0P4284	DV0P228 DV0P222	DV0P42										
<u> </u>		3-phase 200 V	1500	MDME152 □ C * M	165	MDDKT5540	MDDKT5540E	D-irame	Approx. 2.3	MFECA 0**0ESD			MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	DV0F42																
D	MDME 000 r/min		2000	MDME202 □ C * M	166	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3							DV0P4285 Note) 5	DV0P223	DV0PM20																
1 2 C	300 1/111111	3-phase	3000	MDME302 □ C * M	167	MFDKTA390	MFDKTA390E		Approx. 4.5							,	DV0P224																	
		200 V	4000	MDME402 □ C * M	168	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6				MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P225	DV0P34																
			5000	MDME502 □ C * M	169	MFDKTB3A2	MFDKTB3A2E	Approx. 7.5 D-frame Approx. 1.8	Approx. 7.5		7.5			ж. 7.5	_	<u>i</u>												Note) 6						
/Lo	MGME ow speed/ gh torque	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E		-frame Approx. 1.8		D-frame Approx. 1.8	D-frame Approx. 1.8	D-frame Approx. 1.8	D-frame Approx. 1.8	D-frame Approx. 1.8	D-frame Approx. 1.8	O-frame Approx. 1.8	frame Approx. 1.8	me Approx. 1.8	me Approx. 1.8	ame Approx. 1.8	ne Approx. 1.8	me Approx. 1.8	D-frame Approx. 1.8	D-frame Approx. 1.8						MFMCD 0**2ECD	MFMCA **2FCD		DV0P4284
Ι,	type /	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	F-frame	Approx. 3.8				MFMCA	MFMCA		DV0P4285	DV0P223	DV0P34																
10	000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	rrrame	Approx. 4.5				0**3ECT 0**3FCT	×2 in parallel	DV0P224	DV0F34																		
	MHMJ		200	MHMJ022 □ 1 *	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MFECA	MEECA		ME	MCA	MEMOR		DV0P227 DV0P220	DV0P41																
	type	Single	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	M 0**0EAE	MFMCA 0**0EED		MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20																	
1 30 30	000 r/min	phase/ 3-phase	750	MHMJ082 ☐ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4						DV0P220	DV0PM20																
1 .		200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E		Approx. 1.8				MFMCD	MFMCA			DV0P228 DV0P222																	
			1500	MHME152 ☐ C * M	177	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3					0**2FCD		DV0P4284	DV0P222 DV0PM20047	DV0P42																
	мнме		1300			MPCC1 70040	אטטואו 1 אטטואו		Approx. 2.3	MEEOA	MEEGA		MFMCE	MFMCE		DV0D4005	DV0P222																	
	000 r/min		2000	MHME202 □ C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE			0**2FCD	_	DV0P4285 Note) 5	DV0P223	DV0PM20																
		3-phase	3000	MHME302 ☐ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5				MENTO	NAEN 40.		DV0D:005	DV0P224	-																
		200 V	4000			MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6				MFMCA 0**3ECT			DV0P4285 x2 in parallel	DV0P225	DV0P34																
			5000	MHME502 ☐ C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5								Note) 6																	

A5 Family

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absolute encoder cable (with battery box).

Please buy the battery part number "DV0P2990" separately.

		Title		Part No.	Pa		
ľ	Interface Cable			DV0P4360			
İ				DV0P4120			
		DV0P4121					
	Interface Conve	DV0P4130	19				
	interiace conver	ISION CUDIC	DV0P4131				
				DV0P4131			
ŀ		C:	nalo rou	DV01 4132			
	Connector Kit for Power	to ty	ngle row pe	DV0PM20032			
	Supply Input Connection	ty	ouble row pe	DV0PM20033	20		
		E-frame		DV0PM20044			
	Connector Kit	A-frame to	D-frame	DV0PM20034			
	for Motor Connection	E-frame		DV0PM20046			
	Connector Kit for Regenerative Resistor	E-frame		DV0PM20045	2		
				DV0P4290	2		
				DV0P4310			
	Connector Kit fo	r		DV0P4320	2		
	Motor/Encoder (-		DV0P4330	H		
				DV0P4340	2		
				DV0P4380	2		
ŀ		RS485, RS	000		_		
			232	DV0PM20024	l.		
		Safety		DV0PM20025	1		
	Connector Kit	Interface		DV0P4350			
		External Sca	ale	DV0PM20026			
		Encoder		DV0PM20010	1		
L		Analog Mon	itor Signal	DV0PM20031			
L	Battery For Abso	olute Encode	r	DV0P2990	2		
ľ	Battery Box Not	te) 7		DV0P4430	-		
Γ		A-frame		DV0PM20027			
	Mounting	Inting B-frame		DV0PM20028			
	Bracket	C-frame		DV0PM20029	2		
		D-frame		DV0PM20030			
ŀ				MFECA0**0EAD	r		
		without Bat	tery Box	MFECA0**0EAM	1		
	Encoder Cable	Without But	iory box	MFECA0**0ESD	1		
	Lilcodei Oable		_	MFECA0**0EAE	1		
		with Battery Note) 7	Box		H		
ŀ		INUIC) /		MFECA0**0ESE	1		
				MFMCA0**0EED	1		
		without Bra	ke	MFMCD0**2ECD	1		
	Motor Cable			MFMCE0**2ECD	L		
				MFMCA0**3ECT	1		
		with Brake		MFMCA0**2FCD	1		
L		Draite		MFMCA0**3FCT	1		
L	Brake Cable			MFMCB0**0GET	1		
ſ		A-frame					
		B-frame		DV0P4283			
ш	External	C-frame			_		
	Regenerative Resistor	D-frame		DV0P4284	2		
	E-frame			D) (0D (0			
		F-frame		DV0P4285			
ĺ	Reactor	DV0P220, I DV0P223, I	DV0P224,		2		
H		DV0P4170,			-		
	Noise Filter	DV0P4170, DV0P4220,			2		
		DV0P3410			2		
H	_	Single phas	se	DV0P4190			
L	Cruman Abandan	J - F			2		
	Surge Absorber	3-phase		DV0P1450			

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

Note) 2 Because A5IE series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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

Note) 4 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.

Note) 5 Other combinations exist, and refer to P.210 for details.

Note) 6 Reactor should be prepared by the user.

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

				AC2	00 V	
Motor model		IP65		MSMJ022G1□	MSMJ022S1□	
*1		IP67		-	_	
Amaliandala	Model	A5I series		MADK	T1507	
Applicable driver *2	No.	A5IE series		MADKT1507E	_	
divei	Fr	ame symbol		A-fr	ame	
Power supply	capacit	y (k	VA)	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(rn	าร))	1.6		
Max. current		(A(o	-p))	6.9		
Regenerative b	rake	Without opti	on	No limit Note)2		
frequency (times/	min) Note)1	DV0P428	3	No limit Note)2		
Rated rotation	al spee	d (r/n	nin)	3000		
Max. rotationa	l speed	(r/n	nin)	5000		
Moment of ine	rtia	Without bra	ke	0.14		
of rotor (×10 ⁻⁴	kg·m²)	With brake	Э	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 single tu	rn	1048576	131072	

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

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)

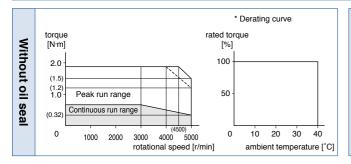
	Radial load P-direction (N)	392
During assemb	Thrust load A-direction (N)	147
docomb	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operatio	Thrust load A, B-direction (N)	98

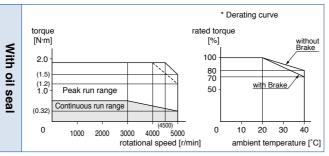
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

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

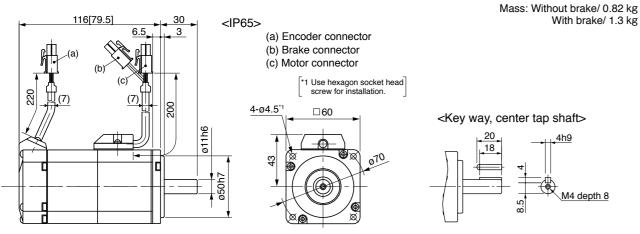
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

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

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

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

Special Order Product

Specifications

				AC2	00 V	
Mataumaadal		IP65		MSMJ042G1□	MSMJ042S1□	
Motor model		IP67		-	-	
A U I I	Model	A5II serie	s	MBDK	T2510	
Applicable driver *2	No.	A5IIE ser	ies	MBDKT2510E	-	
unven	Fr	ame sym	bol	B-fra	ame	
Power supply	capacit	y	(kVA)	0	.9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1.	.3	
Momentary M	ax. peal	k torque	(N·m)	3.8		
Rated current		(A(rms))	2.6		
Max. current		((A(o-p))	11.0		
Regenerative b	rake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0P	4283	No limit Note)2		
Rated rotation	al spee	d (r/min)		3000		
Max. rotationa	l speed	(r/min)		5000		
Moment of ine	rtia	Without brake		0.26		
of rotor ($\times 10^{-4}$	With b	orake	0.28			
Recommended moment of inertia ratio of the load and the rotor Note)3				30 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

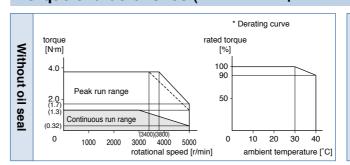
1	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

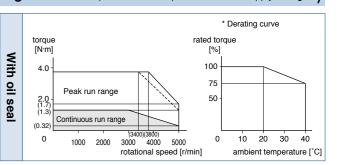
• Permissible load (For details, refer to P.183)

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

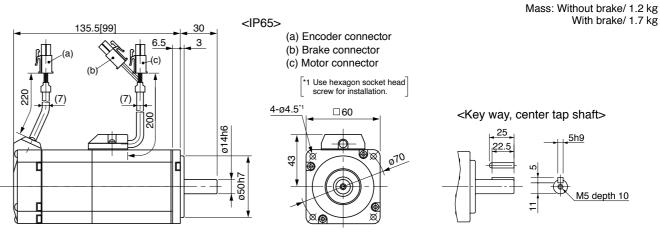
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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			AC2	00 V
		IP65	MSMJ082G1□	MSMJ082S1□
Motor model *1		IP67	-	-
Amaliaabla	Model	A5II series	MCDK	T3520
Applicable driver *2	No.	A5IIE series	MCDKT3520E	_
anver	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1.	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2.4	
Momentary 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 ($\times 10^{-4}$	kg·m²)	With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

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)

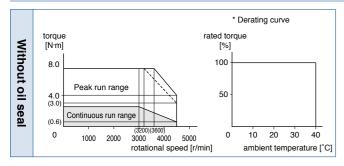
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
assembly	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

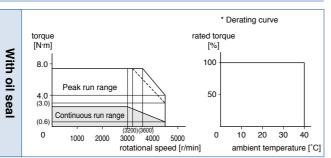
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

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.

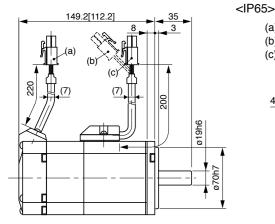
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



(a) Encoder connector

- (b) Brake connector (c) Motor connector

4-ø6*

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.

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[Unit: mm]

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

Please contact us for more information

Specifications

				AC2	00 V	
		IP65		MSME102GC□M	MSME102SC□N	
Motor mode	el *1		IP67		-	-
A I' l. l .	N	Model A5II series		MDDK	T5540	
Applicable driver	*2 N	10.	A5IIE ser	ies	MDDKT5540E	_
unver		Fr	ame sym	bol	D-fr	ame
Power supp	oly ca	pacity	/	(kVA)	1.	.8
Rated outp	ut			(W)	10	00
Rated torqu	ıe			(N·m)	3.	18
Momentary	Max	. peal	torque	(N·m)	9.55	
Rated curre	ent		(.	A(rms))	6.6	
Max. current (A(o-p))			2	8		
Regenerativ	/e bra	ıke	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)1	DV0P4284		No limit Note)2	
Rated rotat	ional	spee	d	(r/min)	3000	
Max. rotation	onal s	speed		(r/min)	5000	
Moment of	inerti	а	Without	brake	2.03	
of rotor (×1	0 ⁻⁴ k	g·m²)	With b	rake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary enco	oder	specif	ications	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.

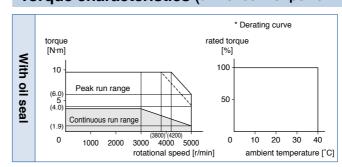
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

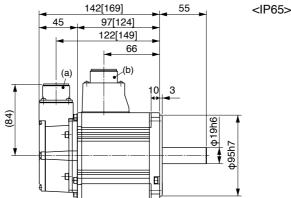
		Radial load P-direction (N)	980
	During assembly	Thrust load A-direction (N)	588
	assembly	Thrust load B-direction (N)	686
[During	Radial load P-direction (N)	490
C	operation	Thrust load A, B-direction (N)	196

- 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



100

With brake/ 4.5 kg Key way dimensions

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Mass: Without brake/ 3.5 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V
		IP65	MSME152GC□M	MSME152SC□M
Motor model *1		IP67	-	-
Amaliaalala	Model	A5I series	MDDK	T5540
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)	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. rotationa	l 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)

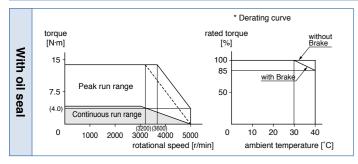
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

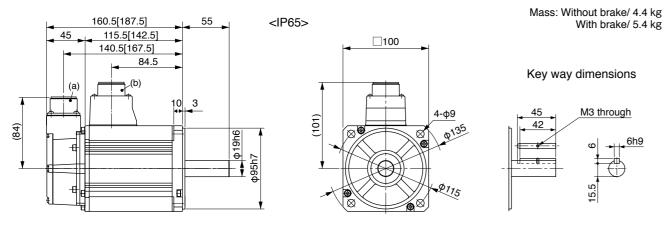
200 V MSME 1.5 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

Specifications

				AC2	00 V	
M - t - · · · · - · · · · ·		IP65		MSME202GC□M	MSME202SC□	
Motor mode	el ⊧1	IP67		-	-	
	Model	A5II serie	s	MEDK	MEDKT7364	
Applicable driver	No.	A5IIE ser	ries	MEDKT7364E	-	
unven	Fr	ame sym	ibol	E-fr	ame	
Power supp	oly capacity	y	(kVA)	3	.3	
Rated outpo	ut		(W)	20	00	
Rated torqu	ie		(N·m)	6.:	37	
Momentary	Max. peal	k torque	(N·m)	19.1		
Rated current (A(rms))		11.3				
Max. current (A(o-p))			48			
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P4285		No limit Note)2		
Rated rotati	ional spee	d	(r/min)	3000		
Max. rotation	nal speed		(r/min)	5000		
Moment of	inertia	Without	t brake	3.68		
of rotor (×10	0 ⁻⁴ kg·m ²)	With b	orake	4.01		
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
	Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

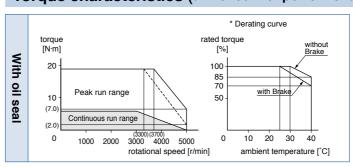
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

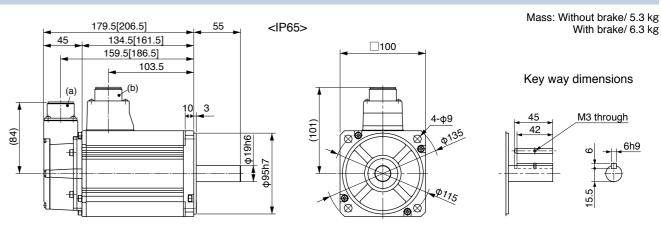
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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.

200 V MSME 3.0 kW [Low inertia, Middle capacity] Please contact us for more information.

Specifications

				AC200 V		
Mataumandal		IP65		MSME302GC□M	MSME302SC□M	
Motor model *1		IP67		-	-	
Ammliaabla	Model	A5 I series		MFDK	TA390	
Applicable driver *2	No.	A5IE series		MFDKTA390E	_	
divei	Fr	ame symbol		F-fra	ame	
Power supply	capacit	y (k	(AV	4	.5	
Rated output			(W)	30	00	
Rated torque		(1)	√m)	9.	55	
Momentary Ma	ax. peal	torque (N	√m)	28.6		
Rated current		(A(rr	ns))	18.1		
Max. current		(A(o	-p))	77		
Regenerative b	rake	Without option		No limit Note)2		
frequency (times/r	min) Note)1	DV0P4285	×2	No limit Note)2		
Rated rotation	al spee	d (r/r	nin)	3000		
Max. rotationa	l speed	(r/r	nin)	5000		
Moment of ine	rtia	Without bra	ke	6.50		
of rotor ($\times 10^{-4}$	kg·m²)	With brak	е	7.85		
Recommende ratio of the loa			15 times or less			
Rotary encode	Rotary encoder specifications Note)5				17-bit Absolute	
R	esolutio	n per single tu	ırn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

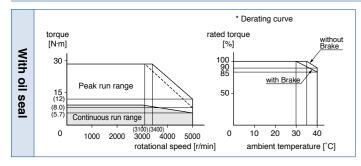
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

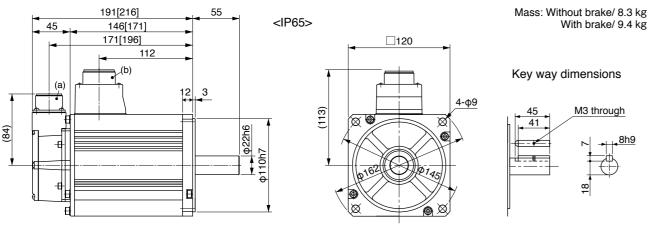
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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.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.

Special Order Product

200 V MSME 4.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

					AC2	AC200 V		
Mataumaa	-1	IP65		MSME402GC□M	MSME402SC□N			
Motor mode	€I ∗1		IP67		-	-		
Annlinabla		Model	A5II serie	s	MFDK	ТВЗА2		
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	-		
anvoi		Fr	ame sym	bol	F-fra	ame		
Power supp	oly c	apacit	y	(kVA)	6	.0		
Rated outp	ut			(W)	40	00		
Rated torqu	ıe			(N·m)	12	2.7		
Momentary	Ма	x. peal	k torque	(N·m)	38	38.2		
Rated curre	ent		(A(rms))	19.6			
Max. current (A(o-p))				83				
Regenerativ	/e br	ake	Without option		No limi	t Note)2		
frequency (tin	nes/m	in) Note)1	DV0P4285×2		No limit Note)2			
Rated rotat	iona	al spee	d	(r/min)	3000			
Max. rotation	onal	speed		(r/min)	4500			
Moment of	iner	tia	Without	brake	12.9			
of rotor (×1	0 ⁻⁴ ł	⟨g·m²)	With brake		14	14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3				15 times or less				
Rotary encoder specifications Note				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.

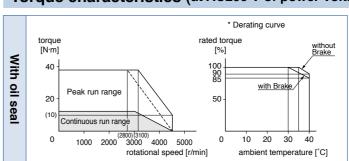
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

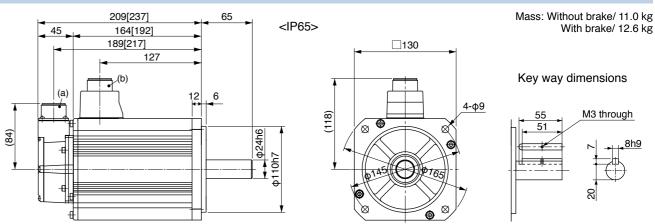
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Please contact us for more information

Please contact us for more information.

Specifications

			AC200 V			
Mataurand		IP65		MSME502GC□M	MSME502SC M	
Motor model *1		IP67		-	_	
A 12 11	Model	A5II series	S	MFDK	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	.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	nin) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	4500		
Moment of ine	rtia	Without	brake	17.4		
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	18.6		
Recommender ratio of the loa			15 times or less			
Rotary encoder specifications Note)5				20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

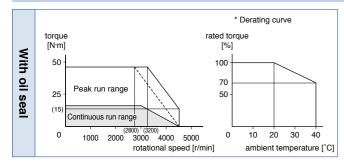
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

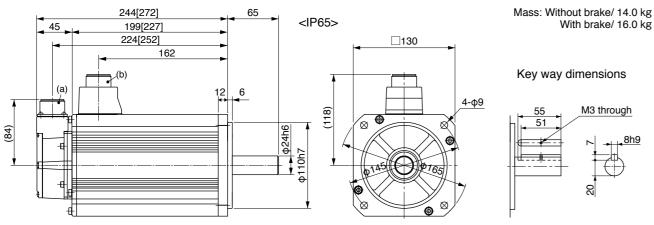
200 V MSME 5.0 kW [Low inertia, Middle capacity]

*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.

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Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

			AC200 V		
		IP65		MDME102GC□M	MDME102SC_N
Motor mode) :1	IP67		-	-
A	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	ut		(W)	10	00
Rated torqu	ie		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated curre	ent	(A(rms))	5.7	
Max. current (A(o-p))				24	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4284		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	inertia	Without brake		4.60	
of rotor (×10	0 ⁻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 encoder specifications Note)5 Resolution per single turn				20-bit Incremental	17-bit Absolute
				1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

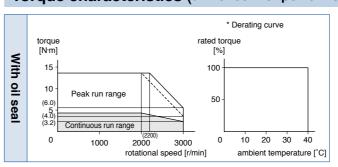
,
4.9 or more
80 or less
70 or less
0.59±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

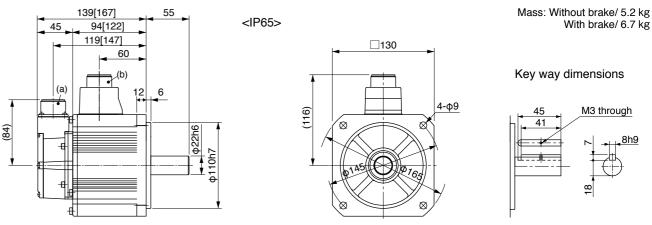
		Radial load P-direction (N)	980
	During assembly	Thrust load A-direction (N)	588
	accombiy	Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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.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	MDME152GC□M	MDME152SC□M
*1		IP67	-	-
A 1: 1-1 -	Model	A5II series	MDDK	T5540
Applicable driver *2	No.	A5IIE series	MDDKT5540E	-
arrer	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 M	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	9.4	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	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	
Recommende ratio of the loa			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)

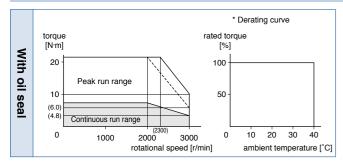
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

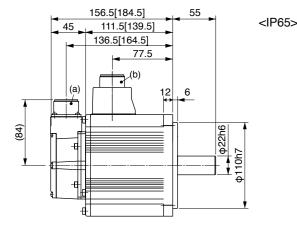
200 V MDME 1.5 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



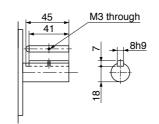
Dimensions



□130 (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.

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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 MDME 2.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

					AC2	00 V
Matanaaa		IP65			MDME202GC□M	MDME202SC M
Motor mode	€I ∗1		IP67		-	_
A		Model	A5II series	S	MEDK	T7364
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	-
dilvoi		Fr	ame sym	bol	E-fra	ame
Power supp	oly c	capacity	y	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ıe			(N·m)	9.	55
Momentary	Ма	x. peal	c torque	(N·m)	28	3.6
Rated curre	ent		(.	A(rms))	11.5	
Max. currer	Max. current (A(o-p))				49	
Regenerativ	/e bi	rake	Without option		No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0P4285		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without brake		8.72	
of rotor (×1	0 ⁻⁴ l	kg·m²)	With brake		10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		
Rotary enco	Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
	Re	solutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

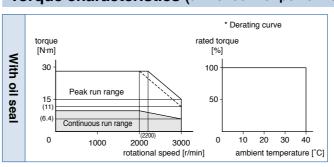
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

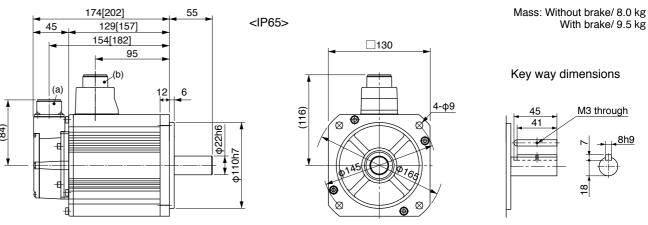
		Radial load P-direction (N)	980
	During assembly	Thrust load A-direction (N)	588
	accombiy	Thrust load B-direction (N)	686
	During	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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	AC200 V		
Matauaralal		IP65		MDME302GC□M	MDME302SC□M	
Motor model		IP67		-	-	
A II In I	Model	A5II series		MFDK	MFDKTA390	
Applicable driver *2	No.	A5IIE serie	es	MFDKTA390E	_	
unver	Fi	ame symb	ool	F-fr	ame	
Power supply	y capacit	у	(kVA)	4	.5	
Rated output	:		(W)	30	000	
Rated torque)		(N·m)	14	4.3	
Momentary N	Лах. реа	k torque	(N·m)	43.0		
Rated currer	it	(A	17.4			
Max. current		(,	74			
Regenerative	brake	Without option		No limit Note)2		
frequency (time	s/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		
Recommend ratio of the lo			10 times or less			
Rotary encode	Rotary encoder specifications Note)5				17-bit Absolute	
Resolution per single turn				1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

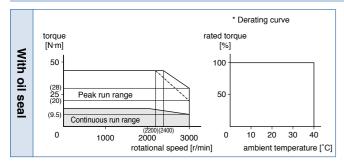
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

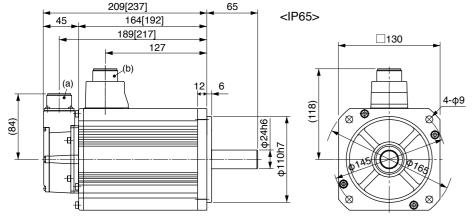
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



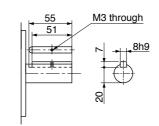
Dimensions



Mass: Without brake/ 11.0 kg

With brake/ 12.6 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

Please contact us for more information

Specifications

					AC2	00 V
Matau ma - d	-1	IP65		MDME402GC□M	MDME402SC□N	
Motor mode	€I ∗1		IP67		-	-
Annlinabla		Model	A5II serie	s	MFDK	ТВЗА2
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	-
anvoi		Fr	ame sym	bol	F-fra	ame
Power supp	oly (capacity	y	(kVA)	6	.0
Rated outp	ut			(W)	40	00
Rated torqu	ıe			(N·m)	19).1
Momentary	Ма	x. peal	k torque	(N·m)	57	'.3
Rated curre	ent		(A(rms))	21.0	
Max. currer	nt		((A(o-p))	89	
Regenerativ	/e b	rake	Without option No limit Note)2		t Note)2	
frequency (tin	nes/n	nin) Note)1	DV0P4	285×2	No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	ine	rtia	Without	brake	37.6	
of rotor (×1	0-4	kg·m²)	With b	rake	38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		
Rotary encoder specifications Note			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.

