- 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 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.

Re	a	а	i	ı
	۲	~	ľ	۲

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/i_e/25000/motor_fa_e/motor_fa_e.html

Contact to

Panasonic Corporation, Appliances Company, **Motor Business Division**

1-1 Morofuku 7-chome, Daito, Osaka 574-0044, Japan Tel : +81-72-871-1212 Fax: +81-72-870-3151

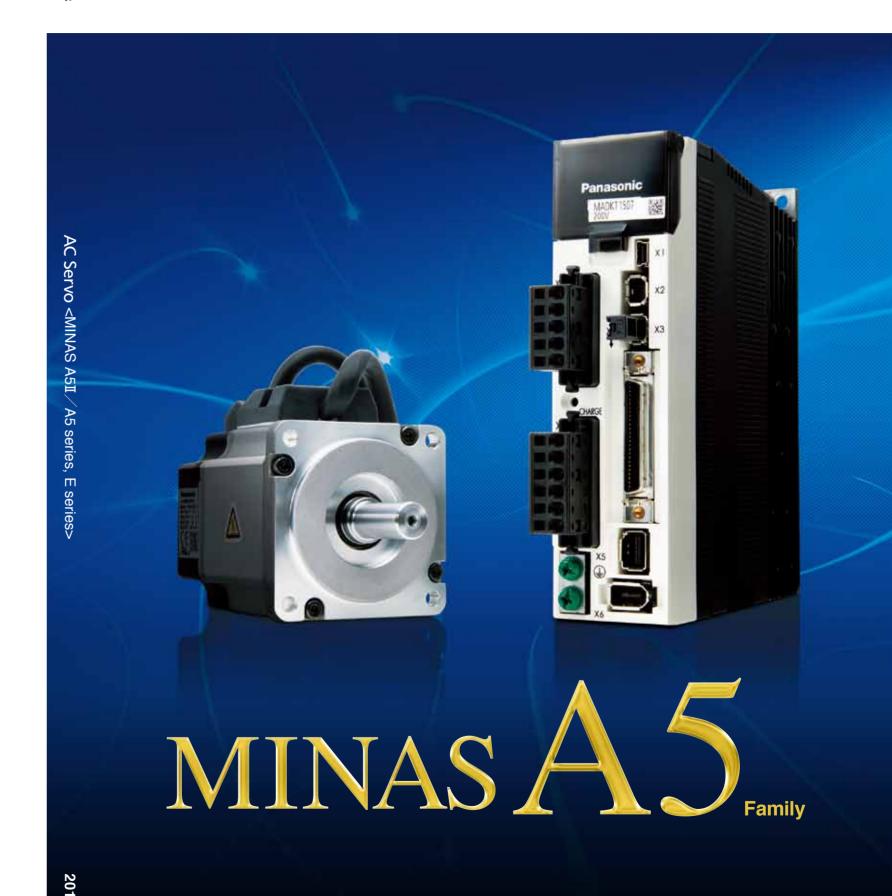




The contents of this catalog apply to the products as of July 2013.

ISO9001 Certificate division **CERTIFICATE OF APPROVAL ISO9001** **Panasonic**

AC Servo 2013/7 **MINAS** E series



Panasonic Corporation, Appliances Company, Motor Business Division http://industrial.panasonic.com/ww/i e/25000/motor fa e/motor fa e.html

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

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





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

Rated output: 50 W to 15.0 kW

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

All-in-one type

Rated output: 50 W to 15.0 kW

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

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

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

Position control type

Rated output: 50 W to 5.0 kW

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

Slim design and position control type





Rated output: 50 W to 400 W

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 5.0 kW rotaly 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

Rated output:

50 W to 15.0 kW

Positioning is possible by built-in NC function

General-purpose RS485 communication AE-LINK support type

- Can connect up to 31 axes
- Standard Ethernet cable¹² using

· AE-LINK is a registered trade mark of Asahi Engineering.

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

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

Linear motor and DD motor control type

AE-LINK®



Capacity of applying Linear motor:

Compatible with 5.0 kW rotaly AC servo motor

- Position, Speed and Thrust controls can be done by using the "Realtime Express"
- Drastically reduced setup time by automatic
- Automatic magnetic pole detection function will detect the magnetic pole position of the

Linear motor control, DC 24 V type



Capacity of applying Linear motor:

Compatible with 30 W rotaly AC servo motor

- Position, Speed and Thrust controls can be done by using the "Realtime Express"
- Drastically reduced setup time by automatic

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

Contents

AJII, AJIIL, AJ, AJL SCIICS	
5II Series Features	3
5 Family Features	5
lotor Line-up	
•	
lodel Designation	
Overall Wiring	17
river and List of	
applicable Peripheral Equipments	
able of Part Numbers and Options	2
9river	29
Driver Specifications	
A5II, A5 series (All-in-one type)	29
A5IIE, A5E series (Position control type)31
Wiring Diagram	
Wiring to the Connector XA, XB, XC,	XD
and terminal block	33
Safety Function	
Wiring to the Connector X3	36
Control Circuit Diagram	
Wiring to the Connector X4	37
Wiring to the Connector X5	39
Wiring to the Connector X6	40
Dimensions of Driver	42
lotor	48
Motor Specifications	49
Dimensions (IP67 motor)	
Motors with Gear Reducer	14
Special Order Product	
Model Designation	
Table of Part Numbers and Options.	
Motor Specifications	
Motor Specifications, Description	182
Options	
Cable part No. Designation	185
Specifications of Motor connector	
Encoder Cable	
Motor Cable	
Brake Cable	
Interface Cable Connector Kit	
Battery for Absolute Encoder	
Mounting Bracket	
Reactor	
External Regenerative Resister	
Surge Absorber for Motor Brake	
List of Peripheral Equipments	213
E cariac	215
E series	213

Information.

Sales Office..

Index.

Quicker, Wiser and Friendlier A5II series

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

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







 The above is a measure based on our test environment





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

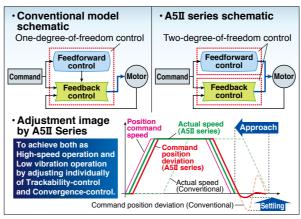


Realizes guick and accurate movement. Fast response & High-precision positioning

Adopted New Algorithm

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

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

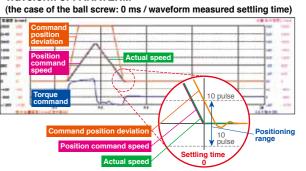


· Full-closed control and torque control are not applicable to 2DOF control system

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

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

Waveform of PANATERM



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

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

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

· Adjustment is completed in only 3 processes



· Fit gain adjustment window

speedy setup.

Newly developed feature "FitGain" maximizes the charecteristics 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.

Equipped with "FitGain" function to realize

· Automatically proposes various settings

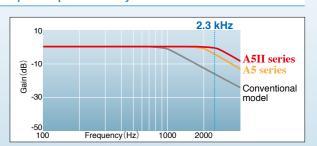


Recom	nerdation setting M	onual petis	19	
Theore	resultiecomes es to	flows Pier	nie choose reco	mentation
Adv	eto est objects e: Full	read, fie	espone pielere	otisky, Middi
Select	Recommendation	Pigidity	Command response[m]	Stabilization (me[ma]
9.	Minimum stabilizati.	22	0.2	8.0
F	Deskyrete overeft	22	34	10
BL 75	Designeto stecular.	13	15	95
Ut at	Might rigidly 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 A 5 Family

) UiC

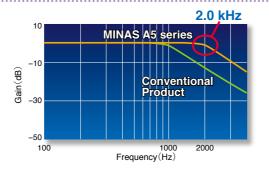


2.0 kHz Frequency Response

Example application Semiconductor production equipment, packaging, etc

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

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





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

<At incremental type>

Example application Machine tools, textile machinery, etc.

Ensures smoother operation and reduced vibration at stopping.

Ensures accurate positioning in a short time.

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

Conventional A4 Series 2,500 p/r

5II, A5 Series 1,048,576 p/r [1.04 million pulses]



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

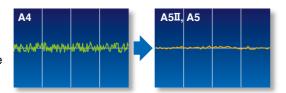




Example application Semiconductor production equipment, textile machinery, etc.

For the industry's most stable speed and lowest cogging

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



Vibration reduced to only 1/8

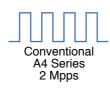


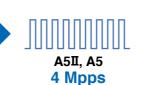
The Input/Output Pulse 4 Mpps

Example application Semiconductor production equipment, machine tools, etc.

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

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





Smart



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

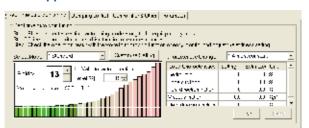
Example application Semiconductor production equipment, food processing machinery, etc.

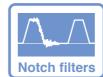
High-performance real-time auto-gain tuning featuring simple setup.

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

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

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





Manual/Auto Notch Filters

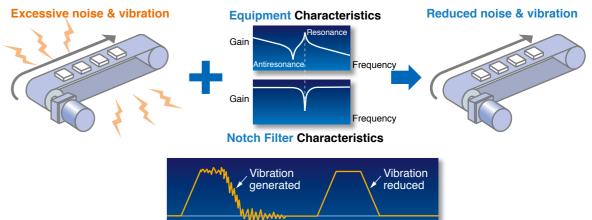
A5II

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

Equipped with auto-setting notch filters for greater convenience.

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

during operation. The A5II, A5 series features an industry-largest total of four notch filters with setup frequencies of 50 Hz to 5,000 Hz. This approach enables depth adjustment within this frequency range. (Two of the filters share the auto set-up.)





Manual/Auto Damping Filter

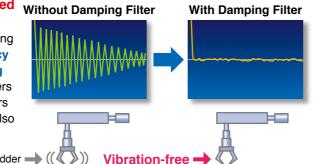
Example application

MINAS A 5 Family

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

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

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



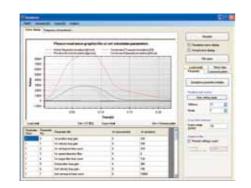
Simulation

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 A5IIE A5E

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



novative enco

Featuring significantly reduced weight and a more compact motor

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



Examples for	or MSM	or MDN	Λ]
		Δ5Π	V

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

Safe torque off

Complies with European Safety Standards.

Safe

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.)



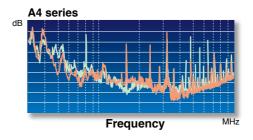
Low noise

Example application

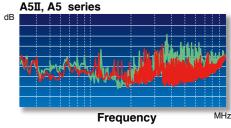
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

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.

Features

MINAS A 5 Family









PANATERM Set-up Support Software

A5II A5 A5IIE A5E

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

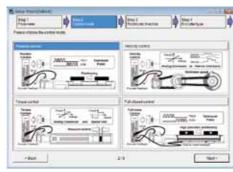
The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A5 Family through the USB interface.

Localized in 4 languages

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

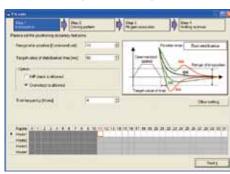
Setup Wizard

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



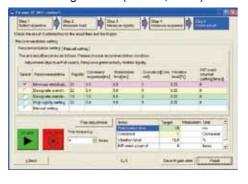
Fit gain

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



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

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



Service Life Prediction

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



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

Encoder Temperature Monitor

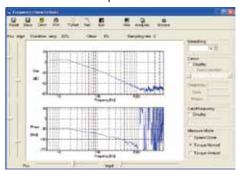
The Encoder Temperature Monitor is a new function capable of **real-time measurement of the interior temperature of the encoder**, **something that has been difficult to achieve in the past**. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided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

Other New Function

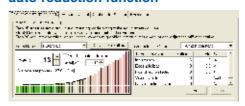
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

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 redcution.

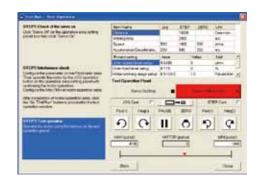


Added New screen for gain adjustment, equipped with stiffness oscillation auto-reduction function

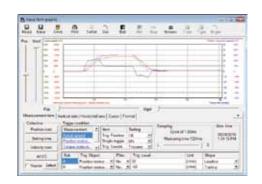


Trial run

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, AIII, E or A4 series), consult our distributors.

lardware co	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
Display	Resolution	1024 × 768pix or more (desirably 1024 × 768)
	Number of colors	24bit colors (TrueColor) or more

Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/i_e/25000/motor_fa_e/motor_fa_e.html

MINAS A 5 Family

Features

Command Control Mode A5II A5

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

Full-closed Control

A5II A5

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

SEMI F47



- 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



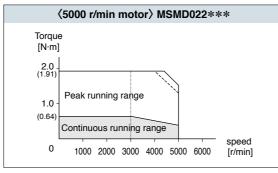
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not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

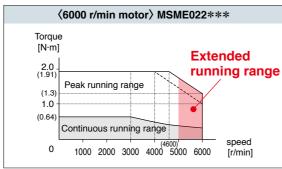
6,000-rpm capability

A5II A5 A5IIE A5E

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

[Comparison of new and conventional 200 W]





Gear head

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

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

MSME → 6000 r/min

MSMD

→ 5000 r/min MHMD

Dynamic Braking 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

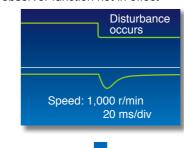
Using the front panel or by connecting a PC, you can restore the parameters to the factory settings.

Disturbance Observer A5II A5 A5IIE A5E

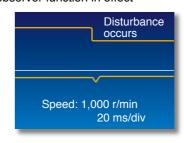


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

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

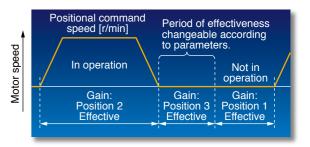
A5II A5

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.



Inertia Ratio Conversion A5II A5 A5IIE

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

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

It ends up quicker response of your system.

Input/Output A5II A5 Signal Assignment

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

Torque Limiter Switching A5II A5 A5IIE A5E

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

Applicable international safety standards

A5II A5 A5IIE A5I













(A5II, A5 series) (A5IIE, A5E series)				
		Driver	Motor	
	EMC Directives	EN55011 EN61000-6-2 IEC61800-3	_	
50 D'	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 (E327868: 50 W to 750 W, 6.0 kW to 15.0 kW) UL1004 (E327868: 400 W(400 V), 600 W(400 V), 750 W(400 V), 0.9 kW to 5.0 kW)	
CSA Standards		C22.2 No.14	C22.2 No.100	
Korea Radio Law (KC) ⁺²		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	_	

IEC : International Electrotechnical Commission

EN: Europaischen Normen

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

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

Panasonic Testing Centre

Panasonic Service Europe, a division of

Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

- When export this product, follow statutory provisions of the destination country.
- *1 A5IIE and A5E series doesn't correspond to the functional safety standard.
- *2 Information related to the Korea Radio Law

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

13

A 급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A 급) 전자파적합기기로서 판매자

또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

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

Applicable External Scales

A5II A5

Applicable External Scale	Manufacturer	Model No.	Resolution [µs]	Maximum Speed (m/s) ^{*3}
Parallel Type (AB-phase)	General	_	Maximum speed after 4 × multiplication: 4 Mpps	
		SR75	0.01 to 1	3.3
	Magnagala Co. Ltd.	SR85	0.01 to 1	3.3
Serial Type (Incremental)	Magnescale Co., Ltd.	SL700-PL101RP/RHP	0.1	10
Cona. Type (moremental)		SL710-PL101RP/RHP	0.1	10
	MicroE Systems	MII5000si/P MII6000si/P	0.1 *4	5 ^{*5}
	Mitatora Operandia	AT573A	0.05	2.5
	Mitutoyo Corporation	ST778A(L)	0.1	5
	Magnagala Co. Ltd.	SR77	0.01 to 1	3.3
	Magnescale Co., Ltd.	SR87	0.01 to 1	3.3
			0.001	0.4
Serial Type (Absolute)	Renishaw plc	RESOLUTE	0.05	20
			0.1	40
		SVAP	0.05	2.5
	Farman Automotion O. Cons	SAP	0.05	2.5
	Fagor Automation S.Coop	GAP	0.05	2.5
		LAP	0.1	2

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

^{*4} It changes by the setting.

^{*5} At 0.1 μm resolution.

Motor Line-up

MINAS A5 Family

Motor Line-up

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

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

Model Designation

MINAS A5 Family

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

Servo Motor

Symbol

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

Motor rated output

Symbol	Rated output	Symbol	Rated output
5A	50 W	25	2.5 kW
01	100 W	30	3.0 kW
02	200 W	40	4.0 kW
04	400 W	45	4.5 kW
06	600 W	50	5.0 kW
80	750 W	60	6.0 kW
09	0.9 kW	75	7.5 kW
10	1.0 kW	C1	11.0 kW
15	1.5 kW	C5	15.0 kW
20	2 0 kW		

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	1,048,576	5
S	Absolute	17-bit	131,072	7

* S: can be used in incremental.