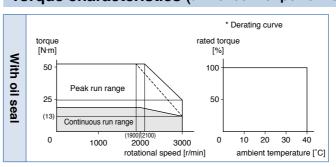
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

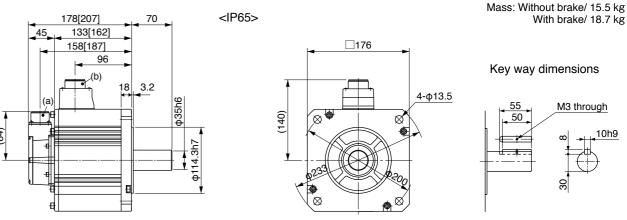
	During assembly	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- 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

			AC200 V	
Motor model		IP65	MDME502GC□M	MDME502SC M
*1		IP67	-	-
Amuliaabla	Model	A5II series	A5II series MFDKT	
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	_
unvoi	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	7	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23	3.9
Momentary M	ax. peal	k torque (N·m)	71.6	
Rated current		(A(rms))	25.9	
Max. current		(A(o-p))	110	
Regenerative b	orake	Without option	120	
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	al speed	(r/min)	3000	
Moment of ine	ertia	Without brake	48.0	
of rotor (×10 ⁻⁴	kg·m²)	With brake	48.8	
Recommende ratio of the loa			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.

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)

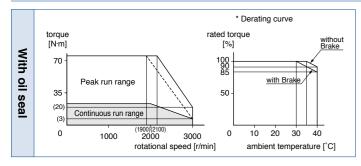
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

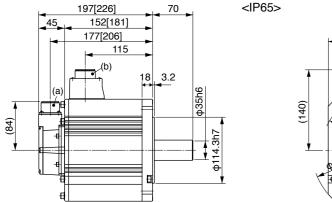
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

*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.

Special Order Product

200 V MGME 0.9 kW [Middle inertia, Middle capacity]

Specifications

					AC200 V		
Matauranal	1-1		IP65		MGME092GC□M	MGME092SC□M	
Motor mode	8 I *1	IP67		-	-		
	1	Model A5II series		MDDK	T5540		
Applicable driver	*2	No.	A5IE series		MDDKT5540E	-	
dilvoi		Fr	ame sym	bol	D-fr	ame	
Power supp	oly ca	apacity	/	(kVA)	1.	.8	
Rated outp	ut			(W)	90	00	
Rated torqu	ıe			(N·m)	8.	59	
Momentary	Max	c. peal	k torque	(N·m)	19.3		
Rated curre	ent		(A(rms))	7.6		
Max. currer	Max. current (A(o-p))				24		
Regenerativ	e bra	ake	Without	option	No limit Note)2		
frequency (tin	nes/mir	n) Note)1	DV0P4284		No limit Note)2		
Rated rotat	ional	spee	d	(r/min)	1000		
Max. rotation	onal	speed		(r/min)	2000		
Moment of	inert	ia	Without brake		6.70		
of rotor (×1	0 ⁻⁴ k	g·m²)	With brake		7.99		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less			
Rotary enco	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	Res	solutio	n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

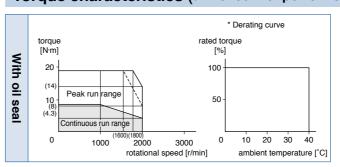
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

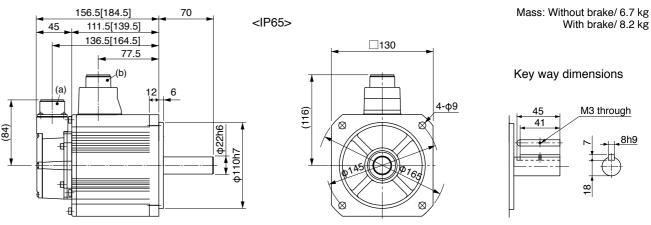
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

With brake/ 8.2 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MGME 2.0 kW [Middle inertia, Middle capacity]

Please contact us for more information.

Specifications

			AC200 V		
		IP65	MGME202GC□M	MGME202SC□M	
Motor model *1		IP67	-	-	
A 15 1-1	Model	A5II series	MFDKTA390		
Applicable *2	No.	A5IIE series	MFDKTA390E	-	
dilvei	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	3	.8	
Rated output		(W)	20	00	
Rated torque		(N·m)	19	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 (×10 ⁻⁴	kg·m²)	With brake	31.4		
Recommender ratio of the loa			10 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

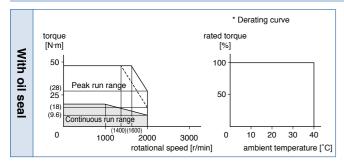
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

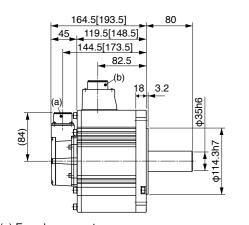
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

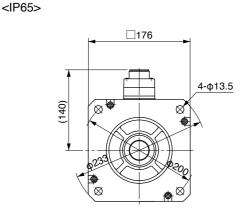
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



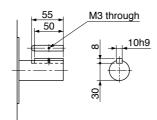
Dimensions





Mass: Without brake/ 14.0 kg With brake/ 17.5 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MGME 3.0 kW [Middle inertia, Middle capacity]

A5 Family

Motor Specifications

Please contact us for more information

Specifications

			AC200 V			
Materia	-1	IP65		MGME302GC□M	MGME302SC□N	
Motor mode	el *1	IP67		_	-	
A I' l. l .	Mod	del A5II sei	ries	MFDK	TB3A2	
Applicable driver	*2 No.	A5IIE s	series	MFDKTB3A2E	_	
unven		Frame sy	mbol	F-fra	ame	
Power supp	oly capa	city	(kVA)	4	.5	
Rated outp	ut		(W)	30	00	
Rated torqu	ıe		(N·m)	28	3.7	
Momentary	Мах. р	eak torque	(N·m)	71	71.7	
Rated curre	ent		(A(rms))	22.6		
Max. currer	nt		(A(o-p))	80		
Regenerativ	e brake	Witho	ut option	No limit Note)2		
frequency (tin	nes/min) No	ote)1 DV0F	4285×2	No limit Note)2		
Rated rotat	ional sp	eed	(r/min)	1000		
Max. rotation	onal spe	ed	(r/min)	2000		
Moment of	inertia	Witho	ut brake	48	3.4	
of rotor (×1	0⁴ kg·n	1 ²) With	h brake 49.2		0.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specification			Note)5	20-bit Incremental	17-bit Absolute	
	Resolu	ution per sir	ngle 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.

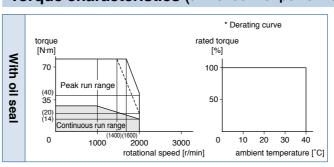
,
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

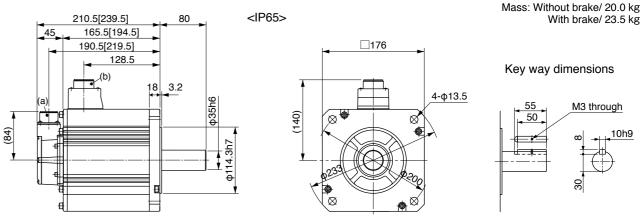
	During assembly During operation	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
Du		Radial load P-direction (N)	1470
ope		Thrust load A, B-direction (N)	490

- 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]

<a>Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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A5 Family

E Serie

Informa

200 V MHMJ 400 W [High inertia, Small capacity]

Specifications

				AC2	00 V
Motor model	IP65			MHMJ022G1□	MHMJ022S1□
*1		IP67		-	-
A	Model	A5II series	S	MADK	T1507
Applicable driver *2	No.	A5IIE seri	ies	MADKT1507E	_
divei	Fr	ame sym	bol	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(o-p))	6.9	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4283		No limi	t Note)2
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	0.42	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	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)

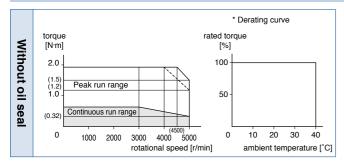
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
assembly	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

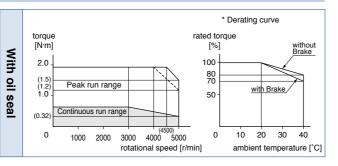
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MHMJ 200 W [High inertia, Small capacity]

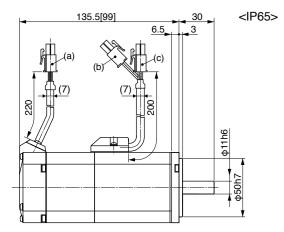
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





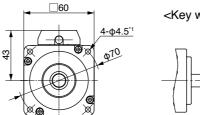
Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector



<Key way, center tap shaft>

Mass: Without brake/ 0.96 kg

With brake/ 1.4 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

Please contact us for more information

Specifications

				AC2	00 V	
		IP65			MHMJ042G1□	MHMJ042S1
Motor mode	€I *1		IP67		-	-
A 1: 1- 1 -	ı	Model	A5II serie	S	MBDK	T2510
Applicable driver	*2 I	No.	A5IIE ser	ies	MBDKT2510E	-
unver		Fr	ame sym	bol	B-fra	ame
Power supp	ply c	apacity	y	(kVA)	0	.9
Rated outp	ut			(W)	40	00
Rated torqu	ıe			(N·m)	1.	.3
Momentary	Max	k. peal	k torque	(N·m)	3.8	
Rated curre	ent		(A(rms))	2.6	
Max. currer	nt		((A(o-p))	11.0	
Regenerativ	e bra	ake	Without option		No limit Note)2	
frequency (tin	mes/mii	n) Note)1	DV0P4283		No limit Note)2	
Rated rotat	iona	spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	5000	
Moment of	inert	ia	Without brake		0.67	
of rotor (×1	0 ⁻⁴ k	g·m²)	With brake		0.70	
Recommended moment of inertial ratio of the load and the rotor			tia Note)3	30 times or less		
Rotary encoder specific			fications	Note)5	20-bit Incremental	17-bit Absolute
Resolutio			n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

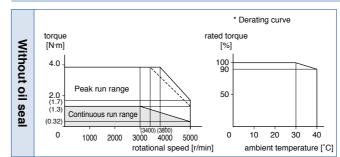
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

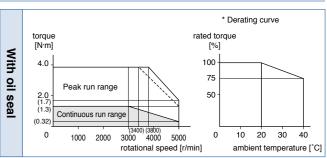
• Permissible load (For details, refer to P.183)

Radial load P-direction (N)	392
Thrust load A-direction (N)	147
Thrust load B-direction (N)	196
Radial load P-direction (N)	245
Thrust load A, B-direction (N)	98
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

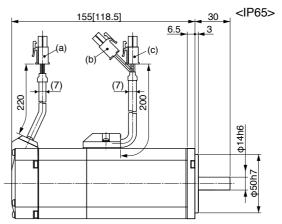
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





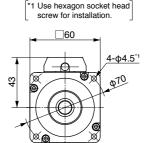
Dimensions



(a) Encoder connector

(b) Brake connector

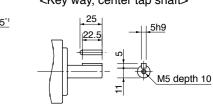
(c) Motor connector



<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.

			AC2	00 V	
Mataumandal		IP65	MHMJ082G1□	MHMJ082S1	
Motor model *1		IP67	-	-	
Amaliaahla	Model	A5I series	MCDK	T3520	
Applicable *2	No.	A5IIE series	MCDKT3520E	_	
divoi	Fr	ame symbol	C-fr	ame	
Power supply	capacity	y (kVA)	1.	.3	
Rated output		(W)	75	50	
Rated torque		(N·m)	2	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	nin) 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 brake	1.61		
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

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)

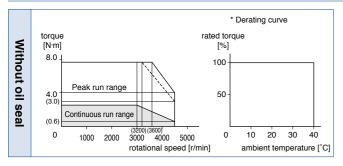
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
assembly	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

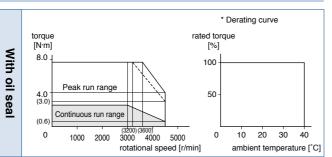
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MHMJ 750 W [High inertia, Small capacity]

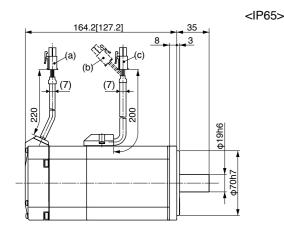
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

screw for installation.

*1 Use hexagon socket head

<Key way, center tap shaft>

Mass: Without brake/ 2.5 kg

With brake/ 3.5 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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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 MHME 1.0 kW [High inertia, Middle capacity]

Please contact us for more information

Specifications

				AC200 V		
M-4		IP65		MHME102GC□M	MHME102SC_N	
Motor mode	EI ⊧1	IP67		-	_	
A II l. l .	Model	A5II serie	S	MDDK	T3530	
Applicable driver	No.	A5IIE ser	ies	MDDKT3530E	_	
unver	F	rame sym	bol	D-fr	ame	
Power supp	oly capaci	ty	(kVA)	1.	8	
Rated outpo	ut		(W)	10	00	
Rated torqu	ie		(N·m)	4.	77	
Momentary	Max. pea	k torque	(N·m)	14.3		
Rated curre	ent	(A(rms))	5.7		
Max. currer	nt		(A(o-p))	24		
Regenerativ	e brake	Without option 83		3		
frequency (tin	nes/min) Note)	DV0P4284		No limit Note)2		
Rated rotat	ional spec	ed	(r/min)	2000		
Max. rotation	nal speed	t	(r/min)	3000		
Moment of	inertia	Without	brake	24	7	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		26.0		
Recommended moment of inertia ratio of the load and the rotor Note)3			tia Note)3	5 times or less		
Rotary enco	Rotary encoder specifications Note			20-bit Incremental	17-bit Absolute	
	Resolution	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.

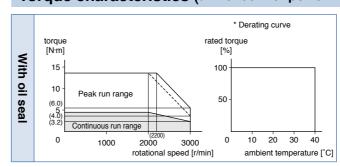
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

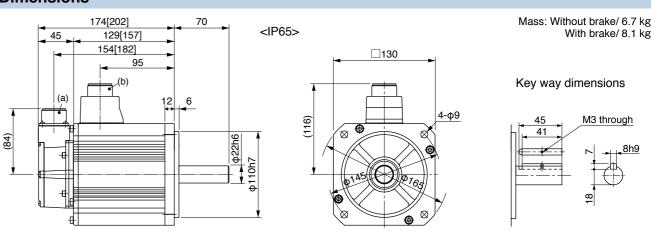
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MHME 2.0 kW [High inertia, Middle capacity]

Please contact us for more information

Specifications

				00 V
		IP65	MHME152GC□M	MHME152SC□M
Motor model *1		IP67	-	_
Ammliaalala	Model	A5II series	MDDK	T5540
Applicable driver *2	No.	A5IE series	MDDKT5540E	_
unvoi	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	2	.3
Rated output		(W)	15	000
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/	min) Note)1	DV0P4284	130	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.1	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

		Radial load P-direction (N)	980
Duri	ng embly	Thrust load A-direction (N)	588
4550	assembly	Thrust load B-direction (N)	686
Durii	ng	Radial load P-direction (N)	490
oper	ation	Thrust load A, B-direction (N)	196

• For details of Note 1 to Note 5, refer to P.182, P.183.

Mass: Without brake/ 8.6 kg

Key way dimensions

With brake/ 10.1 kg

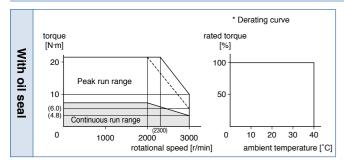
[Unit: mm]

- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

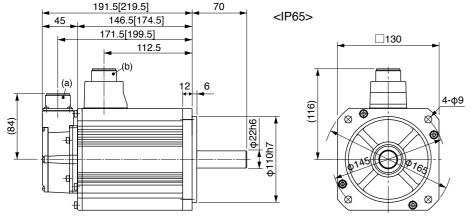
200 V MHME 1.5 kW [High inertia, Middle capacity]

*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



(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.

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Specifications

Special Order Product

				AC2	00 V
Matanaaala		IP65		MHME202GC□M	MHME202SC N
Motor mode	1	IP67		-	-
A	Model	A5II serie	S	MEDK	T7364
Applicable driver *	No.	A5IIE ser	ies	MEDKT7364E	-
unver	Fi	ame sym	bol	E-fra	ame
Power supp	ly capacit	y	(kVA)	3	.3
Rated outpu	ıt		(W)	20	00
Rated torqu	е		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated current (A(rms))		11.1			
Max. current (A(o-p))		4	7		
Regenerative	e brake	Without	option	45	
frequency (tim	es/min) Note)1	DV0P4285		142	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	57.8	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		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.

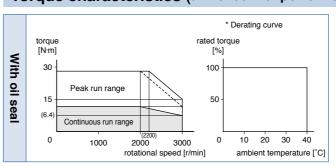
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

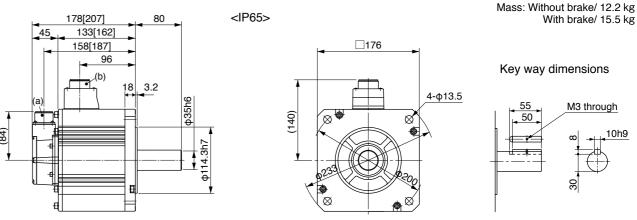
	Radial load P-direction (N)	1666
 During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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
		IP65	MHME302GC□M	MHME302SC□M
Motor model		IP67	_	_
Ammliaalala	Model	A5I series	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 I	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 encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

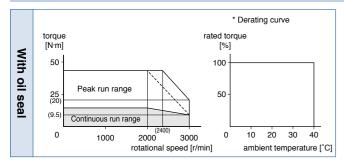
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

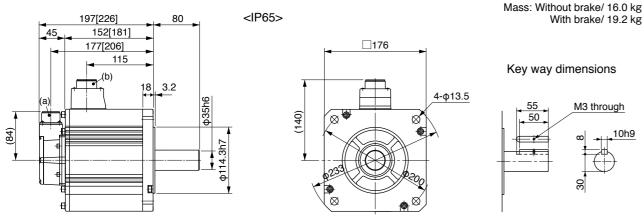
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

With brake/ 19.2 kg

Reduce the moment of inertia ratio if high speed response operation is required. <Cautions>

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MHME 4.0 kW [High inertia, Middle capacity]

Specifications

				AC2	00 V
M-4	-1	IP65		MHME402GC□M	MHME402SC□I
Motor mode	9I *1	IP67		-	-
A I' l. I .	Model	A5II serie	S	MFDKTB3A2	
Applicable driver	No.	A5IIE ser	ies	MFDKTB3A2E	-
unven	Fi	ame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	6	.0
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(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 (tin	nes/min) Note)1	DV0P4285×2		125	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	onal speed		(r/min)	3000	
Moment of	inertia	Without	brake	112	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		n per sina	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

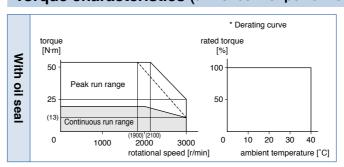
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

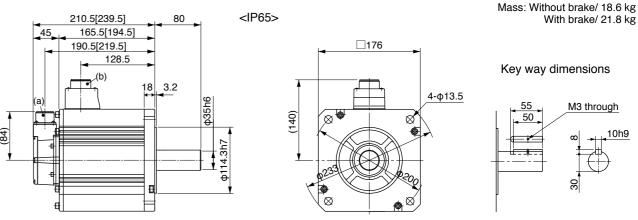
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

A5 Family **Motor Specification**

Description

Motor Specifications

200 V MHME 5.0 kW [High inertia, Middle capacity]

Please contact us for more information.

Specifications

			AC200 V			
Motor model	IP65			MHME502SC□M		
Wiotor model *1		IP67	_	-		
A mustic a late	Model	A5II series	MFDK	TB3A2		
Applicable driver *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	3.9		
Momentary Ma	ax. peal	k torque (N·m)	71.6			
Rated current		(A(rms))	25.9			
Max. current		(A(o-p))	110			
Regenerative b	rake	Without option	1	10		
frequency (times/	min) Note)1	DV0P4285×2	7	6		
Rated rotation	al spee	d (r/min)	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.

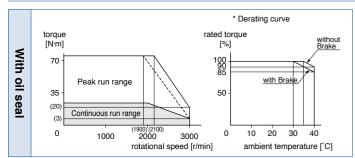
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

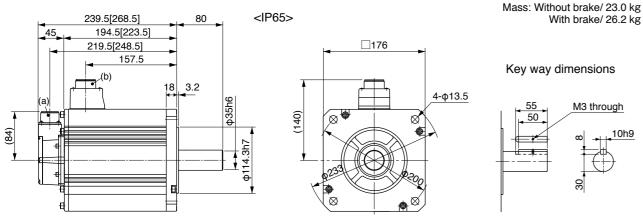
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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.

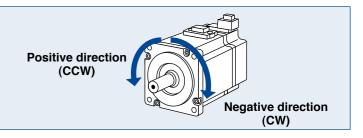
Environmental Conditions

Item		Conditions
Ambient ter	mperature *1	0 °C to 40 °C (free from freezing)
Ambient hu	ımidity	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 hu	midity	20 % to 85 % RH (free from condensation ⁻⁵)
Vibration	Motor only	50 W to 5.0 kW : Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW to 15.0 kW : Lower than 24.5 m/s² (2.5 G) at running, 24.5 m/s² (2.5 G) at stall
Impact	Motor only	Lower than 98 m/s² (10 G)
		MSMD, MHMD, MSMJ, MHMJ (except rotating portion of output shaft and readwire end.)
Enclosure IP65 *3 rating (Motor		M * ME (IP65 motor: 0.9 kW or more) (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)
only) IP67 *3*4		M * ME IP67 motor (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)
Altitude		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]

voltage/230) relative to the value in the table.

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
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

Description

[At AC400 V of power voltage]

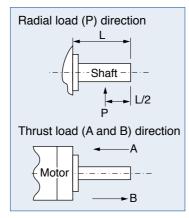
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC460 V (at 400 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

-Notos

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

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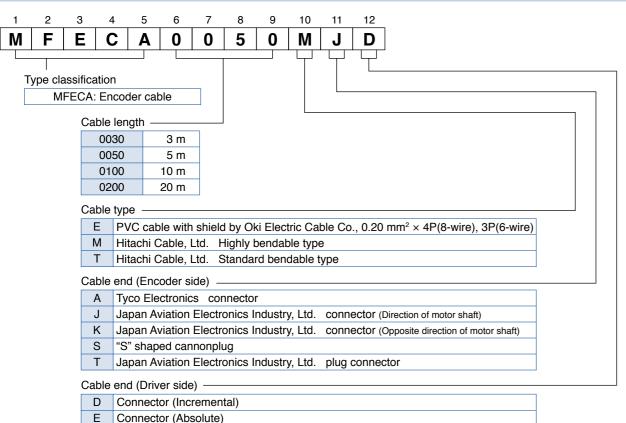
· Specifications of Built-in Holding Brake

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	392	490		
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59			588	780	10000
	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less	0.79		1176	1500		
MDME	3.0 kW	16.2 or more		110 or less	(130)	0.9	24 ±2.4	1470	2200		
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440	
	7.5 kW	58.8 or more		150 or less	50 or less	1.4			5000		
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000	
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83	2 V or more	1372	2900		
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75			24 ±2.4 1470	1500	10000
	4.5 kW	31.4 or more	0.70	100 01 1000	100 01 1000	0.70	24 IZ.4	1470	2200		
	0.9 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79		1176	1500	10000	
MGME	2.0 kW	24.5 or more		80 or less	25 or less (200)	1.3	2 V or more			5440	
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372	2900	3440	
	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.)

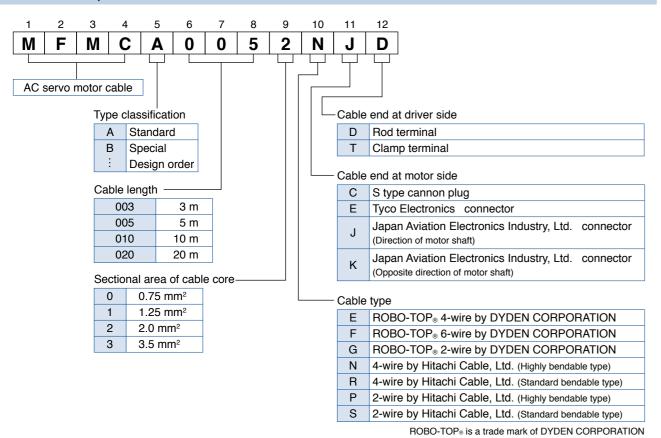
Options

Encoder Cable



Motor Cable, Brake Cable

M Connector (MSMD, MHMD)



Specifications of Motor connector

When the motors of <MSMD, MHMD, MSMJ, MHMJ> are used, they are connected as shown

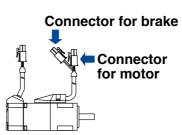
Connector: Made by Tyco Electronics (The figures below show connectors for the motor.)

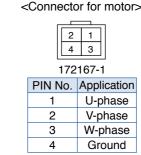
Connector for encoder

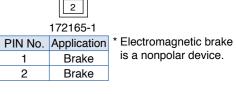
	PIN No.	Application
3 2 1	1	NC
6 5 4	2	PS
	3	PS
172168-1	4	E5V
20-bit Incremental	5	E0V
	6	FG(SHIELD

		_	,		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 I	NC.			9	NC
_						

<Remarks> Do not connect anything to





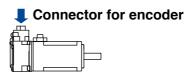


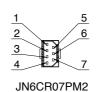
<Connector for brake>

• When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

* Do not remove the gasket supplied with the junction cable connector. Securely install the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.

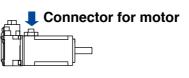


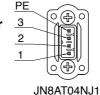


20-bit Incremental			17-bit Absolute		
PIN No.	Application		PIN No.	Application	
1	FG(SHIELD)		1	FG(SHIELD)	
2	_		2	BAT-	
3	E0V		3	E0V	
4	PS		4	PS	
5	_		5	BAT+	
6	E5V		6	E5V	
7	PS		7	PS	
1	F5		/	P3	

Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.



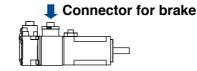


PIN No.	Application
1	U-phase
2	V-phase
3	W-phase
PE	Ground

Tightening torque of the screw (M2) 0.085 N·m to 0.095 N·m (screwed to plastic)

* Be sure to use only the screw supplied with the connector, to avoid damage.

[Motor with brake]





PIN No.	Application	
1	Brake	* Electromagnetic brake is
2	Brake	a nonpolar device.

r device. Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.

Encoder Cable

Part No.

* It doesn't correspond to IP65 and IP67.

MFECA0 * * 0EAM

Options

A5 Family

MSMD 50 W to 750 W, MHMD 200 W to 750 W

MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

For 20-bit incremental encoder (Without battery box)

Compatible

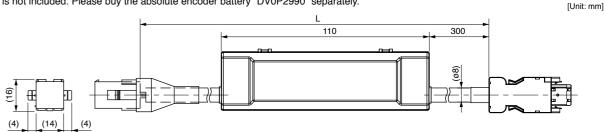
motor output

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		50 W to 750 W, 200 W to 750 W,		
Specifications	For 17-bit absolute encoder (With battery box) *					

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately

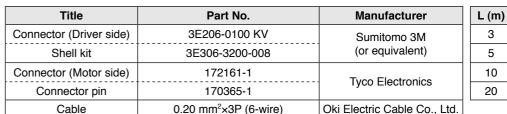
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAE
Connector (Motor side)	172161-1	Typo Floatronics	10	MFECA0100EAE
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAE
Cable	0.20 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAD	Compatible motor output		50 W to 750 W, 200 W to 750 W,		
Specifications	For 17-bit incremental encoder (Without battery box)					

[Unit: mm]



3	MFECA0030EAD
5	MFECA0050EAD
10	MFECA0100EAD
20	MFECA0200EAD

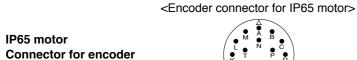
Part No.

Specifications of Motor connector

• When the motors of <MSME (750 W(400 V), 1.0 kW to 5.0 kW), MDME, MGME, MHME> are used, they are connected as shown below.

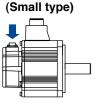
Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

Connector for encoder



(Large type)

IP67 motor Connector for encoder



			-	
	l K	M A N T S G	B C P D E F	

N/MS3102A20-29P

20-bit Incremental			17-bit A	Absolute
PIN No.	Application		PIN No.	Application
Α	NC		Α	NC
В	NC		В	NC
С	NC		С	NC
D	NC		D	NC
Е	NC		E F	NC
F	NC		F	NC
G	E0V		G	E0V
Н	E5V		Н	E5V
J	FG(SHIELD)		J	FG(SHIELD)
K	PS		K	PS
L	PS		L	PS
M	NC		М	NC
N	NC		N	NC
Р	NC		Р	NC
R	NC		R	NC
S	NC		S	BAT-
т	NIC		т —	DAT.

<Encoder connector for IP67 motor>



JN2AS10ML3-R

20-bit Incremental		17-bit <i>F</i>	Absolute
PIN No.	Application	PIN No.	Application
1	E0V	1	E0V
2	NC	2	NC
3	PS	3	PS
4	E5V	4	E5V
5	NC	5	BAT-
6	NC	6	BAT+
7	PS	7	PS
8	NC	8	NC
9	FG(SHIELD)	9	FG(SHIELD)
10	NC	10	NC

<Remarks>

* Electromagnetic brake

is a nonpolar device.

T NC T BAT+ Do not connect anything to NC.

[6.0 kW or more]

<Motor>

D

<Brake>

Connector for motor Connector for brake

JL04V-2E32-17PE-B-R

MDME 7.5 kW to 15.0 kW MGME 6.0 kW MHME 7.5 kW

PIN No. Application U-phase

N/MS3102A 14S-2P

MDME 7.5 kW to 15.0 kW

PIN No. Application

Brake Brake

NC

NC

MGME 6.0 kW

MHME 7.5 kW

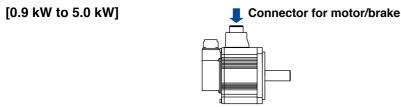
D

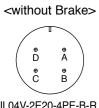
V-phase

W-phase

Ground

Connector for motor/brake





е е С В	
_04V-2E20-4PE-B-R	JL04V-2E20-18PE-
SME 750 W(400 V),	[200 V]
1 0 kW to 2 0 kW	TMOME 10 KM to 20

/ISME	750 W(400 V),	[200 V]		
	1.0 kW to 2.0 kW	MSME	1.0 kW to	2.0
/IDME	400 W (400 V),		1.0 kW to	
	600 W (400 V),	MFME*	1.5 kW	
	1.0 kW to 2.0 kW	MGME	0.9 kW	
/IGME	0.9 kW	MHME	1.0 kW to	1.5
ИНМЕ	1.0 kW to 1.5 kW	_		

_04HV-2E22-22PE-B-R				
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
MHME 2.0 kW to 5.0 kW			Α	NC
WIT HATE 2.0 KVV to 5.0 KVV			F	U-phase
PIN No.	Application		I	V-phase
Α	U-phase		В	W-phase
B V-phase			Е	Ground
С	W-phase		D	Ground
D	Ground		С	NC

<u> </u>
$ \begin{array}{c c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & &$
L04V-2E20-18PE-B-R 00 V]
ISME 1.0 kW to 2.0 kW

	[200 4]
2.0 kW	MSME 3.0 kW to 5.
2.0 kW	MDME 3.0 kW to 5.
	MFME* 2.5 kW, 4.5
	MGME 2.0 kW to 4.
.5 kW	MHME 2.0 kW to 5.
_	_

<with Brake>

02011 2221 111 2 2 11									
[200 V]				[400 V]					
MSME	3.0 k\	N to 5.0 kW		MSME	75	50 W,		-	
MDME	3.0 k\	N to 5.0 kW			1.	0 kW	to 5.0) kW	
MFME*	2.5 k\	N, 4.5 kW		MDME	40	00 W,	600 \	₩,	
MGME	2.0 kV	N to 4.5 kW			1.	0 kW	to 5.0) kW	
MHME	2.0 k\	W to 5.0 kW		MFME*	1.	5 kW	to 4.5	5 kW	
				MGME	0.	9 kW	to 4.5	5 kW	
				MHME	1.	0 kW	to 5.0) kW	
		PIN No.	Αŗ	oplication	วท				
		Λ		Brako					

JL04V-2E24-11PE-B-R

PIN No.	Application
Α	Brake
В	Brake
С	NC
D	U-phase
Е	V-phase
F	W-phase
G	Ground
Н	Ground
I	NC
I	NC

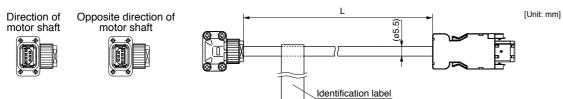
* MFME is common to with or without brake	e.
<remarks></remarks>	

Do not connect anything to NC.

* Electromagnetic brake	
is a nonpolar device.	

Encoder Cable

* It doesn't correspond to IP65 and IP67.

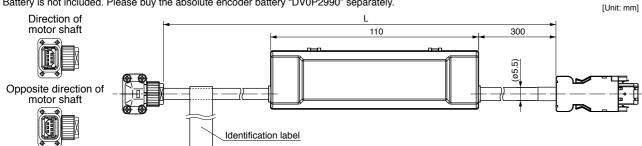


Title	Part No.	Manufacturer		
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M		
Shell kit	3E306-3200-008	(or equivalent)		
Connector (Motor side)	JN6FR07SM1	Japan Aviation		
Connector pin	LY10-C1-A1-10000	Electronics Ind.		
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.		

	L (m)	Part No.(ex.)
	3	MFECA0030MJD
	5	MFECA0050MJD
1	10	MFECA0100MJD
	20	MFECA0200MJD
7		

Part No	MFECA0 * * 0MJE (Highly bendable type, Direction of motor shaft) MFECA0 * * 0MKE (Highly bendable type, Opposite direction of motor shaft) MFECA0 * * 0TJE (Standard bendable type, Direction of motor shaft) MFECA0 * * 0TKE (Standard bendable type, Opposite direction of motor shaft)	Compatible motor output	MSME 50 W to 750 W (200 V)
Specification	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

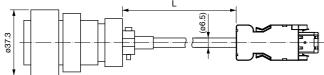


Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFECA0030MJE
5	MFECA0050MJE
10	MFECA0100MJE
20	MFECA0200MJE

[Unit: mm]

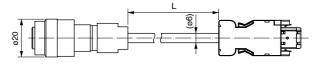
Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		



<u> </u>		
Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation
Cable clamp	N/MS3057-12A	Electronics Ind.
Cable	0.2 mm ² x3P (6-wire)	Oki Electric Cable Co., Ltd.

		L (m)	Part No.
		3	MFECA0030ESD
		5	MFECA0050ESD
		10	MFECA0100ESD
		20	MFECA0200ESD
7			

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)				

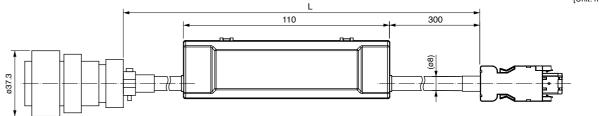


Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable	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 encode	17-bit absolute encoder (With battery box) *	

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

[Unit:	mm



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESE
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	10	MFECA0100ESE
Cable clamp	N/MS3057-12A	Electronics Ind.	20	MFECA0200ESE
Cable	0.2 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ETE	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)
Specifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately

s not included. Flease buy t	ne absolute encoder battery	L Separately.	-1	[Unit: mm]
	- I-	110	300	
020			(98)	

Title	Part No.	Manufacturer	L (m)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3
Shell kit	3E306-3200-008	(or equivalent)	
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20
Cable	0.2 mm² ×3P (6-wire) Oki Electric Cable Co., Ltd		

3	MFECA0030ETE
5	MFECA0050ETE
10	MFECA0100ETE
20	MFECA0200ETE

Part No.

189

[Unit: mm]

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

=10

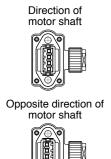
Title	Part No.	Manufacturer
Connector	172159-1	Tugo Flootronico
Connector pin	170366-1	Tyco Electronics
Rod terminal	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	ROBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION

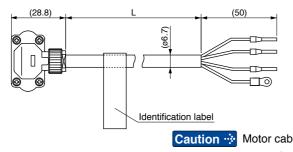
L (m)	Part No.	
3 MFMCA0030EED		
5	MFMCA0050EED	
10	MFMCA0100EED	
20	MFMCA0200EED	

	MFMCA0 * * 0NJD (Highly bendable type, Direction of motor shaft)		MSME 50 W to 750 W(200V)
Dort No	MFMCA0 * * 0NKD (Highly bendable type, Opposite direction of motor shaft)	Applicable	MSME 200 W to 750 W(200V)
		model	MSME 50 W to 750 W(200V)
	MFMCA0 * * 0RKD (Standard bendable type, Opposite direction of motor shaft)		MSME 200 W to 750 W(200V)

[Unit: mm]

[Unit: mm]





Caution : Motor cable for opposite direction of motor shaft cannot be used with a motor 50W and 100W.

Title	Part No.	Manufacturer
Connector	JN8FT04SJ1	Japan Aviation
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.
Rod terminal	Al0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFMCA0030NJD
5	MFMCA0050NJD
10	MFMCA0100NJD
20	MFMCA0200NJD

Part No.	MFMCA0 * * 2ECD	Applicable model	MFME	1.5 kW(200 V)
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191

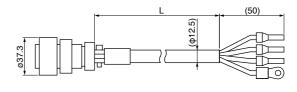
	14	L		(50)) <u> </u>
037.3			(412.5)		

Title	Part No.	Manufacturer	
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation	
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	
Rod terminal	NTUB-2	LOTM: Or Lid	
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION	

L (m)	Part No.
3	MFMCA0032ECD
5	MFMCA0052ECD
10	MFMCA0102ECD
20	MFMCA0202ECD

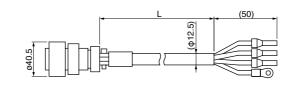
MSME 750 W(400 V), 1.0 kW to 2.0 kW, Applicable model MDME 400 W(400 V), 600 W(400 V), 1.0 kW to 2.0 kW MFMCD0 * * 2ECD Part No. MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation	3	MFMCD0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCD0052ECD
Rod terminal	NTUB-2	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		

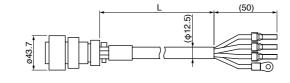
Part No.		Applicable model	MHME 2.0 kW (200 V and 400 V commonness)	
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Title	Part No. Manufacturer		L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCE0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	BOBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	1.5 kW(400 V), 2.5 kW(200 V and 400 V commonness)
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[Unit: mm]



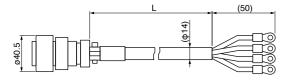
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCF0032ECD
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCF0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCF0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCF0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Options

Motor Cable (without Brake) * It doesn't correspond to IP65 and IP67.

MSME $\,$ 3.0 kW to 5.0 kW, MDME $\,$ 3.0kW to 5.0 kW Applicable model MHME 3.0 kW to 5.0 kW, MGME 2.0kW to 4.5 kW (All model 200 V and 400 V commonness) Part No. MFMCA0 * * 3ECT

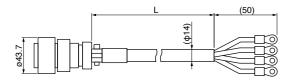
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

Part No.	MENICIDI * * 3EC.I	Applicable model	MFME 4.5 kW (200 V and 400 V commonness)
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[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

193

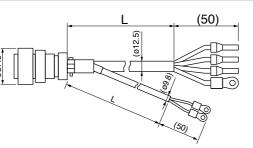
Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

Cable

A5 Family

Options

Dart No.	MFMCA0 * * 2FCD	Applicable	MDME	1.0 kW to 2.0 kW(200 V), 1.0 kW to 2.0 kW(200 V), 1.5 kW(200 V),	
Part NO.	WFWCAU * * 2FGD	model	MHME	1.0 kW(200 V), 1.0 kW(200 V) to 1.5 kW(200 V) 0.9 kW(200V)	

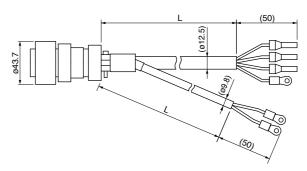


Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032FCD
Cable clam	p	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052FCD
Rod termina	al	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCA0102FCD
Nylon insulated	Earth	N2-M4	LC TMfc Co Ltd	20	MFMCA0202FCD
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.	•	

DYDEN CORPORATION

Part No.	MFMCE0 * * 2FCD	Applicable model	MSME 750 W(400 V) to 2.0 kW(400 V), MDME 400 W(400 V) to 2.0 kW(400 V), MFME 1.5 kW(400 V), 2.5 kW(200 V/400 V), MGME 0.9 kW(400 V) MHME 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)

[Unit: mm]



ROBO-TOP 600 V 0.75 mm² and ROBO-TOP 600 V 2.0 mm² 6-wire

Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCE0032FCD
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	5	MFMCE0052FCD
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCE0102FCD
Nylon insulated	Earth	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202FCD
round terminal Brake		N1.25-M4	J.S. 1 Wilg. Co., Ltd.		
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 2.0 mm ² 6-wire	DYDEN CORPORATION		

Brake Cable

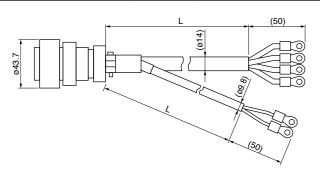
* It doesn't correspond to IP65 and IP67.

A5 Family

Options

Motor Cable (with Brake)
* It doesn't correspond to IP65 and IP67.

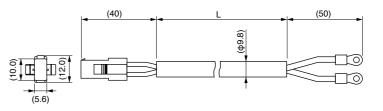
MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 4.5 kW, MHME 3.0 kW to 5.0 kW Applicable model MFMCA0 * * 3FCT Part No. MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)



Title		Part No.	Manufacturer
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation
Cable clam	р	JL04-2428CK(17)-R	Electronics Ind.
Nylon insulated	Earth	N5.5-5	J.S.T Mfg. Co., Ltd.
round terminal	Brake	N1.25-M4	3.3.1 Wilg. Co., Ltd.
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 3.5 mm ² 6-wire	DYDEN CORPORATION

L (m)	Part No.
3	MFMCA0033FCT
5	MFMCA0053FCT
10	MFMCA0103FCT
20	MFMCA0203FCT

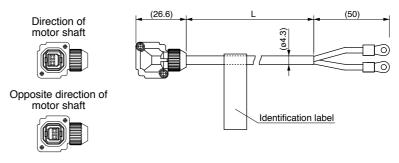
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Tugo Floatronico	3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ² 2-wire	DYDEN CORPORATION	20	MFMCB0200GET

MFMCB0 ** 0SKT (Standard bendable type, Opposite direction of motor shaft) (200 V)

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JN4FT02SJMR	Japan Aviation	3	MFMCB0030PJT
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	5	MFMCB0050PJT
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100PJT
Cable	AWG22 2-wire (ø4.3)	Hitachi Cable, Ltd.	20	MFMCB0200PJT

195

196

[Unit: mm]

A5 Family

Connector Kit for Communication Cable (for RS485, RS232) (Excluding A5IE, A5E Series)

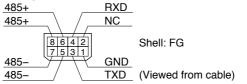
Part No. DV0PM20024

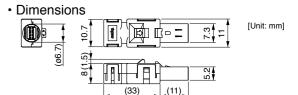
Components

Connector Kit

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

• Pin disposition of connector, connector X2





Connector Kit for Safety (Excluding A5IE, A5E Series)

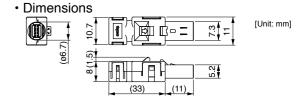
Part No. DV0PM20025

Components

Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

Pin disposition of connector, connector X3





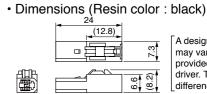
Safety bypass plug (Excluding A5IE, A5E Series)

Part No. DV0PM20094

Components

Title	Part No.	Manufacturer	Note
Connector	CIF-PB08AK-GF1R	J.S.T Mfg. Co., Ltd.	For Connector X3

 Internal wiring (Wiring of the following has been applied inside the plug.)



A design and color may vary from the plug provided together with driver. There is no difference in function.

[Unit: mm]

Connector Kit for Interface

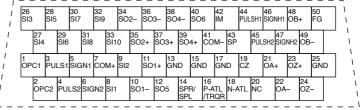
Pin No. 1 2 3 4 5 6 7 8

Part No. DV0P4350

· Components

Title	Part No.	Number	Manufacturer	Note
Connector	10150-3000PE	1	Sumitomo 3M	For Connector X4
Connector cover	10350-52A0-008	1	(or equivalent)	(50-pins)

• Pin disposition (50 pins) (viewed from the soldering side)



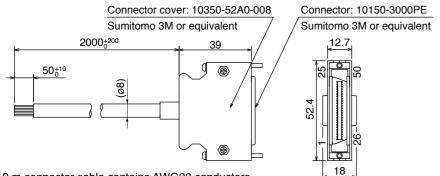
- 1) Check the stamped pin-No. on the connector body while making a wiring.
- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Cable for Interface

Part No.	DV0P4360				
	·		•		ft t= te



This 2 m connector cable contains AWG28 conductors.

Table for wiring

Table for wiring									
Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color
1	Orange (Red1)	11	Orange (Black2)	21	Orange (Red3)	31	Orange (Red4)	41	Orange (Red5)
2	Orange (Black1)	12	Yellow (Black1)	22	Orange (Black3)	32	Orange (Black4)	42	Orange (Black5)
3	Gray (Red1)	13	Gray (Red2)	23	Gray (Red3)	33	Gray (Red4)	43	Gray (Red5)
4	Gray (Black1)	14	Gray (Black2)	24	Gray (Black3)	34	White (Red4)	44	White (Red5)
5	White (Red1)	15	White (Red2)	25	White (Red3)	35	White (Black4)	45	White (Black5)
6	White (Black1)	16	Yellow (Red2)	26	White (Black3)	36	Yellow (Red4)	46	Yellow (Red5)
7	Yellow (Red1)	17	Yel (Blk2)/Pink (Blk2)	27	Yellow (Red3)	37	Yellow (Black4)	47	Yellow (Black5)
8	Pink (Red1)	18	Pink (Red2)	28	Yellow (Black3)	38	Pink (Red4)	48	Pink (Red5)
9	Pink (Black1)	19	White (Black2)	29	Pink (Red3)	39	Pink (Black4)	49	Pink (Black5)
10	Orange (Red2)	20	_	30	Pink (Black3)	40	Gray (Black4)	50	Gray (Black5)

<Remarks>

Color designation of the cable e.g.) Pin-1 Cable color: Orange (Red1): One red dot on the cable The shield of this cable is connected to the connector shell but not to the terminal.

Interface Conversion Cable

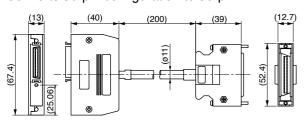
Part No.	DV0P4120,	4121.	4130.	4131.	4132
	D 10:	,	,	,	

Interface cables for old product (XX series or V series) can be connected to the current product by using the connector conversion cable shown below.

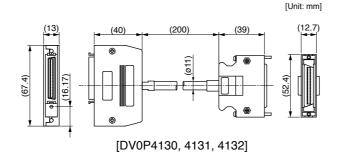
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control
DV0P4132	MINAS V → A5II, A5 series (A4, A series) for torque control

^{*} For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.



[DV0P4120, 4121]



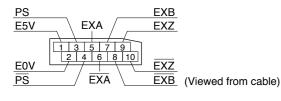
Connector Kit for External Scale (Excluding A5IE, A5E Series)

Part No. DV0PM20026

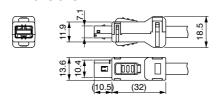
Components

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



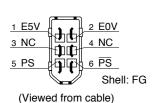
Connector Kit for Encoder

Part No. DV0PM20010

Components

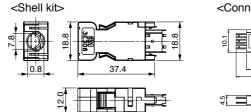
Title	Part No.	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector X6	
Shell kit	3E306-3200-008	(or equivalent)	For Connector X6	

Pin disposition of connector, connector X6

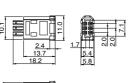




Dimensions



<Connector>



[Unit: mm]

[Unit: mm]

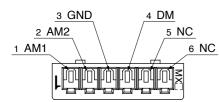
Connector Kit for Analog Monitor Signal

Part No. DV0PM20031

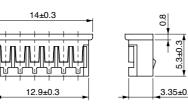
Components

Title	Part No.	Number	Manufacturer	Note	
Connector	510040600	1	Moley Inc	For Connector V7 (6 pine)	
Connector pin	500118100	6	Molex Inc	For Connector X7 (6-pins)	

• Pin disposition of connector, connector X7



Dimensions



<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B

Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V: Single row type)

Components

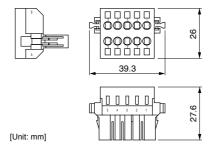
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20033 (For A-frame to D-frame 200 V: Double row type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-C	1	LOTM: O. III	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	

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	LC TMfc Co Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

Part No. DV0PM20052 (For E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	LC T Mfa Co. Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

Connector Kit

A5 Family

Options

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	LC T Mfg. Co. Ltd	For Connector XD
Handle lever	MJFAT-0T	1	J.S.T Mfg. Co., Ltd.	