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

Special specifications

Motor specifications

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

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

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

Symbol	Shaft		Holding brake		Oil seal	
Symbol	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

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

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

L	Gear	ratio,	gear	type

Cumbal	Gear	Motor output (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 100W is not prepared.

Motor structure

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

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

Position control type

Frame symbol *						
Symbol	Frame	Symbol	Frame			
MAD	Frame A	MED	Frame E			
MBD	Frame B	MFD	Frame F			
MCD	Frame C	MGD	Frame G			

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

MDD Frame D MHD Frame H

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

Power device Max. current rating

Symbol	Current rating				
T1	10 A	Supply voltage			
T2	15 A	specifications			
T3	30 A	Symbol	Specifications		
T4	35 A	1	Single phase, 100 V		
T5	50 A	3	3-phase, 200 V		
T7	75 A	4	3-phase, 400 V		
TA	100 A	5	Single/3-phase, 200		
TB	150 A				
TC	300 A				

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

Only position control

	t detecto		
Symbol	Specifications	Symbol	Specifications
05	5 A	40	40 A

Special specifications

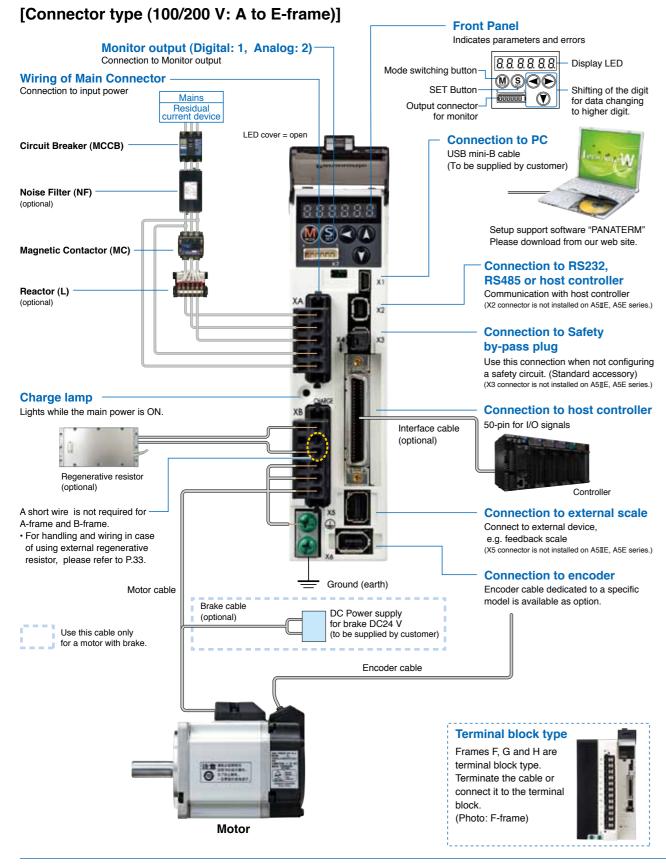
Special specifications

Syllibol	opecilications	Syllibol	opecilicali
05	5 A	40	40 /
07	7.5 A	64	64 /
10	10 A	90	90 /
12	12 A	A2	120 /
20	20 A	B4	240 /
30	30 A		

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

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

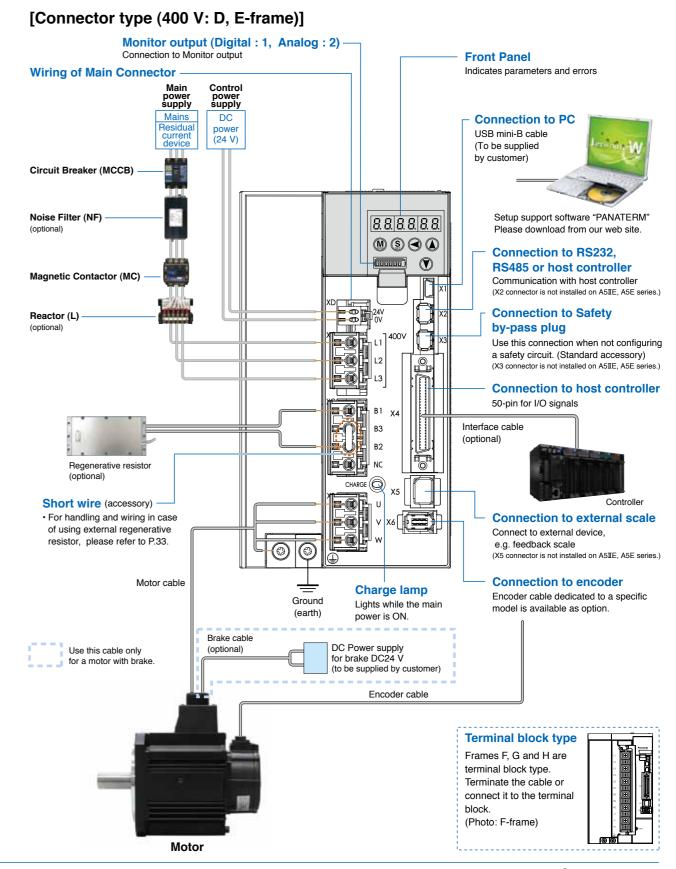
Servo Driver



<Caution>

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

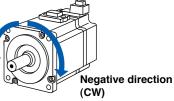
Example) Steel screw (M5) into steel section: 2.7 N·m to 3.3 N·m.



<Note

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

Positive direction (CCW)



Driver and List of Applicable Peripheral Equipments

MINAS A5 Family

Driver	Applicable motor	Voltage	Rated output	Required Power (at the (rated load)	Circuit breaker (rated (current)	Noise filter Single phase 3-phase	Surge absorber Single phase 3-phase	Noise filter for signal	Rated operating current of magnetic contactor Contact configuration *1	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *3	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *4	Diameter and withstand voltage of brake cable
MADU	MSME	Single phase,	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190								
MADH MADK	MSMD MHMD	100 V Single/ 3-phase, 200 V	50 W to 200 W	approx. 0.5 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450								0.28 mm² to
MDDU	MSME	Single 100 V	200 W	approx. 0.5 kVA	10 A	DV0P4170	DV0P4190	-	20 A	0.75 mm²/ AWG18					0.75 mm²/ AWG22 to
MBDH MBDK	MSMD MHMD	Single/ 3-phase, 200 V	400 W	approx. 0.9 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450		(3P+1a)	600 VAC or more					AWG18 100 VAC or more
MCDH	MSME	Single 100 V	400 W	approx. 0.9 kVA			DV0P4190					0.75 mm²/ AWG18			0
MCDK	MSMD MHMD	Single/ 3-phase, 200 V	750 W	approx. 1.3 kVA	15 A	DV0PM20042						600 VAC or more			
	MDME MHME		1.0 kW	approx. 1.8 kVA											
	MGME	0: 1 /	0.9 kW	approx. 1.8 kVA			DV0P4190	DV0P1460			ρ		င္ခ		
	MSME	Single/ 3-phase, 200 V	1.0 kW	approx. 1.8 kVA	00.4	DV0P4220	DV0P1450	D VOF 1400	30 A (3P+1a)		necti		necti		
	MHME MDME MFME	200 V	1.5 kW	approx. 2.3 kVA	20 A						Connection to exclusive connector		Connection to exclusive connector	2.0 mm²/ AWG14	
MDDH	MSME MDME		400 W	approx. 0.9 kVA				-		_	lusive		lusive	600 VAC or more	
MDDK	MDME		600 W	approx. 1.2 kVA							conne		conne		
	MSME MSME		750 W	approx. 1.6 kVA						2.0 mm²/	ector	0.52 mm²/	ector		
	MDME MHME MGME	3-phase, 400 V	1.0 kW 0.9 kW	approx. 1.8 kVA	10 A	FN258L-16-07 (Recommended component)	DV0PM20050		20 A (3P+1a)	AWG14 600V VAC or more		AWG20 100 VAC or more			
	MSME MDME MFME		1.5 kW	approx. 2.3 kVA											
	MHME MDME MSME MHME	3-phase,	2.0 kW	approx. 3.3 kVA	30 A	DV0PM20043	DV0P1450	DV0P1460 RJ8035 (Recommended)	60 A	_		0.75 mm²/ AWG18			
MEDH	MFME	200 V	2.5 kW	approx. 3.8 kVA				component *5	(3P+1a)			600 VAC or more			
MEDK	MSME MDME	3-phase,	2.0 kW	approx. 3.3 kVA	15 A	FN258L-16-07	DV0PM20050	DV0P1460	30 A			0.52 mm²/ AWG20			
	MHME	400 V	2.5 kW	approx. 3.8 kVA	157	(Recommended) component	D VOI 10120030	DV01 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					60 A (3P+1a)		11 mm or smaller		11 mm or smaller		
	MDME MHME MSME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	DV0P1460 RJ8035 (Recommended component		_	φ5.3	0.75 mm²/ AWG18 600 VAC or more	φ5.3		0.75 mm²/
	MFME MGME		4.5 kW	approx. 6.8 kVA				*5	100 A (3P+1a)		Terminal block M5	of more	Terminal block M5		AWG18 100 VAC
MEDIL	MDME MHME MSME		5.0 kW	approx. 7.5 kVA						3.5 mm²/				3.5 mm²/	or more
MFDK	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	3-phase,	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended)	DV0PM20050	DV0P1460	60 A			0.75 mm²/ AWG18			
	MHME MFME	400 V		approx.	-	(component)			(3P+1a)		/ φ4.3 Terminal	100 VAC or more	/ φ3.2 Terminal		
	MGME MSME MDME		4.5 kW	6.8 kVA approx. 7.5 kVA	_						block M4		block M3		
	MHME		7.5 kW	approx.								0.752/			
	MGME	3-phase,	6.0 kW	11 kVA approx.	60 A	FS5559-60-34 (Recommended)	DV0P1450		100 A		11 mm or smaller	0.75 mm²/ AWG18	10 mm or smaller		
MGDH	MHME	200 V	7.5 kW	9.0 kVA approx. 11 kVA		component			(3P+1a)	5.3 mm ² / AWG10		600 VAC or more		13.3 mm²/	
MGDK	MDME		7.5 kW	approx.		FN258-42-07		-		600 VAC or more	<u>φ5.3</u>	0.75 mm²/	<u>φ5.3</u>	AWG6 600 VAC	
	MGME MHME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA approx.	30 A	or FN258-42-33 (Recommended)	DV0PM20050	DV0P1460 RJ8095	60 A (3P+1a)	of filore	Terminal block M5	AWG18 100 VAC or more	Terminal block M5	or more	
	WII IIVIE		7.5 kW 11 kW	11 kVA approx.	100 A	\ component /		(Recommended) component							
		3-phase, 200 V	15 kW	approx.	125 A	FS5559-80-34 (Recommended) component	DV0P1450	T400-61D (Recommended component	150 A (3P+1a)		16 mm or smaller	0.75 mm²/ AWG18 600 VAC	10 mm or smaller	21.1 mm²/ AWG4	
MHDH MHDK	MDME			22 kVA				*5		13.3 mm²/ AWG6 600 VAC	φ6.4	or more	φ4.3	600 VAC or more 13.3 mm²/ AWG6	
INITUK		3-phase, 400 V	11 kW	approx. 17 kVA approx.	50 A	FN258-42-07 or FN258-42-33 (Recommended)	DV0PM20050		100 A (3P+1a)	or more	Terminal block M6	0.75 mm²/ AWG18 100 VAC or more	Terminal block M4	600 VAC or more 21.1 mm²/ AWG4	
			15 kW	approx. 22 kVA	60 A	\ component /						S. IIIOIG		600 VAC or more	

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

· About circuit breaker and magnetic contactor

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

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

<Remarks>

- Select a circuit breaker and noise filter which match to the capacity of power supply (including a load condition).
- · Terminal block and protective earth terminals
- Use a copper conductor cables with temperature rating of 75 °C or higher.
- Use the attached exclusive connector for A to E-frame, and maintain the peeled off length of 8 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	МЗ	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			
l G	L1, L2, L3, B1, B2, NC, U, V, W	M5	2.0 to 2.4	М3	0.3 to 0.5	
Н	L1C, L2C, 24V, 0V, DB1, DB2	M4	0.7 to 1.0	M5	2.0 to 2.5	
П	L1, L2, L3, B1, B2, NC, U, V, W	M6	2.2 to 2.5	CIVI	2.0 10 2.5	

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

the second secon									
	Gro	ound screw		ector to host troller (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

			Wotor				Driver		Power			Optional pa	arts					4
		Power	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.		capacity	Encode	er Cable	Motor	Cable	Brake Cable	External	Reactor	Noise Filter	
IV	otor 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	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		Approx. 0.4						D) (0D 4000	DV0D007		
		Single	100	MSMD011 □ 1 *	51	MAD 🔷 T1107	MAD ◇ T1107E	A-frame	Approx. 0.4						DV0P4280	DV0P227	DV0P4170	
		phase 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	DVUFZZO	DV0PM2004	2
	(Leadwire)		50	MSMD5AZ□1 *	50	MAD ◇ T1505	MAD ♦ T1505E		Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFMCA 0 * * 0EED	_	MFMCB 0 * * 0GET	DV0P4281	D) / D D D D D		
	3000 r/min	Single	100	MSMD012 ☐ 1 *	52	MAD ◇ T1505	MAD ◇ T1505E	A-frame	Approx. 0.5		Note) 7				DV01 4201	DV0P227 DV0P220	DV0P4170	
		phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD ◇ T1507	MAD ◇ T1507E		Approx. 0.5								DV0PM2004	2
_		200 V	400	MSMD042 ☐ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9						DV0P4283	DV0P228		
Low inertia			750	MSMD082 ☐ 1 *	57	MCD ◇ T3520	MCD ◇ T3520E	C-frame	Approx.							DV0P220	DV0PM2004	2
nertia			50	MSME5AZ ☐ 1 *	65	MAD \diamondsuit T1105	MAD \diamondsuit T1105E	A-frame	Approx.	MFECA	MFECA	MFMCA 0 * * 0NJD		MFMCB 0 * * 0PJT	DV0P4280	DV0P227		
		Single phase	100	MSME011 □ 1 *	67	MAD \diamondsuit T1107	MAD \diamondsuit T1107E		Approx.	0 * * 0MJD /For movable, direction of	0 * * 0MJE /For movable, direction of	/For movable, direction of motor shaft		(For movable, direction of motor shaft			DV0P4170	
		100 V	200	MSME021 □ 1 *	69	MBD \diamondsuit T2110	MBD ♦ T2110E	B-frame	Approx.	motor shaft / MFECA	MFECA	MFMCA 0 * * 0NKD		MFMCB 0 * * 0PKT	DV0P4283	DV0P228		4
	MSME		400	MSME041 ☐ 1 *	71	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx.	0 * * 0MKD For movable, opposite direction	0 * * 0MKE For movable, opposite direction	For movable, opposite direction of motor shaft		For movable, opposite direction of motor shaft	DV0P4282		DV0PM2004	2
	(Connector) type		50	MSME5AZ ☐ 1 *	66	MAD \diamondsuit T1505	MAD ◇ T1505E	-	Approx.	MFECA	MFECA	MFMCA 0 * * 0RJD	_	MFMCB 0 * * 0SJT	DV0P4281	DV0P227		
	3000 r/min	Single phase/	100	MSME012 ☐ 1 *	68	MAD \diamondsuit T1505	MAD ◇ T1505E	A-frame	Approx. O.5 Approx.	0 * * 0TJD For fixed, direction of	0 * * 0TJE For fixed, direction of	For fixed, direction of motor shaft		For fixed, direction of motor shaft		DV0P220	DV0P4170	
		3-phase 200 V	200	MSME022 □ 1 *	70	MAD \diamondsuit T1507	MAD ◇ T1507E		0.5 Approx.	MFECA	MFECA	MFMCA 0 * * 0RKD		MFMCB 0 * * 0SKT			DV0PM2004	<u>'</u>
		200 V	400	MSME042 □ 1 *	72	MBD ◇ T2510			0.9 Approx.	O * * OTKD For fixed, opposite direction of motor shaft	O * * OTKE For fixed, opposite direction of motor shaft	For fixed, opposite direction of motor shaft		For fixed, opposite direction of motor shaft	DV0P4283	DVODOOO		$\frac{1}{2}$
			750	MSME082 □ 1 *	73	MCD ♦ T3520	MCD ♦ T3520E		1.3 Approx.	or motor shall y	or motor share y	Note) 6				DV0P220	D VOI WIZOUT	2
		Single phase	200	MHMD021	59	MBD ♦ T2110	MBD \diamondsuit T2110E		0.5 Approx.						DV0P4283	DV0P228	DV0P4170	4
High	MHMD /Leadwire\	100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120	MCD ◇ T3120E	C-frame	0.9	MFECA	MFECA	MFMCA		MFMCB	DV0P4282	DV0P227	DV0PM2004	-
inertia	type /	Single phase/	200	MHMD022 □ 1 *	60	MAD ◇ T1507	MAD ◇ T1507E	A-frame	Approx.	0 * * 0EAM	0 * * 0EAE Note) 7	0 * * 0EED	_	0 * * 0GET		DV0P220	DV0P4170	
₫.	3000 r/min	3-phase 200 V	400	MHMD042 ☐ 1 *	62	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx.		NOIE) /				DV0P4283	DV0P228	DV0PM2004	
		200 V	750	MHMD082 □ 1 *	63	MCD ◇ T3520	MCD ♦ T3520E	C-frame	Approx.							DV0P220	DV0PM2004	2

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

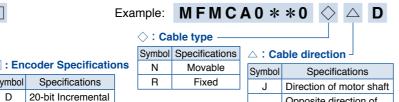
Opposite direction of

- Note) 2 \diamondsuit : Drivers series K: A5II series H: A5 series
- Note) 3 \diamondsuit : Drivers series K: A5IIE series H: A5E series
- Note) 4 Because A5IIE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.
- Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m) (Example. 3 m: MFECA0030EAM)

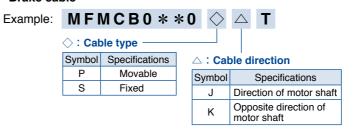
• Selection of cable for MSME motor (Movable: For application where the cable is movable.) Fixed: For application where the cable is fixed.