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. DV0PM20045 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XC
Handle lever	J-FAT-OT-L	2		* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	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.	

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Connector Kit for Motor/Encoder Connection

Part No.		Applicable model	MSMD 50 W to 750 W, MHMD 200 W to 750 W (absolute encoder type)
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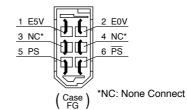
· Components

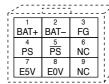
Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M (or equivalent)	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1		
Connector	172161-1	1	Tyco Electronics	For Encoder cable (9-pins)
Connector pin	170365-1	9		
Connector	172159-1	1	Tyco Electronics	For Motor cable (4-pins)
Connector pin	170366-1	4		

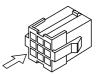
• Pin disposition of connector, • Pin disposition of connector connector X6

for encoder cable

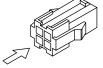
· Pin disposition of connector for motor cable











* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

				50 W to 750 W,			
Part No.	DV0P4380	Applicable model	MSMJ	200 W to 750 W,	MHMJ	200 W to 750 W	
				ental encoder type)			

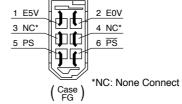
Components

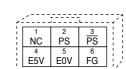
-					
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Connector	172160-1	1	Type Fleetrenies	For Encoder cable	
Connector pin	170365-1	6	Tyco Electronics	(6-pins)	
Connector	172159-1	1	Type Fleetrenies	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

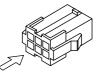
· Pin disposition of connector, · Pin disposition of connector connector X6

for encoder cable

· Pin disposition of connector for motor cable











Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

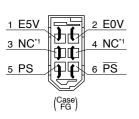
Part No. DV0PM20035 MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

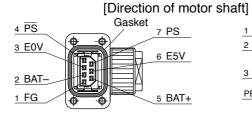
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M (or equivalent)		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008				
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)	
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable	
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.	(4-pins)	

• Pin disposition of connector, • Pin disposition of connector connector X6 for encoder cable

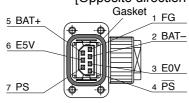
· Pin disposition of connector for motor cable

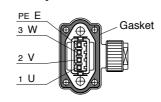


*1 NC: None Connect









* Pins 2 and 5 are left unused (NC) with an incremental encoder.

Remarks - Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.		Applicable model	<ip67 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW, MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)</ip67>	Without brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder coble	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A-20-4SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2022CK(14)-R	22CK(14)-R 1 Electronics Ind.		For wolor cable	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Part N	o. DV0P4310	Applicable model	<ip65 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW</ip65>	Without brake
			MHME 1.0 kW to 1.5 kW, MGME 0.9 kW	

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector VC (C nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder Cable	
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

			<pre><!--P67 motor--></pre>	\\/ithout	
Part No.	DV0PM20037		, , , , , , , , , , , , , , , , , , , ,	Without	
		model	MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW	brake	
			(All model 200 V and 400 V commonness)		

Components

Title	Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Francisco cobla	
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		For Motor cable		

		<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>Without</th></ip65>	notor>			Without
Part No.	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	brake
	linouci	MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 kW	Diake

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
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 coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20038	Applicable model	<ip67 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MFME 1.5 kW (Common to with/ without brake), MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip67>	With brake
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Components

•					
Title	Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	08 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 cable	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor Cable	

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No.	DV0P4330	Applicable model	<ip65 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip65>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	Fay Face day cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1	Japan Aviation	For Motor cobla	
Cable clamp	N/MS3057-12A	1 Electronics Ind.		For Motor cable	

Part No.		Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Franciscopie	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A24-11SE-EB-R	1 Japan Aviation		For Motor cable	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	FOI WIOLOT 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.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B24-11S	1 Japan Aviation		For Motor cable	
Cable clamp	N/MS3057-16A	1	Electronics Ind.	FOI WIGGO CADIE	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV 1		Sumitomo 3M	For Connector 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-6A32-17SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-32CK(24)-R *	04-32CK(24)-R 1 Electronics Ind.		For Motor Cable	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

art No.		Applicable model	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	With brake	
---------	--	------------------	------------------------------------------------------------------------	---------------	--

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	F 0	
Shell kit	3E306-3200-008	1 (or equivalent)		For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	F. M. I I.	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Proke coble	
Cable clamp	N/MS3057-6A	, '		For Brake cable	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

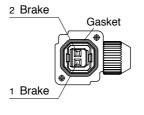
Part No.	DV0PM20040	Applicable model	MSME 50 W to 750 W
----------	------------	------------------	--------------------

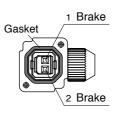
Components

Title	Part No.	Number	Manufacturer	Note
Connector	JN4FT02SJM-R	1	Japan Aviation	For brake cable
Socket contact	ST-TMH-S-C1B-3500	2	Electronics Ind.	For brake cable

• Pin disposition of connector for brake cable

[Direction of motor shaft] [Opposite direction of motor shaft]





<Remarks>

Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

<Remarks>

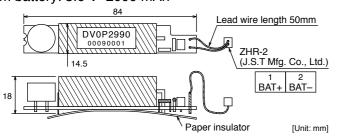
• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Mounting Bracket

A5 Family



· Lithium battery: 3.6 V 2000 mAh

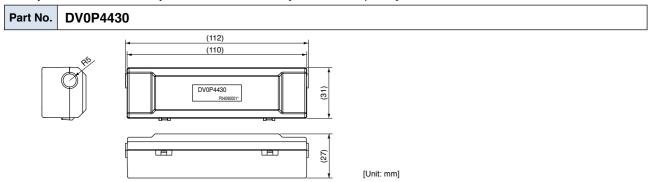


<Caution>

This battery is categorized as hazardous substance, and you may be required to present an application of hazardous substance when you transport by air (both passenger and cargo airlines).

Battery Box for Absolute Encoder *

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.



Battery for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

When waking a cable for 17-bit absolute encoder by yourself

When you make your own cable for 17-bit absolute encoder, connect the optional battery for absolute encoder, DV0P2990 as per the wiring diagram below. Connector of the battery for absolute encoder shall be provided by customer as well.

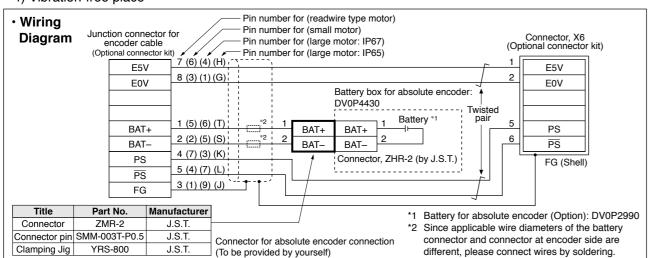
<Caution>

Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

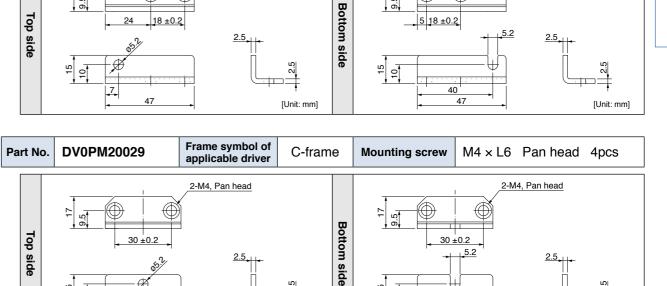
Refer to the instruction manual of the battery for handling the battery.

Installation Place of Battery

- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable gas, grinding oil, oil mist, iron powder or chips and etc.
- 3) Well-ventilated and humid and dust-free place.
- 4) Vibration-free place

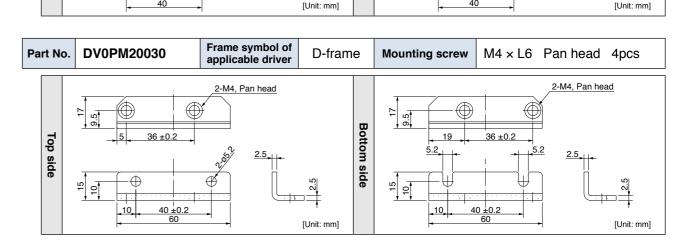


Frame symbol of Part No. DV0PM20027 M4 x L6 Pan head 4pcs A-frame Mounting screw applicable driver 2-M4, Pan head Bottom 11 ±0.2 Frame symbol of DV0PM20028 M4 x L6 Pan head 4pcs B-frame Mounting screw Part No. applicable driver 2-M4, Pan head 2-M4, Pan head



 30 ± 0.2

20



[Unit: mm]

30 ±0.2

20

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).

Options

140±5 °C

B-contact

Open/Close capacity

1 A 125 VAC 6000 times

0.5 A 250 VAC 10000 times

(resistance load)

with fan

1 m/s W

25

25

50

130

80

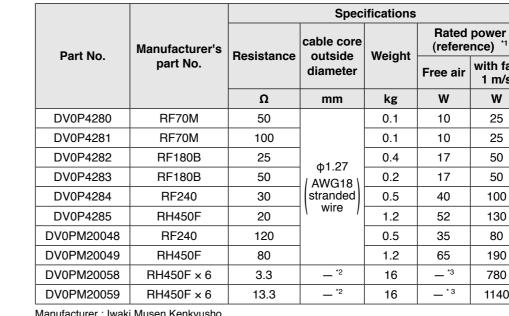
190

780

1140

Activation

built-in thermal protector



External Regenerative Resistor

Manufacturer : Iwaki Musen Kenkyusho

*1 Power with which the driver can be used without activating the built-in thermal protector.

A built-in thermal fuse and a thermal protector are provided for safety.

The circuit should be so designed that the power supply will be turned off as the thermal protector operates.

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit, power supply voltage or load.

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed 100 °C.

Attach the regenerative resistor to a nonflammable material such as metal.

Cover the regenerative resistor with a nonflammable material so that it cannot be directly touched.

Temperatures of parts that may be directly touched by people should be kept below 70 °C.

*2 Terminal block with screw tightening torque as shown below.

T1, T2, 24 V, 0 V, E: M4: 1.2 N·m to 1.4 N·m : M5 : 2.0 N·m to 2.4 N·m

Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

	Power supply			
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-phase, 400 V	
А	DV0P4280	DV0P4281 (50 W, 100 W)		
		DV0P4283 (200 W)	_	
В	DV0P4283	DV0P4283		
С	DV0P4282	DV0F4263		
D		DV0P4284	DV0PM20048	
E		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049	
F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel	
G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel	
Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0PM20049 × 6 in parallel or DV0PM20059	

DV0P4280, DV0P4281 2-φ4.5 thermal protector (light yellow x2) [Unit: mm]

DV0P4282, DV0P4283

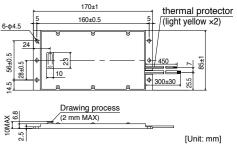


Fig.2 Α (Mounting pitch) Wiring of the reactor <3-Phase> · Wiring of the reactor <Single phase> Servo Power supply Servo side side driver Power side supply Center-to-center distance F: Center-to-center

Rated Inductance Part No. В С D E(Max) G DV0P220 70+3/-0 125±1 136мах M4 65±1 (93)155 85±2 4-7φ×12 6.81 3 155_{Max} DV0P221 60±1 150±1 (113)130 60+3/-0 75±2 4-7φ×12 M4 4.02 5 DV0P222 60±1 150±1 (113)155мах 140 70+3/-0 85±2 4-7φ×12 M4 2 8 Fig. 1.39 DV0P223 60±1 150±1 (113)155мах 150 79+3/-0 95±2 4-7φ×12 M4 11 DV0P224 60±1 150±1 (113)160_{Max} 155 84+3/-0 100±2 4-7φ×12 M5 0.848 16 DV0P225 60±1 150±1 (113)160_{Max} 170 100+3/-0 115±2 4-7φ×12 M5 0.557 25 DV0P227 55±0.7 80±1 110_{Max} 90 55±2 4-5Φ×10 M4 4.02 5 66.5±1 41±2 DV0P228 55±0.7 80±1 95 46±2 60±2 4-5Φ×10 M4 2 8 66.5±1 110_{Max}

distance on slotted hole

1.39

[Unit: mm]

11

110_{Max}

66.5±1

80±1

on outer circular arc

Harmonic restraint

DV0PM20047 55±0.7

Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

105

56±2

70±2

4-5φ×10 M4

With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers' Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. We are pleased to inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver was modified as follows.

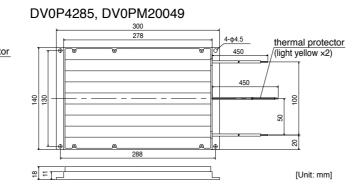
- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

^{*} For application, refer to P.21 to P.28 and P.153 to P.154 "Table of Part Numbers and Options".

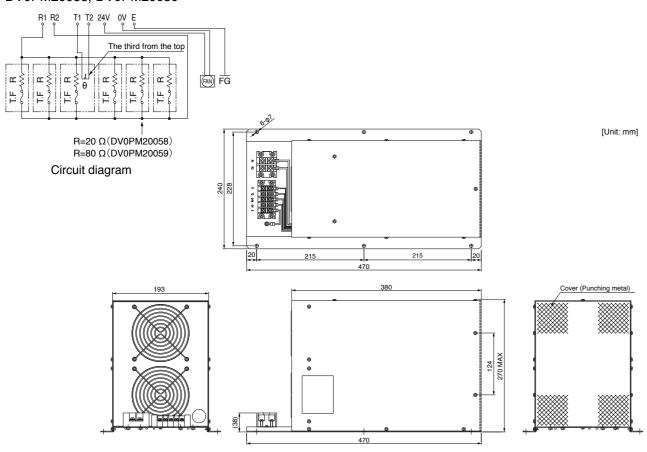
Surge Absorber for Motor Brake

DV0P4284, DV0PM20048 300 290 280 thermal protector (light yellow x2)



External Regenerative Resistor

DV0PM20058, DV0PM20059



<Caution when using external regenerative resistor>

Regenerative resistor gets very hot.

Configure a circuit so that a power supply shuts down when built-in thermal protector of the regenerative resistor works. Because it is automatic reset thermal protector, please apply a self-holding circuit to the outside in order to maintain safety in case of sudden activation. During the failure of the driver, the surface temperature of the regenerative resistor may exceed the operating temperature before thermal protector starts to work.

Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

- Be attached the regenerative resistance to non-combustible material such as metal.
- Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.
- Do not install the regenerative resistor near flammable materials.

Motor		Part No.	Manufacturer	
MSMD	50 W to 750 W	Z15D271	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION	
MSMJ	200 W to 750 W	or		
MSME	50 W to 750 W	TNR15G271K		
	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation	
MDME -	400 W (400 V), 600 W (400 V)		·	
	1.0 kW to 3.0 kW	NVD07SCD082	KOA Corporation	
	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	
	11 kW, 15 kW			
MFME -	1.5 kW	NVD07SCD082	KOA Corporation	
	2.5 kW, 4.5 kW			
MGME	0.9 kW to 6.0 kW	Z15D151	SEMITEC Corporation	
MHMD MHMJ	200 W to 750 W	Z15D271 or TNR15G271K	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION	
MHME -	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation	
	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	

List of Peripheral Equipments

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	Surge absorber for holding brake
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/	
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Noise filter for signal lines
TDK Corporation	DK Corporation +81-3-5201-7229 http://www.global.tdk.com/	
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Japan Aviation Electronics Industry, Ltd.	+81-3-3780-2717 http://www.jae.co.jp/e-top/index.html	
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	Connector
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/	
Fagor Automation S.Coop.	+34-943-719-200 http://www.fagorautomation.com	
Magnescale Co., Ltd.	+81-463-92-7971 http://www.mgscale.com/mgs/language/english/	External scale
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	External doub
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/	140130 IIILGI

 $[\]ensuremath{^{*}}$ The above list is for reference only. We may change the manufacturer without notice.

Compact Servo Only for Position Control.

Ultra compact position control type

MINAS E Series



Best Fit to Small Drives

- Further evolution in down-sizing, by 47 % in size. (Note)
- Exclusively designed for position control.

(Note) Compared to MUDS043A1



Easy to Handle, Easy to Use

- DIN-rail mounting unit (option) improves handling/installation.
- User-friendly Console makes the setup easy.
- High functionality Real-Time Auto-Gain Tuning enables adjustment-free operation.



High-Speed Positioning with Resonance Suppression Filters

- Built-In notch filter suppresses resonance of the machine.
- Built-in adaptive filter detect resonance frequency and suppress vibration.

4

Smoother operation for Low Stiffness Machine

Damping control function suppresses vibration during acceleration/deceleration

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1 Further Flexibility and Multiplicity **Wave-form graphic function**

Note) Refer to P.236 for setup support software.

- You can confirm the response frequency characteristics
- Helps you to analyze the machine and shorten the setup

Note) Refer to P.236 for setup support software.

- You can select 2 preset torque limit value from external

Conformity to CE and UL Standards

- 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

Frequency analyzing function

- of total machine mechanism including the servo motor with the setup support software, "PANATERM".

Torque limit switching function

- Use this function for tension control or press-hold control.

Regeneration discharging function

Console (Option)

You can set up parameters, copy and make a JOG run.

Command control modes

Offers 2 command modes, "Position control" and "Internal

You can make a 4-speed running at preset values with

Inrush current suppressing function

Inrush suppressing resistor, which prevent the circuit

Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give

breaker shutdown of the power supply caused by inrush

parameter at internal velocity control mode.

current at power-on, is equipped in this driver.

Convenient for maintenance at site.

Refer to P.241, Options.

velocity control".

load to the power line.

- 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.

IEC60034-1 IEC60034-5 UL1004 Conforms to CSA22.2 No.100 Low-Voltage UL508C CSA22 2 No 14 Directives FN50178 Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment EN61000-6-2 Immunity for Industrial Environments EC61000-4-2 Electrostatic Discharge Immunity Test Conforms to IEC61000-4-3 Radio Frequency Electromagnetic Field Immunity Test IEC61000-4-4 Electric High-Speed Transition Phenomenon/Burst Immunity Test IEC61000-4-5 Lightening Surge Immunity Test IEC61000-4-6 High Frequency Conduction Immunity IEC61000-4-11 Instantaneous Outage Immunity Test

- : International Electrotechnical Commission
- : Europaischen Normen
- EMC: Electromagnetic Compatibility
- CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC.article 9(2)

Winsbergring 15.22525 Hamburg, F.R. Germany

Panasonic Testing Centre a division of Panasonic Marketing Europe GmbH

* When exporting this product, follow statutory provisions of the destination country

Leasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

MINAS E Series

Features

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

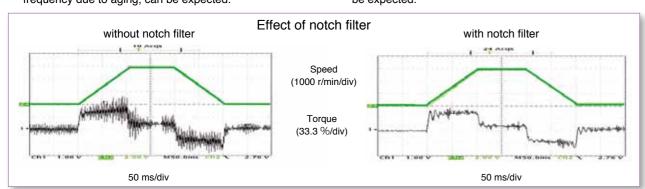
?. Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.

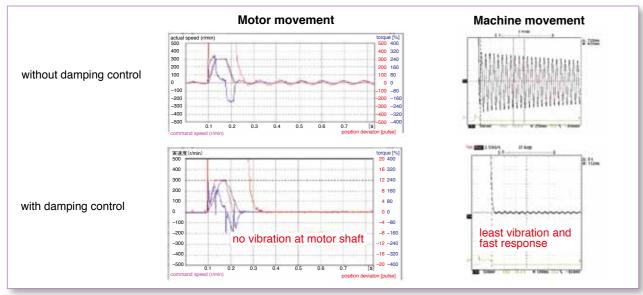
Notch filter (Note1)

- 1-channel notch filter is equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.



Damping control (Note1)

You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up. vibration frequency in 0.1 Hz unit. Note) Only applies to manual adjustment



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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

MINAS E series

Model Designation

Servo Motor

Symbol

SMT machines Inserters

High repetitive

positioning

application

Except shaft Small capacity throughhole Ultra low inertia

connector

MINAS E Series

0.05 to 0.4

0.05

0.1

0.2

0.4

 \bigcirc

(5000)

 \bigcirc

 \bigcirc

Motor Line-up

MUMA

Ultra low inertia

MUMA Ultra low inertia (50 W to 400 W)

Motor rated output

iotor ratoa oatpat				
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)

M U M A 5 A Z P 1 S **

Special specifications

Motor structure

	Shaft	Holding brake		Oil seal	
Symbol	Key-way, center tap	without	with	without	with*
S	•	•		•	
Т	•		•	•	

* Motor with oil seal is manufactured by order.

Design order

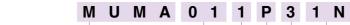
Symbol	Specifications
1	Standard

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

See P.227 for motor specifications

Motor with gear reducer



Motor rated output Symbol Rated output Symbol Type 01 100 W Ultra low inertia MUMA (100 W to 400 W) 02 200 W 04 400 W

voltage specifications				
Symbol	Specifications			
1	100 V			
2	200 V			

Rotary encoder specifications

	oncours opeoms			
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Gear reduction ration, gear type

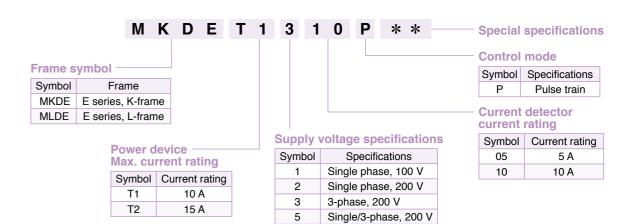
	Gear	Moto	r outpu	t (W)	
Symbol	reduction ratio	100	200	400	Gear type
1N	1/5	•	•	•	Cau biab
2N	1/9	•	•	•	For high accuracy
4N	1/25	•	•	•	

Motor structure

Cumbal	Shaft	Holding brak	
Symbol	Key-way	without	with
3	•	•	
4	•		•

See P.232 for motor with gear reducer specifications

Servo Driver



See P.223 for driver specifications

· Wiring of main circuit

MINAS E Series

Overall Wiring/ Driver and List of Applicable Peripheral Equipments

Connector for

power supply connection,

(DV0P2870)

Ground

(Earth)

Regenerative

resistor

(option)

Console

(DV0P4420)

Personal Computer

Setup support software

"PANATERM" (DV0P4460)

PC communication cable

Connector for external equipment (DV0P0770)

(DV0P1960)

or interface cable (DV0P0800)

Encoder cable

Motor cable

Brake cable

Power supply for brake DC24 V (0)

Circuit Breaker (MCCB) Protects the power lines. Shuts off the circuit when overcurrent passes.

Noise Filter (NF) Prevents external noise from the

power lines. And reduces an effect of the noise generated by the servo driver.

Magnetic Contactor (MC)

Turns on/off the main power of the servo driver. Surge absorber to be used together with this.

Reactor (L)

Reduces harmonic current of the main power.

Pin-5 and Pin-3 of CN POWER

· Connect an external regenerative resistor (option) between P(pin-5) and B(pin-3) of connector, CN X1, when regenerative energy is large. (Refer to P.242 for regenerative resistor.)

Motor	to P.227
Driver	to P.223
Option	to P.236

Recommended equipments Parts customer to prepare

List of recommended peripheral equipments

	Мо	tor	Power			Magnetic			
Power supply	Series Output capacity (at rated output) Circuit Breaker (Rated current) Noise Filter		Noise Filter	Contactor (Contact Composition)	Wire diameter (L1, L2, L3, U, V and W)				
Single		50 W	0.3 kVA	(5 A)	_				
phase,		100 W	0.4 kVA	(5 A)		10 A (3P+1a)			
100 V		200 W	0.5 kVA	(10 A)					
		50 W	0.01970	(5 A)			0.75 mm ² to 0.85 mm ² AWG18		
Single		100 W	0.3 kVA		DV0P4160	15 A (3P+1a)			
phase, 200 V	MUMA	200 W	0.5 kVA						
		400 W	0.9 kVA	(10 A)			AWGIO		
		50 W	0.01970			10 A (3P+1a)			
3-phase		100 W	0.3 kVA	(5 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, (1) 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	Part No.	Carrying page						
Console			DV0P4420	241				
Setup Support		Japanese	DV0D4400	000				
Software, PANATERM		English	DV0P4460	236				
RS232 Communication (for Connection with			DV0P1960	241				
Interface Cable			DV0P0800	241				
Connector Kit for E	xter	nal Equipment	DV0P0770	240				
Connector Kit for N	/lotor	and Encoder	DV0P3670	239				
Connector Kit for D)rive	Power Supply	DV0P2870	239				
Encoder Cable		MFECA0 * *	0EAM	238				
Motor Cable		MFMCA0 * *	238					
Brake Cable		MFMCB0 * *	238					
Cable Set (3 m) (Not	te 3)	DV0P37300	238					
Cable Set (5 m) (Not	te 3)	DV0P39200	238					
DIN Rail Mount Un	it	DV0P3811	242					
	0 V	50 Ω 10 W	DV0P2890	040				
Regenerative Resistor 20	0 V	100 Ω 10 W	DV0P2891	242				
		100 V	DV0P227					
Reactor		100 V	DV0P228	243				
		200 V	DV0P220					
Noise Filter			DV0P4160	256				
Surge Absorber	Single phase 100 V, 200 V		DV0P4190	256				
	3-р	hase 200 V	DV0P1450					
Noise Filter for Sig	nal V	Vire	DV0P1460	256				

(Note 3) Cable set (3 m) contains,

- 1) Interface cable: DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m): MFMCA0030AEB
- 4) Connector kit for driver power supply connection: DV0P2870 Cable set (5 m) contains,
- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m): MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

■ Table of Part Numbers and Options

		2500P/r, Incremental			Option							
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable		Brake Cable	External Regenerative Resistor	Reactor	Noise Filter
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)						DV0P227	
phase	100	MUMA011P1 🗌	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)	MEECAO* *OEAM			MFMCB0 * * 0GET	Т		D\/0D4160
	400	MUMA042P1	229	MLDET2510P	226 (L)	WIFECAU* * UEAW	MFMCA0 * * 0AEB					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)							
250 V	400	MUMA042P1	229	MLDET2510P	226 (L)							
	400	IVIOIVIAU42FT	229	MLDET2310P	220 (L)							

- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

	ī	7

es

Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

E Series

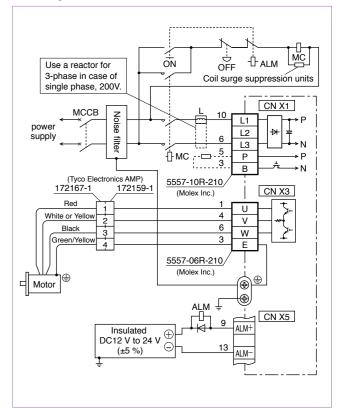
Wiring Diagram

Standard Wiring Example of Main Circuit

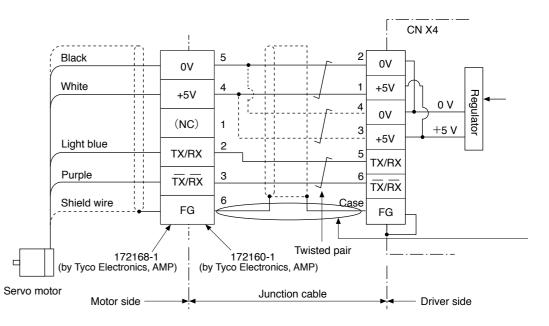
3-Phase, 200 V

HALM ME Coil surge suppression units CN X1 . Вмс --⊡--<u>ў</u> 5557-10R-210/ CN X3 (Molex Inc.) Red White or Yellow 2 Black 5557-06R-210/ CN X5 Insulated DC12 V to 24 V (±5 %) ALM-

■ Single Phase, 100 V / 200 V



Encorder Wiring Diagram



When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

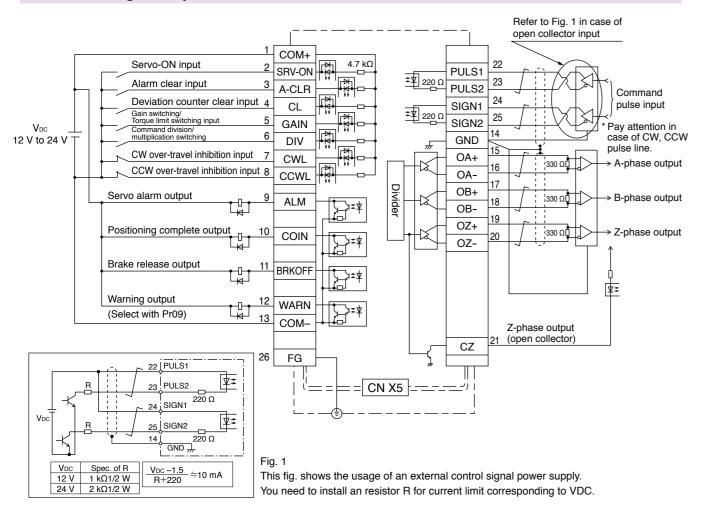
- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher bending resistance.
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

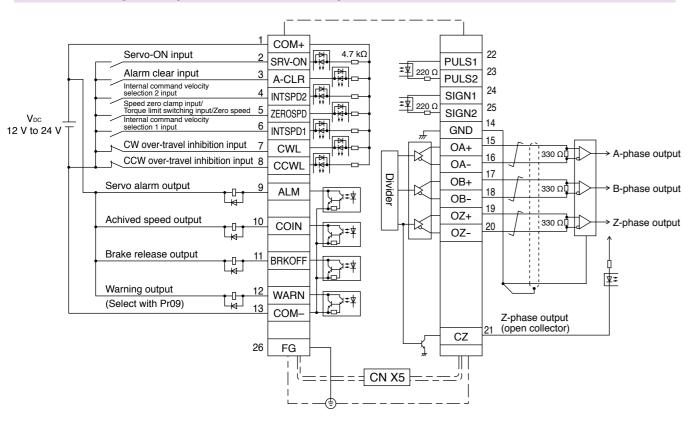
	_	Sing	le phase, 100 V		Single phase, 100 V to 115 V $^{+10}_{-15}$ % 50 Hz/60 Hz				
	Input power	Sing	le phase, 200 V	,	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz				
		3-phase, 200 V			3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz				
		Tem	perature		Operating: 0 °C to 55 °C, Storage: -20 °C to 65 °C				
	invir				(Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>				
	Environment	Hum			Both operating and storage : 90 %RH or less (free from condensation) 1000 m or lower				
	ğ		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	rol me	ethod		IGBT PWM Sinusoidal wave drive				
	Enco	oder fe	eedback		2500 P/r (10000 resolution) incremental encoder				
	si လ	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 mode				
	<u>v</u> . ¬	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.				
	Disp	lay LE	ED .		(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)				
	Rege	enerat	tion		No built-in regenerative resistor (external resistor only)				
	Dyna	amic b	rake		Built-in				
	Cont	rol mo	ode		3 modes of (1) High-speed position control, (2) Internal velocity control and (3) High-functionality positioning control are selectable with parameter.				
		Control input			(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)				
	Position control		Max. command frequency	l pulse	Line driver : 500 kpps, Open collector : 200 kpps				
	າ contr	Pulse input	Type of input p	ulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)				
	<u>o</u>		Electronic gear (Division/Multiplication) (of command pulse)		Setup of electronic gear ratio Setup range of (1-10000) $\times 2^{(0-17)}/(1-10000)$				
			Smoothing filte	r	Primary delay filter or FIR type filter is selectable to the command input.				
	Inte	Control 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				
	rnal	Con	trol output		(1) Speed arrival (at-speed)				
	Internal speed	Inter	nal speed comn	nand	Internal 4-speed is selectable with control input.				
	d control	Soft	-start/down func	tion	Individual setup of acceleration and deceleration are enabled, with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.				
	<u>0</u>	Zero	-speed clamp		0-clamp of internal speed command with speed zero clamp input is enabled.				
		Auto-g	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.				
		inpu		-	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 f e	feedback	1 P/r to 2500 P/r (encoder pulses count is the max.).				
	ă	Protective function	Hardware error	•	Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.				
		tive	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.				
			ping control fun	ction	Manual setup with parameter				
		Setup	Manual		Console				

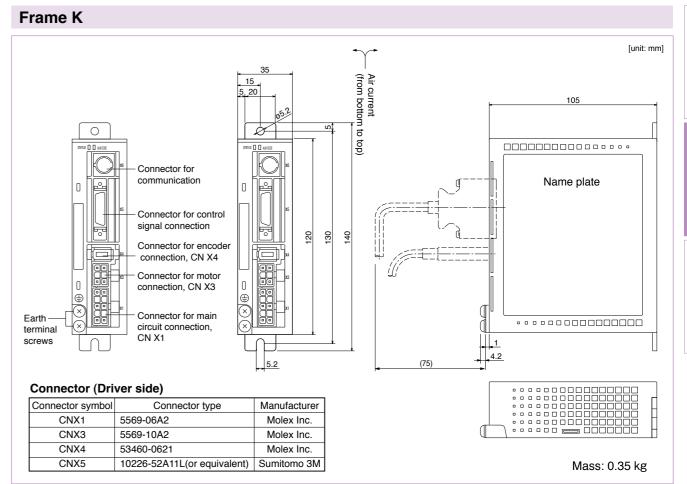
Control Circuit Standard Wiring Example

CN X 5 Wiring Example at Position Control Mode

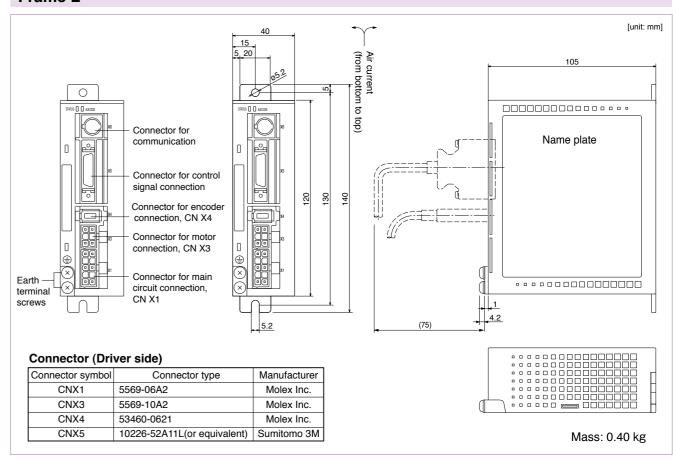


CN X 5 Wiring Example at Internal Velocity Control Mode





Frame L



Motor Specifications

100 V MUMA 50 W to 200 W [Low inertia Small drives]

				AC100 V			
Motor model		MUMA	5AZP1□	011P1□	021P1		
Applicable drive		Model No.	MKDET1105P	MKDET1110P	MLDET2110P		
Applicable drive	er	Frame symbol	Frai	me K	Frame L		
Power supply ca	apacity (kVA)	0.3	0.4	0.5		
Rated output (W	V)		50	100	200		
Rated torque (N	l·m)		0.16	0.32	0.64		
Momentary Max	k. peak to	orque (N·m)	0.48	0.95	1.91		
Rated current (A	Arms)		1.0	1.6	2.5		
Max. current (Ad	o-p)		4.3	6.9	11.7		
Regenerative br	rake	Without option	No limit Note)2				
frequency (times/min)	Note)1	DV0P2890	No limit Note)2				
Rated rotational	l speed (r/min)	3000				
Max. rotational s	speed (r/	/min)	5000				
Moment of inerti	ia	Without brake	0.021 0.032		0.10		
of rotor (×10 ⁻⁴ kg·m²)		With brake	0.026 0.036		0.13		
Recommended of the load and t			30 times or less				
			2500 P/r				
Rotary encoder	specific	ations	Incremental				
				4000			
		n per single turn					
Protective enclo	osure rat	ing	IP65 (except rotating portion of output shaft and lead wire end)				
1	Ambient temperature		0 °C to 40 °C (free from freezing), Storage : –20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal humidity="">)</nomal>				
	Ambient	humidity	85 %RH or lower (free from condensing)				
Environment	Installati	on location	Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust				
	Altitude			1000 m or lower			
•	Vibration	resistance	49 m/s² or less				
Mass (kg), () rep	presents I	nolding brake type	0.4 (0.6)	0.5 (0.7)	0.96 (1.36)		

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)						
Static friction torque (N·m)	0.29	1.27				
Engaging time (ms)	25	50				
Releasing time (ms) Note)4	20 (30)	15 (100)				
Exciting current (DC) (A)	0.26	0.36				
Releasing voltage	DC 1 V or more					
Exciting voltage	DV 24 V ±10 %					

Permissible load					
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

For motor dimensions, refer to P.231, and for the diver, refer to P.226.

Model Designation

S Design order Symbol Type 1 : Standard

Ultra low inertia MUMA (50 W to 200 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W

Voltage specifications Symbol Specifications 100 V 100/200 V Z (50 W only)

Motor structure

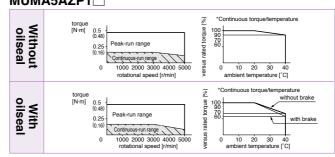
	Shaft	Holding	brake	Oil s	eal
Symbol	Key-way, center tap	without	with	without	with
S	•	•		•	
Т	•		•	•	

Rotary encoder specifications

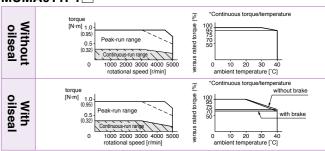
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

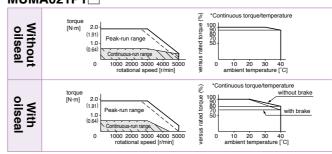
MUMA5AZP1



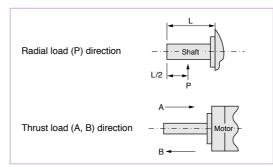
MUMA011P1



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)

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

Symbol Type Ultra low inertia MUMA (50 W to 400 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W 04 400 W

Voltage specifications Symbol Specifications 2 200 V 100/200 V Z (50 W only)

Design order 1 : Standard

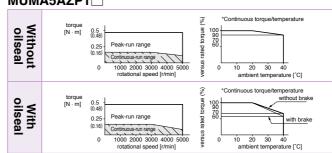
IVIOLOI SLI	uotaro				
	Shaft	brake	Oil s	eal	
Symbol	Key-way, center tap	without	with	without	with
S	•	•		•	
Т	•		•	•	

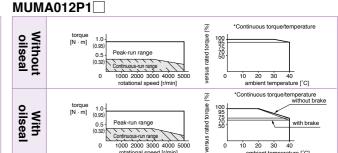
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

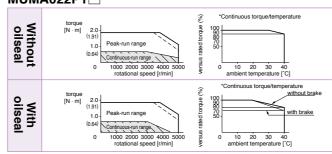
Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

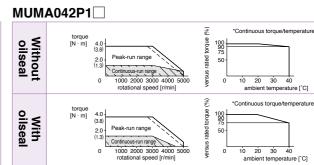
MUMA5AZP1

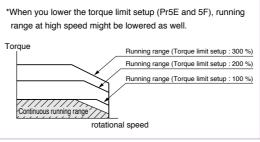


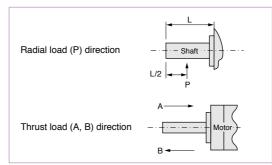


MUMA022P1









- 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)

Encoder

connector

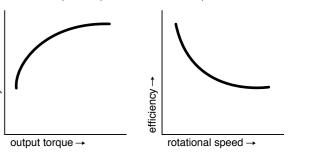
MINAS E Series

Motors with Gear Reducer

Motor Types with Gear Reducer

Reduction	Мо	Motor output (W)							
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.



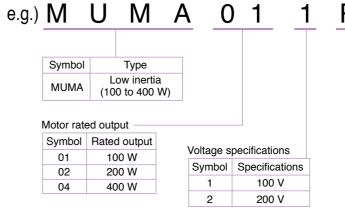
Model No. Designation

[Unit: mm]

Rotary encoder specifications

Format

Symbol



Pulse counts

2500 P/r

		Ş
Pulse counts	Wire	Г
10000	5	Г

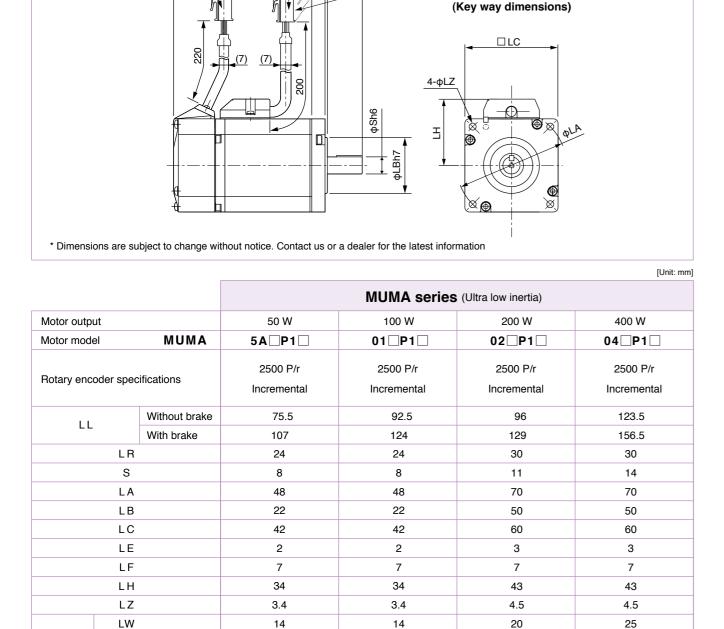
Motor types with gear reducer Reduction Type of ratio 100 200 400 For High 2N 1/9 4N 1/25

Motor structure

Symbol	Shaft	Holding brake					
Syllibol	Key-way	without	with				
3	•	•					
4	•		•				

Specifications of Motor with Gear Reducer

	Motor type	MUMA				
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer				
	Composition of gear	Planetary gear				
	Gear efficiency	65 % to 85 %				
0	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft				
Gear	Composition of gear	Planetary gear				
reducer	Mounting method	Flange mounting				
	Permissible moment of inertia of the load	10 times or smaller than rotor moment of inertia of the moto				
	(conversion to the motor shaft)	To times or smaller than rotor moment or inertia or the motor				
	Protective structure	IP44 (at gear reducer)				
	Ambient temperature	0 °C to 40 °C				
	Ambient humidity	85 %RH (free from condensation) or less				
Environment	Vibration resistance	49 m/s ² or less (at motor frame)				
	Impact resistance	98 m/s² or less				



MUMA 50 W to 400 W

Brake connector

Motor connector

LR LE

LL

<Cautions>

Key way

Mass (kg)

LK

KW

ΚH

RH

TP

Connector/Plug specifications

Reduce the moment of inertia ratio if high speed response operation is required.

Without brake

With brake

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

12.5

3h9

3

6.2

M3 × 6 (depth)

0.40

0.60

12.5

3h9

3

6.2

 $M3 \times 6$ (depth)

0.50

0.70

refer to Options, P.239, P.240.

18

4h9

4

8.5

M4 × 8 (depth)

0.96

1.36

22.5

5h9

5

11

M5 × 10 (depth)

1.5

1.9

Torque Characteristics

Motors with Gear Reduce

Table of Motor with Gear Reducer Specifications

	Motor					M	UMA with g	ear reduc	er				
Model	Output	Reduction	Output	Rated	Max.	Rated		/motor + redu	of inertia cer/converted or shaft		ass	Permissible radial load	Permissible thrust load
		ratio	. 5	speed	speed	speed torque	torque	w/o brake	w/ brake	w/o brake	w/ brake	raulai iuau	iiiusi lodu
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10	⁻⁴ kg·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

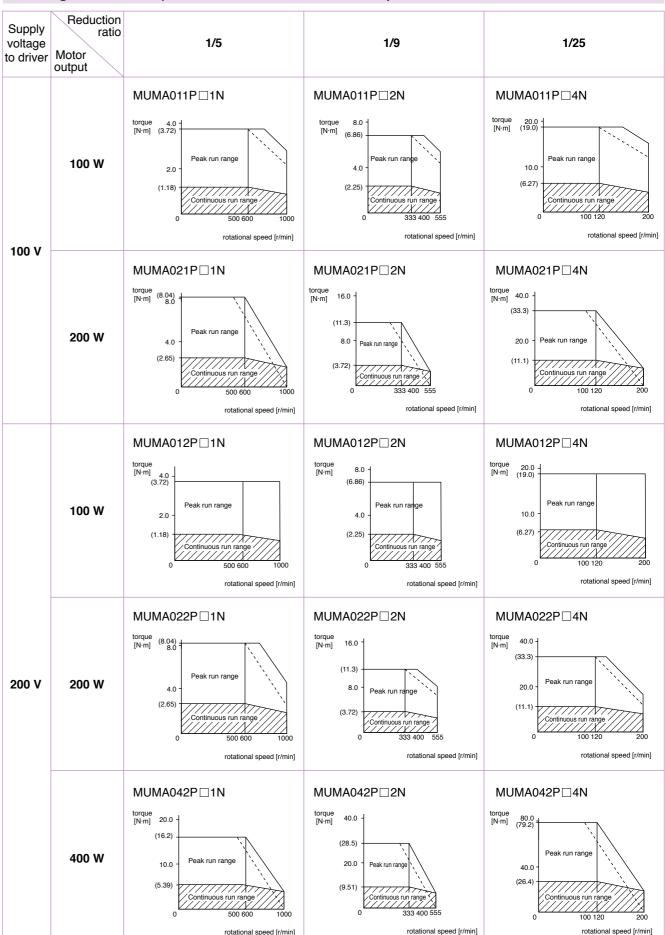
For dimensions, refer to P.235.

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	
Encoder	encoder output wit		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	1 400 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P	
Incremental				MLDET2510P	MLDET2510P		
	400 00	_	_	MUMA042P□□N			

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

Encoder connecter (AMP)

Brake connector (AMP)

Motor Dimensions

2500 P/r Encoder

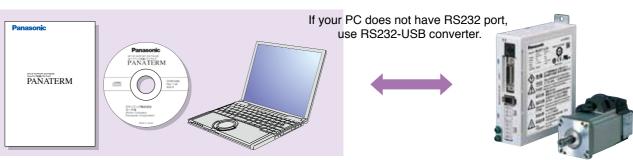
																[U	Init: mm]						
Model	Motor output	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	Key way B×H×LD	Т						
MUMA01□P□1N		1/5	192	92.5																			
WOWAUTET ETT		173	223.5	124	32	20	52	50	60	12	10	M5	M5 (Depth: 12)	M5	M5	18	67.5		4×4×16	2.5			
MUMA01□P□2N	100 W	100 14/	1/9	192	92.5	32	20	32	30	00	12	10		10	07.5		424210	2.5					
WOWAUT	100 00	173	223.5	124																			
MUMA01□P□4N		1/25	234.5	92.5	50	50 30 78	78	70	70 90	10	19 17	M6	26	92	3	6×6×22	3.5						
WOWAUT_F_4N		1/23	266	124		19	17	(Depth: 20)	20	92	3	UXUXZZ	3.5										
MUMA02 P 1N		1/5	200.5	200.5 96 32 20 52 50	60	12	10	M5	18	72.5		4×4×16	2.5										
WOWAOZ I I IN		173	233.5	129	32	20	52	30	00	12	10	(Depth: 12)	10			424210	2.5						
MUMA02 P 2N	200 W	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										100			
WOWA02_F_4N		1/23	279	129	50	30	78	70	90	19	17	M6	26	100		6×6×22	3.5						
MUMA042P⊡1N		1/5	263	123.5	50	30	/0	70	90	19	17	(Depth: 20)	26			UXUXZZ	3.5						
WOWA042F TN		173	296	156.5										89.5									
MUMA042P□2N	400 \	1/9	263	123.5										69.5									
IVIOIVIAU42F_ZIN	042P 2N 400 W 1 / 9 296 156.5																						
MI IMAO42D AN		1/25	288.5	123.5	61	40	98		115	24	18	M8	0.5	104	_	0700							
MUMA042P□4N		1/23	321.5	156.5	01	40	98	90	115	24	10	(Depth: 20)	35	104	5	8×7×30	4						

Upper column : without brake

Setup Support Software "PANATERM" for MINAS series AC Servo Motor & Driver

Part No. DV0P4460 (Japanese/English version)

The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A4 series, E series through the RS232 serial interface.



Basic Function

Parameter setup

- After a parameter is defined on the screen, it will be sent to the driver immediately.
- Once you register parameters you frequently use, they can be easily set up on the screen.

Monitoring Control Conditions

Monitor

- · Control conditions: Control mode, velocity, torque, error and warning
- Driver input signal
- Load conditions: Total count of command/feedback pulses, Load ratio, Regenerative resistor load ratio

Alarm

- Displays the numbers and contents of the current alarm and up to 14 error events in the past.
- Clears the numbers and contents of the current alarm and up to 14 error events in the past.

Setup

Auto tuning

· Gain adjustment and inertia ratio measurement

Graphic waveform display

• The graphic display shows command velocity, actual velocity, torque, and error waveforms.

Absolute encoder setup

- Clears absolute encoder at the origin.
- Displays single revolution/multi-revolution data.
- Displays absolute encoder status.

Analysis of Mechanical Operation Data

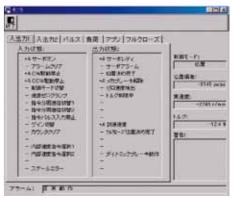
Frequency analysis

• Measures frequency characteristics of the machine, and displays Bode diagram.

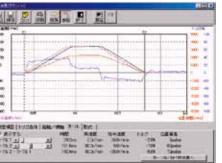
■ Can not use with A5 family.

| 10日 | 10

Parameter



Monitor



Graphic waveform display

Hardware configuration

[Personal computer] • CPU : Pentium 100MHz or more • Memory : 16 MB or more (32 MB recommended)

- Hard disk capacity (vacancy of 25 MB or more recommended) OS: Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version)
- · Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

[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

0

0

Encoder Cable

Ε

Cable

Part No. DV0P37300

Cable Set (3 m)

- 1) Interface cable : DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m): MFMCA0030AEB
- Connector kit for driver power supply connection : DV0P2870

Cable Set (5 m)

Part No. DV0P39200

- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m): MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

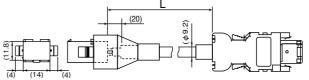
Encoder Cable

Part No. MFECA0 * * 0EAM

[Unit: mm]

[Unit: mm]

[Unit: mm]

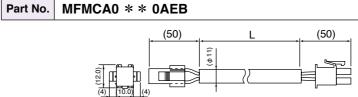


Title	Part No.	Manufacturer		
Connector (Driver side)	3E206-0100KV	Sumitomo 3M	Г	
Shell kit	3E306-3200-008	or equivalent		
Connector	172160-1	Tugo Flootronico		
Connector Pin	170365-1	Tyco Electronics		
Cable	0.20 mm ² × 3P	Oki Electric Cable Co., Ltd.		