· Encoder cable Example: $MFECA0**0 \diamondsuit \triangle \square$ Symbol Specifications ∴ Cable direction М Movable Specifications Fixed Symbol Specifications J Direction of motor shaft

· Motor cable



Opposite direction of



	0 " 1							Options				
	Optional pa	rıS						- p.10110	Title		Part No.	Page
	Motor	Cable	Brake Cable					Interface Cable	TIUC		DV0P4360	. aye
-	•••		Cable	External Regenerativ	Reactor	Noise F	Filter	interface Gable			DV0P4120	-
	without Brake	with Brake		Resistor	Single phase	Single ph					DV0P4121	
	Note) 5	Note) 5	Note) 5	1100.0101	3-phase	3-phas	ase /	Interface Conve	rsion Cab	le	DV0P4130	197
	, -	11010, 0									DV0P4131	
				DV0P4280	DV0P227						DV0P4132	
				DV0P4280	DV0P221	DV0P4	4170	Connector Kit		Single row	DV0PM20032	
								for Power Supply Input	A to D-frame	type	2 (0) 11120002	200
				DV0P4283				Connection	D-Irame	Double row type	DV0PM20033	
	MEMOA		MEMOR	DV0P4282	DV0P228	DV0PM2	20042	Connector Kit for Motor Connection	A to D-fr	ame	DV0PM20034	201
	MFMCA 0 * * 0EED	_	MFMCB 0 * * 0GET					Connection			DV0P4290	
	0 OLLD		0 OGL1	DV0P4281	DV0P227			Connector Kit fo		_	DV0P4380	202
					DV0P220	DV0P4	4170	Motor/Encoder	Connectio	n	DV0PM20035	203
					2 1 0 1 2 2 0	DV0PM2	20042	Connector Kit fo	r		DV0PM20040	206
						-		Motor/Brake Co				200
				DV0P4283	DV0P228				RS485, RS232 Safety		DV0PM20024	
					DV0P220	DVODMO	00040		Safety		DV0PM20025	198
					_ / 5	DV0PM2	20042	Connector Kit	Interface		DV0P4350	
	MFMCA		MFMCB						External	ocaie	DV0PM20026	100
	0 * * 0NJD		0 * * 0PJT	DV0P4280	DV0P227				Encoder	onitor Signal	DV0PM20010 DV0PM20031	199
	For movable, direction of		For movable, direction of			DV0P4	4170	Battery For Abs			DV0PM20031	
	\ motor shaft / MFMCA		\ motor shaft / MFMCB	DV0P4283	1			Battery Box	olute Ello	Juei	DV0P4430	207
	0 * * 0NKD		0 * * 0PKT	D V 01 4200	DV0P228			Buttory Box	A-frame		DV0PM20027	
	For movable, opposite direction		For movable, opposite direction	DV0P4282	2	DV0PM2	20042	Mounting	B-frame		DV0PM20028	208
	of motor shaft		of motor shaft					Bracket	C-frame		DV0PM20029	
	MFMCA 0 * * 0RJD	_	MFMCB 0 * * 0SJT	DV0P4281							MFECA0**0EAD	400
	/ For fixed, \		/ For fixed, \	DV0F4201	DV0P227	DVOD4	1170				MFECA0**0EAM	188
	direction of motor shaft		direction of motor shaft		DV0P220	DV0P4			without F	Battery Box	MFECA0**0MJD	
	MFMCA		MFMCB			DV0PM2	20042		Williout	ballery box	MFECA0**0MKD	189
	0 * * 0RKD / For fixed, \		0 * * 0SKT	D\/0D 4000		-					MFECA0**0TJD	109
	opposite direction of motor shaft		opposite direction of motor shaft	DV0P4283	DV0P228			Encoder Cable			MFECA0**0TKD	
	Note) 6		,		DV0P220	DV0PM2	20042				MFECA0**0EAE	188
-										_	MFECA0**0MJE	-
				DV0P4283		DV0P4	1170		with Batt	ery Box	MFECA0**0MKE	189
				DV0P4282	DV0P228	DV0PM2	20042				MFECA0**0TJE	-
				D V 01 4202		D V OI IVIZ	20042				MFECA0**0TKE	
	MFMCA 0 * * 0EED	_	MFMCB 0 * * 0GET		DV0P227	DV0P4	4170				MFMCA0**0EED MFMCA0**0NJD	
	0 OEED		0 OGET		DV0P220	DV0PM2		Motor Cable	without E	Brake	MFMCA0**0NKD	191
				DV0P4283	DV0P228	DVUFIVIZ	20042				MFMCA0**0RJD	
					DV0P220	DV0PM2	20042				MFMCA0**0RKD	
						D V OI IVIZ					MFMCB0**0GET	
	•		osite to output	shaft can	not be used	with 50	W or				MFMCB0**0PJT	
) W motor.						Brake Cable			MFMCB0**0PKT	196
	,	•	a 17-bit abs				nental				MFMCB0**0SJT	
	end	coder, please	e use the enco	der cable N	IFECA0**0	EAD.			I		MFMCB0**0SKT	
									50 Ω 25		DV0P4280	
								External	100 Ω 25		DV0P4281	
								Regenerative	25 Ω 50 50 Ω 50		DV0P4282 DV0P4283	210
								Resistor	30 Ω 100		DV0P4283 DV0P4284	-
									20 Ω 130		DV0P4284 DV0P4285	-
	 Brake call Example: 	-	B0**0	\Diamond \triangle	Т			Reactor	DV0P22 DV0P22	0, DV0P221, 3, DV0P224,	DV0P222,	209
				Ť						7, DV0F226, 70, DV0PM2		
								Noise Filter		20, DV0PM2		250
			Acyabla [△ : Cable d					DV0P34	10		251
			Movable Fixed	Symbol	Specification			Surge	Single pl		DV0P4190	253
		U F	iven		ection of moto			Absorber	3-phase	` '	DV0P1450	
					osite directio or shaft	on of		Noise Filter for S	Signal Lin	es	DV0P1460	254

21

E 17-bit Absolute

		Motor				Driver		Power			Option	nal parts					· Options (IP6	
Motor series	Power supply	Output (W)	Part No. Note) 1	Rating/ Spec. (page)	A5II series A5 series Part No. Speed, Position, Torque, Full-Closed type	A5IIE series A5E series Part No. (Position control type Note) 3,4	Frame	capacity	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5	Mot without Brake Note) 5	with Brake Note) 5	Brake Cable	External Regenerative Resistor	Reactor (Single phase 3-phase)	Noise Filter	Interface Cable	
	Single phase/ 3-phase		MSME102 □ C *	74	Note) 2 MDD \diamondsuit T5540		D-frame		Note) 5	Note) 4,5	MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20 <u>0</u> 47	DV0P4220	interface conve	ersion Cabi
	200 V		MSME152 □ C * MSME202 □ C *		· ·	MDD ♦ T5540E MED ♦ T7364E	F.framo	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	0**2ECD	0**2FCD	_	DV0P4285	DV0P222	DV0PM20043	Connector Kit for Power	A to D-frame
MSME	3-phase 200 V	3000 4000	MSME302 C *	77 78	MFD ♦ TA390 MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E		Approx. 4.5 Approx. 6	0 0E3D	0 UESE	MFMCA 0**3ECT	MFMCA 0**3FCT		Note) 6 DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	Supply Input Connection	E-frame D-frame E-frame
3000 r/min	2 nhana	1000 1500	MSME502	104 105 106	MDD \(\) T2412 MDD \(\) T3420 MDD \(\) T3420	MDD ♦ T3420E MDD ♦ T3420E		Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD	MFMCE		DV0PM20048	Note) 7	Recommended	Connector Kit for Control Power Supply Input Connection	D, E-frar
	3-phase 400 V	3000 4000	MSME204	108 109	MFD ♦ T5440 MFD ♦ TA464	MFD ♦ T5440E MFD ♦ TA464E		Approx. 4.5	0**0ESD	0**0ESE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 DV0PM20049 ×2 in parallel	Note) 7	components P.252	Connector Kit for Motor Connection	A to D-fra E-frame D-frame
	Single phase/ 3-phase 200 V	1000	MDME102 □ C * MDME152 □ C *	80	MDD ◇ T3530		- D-frame	Approx. 1.8			MFMCD 0**2ECD			DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Regenerative Resistor	D-frame
	3-phase	3000	MDME202	83		MFD \diamondsuit TA390E		Approx. 4.5	MFECA 0**0ESD	MFECA 0**0ESE	MFMCA	MFMCA	_	DV0P4285 Note) 7	DV0P222 DV0P223 DV0P224	DV0PM20043	Connector Kit for Motor/Encoder	
MDME 2000 r/min	200 V	5000 400	MDME402	85 111	MFD ♦ TB3A2 MDD ♦ T2407			Approx. 6 Approx. 7.5 Approx. 0.9			0**3ECT	0**3FCT		DV0P4285 ×2 in parallel	DV0P225 Note) 7	DV0P3410	Connector Kit	Safety Interfac Externa
	3-phase 400 V	1000 1500 2000	MDME064	113 114 115	MDD ♦ T2412 MDD ♦ T3420 MED ♦ T4430	MDD ♦ T2412E MDD ♦ T3420E MED ♦ T4430E	D-frame	Approx. 1.8 Approx. 2.3		MFECA 0**0ESE	MFMCD 0**2ECD		_	DV0PM20048 DV0PM20049	 Note) 7	Recommended components P.252	Battery For Abs	Encode Analog I
	0: 1	4000	MDME304	117	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel		F.252	Battery Box Mounting Bracket	D-frame
MGME	Single phase/ 3-phase 200 V		MGME092 □ C *						MFECA 0**0ESD	MFECA 0**0ESE	MFMCD 0**2ECD		_	DV0P4284	DV0P228 DV0P221	DV0P4220	Encoder Cable	with Ba
Low speed/ High torque type	3-phase 200 V	2000 3000	MGME202	93 94	MFD ♦ TA390 MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 3.8 Approx. 4.5			MFMCA 0**3ECT MFMCD			DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410		without
1000 r/min	3-phase 400 V	2000	MGME094	126	MFD \diamondsuit T5440	MFD 🔷 T5440E			MFECA 0**0ESD	MFECA 0**0ESE	0**2ECD MFMCA 0**3ECT	0**2FCD MFMCA	_	DV0PM20048 DV0PM20049 x2 in parallel	,	Recommended components P.252	Motor Cable	with Dra
	Single phase/ 3-phase 200 V		MHME102 \(\text{C} *		· · · · · · · · · · · · · · · · · · ·	MDD ♦ T3530E MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3			MFMCD 0**2ECD			DV0P4284	DV0P228/ DV0P222 DV0PM20047/ DV0P222	DV0P4220		with Bra 50 Ω 25
	3-phase		MHME202 □ C * MHME302 □ C *			MED ♦ T7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMCE 0**2ECD		-	DV0P4285 Note) 6	DV0P223 DV0P224	DV0PM20043	External Regenerative	25 Ω 50 50 Ω 50
MHME 2000 r/min	200 V	4000 5000	MHME402	101 102	MFD ♦ TB3A2 MFD ♦ TB3A2	MFD ♦ TB3A2E MFD ♦ TB3A2E		Approx. 6 Approx. 7.5			MFMCA 0**3ECT			DV0P4285 ×2 in parallel	DV0P225 	DV0P3410	Resistor	30 Ω 10 20 Ω 13 120 Ω 8
	3-phase	1500	MHME104	131	MDD \diamondsuit T3420	MDD ◇ T3420E	D-frame	Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD MFMCE 0**2ECD	0**2FCD MFMCE		DV0PM20049	_	Recommended components	Reactor	80 Ω 19 DV0P22 DV0P22 DV0P22
	400 V	3000 4000	MHME304	133 134	MFD \diamondsuit T5440	MFD 🔷 T5440E		Approx. 4.5	0**0FSD	0**0ESE	MFMCA 0**3ECT	MFMCA	_	DV0PM20049 ×2 in parallel	Note) 7	P.252	Noise Filter	DV0P41 DV0P42

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

Note) 5	Cable length: *	(03: 3 m, 05: 5 m, 10	: 10 m, 20: 20 ı	n),
	(1	Example. 3 m: MFEC	A0030EAM)	
Note) 6	Other combinat	ions exist, and refer to	P.210 for deta	ls.
Note) 7	Reactor should	be prepared by the us	ser.	

	Title		Part No.
Interface Cable			DV0P4360
			DV0P4120
			DV0P4121
Interface Conve	rsion Cab	le	DV0P4130
			DV0P4131
			DV0P4132
		Single row	DV0PM20032
Connector Kit	A 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, E-frar	ne (400 V)	DV0PM20053
Connector Kit	A to D-fra	ame	DV0PM20034
for Motor	E-frame	(200 V)	DV0PM20046
Connection	D-frame	(400 V)	DV0PM20054
Connector Kit	E-frame		DV0PM20045
for Regenerative	D-frame	(400 \/)	DV0PM20055
Resistor	D Hallie	(100 V)	
			DV0P4310
Connector Kit fo Motor/Encoder (n	DV0P4320
WIOTOT/ETICOUET (JUI II I U CUO	"	DV0P4330
	I = = · · · ·		DV0P4340
	RS485, I	RS232	DV0PM20024
	Safety		DV0PM20025
Connector Kit	Interface		DV0P4350
Commodor rat	External	Scale	DV0PM20026
	Encoder		DV0PM20010
	Analog M	Ionitor Signal	DV0PM20031
Battery For Abso	olute Enco	oder	DV0P2990
Battery Box			DV0P4430
Mounting Bracket	D-frame		DV0PM20030
Encoder Cable	without E	Battery Box	MFECA0**0ESD
Elicodel Cable	with Batt	ery Box	MFECA0**0ESE
			MFMCA0**2ECD
			MFMCD0**2ECD
			MFMCE0**2ECD
	without E	Brake	MFMCF0**2ECD
Motor Cable			MFMCA0**3ECT
			MFMCD0**3ECT
			MFMCA0**2FCD
	with Rral	(e	MFMCA0**2FCD
	with Bral	ке	MFMCE0**2FCD
			MFMCE0**2FCD MFMCA0**3FCT
	50 Ω 25	W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280
	50 Ω 25 100 Ω 25	W 5 W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281
External	50 Ω 25 100 Ω 25 25 Ω 50	W 5 W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282
	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50	W 5 W W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283
Regenerative	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100	W 5 W W W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284
Regenerative	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130	W 5 W W W O W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285
Regenerative	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80	W 5 W W W O W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284
Regenerative	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190	W 55 W W W D W D W D W D W D W	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049
Regenerative Resistor	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22	W 5 W W W D W D W D W D W D W D D W D D W D D W D D W D D W D D W D D W D D D W D D D W D D W D D D W D D D W D D D W D D D W D D D W D D D W D D D W D	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,
External Regenerative Resistor Reactor	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P22	W 5 W W W D W D W D W D W D W D D W D D W D D W D D W D D W D D W D D W D D D W D D D W D D W D D D W D D D W D D D W D D D W D D D W D D D W D D D W D	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047
Regenerative Resistor Reactor	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	W 5 W W W D W D W D W D W D D W D D V D V D D V	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047
Regenerative Resistor	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	W 5 W W D W D W D W D W D D W D D W D D W D	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047
Regenerative Resistor Reactor	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42	W 5 W W W D W D W D W D W D D W D D V D V D	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047
Regenerative Resistor	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42 DV0P34 Single pl	W 5 W W W D W D W D W D W D D W D D W D D W D D W D	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043
Regenerative Resistor Reactor Noise Filter	50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42 DV0P34 Single pl	W 5 W W W D W D W D W D W D W D W D W D	MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043 DV0P4190