	L (m)	Part No.
	3	MFECA0030EAM
	5	MFECA0050EAM
	10	MFECA0100EAM
	20	MFECA0200EAM
± ~l		

Motor Cable (ROBO-TOP_® 105 °C 600 V . DP)

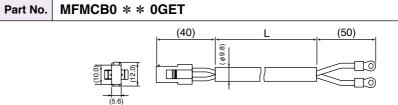
 $\mathsf{ROBO}\text{-}\mathsf{TOP}_{\otimes}$ is a trade mark of DYDEN CORPORATION



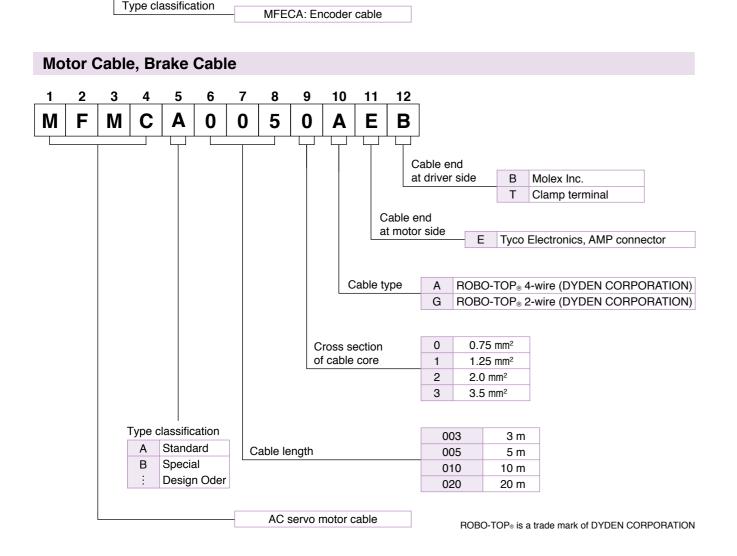
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172159-1	Tugo Floatronico	3	MFMCA0030AEB
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCA0050AEB
Connector	5557-06R-210	Molex Inc	10	MFMCA0100AEB
Connector Pin	5556T	WOIEX IIIC	20	MFMCA0200AEB
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden CoLtd.		

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

ROBO-TOP_® is a trade mark of DYDEN CORPORATION



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Fleetrenies	3	MFMCB0030GET
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	Cable ROBO-TOP 600 V 0.75 mm ²		20	MFMCB0200GET



Cable part No. Designation

Ε

Α

Cable end

(Encoder side)

0050

0100

0200

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

0

Cable type

Cable length

Connector Kit for External Peripheral Equipment Part No. DV0P0770

Pin configuration of encoder cable junction

TX/RX

FG

Pin configuration of motor power cable junction

Pin configuration of mating connector to CN X3 connector

checking the stamped pin numbers on the connector itself.

2. Refer to P.224 for wiring and connection.

TX/RX

0V

 $\pm 5V$

Parts composition

<Cautions>

Title		Part No.	Number	Manufacturer	Note
Connec	or	10126-3000PE	1	Sumitomo 3M	For connector, CN X5
Connector	cover	10326-52A0-008	1	or equivalent	(26 pins)

1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by

Pin configuration of connector CN X5 (26 pins) (viewed from the soldering side)

14 GND	16 OA		18 OB-	-	20 OZ-	-	22 PUI	.S1	24 SIG	iN1	26 FG
15 OA		17 OB-		19 OZ-	+	21 CZ		23 PUI	S2	25 SIG	N2
1 COM+	3 A-C	LR		ROSPD	7 CW		9 ALN	И	11 BRI OF	K-	13 COI
2 SF	IV-	4 CL N	TSPD2	6 DIV		8 CC	WL	10 CO		12 WA	RN

<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.

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	Wiolex IIIC.	(10 pins)

Pin configuration of connector CN X1

2	٢٦										
- 1	10	9	8	7	6	1 1					
1	L1	(NC)	L2	(NC)	L3	1 1					
1	5	4	3	2	1	1 1					
i.	P	(NC)	R	(NC)	l F I	100					



Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material
57026-5000	UL1007
57027-5000	UL1015

<Cautions>

- 1. The above pin disposition is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.
- 3. Do not connect anything to pins marked "NC".

Connector Kit for Motor/Encoder Connection

Part No. DV0P3670 (Incremental 2500 pulse, 5-wire)

This option is required when you make your own encoder cable and motor cable. (Brake cable is required for brake.)

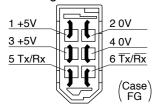
Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For connector, CN X4
Shell kit	3E306-3200-008	1	or equivalent	(6 pins)
Connector (6 pins)	172160-1	1	Tyco Electronics	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tyco Electronics	For junction to motor power cable
Connector pin	170366-1	4	Tyco Electronics	(4 pins)
Connector (6 pins)	5557-06R-210	1	Molex Inc.	For connector, CN X3
Connector pin	5556PBTL	4	WICHEX IIIC.	(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

·	•	•		
Title	Part No.	Manufacturer	Cable material	
For encoder cable junction	755330-1	Type Floatronics	_	
For motor power cable junction	755331-1	Tyco Electronics		
For Commenter ON VO	57026-5000	Moley Inc	UL1007	
For Connector CN X3	57027-5000	Molex Inc.	UI 1015	

<Remarks>

- 1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

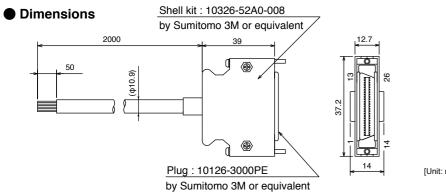
DIN Rail Mounting Unit/ External Regenerative Resistor

Interface Cable

Part No. DV0P0800 Cable of 2 m is connected.

Communication Cable/ Console

Interface Cable/



Wiring table

•	9							
Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable
1	COM+	Orange (Red 1)	10	COIN	Pink (Black 1)	19	OZ+	Pink (Red 2)
2	SRV-ON	Orange (Black 1)	11	BRK-OFF	Orange (Red 2)	20	OZ-	Pink (Black 2)
3	A-CLR	Gray (Red 1)	12	WARN	Orange (Black 2)	21	CZ	Orange (Red 3)
4	CL/INTSPD2	Gray (Black 1)	13	COM-	Gray (Red 2)	22	PULS1	Gray (Red 3)
5	GAIN/ZEROSPD	White (Red 1)	14	GND	Gray (Black 2)	23	PULS2	Gray (Black 3)
6	DIV/INTSPD1	White (Black 1)	15	OA+	White (Red 2)	24	SIGN1	White (Red 3)
7	CWL	Yellow (Red 1)	16	OA-	White (Black 2)	25	SIGN2	White (Black 3)
8	CCWL	Yellow (Black 1)	17	OB+	Yellow (Red 2)	26	FG	Orange (Black 3)
9	ALM	Pink (Red 1)	18	OB-	Yellow (Black 2)			

<Notes>

e. g. of Pin No. designation: Pin No. 1 Wire color is orange, and one red dot.

Pin No. 12 ... Wire color is orange, and two black dot.

<Remarks>

The shield of this cable is not connected to a connector pin. To connect the shield to FG or GND at the driver side, use a connector kit for external device connection.

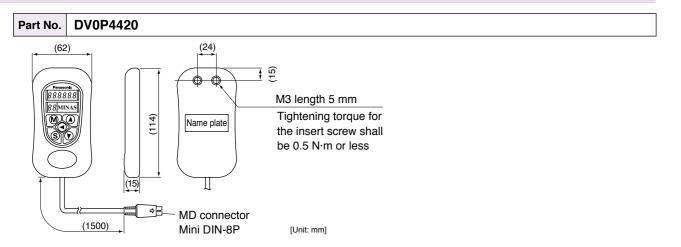
Communication Cable (For Connection with PC)

Part No. DV0P1960

MD connector

Console

D-sub connector 9P

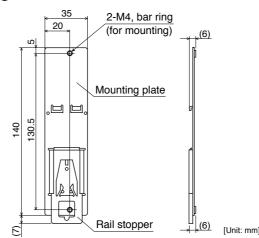


[Unit: mm]

DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

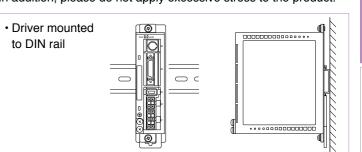


<Notes>

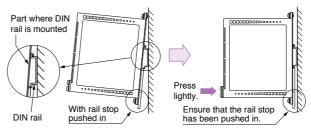
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.

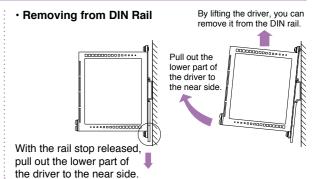


· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

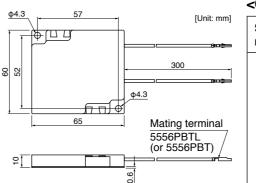


External Regenerative Resistor

			Specifi	cations		
Part No.	Manufacturer's Part No.	Resistance Rated power		Activation temperature of built-in fuse	Note (Input Power of drive)	
		Ω	W	°C		
DV0P2890	45M03	50	10	137 ⁺³ ₋₂	Single phase, 100 V	
DV0P2891	45M03	100	10	137 ⁺³ ₋₂	Single/3-phase, 200 V	

Manufactured by Iwaki Musen Kenkyuusho Co., Ltd.

Dimensions



<Caution of when using external regeneration resistor>

Since it becomes high temperature, external regeneration resistor must be installed according to the contents shown below.

- · Attach to incombustibles, such as metal.
- Install in the place which cannot touch directly by covering with incombustibles etc.
- · Do not install near the combustibles.

Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in amplifier failure.

The thermal cutoff is for preventing ignition of the regeneration resistor in amplifier failure, and is not for controlling the skin temperature of resistor.

<Remarks>

Thermal fuse is installed for safety.

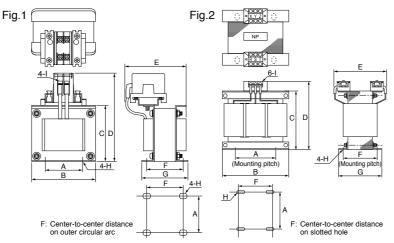
The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation. Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Please carry out air cooling if needed.

List of Peripheral Components

E Series

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.	
	Single phase, 100 V	50 W to 100 W	DV0P227	1	
MKDE	Single phase, 200 V	50 W to 100 W	DV0P220	2	
	3-phase, 200 V	50 W to 200 W	DV0F220		
	Single phase, 100 V	200 W	DV0P228	1	
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2	
	3-phase, 200 V	400 W			



Surge Absorber for Motor Brake

[Unit: mm]

	Part No.	А	В	С	D	E(Max)	F	G	Н	ı	Inductance (mH)	Rated current (A)
Fig. 1	DV0P227	55±0.7	80±1	66.5±1	110 Max	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.1	DV0P228	55±0.7	80±1	66.5±1	110 Max	95	46±2	60±2	4-5φ×10	M4	2	8
Fig.2	DV0P220	65±1	125±1	(93)	136 Max	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3

Harmonic restraint on general-purpose inverter and servo driver

Reactor/

On September, 1994, Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system and Guidelines for harmonic restraint on household electrical appliances and general-purpose articles established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004.

We inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver will be modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the Guide-lines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

<Remarks:

When using a reactor, be sure to install one reactor to one servo driver.

■ Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber	for motor brake
Motor	Part No. (Manufacturer's)	Manufacturer
MUMA 50 W to 400 W	Z15D151	SEMITEC Corporation

List of Peripheral Components

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for motor brake
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Noise filter for signal lines
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	Connector
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable

^{*} The above list is for reference only. We may change the manufacturer without notice.

MEMO

Information

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EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products.

However, our AC servos meet the relevant EC Directives for Low Voltage Equipment so that the machine or equipment comprising our AC servos can meet EC Directives.

EMC Directives

MINAS Servo System conforms to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

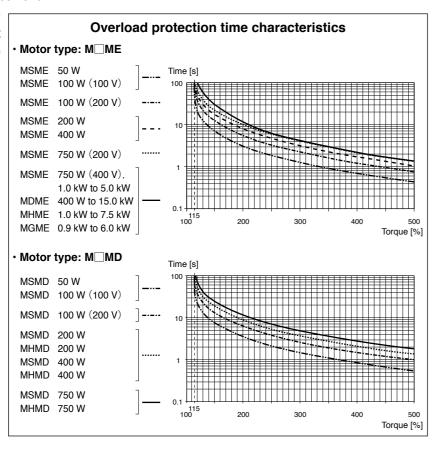
Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Make sure to install a circuit breaker or fuse which are UL recognized (Listed (1) marked) between the power supply and the noise filter.
 - For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Equipments"
 - Use a copper cable with temperature rating of 75 °C or higher.
- (3) Over-load protection level

Over-load protective function will be activated when the effective current exceeds 115 % or more than the rated current based on the time characteristics (see the graph). Confirm that the effective current of the driver does not exceed the rated current.

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
EC		EN61800-5-1	EN60034-1 EN60034-5
Directives	Machinery Directives Functional safety *1	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards		UL508C (E164620)	UL1004-1, UL1004-6 (E327868)
CSA Standards		C22.2 No.14	C22.2 No.100
Radio Waves Act (South Korea) (KC) *2		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	_

IEC : International Electrotechnical Commission

EN : Europaischen NormenEMC : Electromagnetic CompatibilityUL : Underwriters LaboratoriesCSA : Canadian Standards Association

Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Europe, a division of

Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

- When export this product, follow statutory provisions of the destination country.
- *1 A5IIE and A5E series doesn't correspond to the functional safety standard.
- *2 Information related to the Korea Radio Law

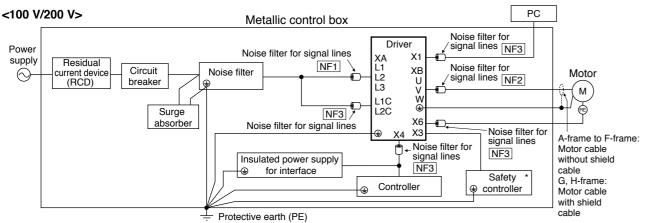
This servo driver is a Class A commercial broadcasting radio wave generator not designed for home use. The user and dealer should be aware of this fact.

A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

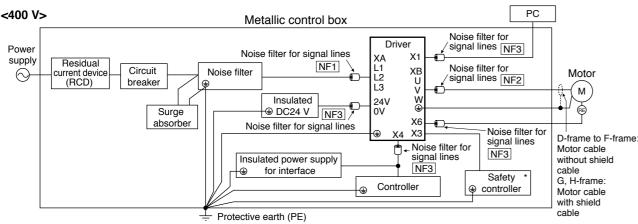
Installation Environment

Use the servo driver in the environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254).

^{*} A5IIE, A5E is not provided with X3 terminal.



For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254).

<Caution>

Use options correctly after reading Operating Instructions of the options to better understand the precautions. Take care not to apply excessive stress to each optional part.

Power Supply

100 V type (A-frame to C-frame)	Single phase, 100 V $^{+10}_{-15}\%$ to 120 V $^{+10}_{-15}\%$	50 Hz/60 Hz
200 V type (A-frame to D-frame)	Single/3-phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V type (E-frame to H-frame)	3-phase, 200 V ⁺¹⁰ % to 230 V ⁺¹⁰ % ⁻¹⁵ %	50 Hz/60 Hz
400 V type [Main power supply] (D-frame to H-frame)	3-phase, 380 V ^{+10 %} _{-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.

Circuit Breaker

Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

The short-circuit protection circuit on the product is not for protection of branch circuit.

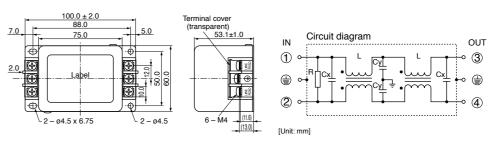
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

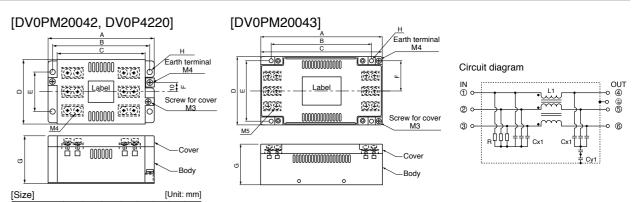
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170	Single phase 100 V, 200 V	SUP-EK5-ER-6	A-frame and B-frame	Okaya Electric Ind.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
	3-phase 200 V		A-frame and B-frame	
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame	



A B C D E F G H

DV0PM20042 115 105 95 70 43 10 52 5.5

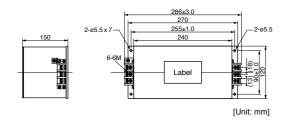
DV0P4220 145 135 125 70 50 10 52 5.5

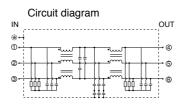
DV0PM20043 165 136 165 90 80 40 54 5.5

Eaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

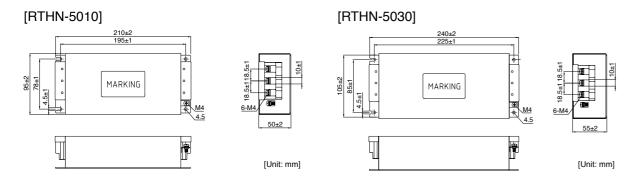
Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P3410	3-phase 200 V	3SUP-HL50-ER-6B	F-frame	Okaya Electric Ind.

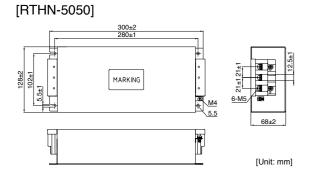




Recommended components

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	

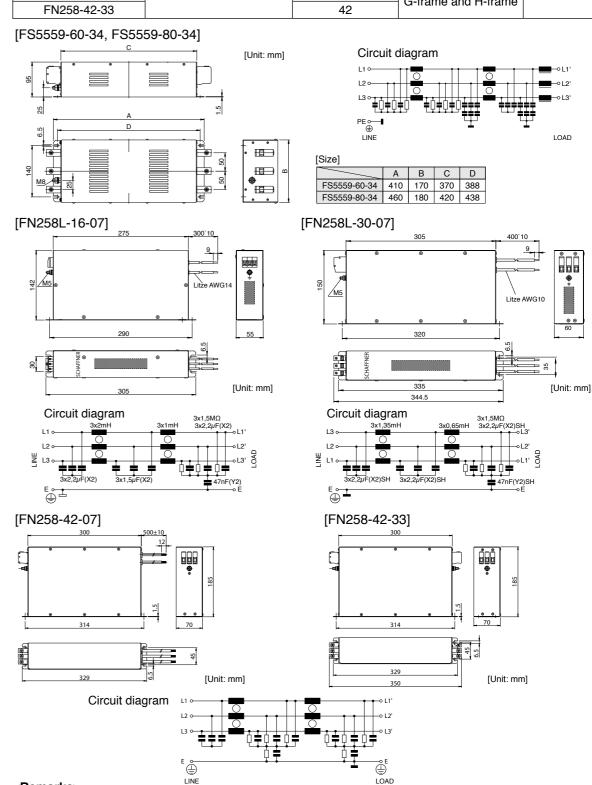




<Remarks>

- 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	Schaffner EMC, Inc.
FN258L-30-07	2 phase 400 V	30	F-frame	Schainlei EMO, inc.
FN258-42-07	3-phase 400 V	42	G-frame and H-frame	
FN258-42-33		42	G-ITAITIE AND H-ITAITIE	

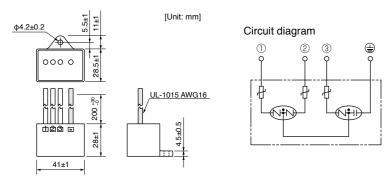


- <Remarks>
- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

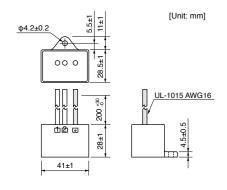
Surge Absorber

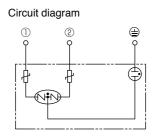
Provide a surge absorber for the primary side of noise filter.

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P1450	3-phase 200 V	R·A·V-781BXZ-4	Okaya Electric Ind.
DV0PM20050	3-phase 400 V	R·A·V-801BXZ-4	Okaya Electric iliu.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.





Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Symbol*1	Cable Name	100 V/200 V Amp. frame symbol	400 V Amp. frame symbol	Option part No.	Manufacturer's part No.	Manufacturer	Qty.
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1
		A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF2	Motor cable	G, H	G, H	Recommended components	T400-61D	MICROMETALS	1
NF3	24 V Power cableEncoder cableInterface cableUSB cableControl power cable	Comm (to all fra	-	DV0P1460	ZCAT3035-1330	TDK Corp.	4

^{*1} For symbols, refer to the Block Diagram "Installation Environment" (P.249).

<Remarks>

To connect the noise filter to the connector XB connection cable, adjust the sheath length at the tip of the cable, as required.

<Caution>

Fix the signal line noise filter in order to prevent excessive stress to the cables.

<Fig.2: Dimensions>

•										
Part No.	Current	100 kHz				Siz	e [Unit: ı	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)

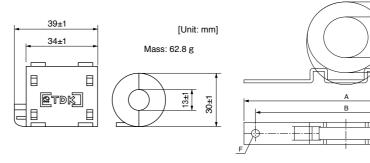
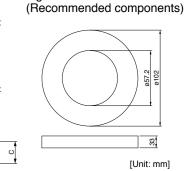


Fig.2: RJ8035, RJ8095 Fig.3: T400-61D (Recommended components) (Recommended components)



Residual Current Device

Install a type B Residual current device (RCD) at primary side of the power supply.

Type B: Residual current device which detects a direct-current ingredient.

Grounding

- (1) Connect the protective earth terminal () of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals ((1)). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral equipments, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products. MINAS AC Servos conforms to the EC Directives for Low Voltage Equipment so that the machine incorporating our servos has an easy access to the conformity to relevant EC Directives for the machine.

EMC Directives

MINAS Servo System conform to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

Conformed Standards

Subject		Conformed Standard	
	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to
Motor	EN50178	UL508C CSA22.2 No.14	Low- Voltage Directives
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	
	EN61000-6-2	Immunity for Industrial Environments	1
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to
Motor and	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references
driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	Lightening Surge Immunity Test	1
	IEC61000-4-6	High Frequency Conduction Immunity Test	7
	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)

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a division of Panasonic Marketing Europe GmbH Winsbergring 15,22525 Hamburg, F.R. Germany

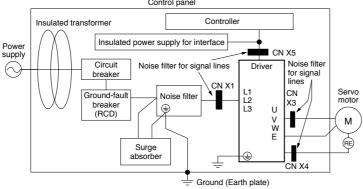
Composition of Peripheral Components

<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.

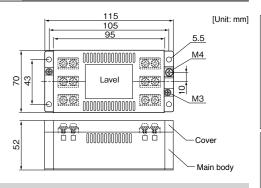
Noise Filter

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	_04.2±		[Unit: mm]	Circuit diagr	<u>∞4.2±</u>		[Unit: mm
ū	3 😩	2841 200-50	MC-1015 AWG16 AWG16		⊕ 	28.5±1 200.0°	UL-1015 AWG16 2045;4
		41±1	I			41±1	I

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged

Noise Filter for Signal Lines

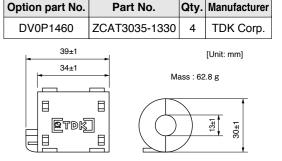
Install noise filters for signal lines to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- Please fix a line noise filter to avoid excessive stress to the cable.
- · When using multiple axes, noise generated from each driver might influence driver and peripheral equipment and result to

Please insert line noise filters between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)



Grounding

- (1) Connect the protective earth terminal of the driver ((1) and protective earth terminal of the control panel (PE) without fail to prevent electrical shocks.
- (2) Do not co-clamp to the ground terminals ((\perp)). Two ground terminals are provided.

Ground-Fault Breaker

Install a ground fault curcuit braker (RCD) to the primary side of the power supply.

Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Install a circuit breaker or fuse which are UL recognized (LISTED (1) marked) between the power supply and the noise filter without fail.

AC Servo Motor Capacity Selection Software

We have prepared PC software "M-SELECT" for AC servo motor capacity selection. Consult our sales representative or authorized distributor.

Three-step selection

Select components and specified values
 Select appropriate mechanical parameter items
 and fill them with parameter values derived from

the real machine.
To simulate the target machine as practical as possible, use maximum number of parameters available.



2. Enter operation pattern

Input the planned operation pattern that will contain [speed and rotation standard] or [absolute position

standard] with optional settings such as S-acceleration/de celeration.



3. Select the motor

AC Servo Motor Capacity Selection Software

Option Selection Software for AC Servo Motor

When the data required in step 1 and 2 above have been input, the software lists the motors,

which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.



Details of motor

Once the motor is selected, specifications of the motor and amplifier, and details of reason for

determination are displayed and may be printed out.



Option Selection Software for AC Servo Motor

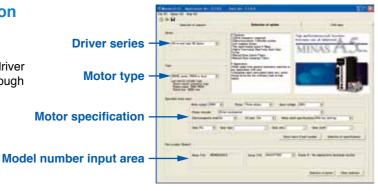
We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software.

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Two procedures for option selection

1. Selection according to driver series and motor type

Suitable option can be selected by selecting driver series, motor type and motor specification through pulldown menu.



2. Entry of model number

If you know the model number based on the servo motor and driver currently used, enter the model number.

Result of selection

Tab sheet specific to each of option model numbers is used for easier identification of the desired option.

* When you are using the motor capacity selection software, simply press [Option Selection] tab and the screen as shown right will appear.



Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

Table 1: Basic unit Table 2: Auxiliary unit Derived unit Table 4: Unit combined with SI unit proper name Table 5: Prefix (Multiples of 10) Table 4: Derived unit Derived un

Table1: Basic unit

Quantity	Name of unit	Symbol of unit
Length	meter	m
Weight	kilogram	kg
Time	second	s
Current	ampere	Α
Thermodynamic temperature	kelvin	K
Amount of substance	mol	mol
Luminous intensity	candela	cd

Table 2: Auxiliary unit

Quantity	Name of unit	Symbol of unit
Plane angle	radian	rad
Solid angle	steradian	sr

Table 3: Major derived unit with proper name

Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg·m/s ²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	watt	W	1 W = 1 J/s
Electric charge, Amount of electricity	coulomb	С	1 C = 1 A·s
Electric potential, Potential difference, Voltage, Electromotive force	volt	V	1 V = 1 J/C
Electrostatic capacity, Capacitance	farad	F	1 F = 1 C/V
Electric resistance	ohm	Ω	1 Ω = 1 V/A
Electric conductance	siemens	S	1 S = 1 Ω ⁻¹
Magnetic flux	weber	Wb	1 Wb = 1 V·s
Magnetic flux density, Magnetic induction	tesla	Т	1 T = 1 Wb/m ²
Inductance	henry	Н	1 H = 1 Wb/A
Degree centigrade (Celsius)	degree centigrade (Celsius) / degree	°C	t °C = (t+273.15) K
Luminous flux	lumen	lm	1 lm = 1 cd·sr
Illuminance	lux	lx	1 lx = 1 lm/m ²

Table 4: Unit combined with SI unit

Quantity	Name	Symbol of unit
	minute	min
Time	hour	h
	day	d
	degree	۰
Plane angle	minute	,
	second	"
Volume	liter	I, L
Weight	ton	t

Table 5: Prefix

Multiples powered	Pr	efix
to unit	Name	Symbol
10 ¹⁸	exa	E
10 ¹⁵	peta	Р
10 ¹²	tera	Т
10 ⁹	giga	G
10 ⁶	mega	M
10 ³	kilo	k
10 ²	hecto	h
10	deca	da
10 ⁻¹	deci	d
10 ⁻²	centi	С
10 ⁻³	milli	m
10-6	micro	μ
10 ⁻⁹	nano	n
10 ⁻¹²	pico	р
10 ⁻¹⁵	femto	f
10 ⁻¹⁸	atto	a

Quantity	Symbol of conventional unit	Symbol of SI unit and compatible unit	Conversion value
Length	μ (micron)	μ m	1 μ = 1 μm (micrometer)
Acceleration	Gal	m/s ²	1 Gal = 10 ⁻² m/s ²
	G	m/s ²	1 G = 9.80665 m/s ²
Frequency	c/s, c	Hz	1 c/s = Hz
Revolving speed, Number of revolutions	rpm	s ⁻¹ or min ⁻¹ , r/min	1 rpm = 1 min ⁻¹
Weight	kgf	_	Same value
Mass	_	kg	Same value
Weight flow rate	kgf/s	_	Same value
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m ³	_	Same value
Density	_	kg/m³	Same value
Specific volume	m³/kgf	m³/kg	Same value
Load	kgf	N	1 kgf = 9.80665 N
Force	kgf	N	1 kgf = 9.80665 N
	dyn	N	1 dyn = 10 ⁻⁵ N
Moment of force	kgf·m	N∙m	1 kgf⋅m = 9.806 N⋅m
Pressure	kgf/cm ²	Pa, bar ⁽¹⁾ or kgf/cm ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
	_		= 0.980665 bar
	at (Engineering atmospheric pressure)	Pa	1 at = 9.80665 x 10 ⁴ Pa
	atm (Atmospheric pressure)	Pa	1 atm = 1.01325 x 10 ⁵ Pa
	mH ₂ O, mAq	Pa Pa	1 mH ₂ O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg ⁽²⁾	1 mmHg = 133.322 Pa
	Torr	Pa	
Stress	kgf/mm ²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
0000			=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
	1.9.76111	1 4 51 14111	= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m ²
Elastic Medalac		1 4 51 14111	1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf⋅m	J (joule)	1 kgf·m = 9.80665 J
Energy, Work	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf·m/s	W (watt)	1 kgf·m/s = 9.80665 W
Work emclency, I ower	PS	W (Watt)	1 PS = 0.7355 kW
Viscosity	PP	Pa·s	1 P = 0.1 Pa·s
· ·			10 ⁻² St = 1 mm ² /s
Kinetic viscosity	St	mm²/s K (kelvin)	1 K = 1 K
Thermodynamic temperature	K	K (Kelvin)	
Temperature interval	deg		1 deg = 1 K
Amount of heat	cal	J	1 cal = 4.18605 J
Heat capacity	cal/°C	J/K ⁽³⁾	1 cal/°C = 4.18605 J/K
Specific heat, Specific heat capacity	cal/ (kgf·°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kgf·°C) = 4.18605 J/ (kg·K)
Entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K)
Internal energy (Enthalpy)	cal	J	1 cal = 4.18605 J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	W	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m ²	1 kcal/ (h·m²) = 1.16279 W/m²
Thermal conductivity	cal/ (h·m·°C)	W/ (m·K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m²·°C) = 1.16279 W/ (m²·K)
Intensity of magnetic field	Oe	A/m	1 Oe = 10 ³ / (4π) A/m
Magnetic flux	Mx	Wb (weber)	1 Mx = 10 ⁻⁸ Wb
Magnetic flux density	Gs,G	T (tesla)	1 Gs = 10 ⁻⁴ T

Major Compatible Unit

Note

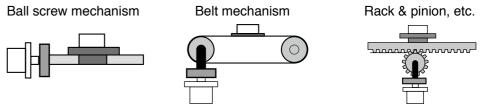
- (1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.
- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

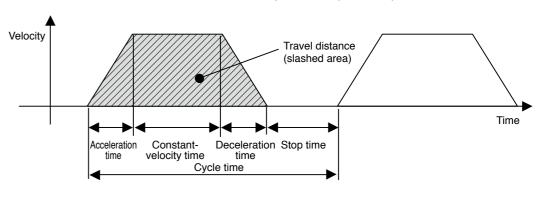
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<Typical mechanism>



2. Definition of operating pattern.

Acceleration/deceleration time, Constant-velocity time, Stop time, Cycle time, Travel distance



Note) Selection of motor capacity significantly varies depending on the operating pattern.

The motor capacity can be reduced if the acceleration/deceleration time and stop time are set as long as possible.

3. Calculation of load inertia and inertia ratio.

Calculate load inertia for each mechanical component. (Refer to "General inertia calculation method" described later.)

Divide the calculated load inertia by the inertia of the selected motor to check the inertia ratio. For calculation of the inertia ratio, note that the catalog value of the motor inertia is expressed as " \times 10⁻⁴ kg·m²".

4. Calculation of motor velocity

Calculate the motor velocity from the moving distance, acceleration / deceleration time and constant-velocity time.

5. Calculation of torque

Calculate the required motor torque from the load inertia, acceleration/deceleration time and constant-velocity time.

6. Calculation of motor

Select a motor that meets the above 3 to 5 requirements.

Description on the Items Related to Motor Selection

1. Torque

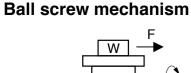
(1) Peak torque

Indicate the maximum torque that the motor requires during operation (mainly in acceleration and deceleration steps). The reference value is 80% or less of the maximum motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

(2) Traveling torque, Stop holding torque

Indicates the torque that the motor requires for a long time. The reference value is 80% or less of the rated motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

Traveling torque calculation formula for each mechanism



Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{P}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W} + \mathsf{F})$

W: Weight [kg] P:Lead [m]

η: Mechanical efficiency

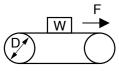
F: External force [N]

μ: Coefficient of friction g: Acceleration of gravity 9.8[m/s²]

Belt mechanism

Traveling torque

$$\mathsf{Tf} = \frac{\mathsf{D}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W}\!+\!\mathsf{F})$$



W: Weight [kg]

η: Mechanical efficiency P : Pulley diameter [m] μ: Coefficient of friction

F: External force [N]

g: Acceleration of gravity 9.8[m/s²]

(3) Effective torque

Indicates a root-mean-square value of the total torque required for running and stopping the motor per unit time. The reference value is approx. 80% or less of the rated motor torque.

$$Trms = \sqrt{\frac{Ta^2 x ta + Tf^2 x tb + Td^2 x td}{tc}}$$

Ta: Acceleration torque [N·m]

ta: Acceleration time [s]

tc: Cycle time [s]

Tf: Traveling torque [N·m]

tb: Constant-velocity time [s]

(Run time + Stop time)

Td: Deceleration torque [N·m]

td: Deceleration time [s]

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition.

Inertia ratio is calculated by dividing load inertia by rotor inertia.

Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less.

If you need quicker response, a lower inertia ratio is required.

/ For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further \increased.

General inertia calculation method

General inertia calculation method				
Shape	J calculation formula	Shape	J calculation formula	
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$	Hollow cylinder	$J = \frac{1}{8} W(D^2 + d^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $d : Inner diameter [m]$	
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$ $W : Weight [kg]$ $a, b, c : Side length [m]$	Uniform rod	$J = \frac{1}{48} W(3D^2 + 4L^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $L : Length [m]$	
Straight rod	$J = \frac{1}{3} WL^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $L : Length [m]$	Separated rod	$J = \frac{1}{8} WD^{2} + WS^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $S : Distance [m]$	
Reduction gear	Inertia on shaft "a" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[\mathrm{kg} \cdot \mathrm{m}^2]$ $n_1 : \text{A rotational speed of a shaft } [\mathrm{r/min}]$ $n_2 : \text{A rotational speed of b shaft } [\mathrm{r/min}]$			
Conveyor	$J = \frac{1}{4} W D^{2} [kg \cdot m^{2}]$ $W : \text{Workpiece weight on conveyor } [kg]$ $D : \text{Drum diameter } [m]$ * Excluding drum J	Ball screw	$J = J_B + \frac{W \cdot P^2}{4\pi^2} \text{ [kg·m²]}$ $W : \text{Weight [kg]}$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$	

If weight (W [kg]) is unknown, calculate it with the following formula:

Weight W[kg]=Density ρ [kg/m³] x Volume V[m³]

Density of each material

Iron $\rho = 7.9 \times 10^3 \, [kg/m^3]$

Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass $\rho = 8.5 \times 10^3 \, [kg/m^3]$

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

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 **Example of Motor Selection**

To Drive Ball Screw Mechanism

1. Example of motor selection for driving ball screw mechanism

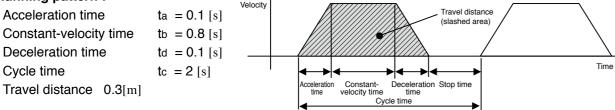
Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$



Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :



3. Ball screw weight
$$BW = \rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$$

= 1.24 [kg]

$JL = JC + JB = JC + \frac{1}{8}BW \times BD^2 + \frac{WA \cdot BP^2}{4\pi^2}$ 4. Load inertia $= 0.00001 + (1.24 \times 0.02^{2}) / 8 + 10 \times 0.02^{2} / 4\pi^{2}$ $= 1.73 \times 10^{-4} [\text{kg} \cdot \text{m}^2]$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-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

$$\frac{1}{2} \times 0.1 \times \text{Vmax} + 0.8 \times \text{Vmax} + \frac{1}{2} \times 0.1 \times \text{Vmax} = 0.3$$

 $0.9 \times \text{Vmax} = 0.3$
 $0.9 \times \text{Vmax} = 0.3 / 0.9 = 0.334 \text{ [m/s]}$

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 $B\eta = 0.8$

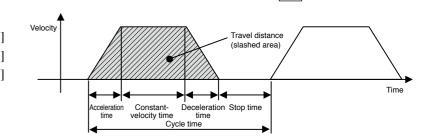
Coupling inertia Jc = 0 (Direct connection to motor shaft)

Belt mechanism inertia Pulley inertia

2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time td = 0.1[s]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")

6. Calculation of maximum velocity (Vmax)

$$\frac{1}{2}$$
 × Acceleration time×Vmax+Constant-velocity time×Vmax+ $\frac{1}{2}$ × Deceleration time×Vmax=Travel distance $\frac{1}{2}$ × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 1 0.9 × Vmax = 1 Vmax = 1 / 0.9 = 1.111[m/s]

7. Calculation of motor velocity (N [r/min])

A single rotation of pulley :
$$\pi \times PD = 0.157 [m]$$

N = 1.111 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{PD}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} \ (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061[N\cdot m]$$
Acceleration torque
$$T_a = \frac{(JL + JM)\,\times\,2\pi N[\,r/s\,]}{Acceleration\,time[\,s\,]} + Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812[N\cdot m]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi N[\,r/s\,]}{Deceleration\,time[\,s\,]} - Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

$$= 0.751 - 0.061 = 0.69[N\cdot m]$$

9. Verification of maximum torque

Acceleration torque $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor)

10. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$
= 0.241 [N·m] < 2.4 [N·m] (Rated torque of MSME 750 W motor)

11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

Request Sheet for Motor Selection

Request for motor selection I: Ball screw drive

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 mm 2) Cycle time to: Running pattern (Fill in items 3) and 4) if required.) 3) Acceleration time 4) Deceleration time time td: 5) Stopping time ts: V: 6) Max. velocity mm/s 7) External force F: Ν Positioning accuracy of the mm work load 9) Total weight of the work load and the table WA: kg 10) Power supply voltage ٧ 11) Diameter of the ball screw

mm

mm

mm

14) Traveling direction (horizontal, vertical etc.)

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Г	
	Company name :
	Department/Section :
	Name :
	Address:
	Tel:
	Fax:
	E-mail address:

mm

Request Sheet for Motor Selection

Request for motor selection II: Timing pulley + Ball screw drive

1. Driven mechanism and running data

1)	Travel distance of the work
	load per one cycle

I ravel distance of the work
oad per one cycle

ℓ ₁ :	mm	1

15) Diameter of the pulley

(or item 17) and 18))

16) Weight of the pulley

Motor side		Ball screw side	
D ₁ :	mm	D ₂ :	mm
W1:	kg	W2:	kg

(Fill in items 3) and 4) if required.)

17) Width of the pulley

mm

kg

4) Deceleration time

3) Acceleration time

2) Cycle time

ts:

td:

18) Material of the pulley 19) Weight of the belt

6) Max. velocity

5) Stopping time

V:	mm/s
F:	N

7) External force Positioning accuracy of the 8) Work load

	F:	N
	±	mm
ч		

9) Total weight of the work load and the table

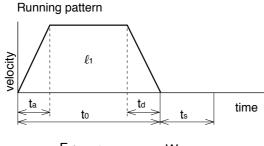
0)	Power supply voltage	

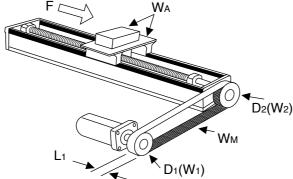
11) Diameter of the ball screw

12) Tot	al length of the ball screw	mm

13) Lead of the ball screw

4)	Traveling direction	
	(horizontal, vertical etc.)	





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

kg

٧

mm

 mm

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection III: Belt drive

mm/s

Ν

mm

kg

٧

mm

kg

1. Driven mechanism and running data

1) Travel distance of the work load per one cycle 2) Cycle time to:

(Fill in items 3) and 4) if required.)

3) Acceleration time 4) Deceleration time td:

V:

D₁:

W₁:

5) Stopping time ts:

6) Max. velocity

F: 7) External force

8) Positioning accuracy of the work load

9) Total weight of the work load WA:

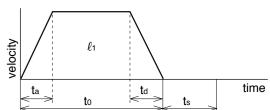
10) Power supply voltage W_M: kg

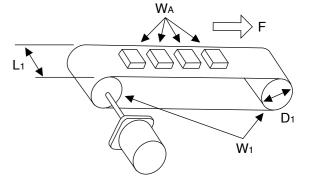
12) Diameter of the driving pulley

13) Total weight of the pulley

11) Weight of the belt

mm	Running pattern
----	-----------------





(or item 14) and 15))

14) Width of the pulley

15) I	Material of the pulley	

L₁:

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 Sheet for Motor Selection

Request for motor selection V: Turntable drive

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	d ₁ :	deg
	•		

Dimensions of the work load

Prism Cylinder mm a: a: mm b: mm b: mm mm c: mm

(Fill in items 3) and 4) if required.)

15) Number of work loads

deg/s

kg

l r	າດຣ

3) Acceleration time

2) Cycle time

4) Deceleration time td:

5) Stopping time

6) Max. rotational speed of the table

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: mm

10) Diameter of the table

D₁: mm

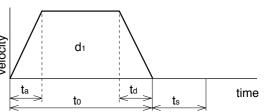
11) Mass of the table Diameter of the table

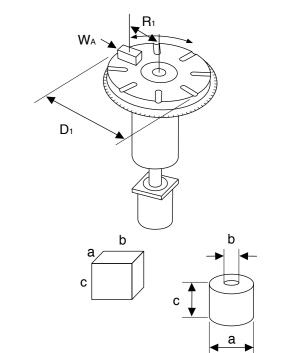
support

13) Power supply voltage

W ₁ :	kg
T ₁ :	mm

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 for motor selection \mathbb{N} : Timing pulley + Belt drive 1. Driven mechanism and running data Belt side Motor side 1) Travel distance of the work load per one cycle 16) Diameter of the pulley D3: mm D4: mm mm to: 17) Weight of the pulley W3: kg W4: kg 2) Cycle time (Fill in items 3) and 4) if required.) (or item 18) and 19)) 18) Width of the pulley 3) Acceleration time s mm 4) Deceleration time td: 19) Material of the pulley S 20) Weight of the belt WL: 5) Stopping time ts: kg Traveling direction 6) Max. velocity V: mm/s (horizontal, vertical etc.) F: Running pattern 7) External force Ν Positioning accuracy of the 8) Work load mm 9) Total weight of the work load WA: kg **t**a **t**d time 10) Power supply voltage ٧

Request Sheet for Motor Selection

11) Weight of motor side belt W_M: kg Belt side Motor side mm D₂: mm W₁: kg W₂: kg L1: mm

Weight of the

Width of the

Material of the

pulley

pulley

14)

15)

Diameter of the D₂(W₂) (or item 14) and 15)) D3(W3)

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:

time

Request Sheet for Motor Selection

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

odd per one cycle			
Cycle time	to:	s	

Cycle time	to:	S
(Fill in items 3) and 4) if requi	red.)	

3) Acceleration time	ta:	s
Deceleration time	td:	s



6) table	v:	deg/s
(or)	V:	r/s
7) Positioning accuracy of the	±	deg

work load	±	deg
9) Weight of one work load	144	lea-

9) Driving radius of the center of gravity of the work	: 1

10) Diameter of the table	D ₁ :	mm
11) Mass of the table	W ₁ :	kg

T₁:

12)	Diameter of the table
	support

15) Number of work loads

13) Power supply voltage	

,		.5-			
			(Prism)		(Cylinder)
14)	Dimension of the work load	a:	mm	a:	mm
				_	
		b:	mm	b:	mm
		c:	mm	c:	mm

16) Diameter of the pulle

16) Diameter of the pulley	D ₂ :	mm	D3:	mm
17) Weight of the pulley	W2:	kg	W3:	kg

Motor side

Turntable side

or	item	18)	and	19))
----	------	-----	-----	------

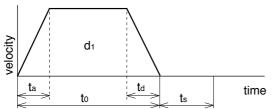
18)	Width of the pulley	
.0,	Triatif of the pulley	

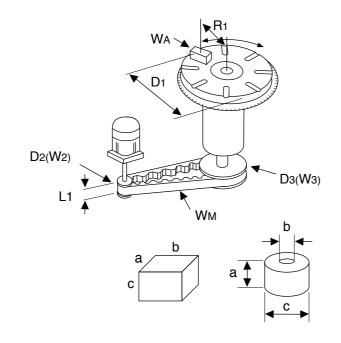
Ο,	Width of the pulley	L1.
9)	Material of the pulley	

20)	Weight	of the	belt
,	* * Oigiit	01 1110	DOIL

W _M :	kg







2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

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

10) Power supply voltage

11) Diameter of the roller

12) Mass of the roller

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	Running pattern
2)	Cycle time	to:	s	/:
	(Fill in items 3) and 4) if required.)			λi locity ℓ1
3)	Acceleration time	ta:	s	ta
4)	Deceleration time	td:	s	to
5)	Stopping time	ts:	s	
6)	Max. velocity	v:	mm/s	
7)	External pulling force	F:	N	Ö
8)	Positioning accuracy of the work load	±	mm	
9)	Number of rollers		pcs	

D₁:

W₁:

(or item 13) and 14))	

Width of the roller

13) Width of the folier	L1.	111111
14) Material of the roller		

2. Other data	(Fill the details on s	specific mechanism	and its configurations	in the following blank
---------------	------------------------	--------------------	------------------------	------------------------

٧

 mm

kg

mpany name :
partment/Section :
me:
dress:
:
x :
nail address:
1

mm

mm/s

Ν

mm

kg

٧

mm

kg

Request for motor selection **II**: Driving with Rack & Pinion 1. Driven mechanism and running data

ta:

td:

ts:

V:

F:

WA:

D₃:

W3:

1) Travel distance of the work load per one cycle

2) Cycle time to:

(Fill in items 3) and 4) if required.)

3) Acceleration time

4) Deceleration time

6) Max. velocity

8) work load

5) Stopping time

7) External force

Positioning accuracy of the

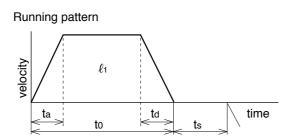
9) Total weight of the work load

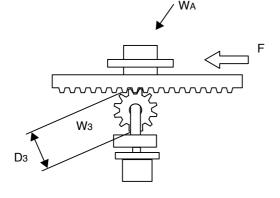
10) Power supply voltage

11) Diameter of the pinion12) Mass of the pinion

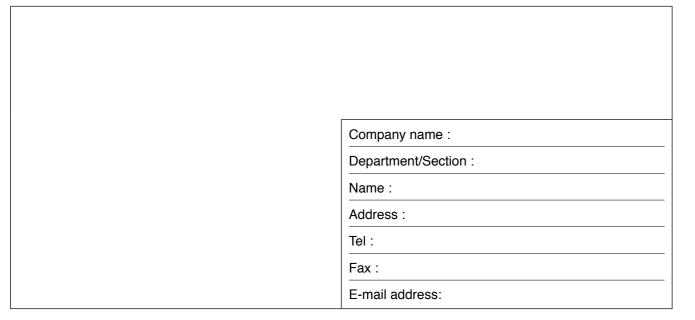
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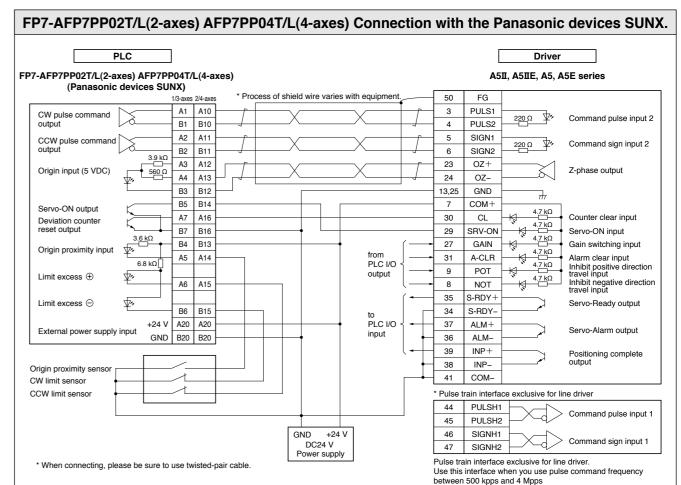
3) Traveling direction (horizontal, vertical, etc.)