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

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

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131 DV0P4132

DV0PM20033

DV0PM20044

DV0PM20051

DV0PM20052

DV0PM20053

DV0PM20034

DV0PM20046

Single row DV0PM20032

type

type

D-frame Double row

E-frame (200 V) D-frame (400 V)

E-frame (400 V)

E-frame (200 V)

D, E-frame (400 V)

		ı	Motor				Driver		Deves			Optional part	ts				· Options (IP6	7 motor)
						A5II series	A5IIE series		Power capacity	5	O-bl-	Matau Oak	Brak	:				Title
				Dowl No.	Rating/	A5 series Part No.	A5E series		/ at \	Encod	er Cable	Motor Cab	le Cable	External	Reactor		Interface Cable	
٨	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		20-bit Incremental Note) 5	17-bit Absolute Note) 4,5	Brake E	with Brake lote) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conve	ersion Cable
		Single phase/	1000	MSME102 ☐ 1 *	74	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8			MEMOR	UE1404	DV0P4284	DV0P228 DV0P222	DV0P4220		Sir
		3-phase 200 V	1500	MSME152 ☐ 1 *	75	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 2.3	MFECA	MFECA		IFMCA *2FCD		DV0PM20047 DV0P222		Connector Kit for Power	A to typ D-frame Do
		3-phase	2000 3000	MSME202 \(\text{1 *} \) MSME302 \(\text{1 1 *} \)		-	MED ♦ T7364E	E-frame	Approx. 3.3 Approx. 4.5	0**0ETD	0**0ETE			DV0P4285 Note) 7	DV0P223 DV0P224	DV0PM20043	Supply Input Connection	E-frame (200 D-frame (400
Low ir	MSME	200 V	4000	MSME402 □ 1 *	78	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6				IFMCA **3FCT	DV0P4285 ×2 in parallel	DV0P225	DV0P3410	Connector Kit	E-frame (400
inertia	3000 r/min		5000 750	MSME502 ☐ 1 * MSME084 ☐ 1 *		Ť	MFD ♦ TB3A2E MDD ♦ T2412E		Approx. 7.5 Approx. 1.6						Note) 8		for Control Power Supply Input	D, E-frame (
		2 phone	1000 1500	MSME104 \(\Boxed{1} \) 1 * MSME154 \(\Boxed{1} \) 1 *		•	MDD ♦ T3420E MDD ♦ T3420E	D-frame	Approx. 1.8 Approx. 2.3	MFECA	MFECA		FMCE *2FCD	DV0PM20048		Recommended	Connection Connector Kit	A to D-frame
		3-phase 400 V	2000 3000	MSME204	108	MFD \diamondsuit T5440	MED ♦ T4430E MFD ♦ T5440E		Approx. 4.5	0**0ETD	0**0ETE	MFMCA M	IFMCA -	DV0PM20049 DV0PM20049	Note) 8	components P.252	for Motor Connection	D-frame (400
			4000 5000	MSME404 1 * MSME504 1 *		MFD ♦ TA464 MFD ♦ TA464	MFD ♦ TA464E MFD ♦ TA464E	F-frame	Approx. 6 Approx. 7.5				*3FCT	×2 in parallel			Connector Kit for Regenerative Resistor	E-frame D-frame (400
		Single phase/ 3-phase		MDME102 1 *			MDD ♦ T5540E	D-frame	Approx. 1.8				IFMCA	DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Motor/Encoder	
		200 V	2000	MDME152 □ 1 * MDME202 □ 1 *	81	-	MDD ♦ T5540E MED ♦ T7364E	E-frame	Approx. 2.3 Approx. 3.3			0**2ECD 0*	*2FCD	DV0P4285	DV0P222 DV0P223	DV0PM20043		RS485, RS2
			3000	MDME302	83	MFD ♦ TA390	MFD ♦ TA390E MFD ♦ TB3A2E		Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE		IFMCA –	Note) 7 DV0P4285	DV0P224 DV0P225	DV0P3410	Connector Kit	Safety Interface External Scal
		3-phase 200 V	5000	MDME502 ☐ 1 *	85	MFD \diamondsuit TB3A2	MFD \diamondsuit TB3A2E		Approx. 7.5			0**3ECT 0*	**3FCT	×2 in parallel	D VOI 223			Encoder Analog Monit
	мрмг		7500 11000	MDME752 □ 1 * MDMEC12 □ 1 *	86 87	MGD ♦ TC3B4	_	G-frame	Approx. 17				 Note) 6	x3 in parallel	Note) 8	Recommended components	Battery For Abs Battery Box	solute Encoder
	MDME 2000 r/min		400	MDMEC52 1 * MDME044 1 *	111	MHD \diamondsuit TC3B4	MDD ◇ T2407E	H-frame	Approx. 22 Approx. 0.9					DV0PM20058		P.252	Mounting Bracket	D-frame without Batte
7			1000	MDME064	113	MDD 🔷 T2412	MDD ♦ T2412E	D-frame	Approx. 1.8				FMCE *2FCD	DV0PM20048			Encoder Cable	with Battery
Middle i			2000	MDME154	115	MED \diamondsuit T4430	MED <> T4430E	E-frame		MEEOA	MEEOA			DV0PM20049		Recommended		without Brak
inertia		3-phase 400 V	4000	MDME304	117	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5	MFECA 0**0ETD	MFECA 0**0ETE		FMCA -	DV0PM20049 ×2 in parallel	Note) 8	components P.252	Motor Cable	William Branc
			7500	MDME754 □ 1 *	119	MGD \diamondsuit TB4A2	_	G-frame	Approx. 11			_	_	DV0PM20049 ×3 in parallel				with Brake
				MDMEC14				H-frame	Approx. 17 Approx. 22			Note) 6 N	Note) 6	DV0PM20059				50 Ω 25 W
		Single phase/ 3-phase 200 V	1500	MFME152 □ 1 *	89	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 2.3	MEEOA	MEEOA		FMCA *2FCD	DV0P4284	DV0PM20047 DV0P222	DV0P4220	External Regenerative	100 Ω 25 W 25 Ω 50 W 50 Ω 50 W
	MFME	3-phase	2500	MFME252 □ 1 *	90	MED ◇ T7364	MED ♦ T7364E	E-frame	Approx. 3.8	MFECA 0**0ETD	MFECA 0**0ETE	0**2ECD 0*	FMCE *2FCD	DV0P4285 Note) 7	DV0P224	DV0PM20043	Resistor	30 Ω 100 W 20 Ω 130 W
	(Flat type) 2000 r/min	200 V		MFME452 1 *		Ť	MFD ♦ TB3A2E					0**3ECT 0*	FMCA *3FCT	DV0P4285 ×2 in parallel	Note) 8	DV0P3410		120 Ω 80 W 80 Ω 190 W DV0P220, D
		3-phase 400 V		MFME154 □ 1 * MFME254 □ 1 *						MFECA 0**0ETD	MFECA 0**0ETE	0**2ECD 0*	FMCE *2FCD	DV0PM20048 DV0PM20049 DV0PM20049	_	Recommended components	Reactor	DV0P223, D DV0P227, D
				MFME454 \(\Boxed{1} \) 1 * ions: \(\Boxed{D} \) Motor spec			MFD \diamondsuit TA464E	F-frame	Approx. 6.8	O OLID	O OLIE		*3FCT	×2 in parallel	·	P.252	Noise Filter	DV0P4170, I DV0P4220, I DV0P3410

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

25

Connection	D-frame (400 V)	DV0PM20054	
Connector Kit	E-frame	DV0PM20045	
for Regenerative Resistor	D-frame (400 V)	DV0PM20055	
		DV0PM20036	203
Connector Kit fo	r	DV0PM20037	004
Motor/Encoder (Connection	DV0PM20038	204
		DV0PM20039	205
	RS485, RS232	DV0PM20024	
	Safety	DV0PM20025	198
	Interface	DV0P4350	
Connector Kit	External Scale	DV0PM20026	
	Encoder	DV0PM20010	199
	Analog Monitor Signal	DV0PM20031	
Battery For Abso		DV0P2990	
Battery Box		DV0P4430	207
Mounting Bracket	D-frame	DV0PM20030	208
	without Battery Box	MFECA0**0ETD	400
Encoder Cable	with Battery Box	MFECA0**0ETE	190
		MFMCA0**2ECD	191
		MFMCD0**2ECD	
		MFMCE0**2ECD	192
	without Brake	MFMCF0**2ECD	
Notor Cable		MFMCA0**3ECT	
		MFMCD0**3ECT	193
		MFMCA0**2FCD	
	with Brake	MFMCE0**2FCD	194
		MFMCA0**3FCT	195
	50 Ω 25 W	DV0P4280	
	100 Ω 25 W	DV0P4281	
	25 Ω 50 W	DV0P4282	
External	50 Ω 50 W	DV0P4283	
Regenerative	30 Ω 100 W	DV0P4284	210
Resistor	20 Ω 130 W	DV0P4285	
	120 Ω 80 W	DV0PM20048	
	80 Ω 190 W	DV0PM20049	
Reactor	DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228,	DV0P222, DV0P225,	209
Noise Filter	DV0P4170, DV0PM2 DV0P4220, DV0PM2		250
	DV0P3410		251
	Single phase	DV0P4190	
Surge Absorber	3-phase (200V)	DV0P1450	253
	3-phase (400V)	DV0PM20050	

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) 3 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.

Motor

Driver

Motor series Power Color Part No. Note								2		Power				Optiona	P				
Motor sortice Purple Motor Mot				Outrut	Davi Na	Rating/	A5 series	A5E series		capacity	Encode	er Cable		Motor	Cable	1	External	Reactor	
Pale	N	lotor series				1	Speed, Position, Torque, Full-Closed type	(Position control type	Frame	\ load /	Incremental	Absolute		Brake	Brake	Note) 5	Resistor	Single phase	Noise Filter
Mode Sample Sam			phase/ 3-phase	900	MGME092 □ 1 *	92	MDD \diamondsuit T5540	MDD ♦ T5540E	D-frame	Approx. 1.8							DV0P4284		DV0P4220
MGME Sphase Sph			200 V	2000	MGME202 □ 1 *	93	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 3.8	MEECA	MEECA						DV0P223	
Mome Sphase 4500 Mome				3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5						-		DV0P224	DV0P3410
Fig.	<	MGME		4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5				0 020.	0 0.0.		parano		
Solution	liddle ine	Low speed/ High torque	200 V	6000	MGME602 □ 1 *	96	MGD ♦ TC3B4	_	G-frame	Approx. 9.0								Note) 7	Recommender components P.252
S-phase 400 V 4500 MGME304 1 * 127 MFD \ TA464 MFD \ TA4	rtia	1000 r/min		900	MGME094	125	MDD \diamondsuit T3420	MDD ◇ T3420E	D-frame	Approx. 1.8							DV0PM20048		
Mode			0 =====					-				MEECA		MEMOA	A MEMCA		DV0DM00040	a _	Recommende
4500 MGME464				3000	MGME304 ☐ 1 *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame							_			components
Single Phase Sing				4500	MGME454 ☐ 1 *	128	MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 7.5	5								P.252
Single phase 200 V Single				6000	MGME604 □ 1 *	129	MGD ♦ TB4A2	_	G-frame	G-frame Approx. 9.0					Note) 6				
Spring S			phase/	1000	MHME102 □ 1 *	97	MDD ◇ T3530	MDD ◇ T3530E	D.framo	Approx. 1.8							DV0P4284		DV0P4220
MHME 2000 MHME202 1 * 99 MED				1500	MHME152 □ 1 *	98	MDD ◇ T5540	MDD ♦ T5540E	Арр	Approx. 2.3	3			0**2ECD	0**2FCD		B 701 1201		5701 1220
Note 1 1 1 1 1 1 1 1 1				2000	MHME202 □ 1 *	99	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 4.5						_		DV0P223	DV0PM200
Solution						_	Ť	Ť			6				MEMCΔ		D\/0P4285		
MHME 2000 r/min 2000 r/mi							Ť	Ť	F-frame								DV0P225	DV0P3410	
1000 MHME104 1 * 130 MDD \rightarrow T2412 MDD \rightarrow T2412 MDD \rightarrow T2412 Approx. 1.8 Approx. 2.3	Ĩ		200 V	5000	MHME502 ☐ 1 *	102	MFD \diamondsuit TB3A2	MFD ♦ TB3A2E		Approx. 7.5						-			
1000 MHME104 1 * 130 MDD \rightarrow T2412 MDD \rightarrow T2412E D-frame Approx. 2.3	gh inertia			7500	MHME752 ☐ 1 *	103	MGD ♦ TC3B4	_	G-frame	Approx. 11									Recommend component P.252
1500 MHME154	_			1000	MHME104 □ 1 *	130	MDD 🔷 T2412	MDD \diamondsuit T2412E	D.framo	Approx. 1.8							DV0PM20048		
3-phase 400 V				1500	MHME154 ☐ 1 *	131	MDD 🔷 T3420	MDD ◇ T3420E	D-name	Approx. 2.3							2 V 01 1V120040		
400 V 400 V MHME404 1 * 133 MFD 15440 MFD 15440E Approx. 4.5 Approx. 4.5 F-frame Approx. 6 P-frame App			2 phase					•	E-frame					0^^2FCD		DV0PM20049		Recommended	
4000 MHME404 1 * 134 MFD \$\infty\$ TA464 MFD \$\infty\$ TA464E F-frame Approx. 6 P.252							v	,					MEMCA MEMCA		DV0PM20040	Note) 7	components		
									F-frame										P.252
				5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 7.5						-			
7500 MHME754 🗆 1 * 136 MGD \diamondsuit TB4A2 — G-frame Approx. 9.0 — G-frame Approx. 9.0 — DV0PM20049 ×3 in parallel				7500	MHME754 □ 1 *	136	MGD ♦ TB4A2	_	G-frame	Approx. 9.0				— Note) 6					

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

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

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

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

27

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.

Options (IP6)		, 	Dowl No.	D	
	Title		Part No.	Page	
Interface Cable			DV0P4360		
			DV0P4120		
			DV0P4121	197	
Interface Conve	rsion Cab	le	DV0P4130		
			DV0P4131		
		0	DV0P4132		
	A to	Single row type	DV0PM20032		
Connector Kit for Power	D-frame	Double row type	DV0PM20033	200	
Supply Input Connection	E-frame	(200 V)	DV0PM20044		
Comiconom	D-frame	(400 V)	DV0PM20051		
	E-frame	(400 V)	DV0PM20052		
Connector Kit for Control Power Supply Input Connection	D, E-frar	me (400 V)	DV0PM20053		
Connector Kit	A to D-fr	ame	DV0PM20034	201	
for Motor	E-frame	, ,	DV0PM20046		
Connection	D-frame	(400 V)	DV0PM20054		
Connector Kit	E-frame		DV0PM20045		
for Regenerative Resistor	D-frame	(400 V)	DV0PM20055		
			DV0PM20036	203	
Connector Kit fo			DV0PM20037	204	
Motor/Encoder (Connectio	n	DV0PM20038	204	
			DV0PM20039	205	
	RS485,	RS232	DV0PM20024		
	Safety		DV0PM20025	198	
Connector Kit	Interface)	DV0P4350		
Connector rat	External	Scale	DV0PM20026		
	Encoder		DV0PM20010	199	
	•	Monitor Signal	DV0PM20031		
Battery For Abso	olute Enco	oder	DV0P2990	207	
Battery Box			DV0P4430		
Mounting Bracket	D-frame		DV0PM20030	208	
Encoder Cable	without E with Batt	Battery Box tery Box	MFECA0**0ETD MFECA0**0ETE	190	
		-	MFMCA0**2ECD	191	
			MFMCD0**2ECD		
	without E	Proko	MFMCE0**2ECD	192	
	Williout	Siake	MFMCF0**2ECD	1	
Motor Cable			MFMCA0**3ECT	193	
			MFMCD0**3ECT	100	
			MFMCA0**2FCD	194	
	with Bral	ke	MFMCE0**2FCD		
			MFMCA0**3FCT	195	
	50 Ω 25		DV0P4280		
	100 Ω 2		DV0P4281		
External	25 Ω 50		DV0P4282		
Regenerative	50 Ω 50		DV0P4283	210	
Resistor	30 Ω 100		DV0P4284	"	
	20 Ω 130		DV0P4285		
	120 Ω 80 80 Ω 190		DV0PM20048 DV0PM20049		
Reactor	DV0P22 DV0P22	0, DV0P221, 3, DV0P224,	DV0P222,	209	
Noise Filter	DV0P41	70, DV0PM2 20, DV0PM2	0042	250	
INDISE LIITEI	DV0P34			251	
	Single pl	-	DV0P4190	1.5.	
Surge Absorber	<u> </u>		DV0P1450	253	
_	3-phace	` ,	DVODMOOGO	1	

DV0PM20050

DV0P1460

Noise Filter for Signal Lines

28

Optional parts

A5II, A5 series (Speed, Position, Torque,)

	100 V	Main	circuit	Single phase, 100 V to 120 V $^{+10~\%}_{-15~\%}$ 50/60 Hz				
	100 V	Contro	ol circuit	Single phase, 100 V to 120 V +10 %				
		Main	A to D-frame	Single/3-phase, 200 V to 240 V +10 % 50/60 Hz				
Input	200 V	circuit	E to H-frame	3-phase, 200 V to 230 V +10 % 50/60 Hz				
Input power	200 V	Control	A to D-frame	Single phase, 200 V to 240 V +10 % 50/60 Hz				
		circuit	E to H-frame	Single phase, 200 V to 230 V +10 % 50/60 Hz				
	400.1/	Main circuit	D to H-frame	3-phase, 380 V to 480 V +10 % 50/60 Hz				
	400 V	Control circuit	D to H-frame	DC 24 V ± 15 %				
		tempe	erature	Ambient temperature: 0 °C to 55 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)				
Env	vironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation 1)				
		Alti	tude	Lower than 1000 m				
		Vibration		5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)				
Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive				
Enc	Encoder feedback			17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial				
Foo	A/B phase			A/B phase, initialization signal defferential input.				
	feedback		serial	Manufacturers that support serial communication scale: Mitutoyo Corporation Magnescale Co., Ltd. MicroE Systems Renishaw plc, Fagor Automation S.Coop				
P	Control	Control signal Output		General purpose 10 inputs The function of general-purpose input is selected by parameters.				
Parallel I	Control			General purpose 6 outputs The function of general-purpose output is selected by parameters.				
/O c	Analog	cianal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)				
onn	Allalog	Output		2 outputs (Analog monitor: 2 output)				
I/O connector	Dulas	gnal Input Output		2 inputs (Photo-coupler input, Line receiver input)				
,	Pulse si			4 outputs (Line driver: 3 output、open collector: 1 output)				
			USB	Connection with PC etc.				
	Communication		RS232	1 : 1 communication				
lan	Otion		RS485	1 : n communication up to 31 axes to a host.				
Saf	ety functi	on		Used for functional safety.				
Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))				
Reg	generatio	n		A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C to F-frame: Built-in regenerative resistor (external resistor is also enabled.)				
Dyr	namic bra	ıke		A to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only				
Cor	Control mode			Switching among the following 7 mode is enabled, (1) Position control (2) Speed control (3) Toque control (4) Position/Speed control (5) Position/Torque control (6) Speed/Torque control (7) Full-closed control				

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

	Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibitation		
	Control outs		(3) Electric gear (4) Damping control switching etc.		
	Control outp	Max. command pulse frequency	Positioning complete (In-position) etc. Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps		
Posit	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command a direction)		
Position control	input	Electronic gear (Division/Multiplication of command pulse)	1/1000 to 1000 times		
<u>o</u>		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input		
	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.		
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.		
	Instantaneous Speed Observer		Available		
	Damping Control		Available		
	2DOF setting		Only available at A5II Series		
	ZDOI SCIIII	95	(1) Selection of internal velocity setup 1 (2) Selection of internal velo		
	Control inpu	ıt	setup 2 (3) Selection of internal velocity setup 3 (4) Speed zero clamp etc.		
	Control outp	ut	Speed arrival etc.		
Sp	Analog	Velocity command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (6 V/Rated rotational speed Default)		
eec	input	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.		
Speed control		Torque feed forward input	Analog voltage can be used as torque feed forward input.		
ň	Internal velo	ocity command	Switching the internal 8speed is enabled by command input.		
<u>o</u>		own function	Individual setup of acceleration and deceleration is enabled, with (10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.		
	Zero-speed	clamp	Speed zero clamp input is enabled.		
	Instantaneo	us Speed Observer	Available		
	Speed Cont		Available		
	2DOF settin		Only available at A5I Series		
_	Control inpu		Speed zero clamp, Torque command sign input etc.		
orc	Control outp		Speed arrival etc.		
Torque control	Analog input	Torque command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3 V/ra torque Default)		
Ň	Speed limit function		Speed limit value with parameter is enabled.		
	Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibition(3) Command dividing gradual increase switching (4) Damping con switching etc.		
	Control outp	ut	Full-closed positioning complete etc.		
Fu⊩		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps		
S	Pulse	Input pulse signal format	Differential input		
Full-closed control	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 to 1000 times		
<u>o</u>		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input		
Ň	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.		
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.		
	feedback so	,	1/40 to 160 times		
	Damping Co	ontrol	Only available at A5II Series		
C	Auto tuning		The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting.		
m	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 e		

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

Driver Specifications A5IIE, A5E series (Position control type)

		100 V	Main	circuit	Single phase, 100 V to 120 V				
		100 V	Control circuit		Single phase, 100 V to 120 V +10 % 50/60 Hz				
			Main	A to D-frame	Single/3-phase, 200 V to 240 V +10 % 50/60 Hz				
	Input power	200 V	circuit	E to F-frame	3-phase, 200 V to 230 V +10 % 50/60 Hz				
	ower	200 V	Control	A to D-frame	Single phase, 200 V to 240 V +10 % 50/60 Hz				
			circuit	E to F-frame	Single phase, 200 V to 230 V +10 % 50/60 Hz				
		400 V	Main circuit	D to F-frame	3-phase, 380 V to 480 V +10 % 50/60 Hz				
			Control D to circuit F-frame		DC 24 V ± 15 %				
Ве			tempe	erature	Ambient temperature: 0 °C to 50 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)				
Basic Specifications	Env	ironment	humidity		Both operating and storage : 20 % to 85 %RH (free from condensation 1)				
pecifi			Altitude		Lower than 1000 m				
catior	Vibration			ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)				
เร	Control method				IGBT PWM Sinusoidal wave drive				
	Encoder feedback				20-bit (1048576 resolution) incremental encoder, 5-wire serial				
	Pe	Control	Input		General purpose 10 inputs The function of general-purpose input is selected by parameters.				
	Parallel I/O	Control	Sigilal	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.				
	_	Analog :	sional	Input	none				
	connector	7 1110109	Jigi ka	Output	2 outputs (Analog monitor: 2 output)				
	ör	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)				
				Output	4 outputs (Line driver: 3 output、open collector: 1 output)				
	Communication function USB				Connection with PC etc.				
	Front panel				(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)				
	Regeneration				A, B-frame: no built-in regenerative resistor (external resistor only) C to F-frame: Built-in regenerative resistor (external resistor is also enabled.)				
	Dynamic brake				Built-in				
	Cor	ntrol mod	е		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control				

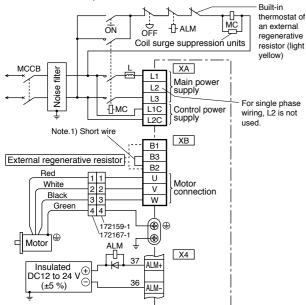
^{*1} Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

31

		Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.	
		Control outp	out	Positioning complete (In-position) etc.	
			Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver : 4 Mpps	
	Position contro	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)	
	control	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 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	
ď		Damping Co	ontrol	Available	
		2DOF setting	igs	Only available at A5II 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.	
	Co	Division of e	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).	
	Common	Protective	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.	
		function	Soft error	Excess position deviation, command pulse division error, EEPROM error etc.	
		Traceability	of alarm data	The alarm data history can be referred to.	

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

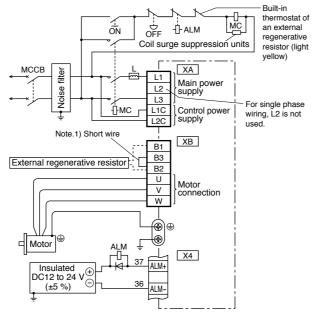




· In Case of MSME

and Terminal Block

Wiring to Connector, XA, XB, XC, XD



Note.1)

thermostat of

an external

regenerative

resistor (light

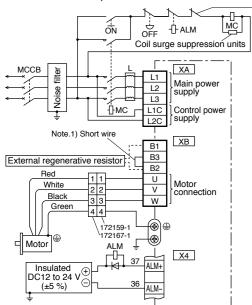
Frame	Short wire	Built-in	Connection of the connector XB				
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.			
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor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

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 register between B1-B2.	Shorted between B2-B3 with an attached short wire			

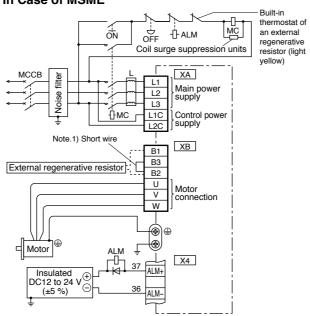
In Case of 3-phase, A to D-frame, 200 V type

• In Case of MSMD, MHMD

Note.1)



· In Case of MSME



Note.1

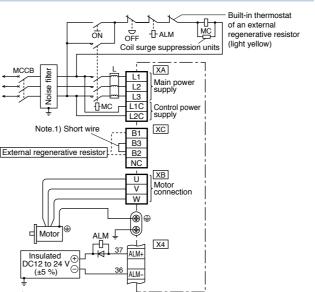
Frame	Short wire	Built-in	Connection of the connector XB				
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.			
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor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

Note 1)

33

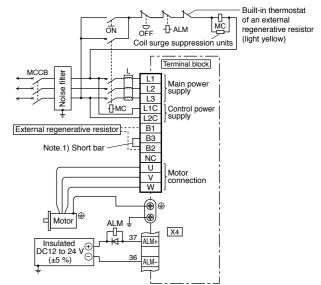
Frame	Short wire	Built-in	Connection of the connector XB			
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.		
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor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



Note.1	1)		L			
Frame	Short wire	Built-in	Connection of the connector XC			
	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.		
E-frame	with	with	Remove the short wire accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short wire		

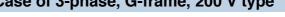
In Case of 3-phase, F-frame, 200 V type

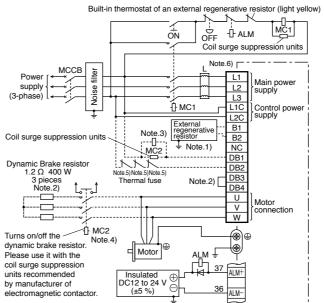


Note.1)

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

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





lote 1	About	regenerative	resistor	
iolo. i	nooui	regenerative	16313101	

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

							100
<comr< th=""><th>mon</th><th>for</th><th>G</th><th>&</th><th>Н</th><th>fram</th><th>ie></th></comr<>	mon	for	G	&	Н	fram	ie>

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.

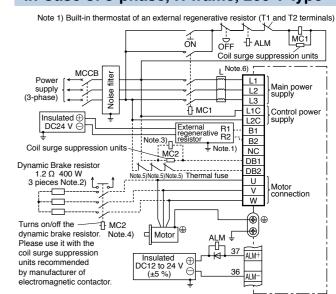
34

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

between DB3-DB4

Open between DB1-DB2

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



Note.1) About regenerative resistor

Frame Short b	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.			
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	Note.2) About dynamic brake resistor					
Frame Short bar (Accessory)	Chart har	Built-in dynamic brake resistor.	Connection of terminal block			
	(Accessory)		In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resis		
H-frame	without	without	Connect external dynamic brake resistor as shown above	Open between DB1-DB2		

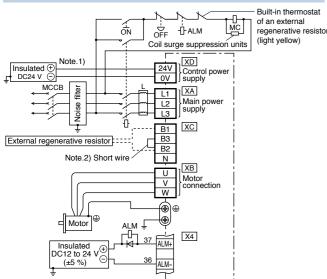
* Refer to P.186, P.187, Specifications of Motor connector.

hetween DB3-DB4

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

Wiring Diagram and Terminal Block

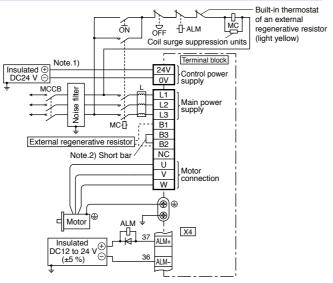
In Case of 3-phase, D and E-frame, 400 V type



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

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

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



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

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

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

Insulated (

—∯ MC2

DC24 V

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

Dynamic Brake resistor
4.8 Ω 400 W
3 pieces Note.2)

dvnamic brake resistor. Note.5)

Note.1) About regenerative resistor

Note.2) About dynamic brake resistor

without

without

-

Please use it with the

coil surge suppression

units recommended by manufacturer of

Turns on/off the

OFF TALM

24V

W

In case of not using

· Open between DB1-DB2

∯ MC1

Coil surge suppression uni

Motor

In case of using

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

above Terminal 24 V,0 V connect to DC pov

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

In case of using

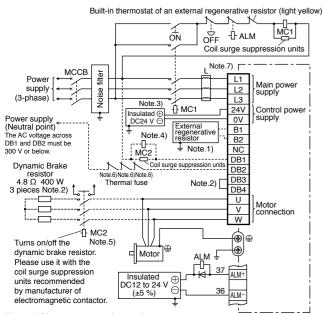
Connect external dynamic brake

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

supply of DC24 V E terminal connect to the ground tive R1

Coil surge suppression units

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



Note.1) About regenerative resistor

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

Frame	Short bar	Built-in	Connection of terminal block			
	(Accessory)	dynamic brake resistor.		In case of not using an external dynamic brake resistor.		
G-frame	with	with	Remove attached short bar between DB3-DB4. Connect external dynamic brake resistor as shown above.	Shorted with attached short bar between DB3-DB4 Open between DB1-DB2		

<common for G & H frame>

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

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

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

35

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

Note.7) Reactor should be prepared by the customer

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

Safety Function

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

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

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

Outline Description of Safe Torque Off (STO)

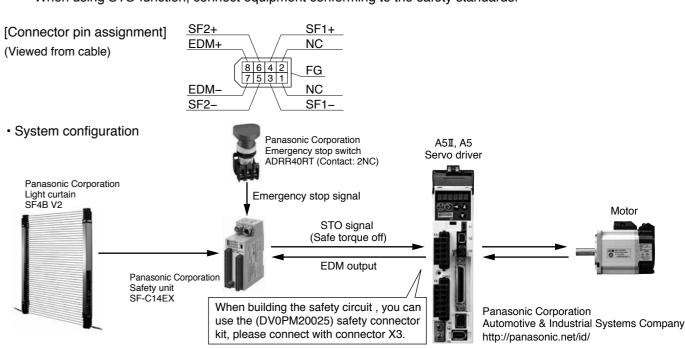
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

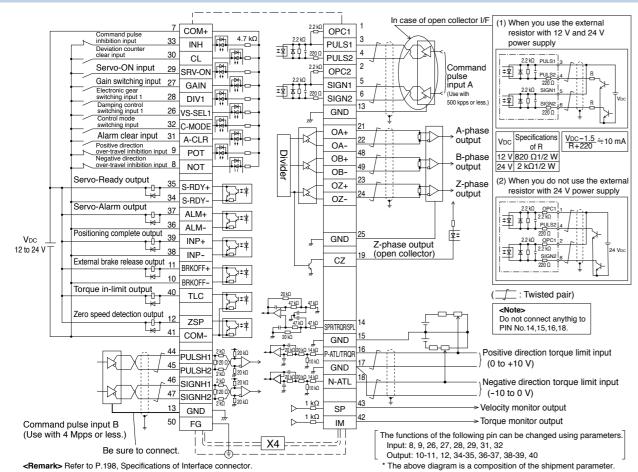
This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