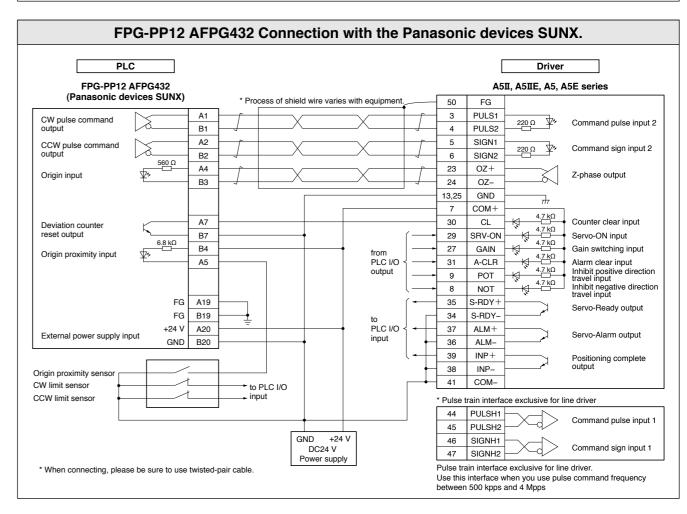


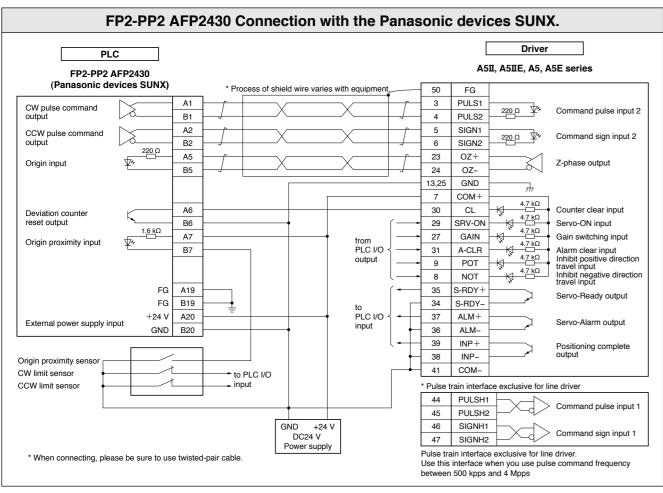


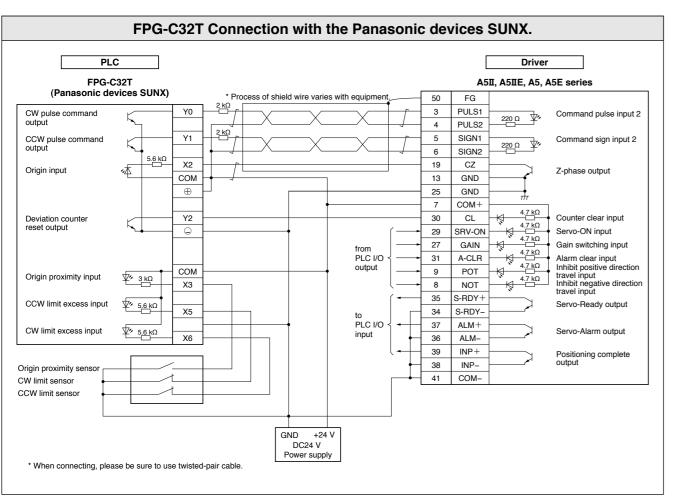
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

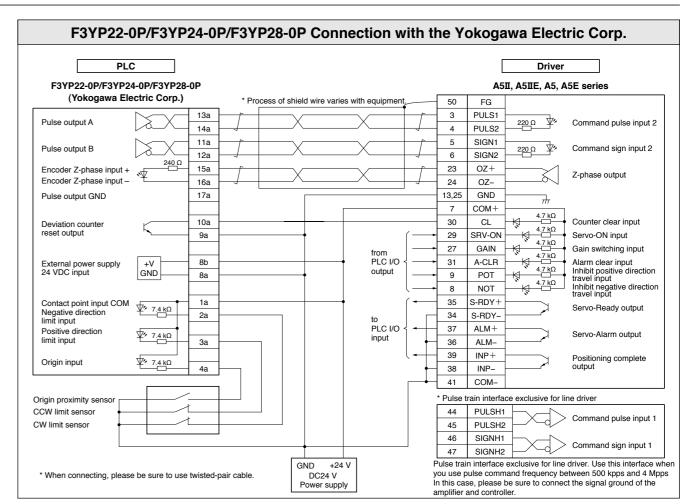


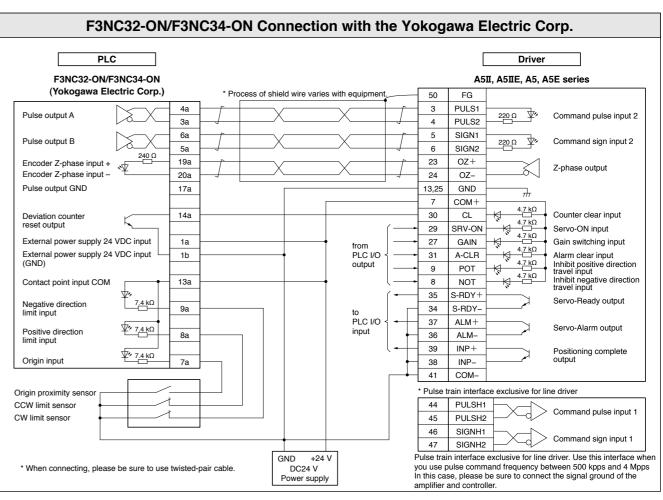


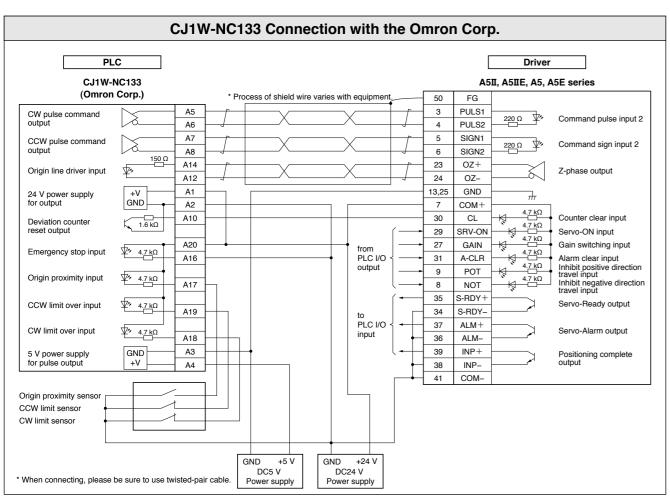


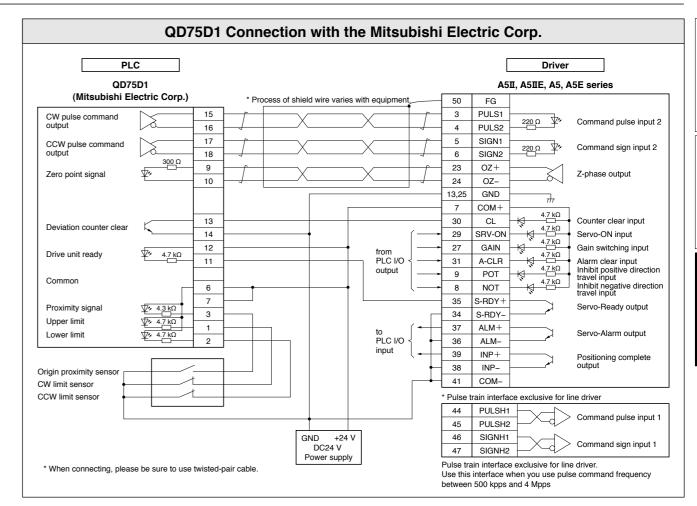


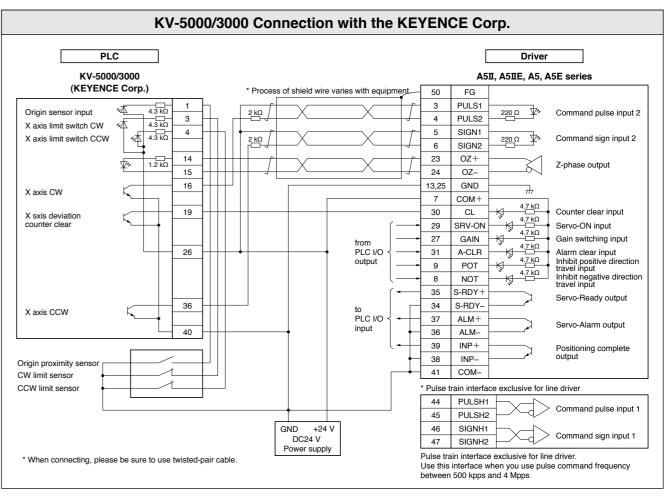






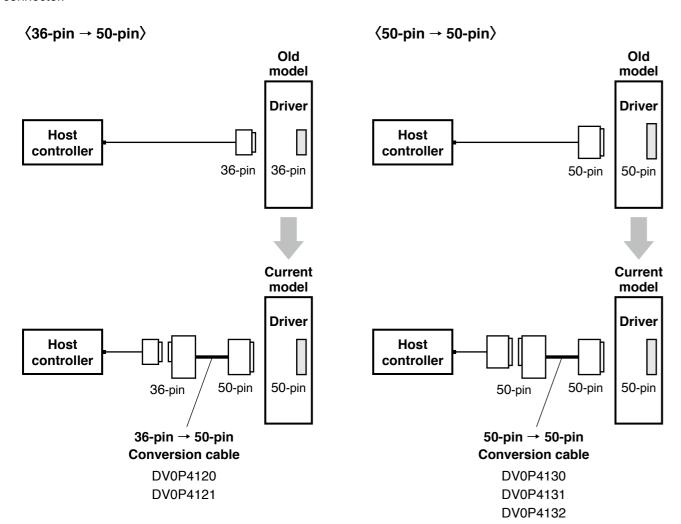






Driver and Controller

For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion connector.



When selecting the cable, refer to the table below because the part number of the cable is specific to the control mode of the old model.

Old model	Control mode	Conversion cable part No.	Conversion wiring table
X series XX series	Position/velocity control	DV0P4120	P.280
(36-pin)	Torque control	DV0P4121	F.200
	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	DV0P4121	
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
3	13	Signal ground	GND	13	Signal ground	GND	
4	19	Z-phase output	CZ	19	Z-phase output	CZ	
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2	
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1	
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2	
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1	
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH	
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL	
14	14	Speed command input	SPR	NC			
15	15	Signal ground	GND	15	Signal ground	GND	
16	43	Speed monitor output	SP	43	Speed monitor output	SP	
17	25	Signal ground	GND	25	Signal ground	GND	
18	50	Frame ground	FG	50	Frame ground	FG	
19	21	A-phase output	OA+	21	A-phase output	OA+	
20	22	A-phase output	OA-	22	A-phase output	OA-	
21	48	B-phase output	OB+	48	B-phase output	OB+	
22	49	B-phase output	OB-	49	B-phase output	OB-	
23	NC			NC			
24	NC			NC			
25	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	
28	36	Servo-Alarm output (-)	ALM-	36	Servo-Alarm output (-)	ALM-	
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (–)	S-RDY-	
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-	
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR	
35	17	Signal ground	GND	17	Signal ground	GND	
36	42	Torque monitor output	IM	42	Torque monitor output	IM	

^{* &}quot;NC" is no connect.

^{*} For external dimensions, refer to P.197.

A5 Family Connection Between Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

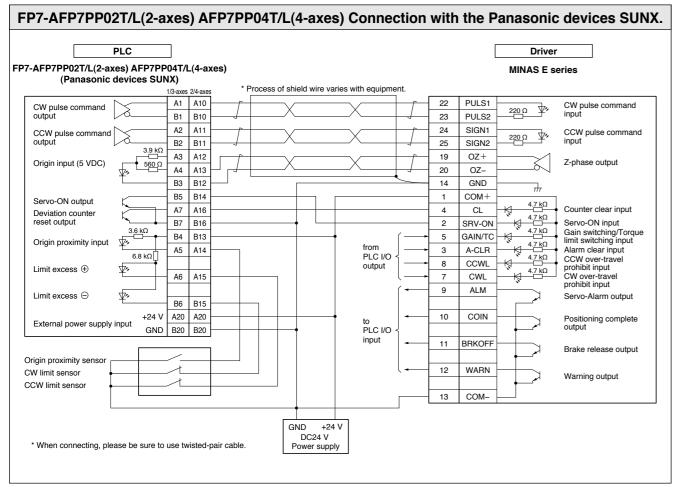
	DV0P4130				DV0P4131		
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
2	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
3	3	Command pulse input 2	PULS1	NC			
4	4	Command pulse input 2	PULS2	NC			
5	5	Command pulse sign input 2	SIGN1	NC			
6	6	Command pulse sign input 2	SIGN2	NC			
7	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
8	NC			NC			
9	NC			NC			
10	NC			NC			
11	11	External brake release signal	BRK-OFF+	11	External brake release signal BR		
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP	
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output TLC		
14	NC			14	Speed command input	SPR	
15	15	Signal ground	GND	15	Signal ground	GND	
16	16	CCW direction torque limit input	CCWTL	16	CCW direction torque limit input	CCWTL	
17	17	Signal ground	GND	17	Signal ground	GND	
18	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
19	19	Z-phase output	CZ	19	Z-phase output	CZ	
20	NC			NC			
21	21	A-phase output	OA+	21	A-phase output	OA+	
22	22	A-phase output	OA-	22	A-phase output	OA-	
23	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
24	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
25	50	Frame ground	FG	50	Frame ground	FG	
26	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN	
28	NC	3 (2.1)		33	Selection 1 input of internal command speed	INTSPD1	
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
30	30	Deviation counter clear input	CL	NC	P. C. P. P. C. P. C. P. C. P. P. P. C. P.		
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	Control mode containing input	0022	
34	NC	Communica parico ministrativi impar		NC			
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
36	NC	ocivo ricady output	OTIDIT	NC	Serve ricady suspect	OTIBIT	
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
38	NC NC	Gervo-Alaim output	ALIVIT	NC NC	Gervo-Alami output	ALIVIT	
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED-	
40	40	Torque in-limit signal output	TLC	40	·	TLC	
40		1 0 1			Torque in-limit signal output		
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (–)	BRK-OFF- AT-SPEED-	
11	34	Positioning complete output (-)	COIN-	34	Speed arrival output (-)		
41	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (-)	ALM-	
	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (–)	S-RDY-	
	41	Power supply for control signal (–)	COM-	41	Power supply for control signal (–)	COM-	
42	42	Torque monitor output	IM	42	Torque monitor output	IM	
43	43	Speed monitor output	SP	43	Speed monitor output	SP	
44	25	Signal ground	GND	25	Signal ground	GND	
45	25	Signal ground	GND	25	Signal ground	GND	
46	25	Signal ground	GND	25	Signal ground	GND	
47	NC			NC			
48	48	B-phase output	OB+	48	B-phase output	OB+	
49	49	B-phase output	OB-	49	B-phase output	OB-	
50	50	Frame ground	FG	50	Frame ground	FG	

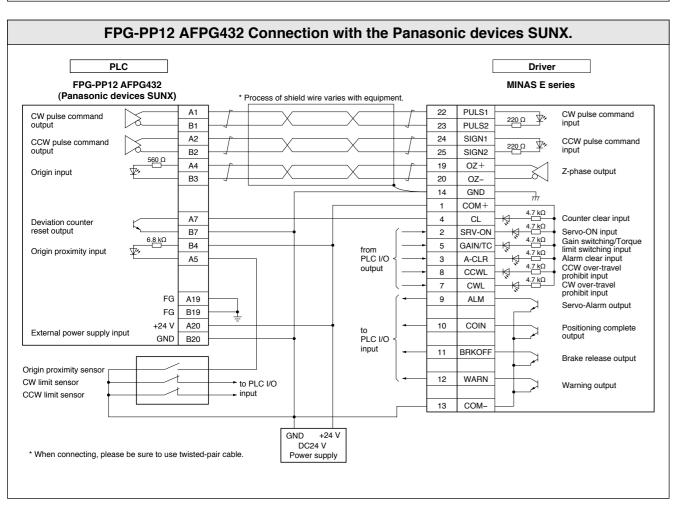
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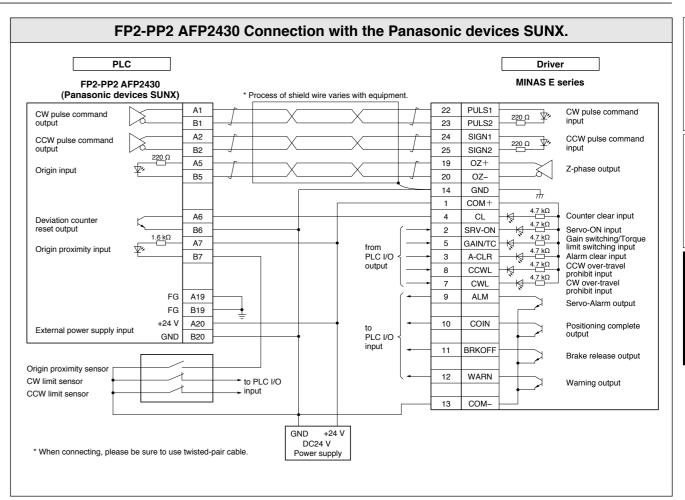
DV0P4132							
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol				
1	8	CW over-travel inhibit input	CWL				
2	9	CCW over-travel inhibit input	CCWL				
3	NC						
4	NC						
5	NC						
6	NC						
7	7	Power supply for control signal (+)	COM+				
8	NC						
9	NC						
10	NC						
11	11 11 External brake release signal		BRK-OFF+				
12 12 Zer		Zero-speed detection output signal	ZSP				
13 13 T		Torque in-limit signal output	TLC				
14	NC						
15	15	Signal ground	GND				
16	16	Torque command input	TRQR				
17	17	Signal ground	GND				
18	18	CW direction torque limit input	CWTL				
19	19	Z-phase output	CZ				
20	NC						
21	21	A-phase output	OA+				
22	22	A-phase output	OA-				
23	23	Z-phase output	OZ+				
24	24	Z-phase output	OZ-				
25	50	Frame ground	FG				
26	26	Speed zero clamp input	ZEROSPD				
27	27	Gain switching input	GAIN				
28	NC						
29	29	Servo-ON input	SRV-ON				
30	NC						
31	31	Alarm clear input	A-CLR				
32	32	Control mode switching input	C-MODE				
33	NC						
34	NC						
35	35	Servo-Ready output	S-RDY+				
36	NC						
37	37	Servo-Alarm output	ALM+				
38	NC						
39	39	Speed arrival output	AT-SPEED+				
40	40	Torque in-limit signal output	TLC				
	10	External brake release signal (-)	BRK-OFF-				
	34	Speed arrival output (-)	AT-SPEED-				
41	36	Servo-Alarm output (–)	ALM-				
	38	Servo-Ready output (–)	S-RDY-				
	41	Power supply for control signal (–)	COM-				
42	42	Torque monitor output	IM				
43	43	Speed monitor output	SP				
44	25	Signal ground	GND				
45	25	Signal ground	GND				
46	25	Signal ground	GND				
	NC						
47							
47	48	B-phase output	OB+				
	48 49	B-phase output B-phase output	OB+				

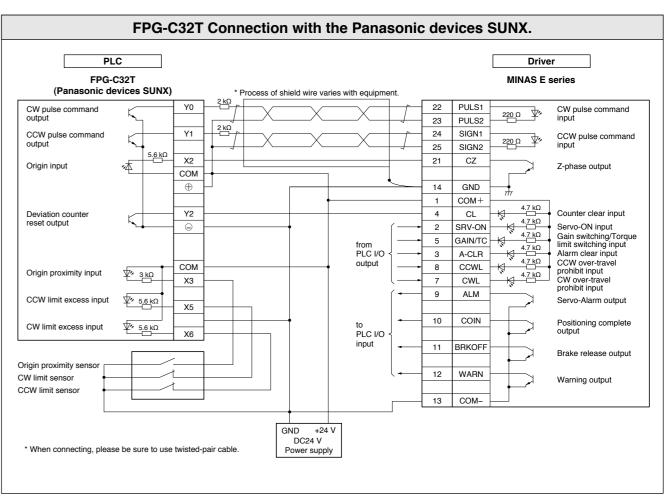
^{* &}quot;NC" is no connect.

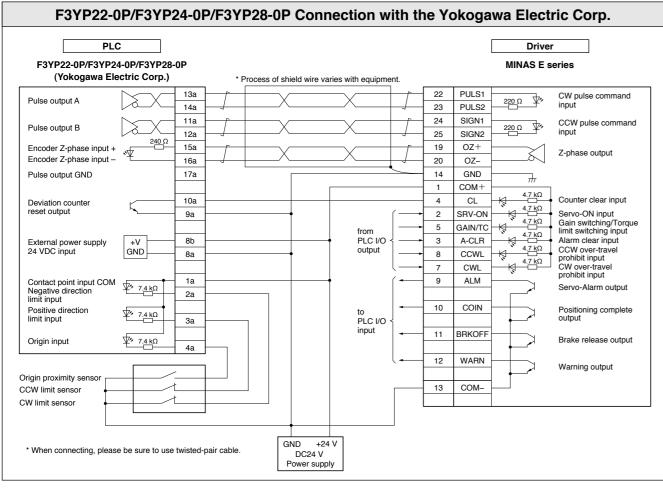
^{* &}quot;NC" is no connect.

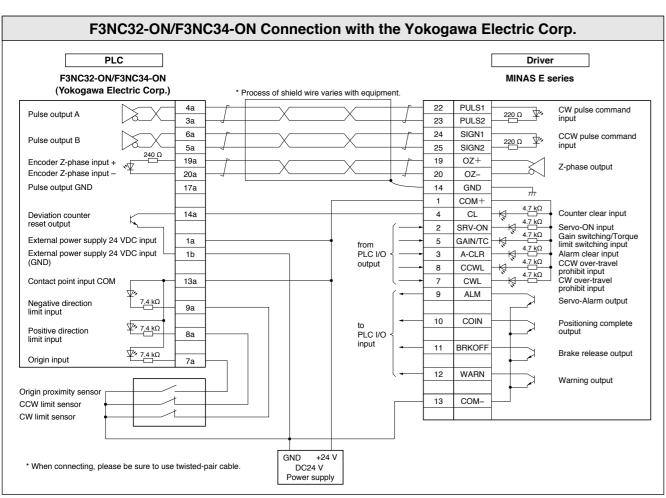


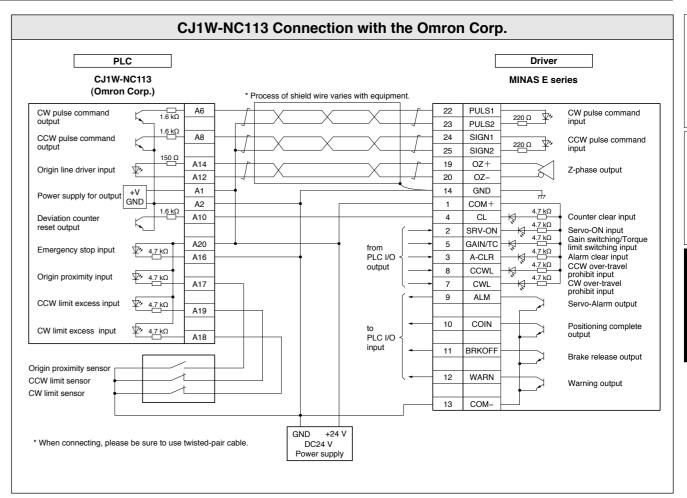


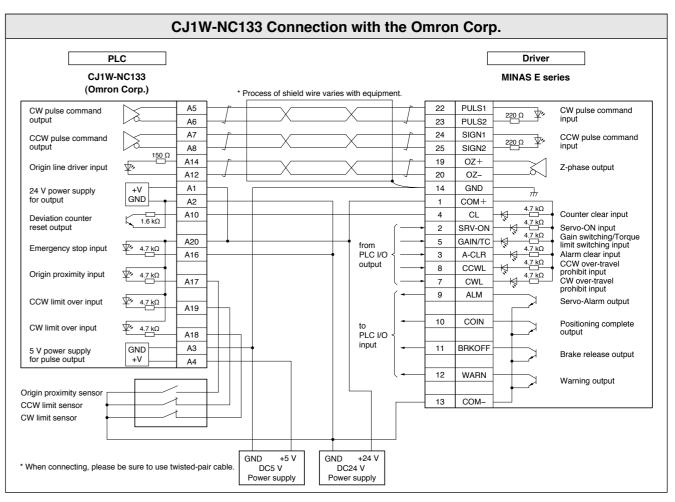




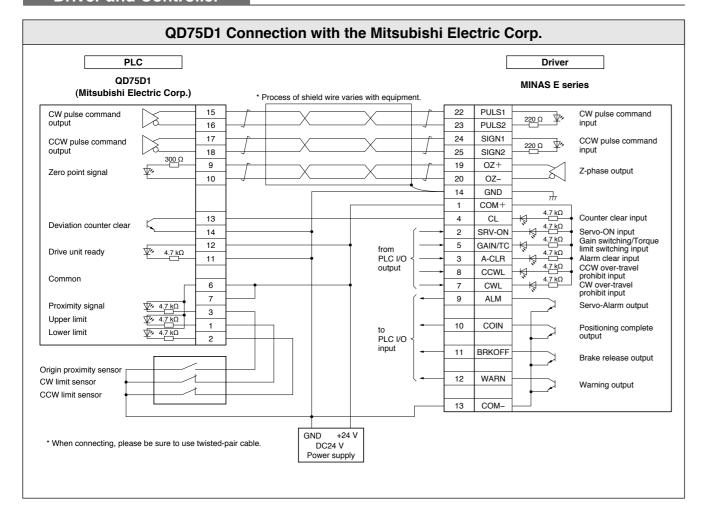








Connection Between Driver and Controller



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MEMO

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[Panasonic Sales Office of Motors]

(February.01.2016)

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