Safety Precautions

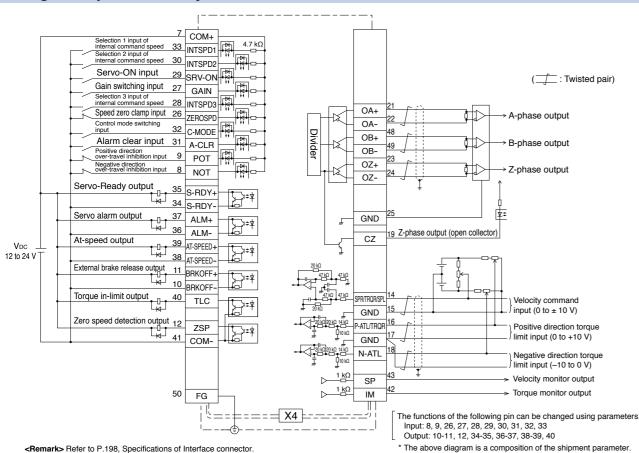
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external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



Wiring Example of Position Control Mode

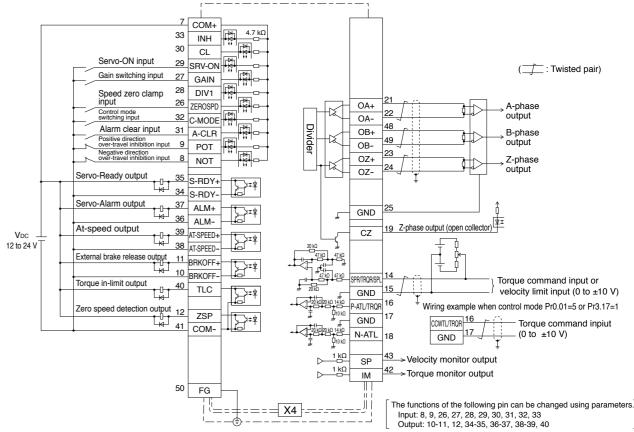


Wiring Example of Velocity Control Mode (Excluding A5IIE, A5E series)



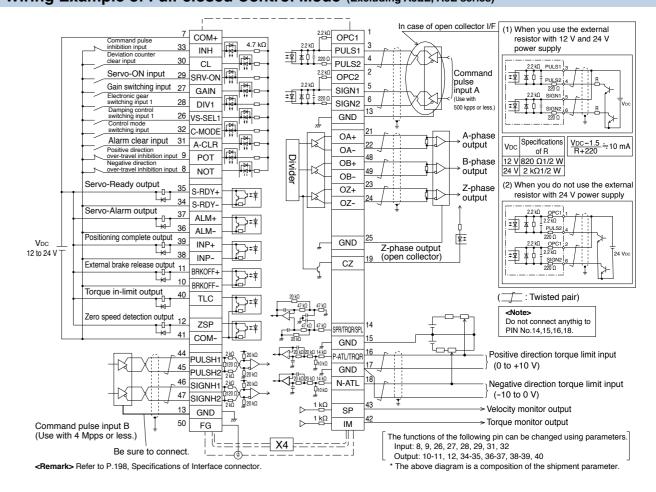
The above diagram is a composition of the shipment parameter.

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



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

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



Wiring to the Connector, X6

A5 Family

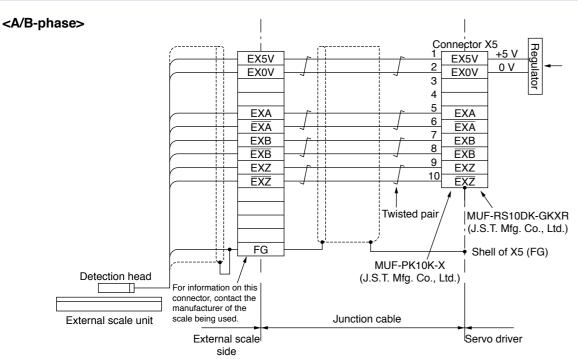
Applicable External Scale

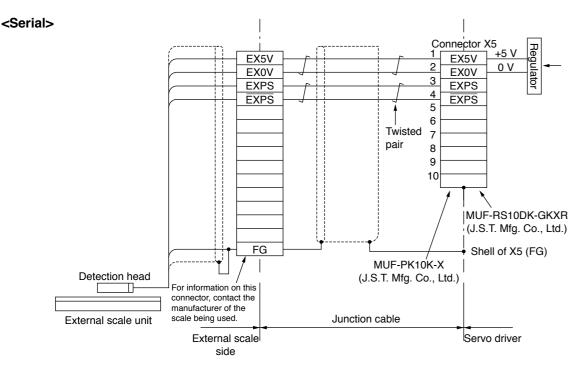
The manufacturers applicable external scales for this product are as follows.

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

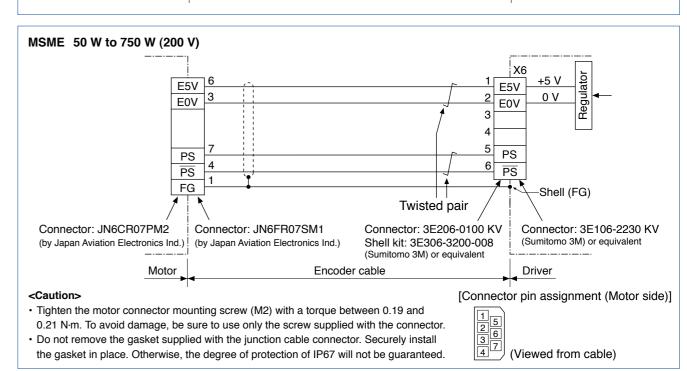
- · Mitutoyo Corporation
- · Magnescale Co., Ltd.
- MicroE systems
- Renishaw plc
- Fagor Automation S.Coop
- * For the details of the external scale product, contact each company.

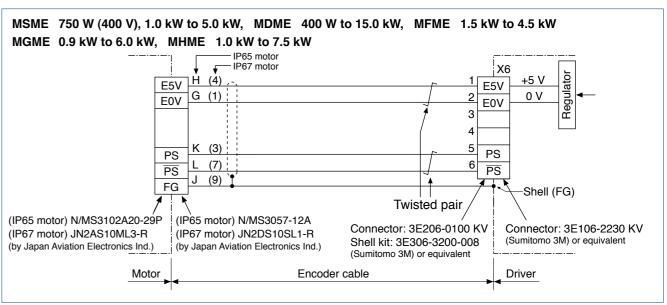
Wiring Diagram of X5





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





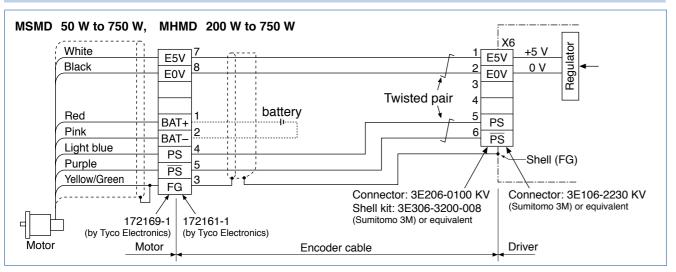
[Connector pin assignment] Refer to P.186, 187 "Specifications of Motor connector".

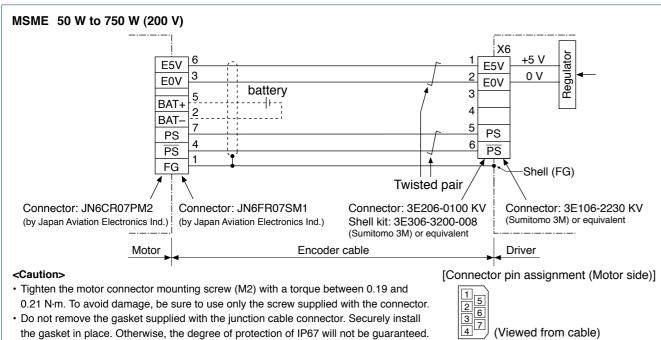
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

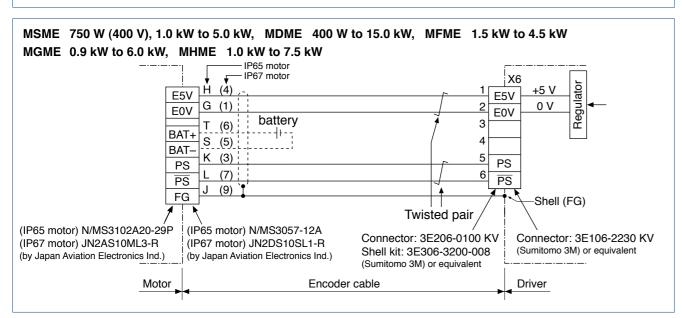
Dimensions of Driver

A5 Family

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

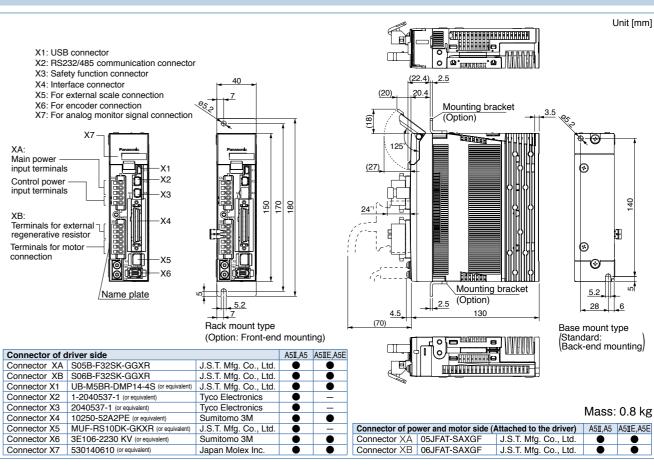




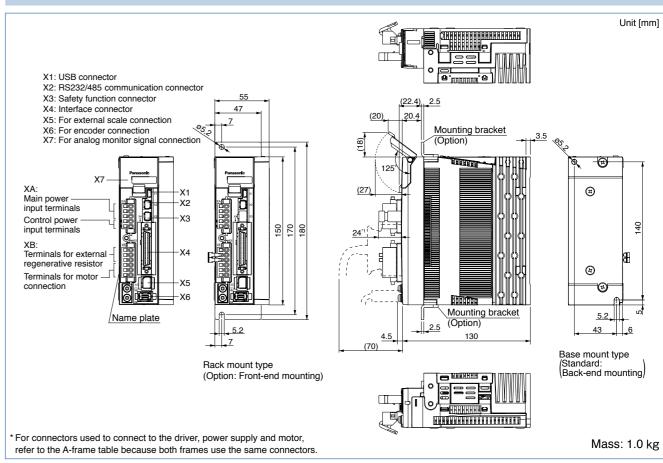


[Connector pin assignment] Refer to P.186, 187 "Specifications of Motor connector".

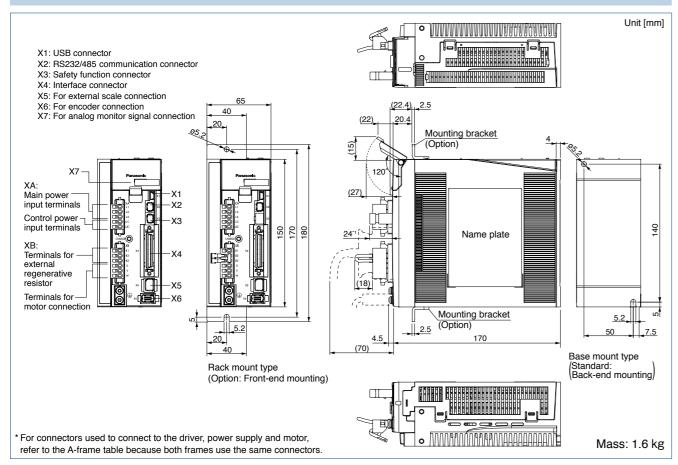
A-frame



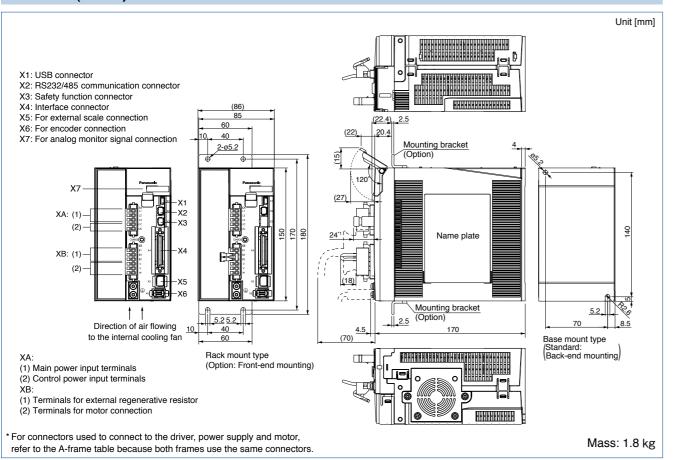
B-frame

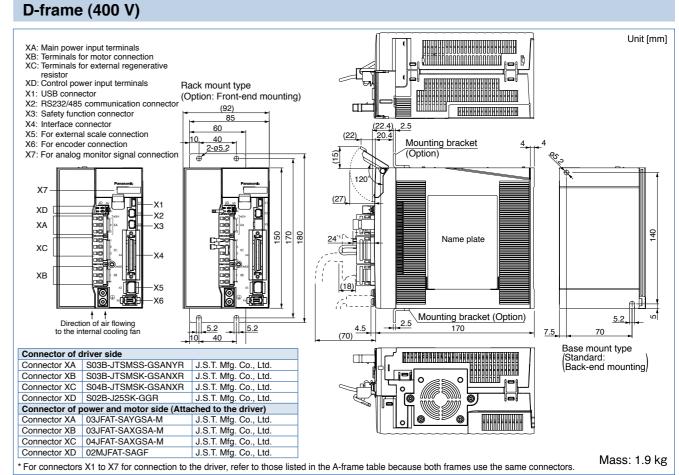


C-frame

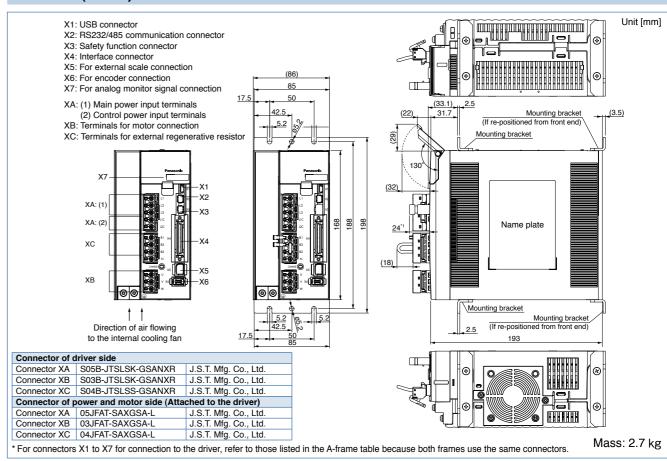


D-frame (200 V)



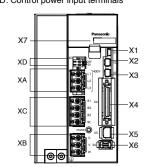


E-frame (200 V)



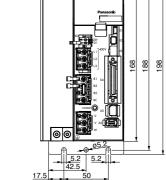
E-frame (400 V) X1: USB connector

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

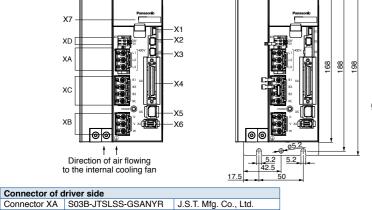


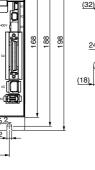
Direction of air flowing

to the internal cooling fan



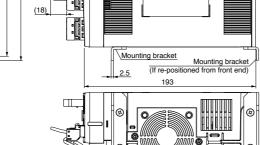
42.5





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

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



(If re-positioned from front end)

Name plate

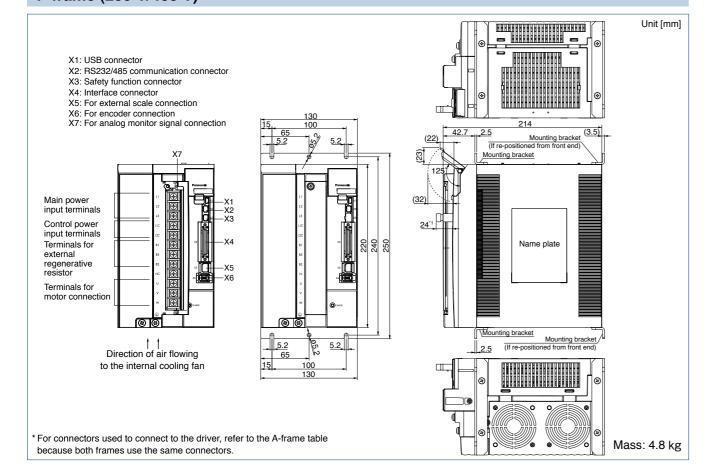
Mass: 2.7 kg

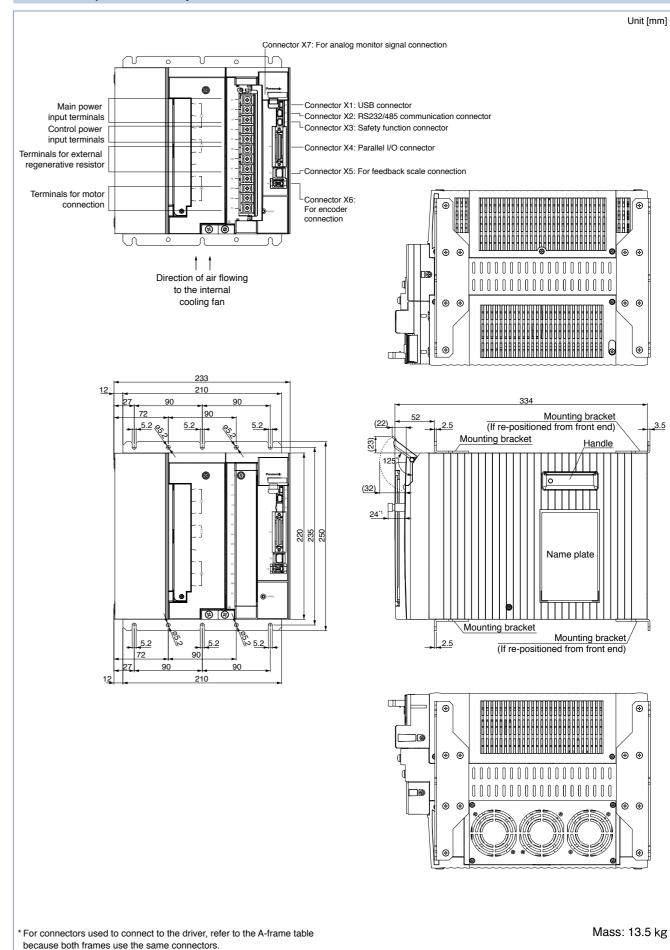
Mounting bracket

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

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

F-frame (200 V/400 V)





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

IP65 motor: 50 W to 5.0 kW

Max speed: 6000r/min (MSME 50 W to 750 W)

· Low inertia (MSME) to High inertia (MHME).

• 20-bit incremental encoder (1,048,576 pulse)

• 17-bit absolute encoder (131,072 pulse).

IP67 motor: 50 W to 15.0 kW

· Low cogging torque: Rated torque ratio 0.5 % (typical value).

Features

Line-up

Motor Lineup

Small capacity

Motor Contents

MSME

Low inertia

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

Enclosure: IP67



Low inertia Max. speed: 5000 r/min

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



MHMD High inertia

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



Low inertia

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

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

Enclosure: IP65, IP67



MDME Middle inertia

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

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



MFME (Flat type)* Middle inertia

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



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

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

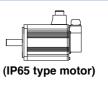


High inertia

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

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

Middle capacity motor has the IP67 type.



Compact

(IP67 type motor)

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

MSMD (100 V/200 V) 50 W to 750 W..... MHMD (100 V/200 V) 200 W to 750 W..... MSME (100 V/200 V) 50 W to 750 W...... MSME (200 V) 1.0 kW to 5.0 kW. . P.74 MDME (200 V) 1.0 kW to 15.0 kW. . P.80 MFME (200 V) 1.5 kW to 4.5 kW . P.89 **MGME (200 V)** 0.9 kW to 6.0 kW . P.92 MHME (200 V) 1.0 kW to 7.5 kW . P.97 MSME (400 V) 750 W to 5.0 kW. P.104 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) 1.0 kW to 7.5 kW P.130 **IP67 motor** P.137 dimensions... **Motors with Gear Reducer** Type and Specifications...... P.141 Model No. designation...... P.142 The combination of the driver and the motor..... Table of motor specifications... P.143 Torque Characteristics of Motor

Dimensions of Motor.....

Motor Specification

Permissible Load at

Built-in Holding Brake

Environmental Conditions.... P.182

Notes on [Motor specification]

Description

Output Shaft...

.P.144

Direction of air flowing to the internal cooling fan

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

			AC100 V		
IP65		MSMD5AZG1□	MSMD5AZS1□		
Motor model *1		IP67	-	-	
Amalianda	Model	A5II, A5 series	MAD	T1105	
Applicable *2	No.	A5IIE, A5E series	MAD ⊘T1105E	_	
divei	Fr	ame symbol	A-fra	ame	
Power supply of	capacity	y (kVA)	0.	.5	
Rated output		(W)	5	0	
Rated torque		(N·m)	0.	16	
Momentary Ma	ıx. peal	torque (N·m)	0.48		
Rated current		(A(rms))	1.1		
Max. current		(A(o-p))	4.7		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/m	nin) Note)1	DV0P4280	No limit Note)2		
Rated rotations	al spee	d (r/min)	3000		
Max. rotational	speed	(r/min)	5000		
Moment of iner	rtia	Without brake	0.025		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1,048,576	131,072	

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

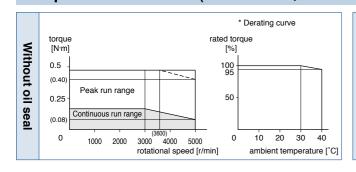
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

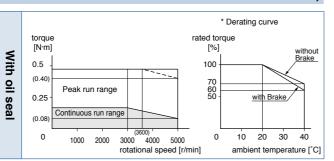
• Permissible load (For details, refer to P.183)

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

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

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

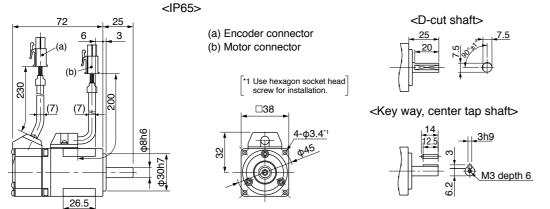




Dimensions

<Cautions>

<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]

Specifications

				AC2	00 V
Matanaaa		IP65		MSMD5AZG1□	MSMD5AZS1
Motor mode	ÐI ⊧1	IP67		-	_
A II l. l .	Model	A5 I I, A5	series	MAD	T1505
Applicable driver	No.	A5IIE, A	5E series	MAD ⊘T1505E	-
unver	Fr	ame sym	bol	A-fr	ame
Power supp	oly capacit	у	(kVA)	0	.5
Rated outpo	ut		(W)	5	0
Rated torqu	ie		(N·m)	0.	16
Momentary	Max. peal	k torque	(N·m)	0.48	
Rated curre	ent	(A(rms))	1.1	
Max. current (A(o-p))			4.	.7	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	Cy (times/min) Note)1 DV0P4281		4281	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of	inertia	Without brake		0.025	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single			le turn	1,048,576	131,072

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

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

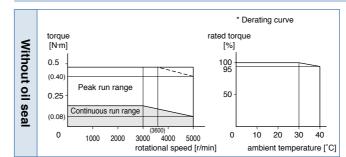
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

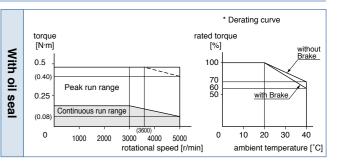
• Permissible load (For details, refer to P.183)

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

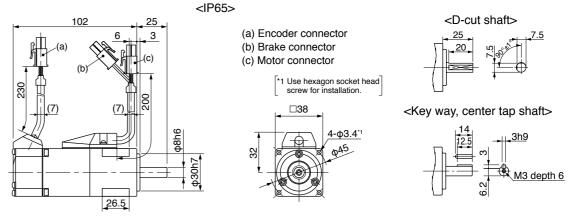
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<With Brake> Mass: 0.53 kg



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

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

[Unit: mm]

A5 Family

Specifications

			AC100 V		
Motor model		IP65		MSMD011G1	MSMD011S1
*1		IP67		-	-
Ammliaalala	Model	A5II, A5	series	MAD	T1107
Applicable driver *2	No.	A5IIE, A	5E series	MAD ⊘T1107E	_
unver	Fr	ame sym	bol	A-fra	ame
Power supply	capacit	y	(kVA)	0	.4
Rated output			(W)	10	00
Rated torque			(N·m)	0.32	
Momentary Ma	ax. peal	k torque	(N·m)	0.95	
Rated current		(A(rms))	1.7	
Max. current			(A(o-p))	7.2	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	ote)1 DV0P4280		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	t brake	0.051	
of rotor ($\times 10^{-4}$	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	
R	esolutio	n per sing	le turn	1,048,576	131,072

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

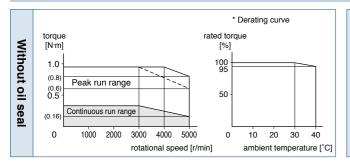
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

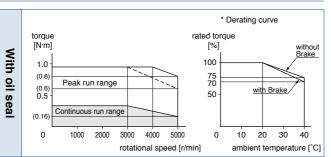
Permissible load (For details, refer to P.183)

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

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

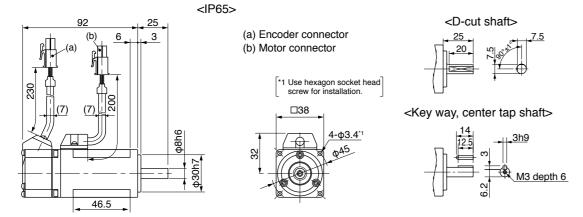




Dimensions

<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

			AC200 V		
Motor mode		IP65		MSMD012G1□	MSMD012S1
	1	IP67		-	-
A	Model	A5 I I, A5	series	MAD	T1505
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1505E	_
divoi	Fi	rame sym	bol	A-fr	ame
Power supp	ly capacit	у	(kVA)	0	.5
Rated outpu	ıt		(W)	10	00
Rated torqu	е		(N·m)	0.3	32
Momentary	Max. pea	k torque	(N·m)	0.95	
Rated curre	nt	(A(rms))	1.1	
Max. curren	t	((A(o-p))	4.	.7
Regenerative	e brake	Without option		No limi	t Note)2
frequency (tim	es/min) Note)1			No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without brake		0.051	
of rotor (×10) ⁻⁴ kg·m²)	With brake		0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single t			le turn	1,048,576	131,072

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

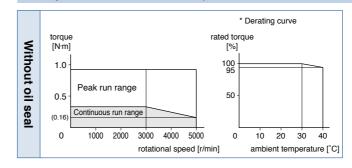
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

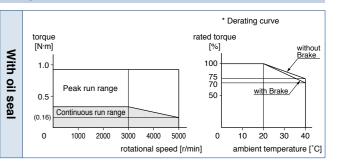
• Permissible load (For details, refer to P.183)

	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, 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.

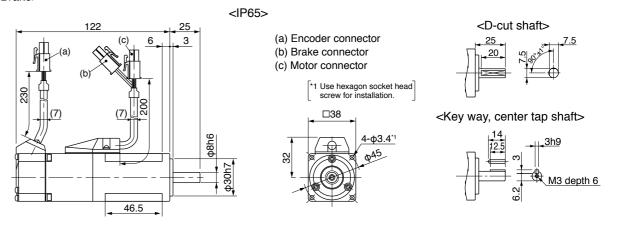
Torque characteristics (at AC200 V of power voltage)





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]

A5 Family

Specifications

				AC1	AC100 V	
		IP65		MSMD021G1□	MSMD021S1□	
Motor model *1		IP67		-	-	
A U a a la la	Model	A5 I I, A5	series	MBD<	T2110	
Applicable driver *2	No.	A5IIE, A	5E series	MBD ⊘T2110E	_	
unven	Fr	ame sym	bol	B-fra	ame	
Power supply	capacit	y	(kVA)	0	.5	
Rated output			(W)	20	00	
Rated torque			(N·m)	0.	64	
Momentary M	ax. peal	k torque	(N·m)	1.91		
Rated current		(A(rms))	2.5		
Max. current (A(o-p))		10.6				
Regenerative I	orake	Without	option	No limi	t Note)2	
frequency (times/	min) Note)1	nin) Note)1 DV0P4283		No limit Note)2		
Rated rotation	nal spee	al speed (r/min)		3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	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 or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	n per sing	le turn	1,048,576	131,072	

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

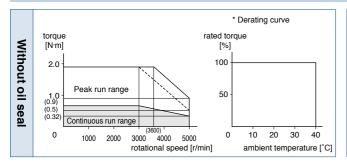
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

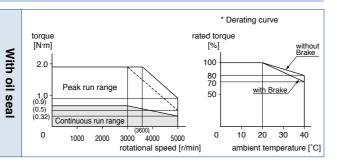
• Permissible load (For details, refer to P.183)

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

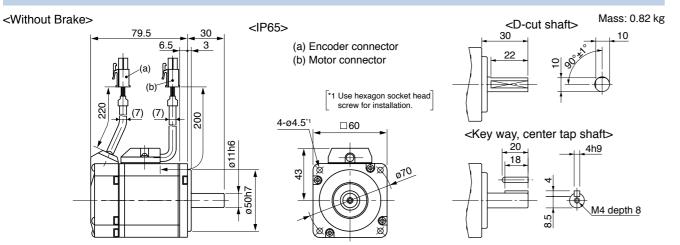
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable 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
		IP65		MSMD022G1□	MSMD022S1
Motor model		IP67		-	_
A 1: 1- 1	Model	Model A5II, A5 series		MAD	T1507
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1507E	_
unver	Fr	ame sym	bol	A-fra	ame
Power suppl	y capacit	y	(kVA)	0	.5
Rated outpu	t		(W)	20	00
Rated torque	Э		(N·m)	0.0	64
Momentary I	Max. peal	k torque	(N·m)	1.91	
Rated currer	nt	(A(rms))	1.6	
Max. current	t		(A(o-p))	6.9	
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of ir	nertia	Without	brake	0.	14
of rotor (×10	⁻⁴ kg·m²)	With b	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072	

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

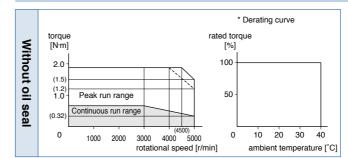
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

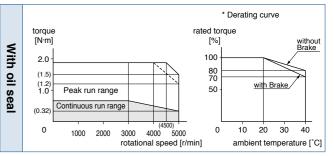
• Permissible load (For details, refer to P.183)

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

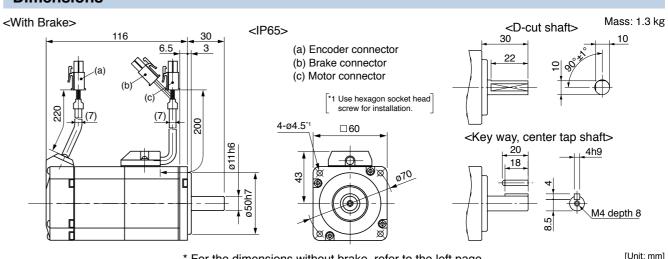
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

			AC1	00 V	
Motor model	IP65		MSMD041G1□	MSMD041S1	
wiotor model *1		IP67		-	-
Annliaghla	Model	A5II, A5 series		MCD ⊘ T3120	
Applicable driver *2	No.	A5IIE, A5E series		MCD ⊘T3120E	_
unver	Fr	ame sym	bol	C-fra	ame
Power supply	capacit	y	(kVA)	0.	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1.	.3
Momentary Ma	ax. peal	k torque	(N·m)	3.8	
Rated current		(.	A(rms))	4.6	
Max. current (A(o-p))			19).5	
Regenerative brake Without option		No limit Note)2			
frequency (times/	min) Note)1	DV0P	4282	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 ($\times 10^{-4}$	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 encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1,048,576	131,072

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

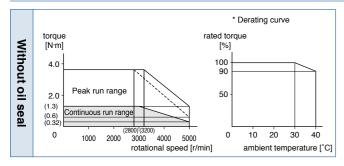
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

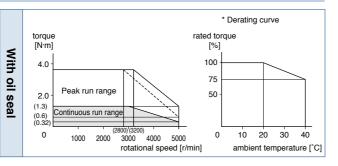
• Permissible load (For details, refer to P.183)

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

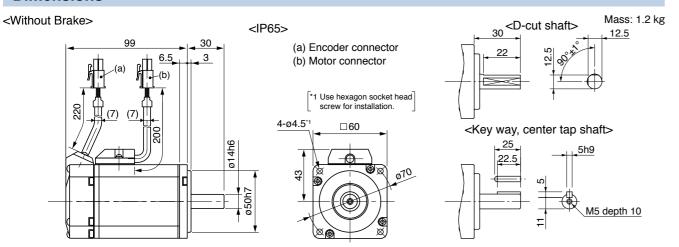
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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





Dimensions



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

, 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 mode *	:1	IP67		-	_
A	Model	A5 I I, A5	series	MBD◇	T2510
Applicable driver *	No.	A5IIE, A5E series		MBD ⊘T2510E	_
divoi	Fı	ame sym	bol	B-fra	ame
Power supp	ly capacit	y	(kVA)	0.	9
Rated outpu	ut		(W)	40	00
Rated torqu	е		(N·m)	1.	3
Momentary	Max. pea	k torque	(N·m)	3.8	
Rated curre	nt	(A(rms))	2.6	
Max. current (A(o-p))		11	.0		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	0.26	
of rotor (×10) ⁻⁴ kg·m ²)	With b	orake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		le turn	1,048,576	131,072	

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.

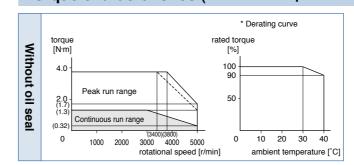
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2
0 0 (/(/	

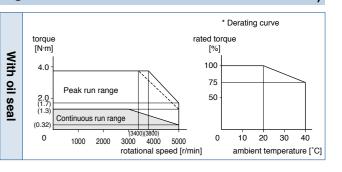
• Permissible load (For details, refer to P.183)

	During assembly	Radial load P-direction (N)	392
		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, 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.

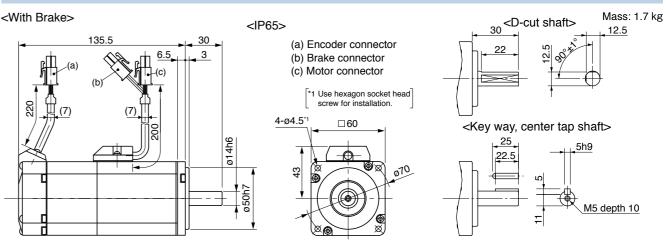
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

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

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

[Unit: mm]

			AC2	00 V
Mataumaadal		IP65	MSMD082G1□	MSMD082S1□
Motor model *1		IP67	-	-
A munica a la la	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))	4.0	
Max. current		(A(o-p))	17	'.O
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0P4283	No limi	t 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	Resolution per single turn			131,072

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

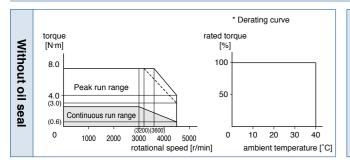
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

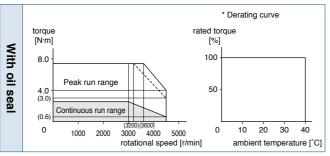
• Permissible load (For details, refer to P.183)

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

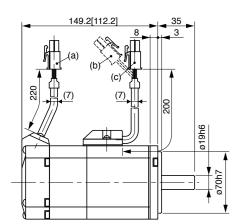
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



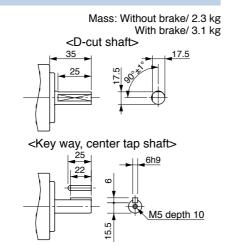


Dimensions



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

<IP65>



* 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.

[Unit: mm]

MEMO

				AC1	00 V
Motor model		IP65		MHMD021G1□	MHMD021S1
*1		IP67		-	_
Ammliaalala	Model	A5II, A5	series	MBD<	T2110
Applicable driver *2	No.	A5IIE, A5E series		MBD ⊘T2110E	_
unvoi	Fr	ame sym	bol	B-fra	ame
Power supply capacity (kVA)			0.5		
Rated output (W)			200		
Rated torque (N·m)				0.64	
Momentary Max. peak torque (N·m)			1.91		
Rated current (A(rms))			2.5		
Max. current (A(o-p))			10	0.6	
Regenerative brake Without option			No limi	t Note)2	
frequency (times/min) Note)1 DV0P4283			4283	No limit Note)2	
Rated rotational speed (r/min)			(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 b	orake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1,048,576	131,072

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

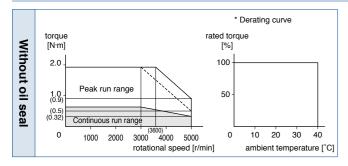
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

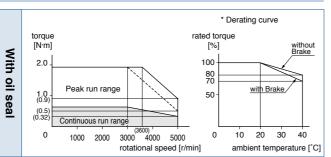
Permissible load (For details, refer to P.183)

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

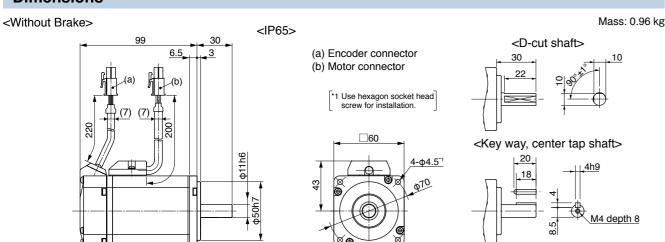
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

Specifications

			AC2	00 V		
Mataumandal		IP65		MHMD022G1□	MHMD022S1	
Motor mod	*1		IP67		-	-
Annlinable	N	Model	A5 I I, A5	series	MAD	T1507
Applicable driver *2		No.	A5IIE, A5E series		MAD ⊘T1507E	_
diivoi		Frame symbol		A-frame		
Power supp	ply ca	apacity	y	(kVA)	0	.5
Rated outp	ut			(W)	20	00
Rated torqu	ue			(N·m)	0.	64
Momentary Max. peak torque (N·m)			1.91			
Rated current (A(rms))			1.6			
Max. current (A(o-p))			6	.9		
Regenerative brake W		Without	option	No limit Note)2		
frequency (tir	mes/min	n) Note)1	DV0P	4283	No limit Note)2	
Rated rotational speed (r/min)			3000			
Max. rotation	onals	speed		(r/min)	5000	
Moment of	inerti	ia	Without	brake	0.42	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		g·m²)	With brake		0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
Resolution per s			n per sing	le turn	1,048,576	131,072

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

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

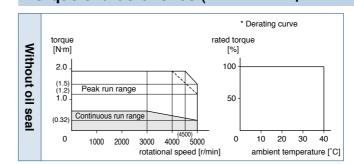
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

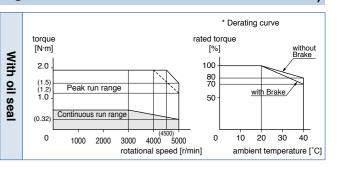
• Permissible load (For details, refer to P.183)

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

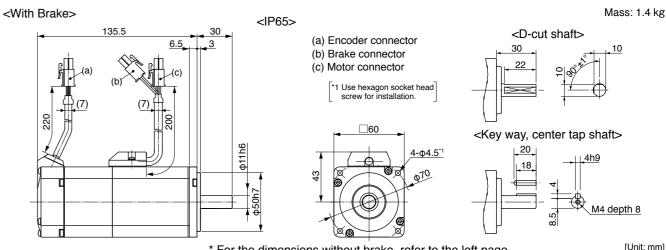
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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

[Unit: mm]

Motor model *1 IP67 Applicable Model A5II, A5 series	HMD041G1□ MHMD041S1□ MCD◇T3120 CD◇T3120E - C-frame 0.9	
*1 IP67 Applicable driver *2 No. A5II, A5 series A5IIE, A5E series Model Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m)	CD \bigcirc T3120E – C-frame	
Applicable driver *2 No. A5IIE, A5E series Minute Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m)	CD \bigcirc T3120E – C-frame	
driver *2 No. A5IIE, A5E series Miles	C-frame	
Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m)		
Rated output (W) Rated torque (N·m)	0.9	
Rated torque (N·m)		
. ,	400	
Momentary Max. peak torque (N·m)	1.3	
	3.8	
Rated current (A(rms))	4.6	
Max. current (A(o-p))	19.5	
Regenerative brake Without option	No limit Note)2	
frequency (times/min) Note)1 DV0P4282	No limit Note)2	
Rated rotational speed (r/min)	3000	
Max. rotational speed (r/min)	5000	
Moment of inertia 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 encoder specifications Note)5	20-bit 17-bit Incremental Absolute	
Resolution per single turn		

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

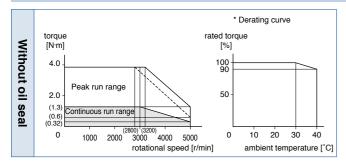
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

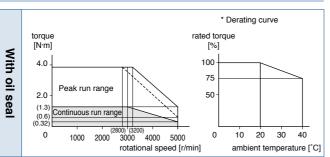
• Permissible load (For details, refer to P.183)

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

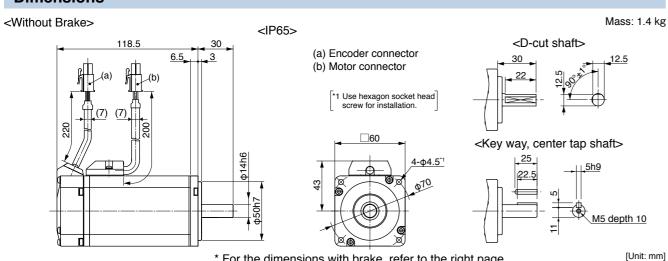
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

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

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

Specifications

			AC2	00 V	
		IP65		MHMD042G1□	MHMD042S1
Motor mode *	•	IP67		-	_
A L' l- L -	Model	A5 I I, A5	series	MBD<	T2510
Applicable driver *	No.	A5IIE, A5E series N		MBD ⊘T2510E	_
divoi	Fr	Frame symbol		B-frame	
Power supply capacity (kVA)			0	.9	
Rated outpu	ıt		(W)	40	00
Rated torqu	е		(N·m)	1.3	
Momentary Max. peak torque (N·m)			3.8		
Rated current (A(rms))			2.6		
Max. current (A(o-p))			11	.0	
Regenerative brake Without option			No limi	t Note)2	
frequency (times/min) Note)1 DVC		DV0P	4283	No limit Note)2	
Rated rotational speed (r/min)			3000		
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	0.67	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake		0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072	

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

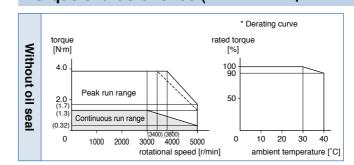
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

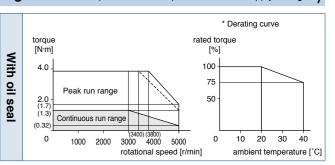
• Permissible load (For details, refer to P.183)

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

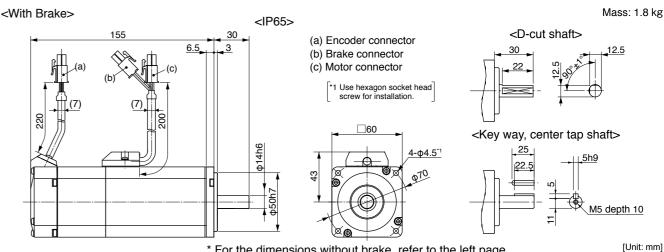
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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

			AC2	00 V		
Motor model		IP65	MHMD082G1□	MHMD082S1		
*1		IP67	-	-		
Amaliaahla	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.	7.1		
Rated current		(A(rms))	4.0			
Max. current		(A(o-p))	17	'.O		
Regenerative b	rake	Without option	No limit Note)2			
frequency (times/r	nin) Note)1	DV0P4283	No limit Note)2			
Rated rotational speed		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 encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1,048,576	131,072		

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

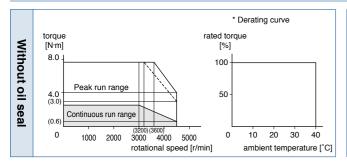
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

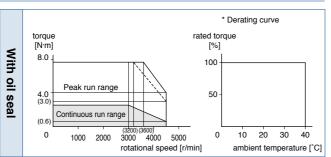
• Permissible load (For details, refer to P.183)

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

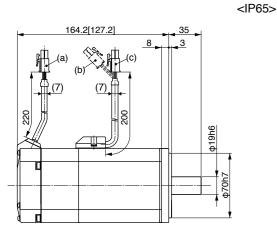
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



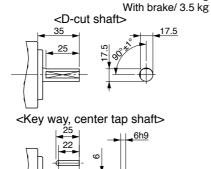


Dimensions



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

*1 Use hexagon socket head screw for installation.



Mass: Without brake/ 2.5 kg

* 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	
M-4		IP65		-	-
Motor model		IP67		MSME5AZG1□	MSME5AZS1
Amaliaalala	Model	A5II, A5 series		MAD ⊘ T1105	
Applicable driver *2	No.	A5IIE, A	5E series	MAD ◇T1105E	_
unvoi	Fr	ame syn	nbol	A-fra	ame
Power supply	capacit	y	(kVA)	0.	4
Rated output			(W)	5	0
Rated torque			(N·m)	0.	16
Momentary M	ax. peal	k torque	(N·m)	0.48	
Rated current			(A(rms))	1.1	
Max. current (A(o-p))			4.	7	
Regenerative b	rake	Withou	t option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4280		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Withou	t brake	0.025	
of rotor (×10 ⁻⁴	kg·m²)	With	brake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sino	gle turn	1,048,576	131,072

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

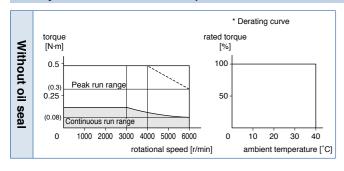
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

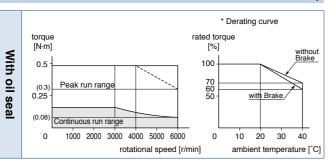
Permissible load (For details, refer to P.183)

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, 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.>)

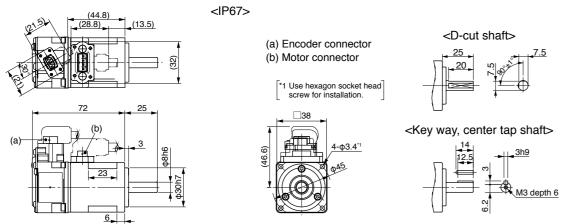




Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 0.31 kg



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

[Unit: mm]

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

Specifications

				AC2	00 V
		IP65		-	-
Motor mode	ÐI ⊧1	IP67		MSME5AZG1□	MSME5AZS1
	Model	A5II, A5	series	MAD	T1505
Applicable driver	No. ∗2	A5IIE, A	E series	MAD ⊘T1505E	-
ulivei	Fi	ame sym	bol	A-fr	ame
Power supp	oly capacit	у	(kVA)	0	.5
Rated outp	ut		(W)	5	0
Rated torqu	ıe		(N·m)	0.	16
Momentary	Max. pea	k torque	(N·m)	0.48	
Rated curre	ent	(/	A(rms))	1.1	
Max. currer	nt	((A(o-p))	4.7	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0P4280		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	6000	
Moment of	inertia	Without	brake	0.0	125
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1,048,576	131,072

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

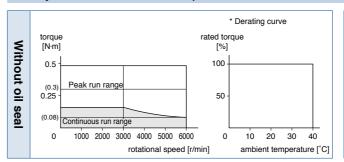
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

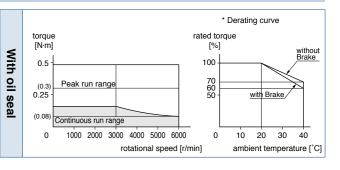
• Permissible load (For details, refer to P.183)

	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, 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)



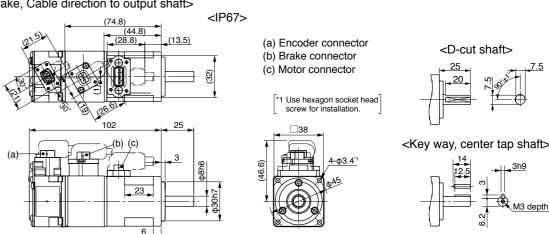


Dimensions

<Cautions>

<With Brake, Cable direction to output shaft>





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

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

				AC1	00 V
Motor model		IP65		-	_
*1		IP67		MSME011G1□	MSME011S1
Amaliaalala	Model	A5II, A5	series	MAD	T1107
Applicable driver *2	No.	A5IIE, A5E series		MAD ◇T1107E	_
unver	Fr	ame sym	bol	A-fra	ame
Power supply	capacit	у	(kVA)	0.	.4
Rated output			(W)	10	00
Rated torque			(N·m)	0.0	32
Momentary Ma	ax. peal	k torque	(N·m)	0.95	
Rated current		(A(rms))	1.6	
Max. current (A(o-p))		6.9			
Regenerative brake		Without option		No limit Note)2	
frequency (times/r	min) Note)1	DV0P4280		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.051	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3				30 times	s or less
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1,048,576	131,072

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

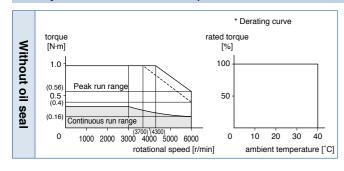
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

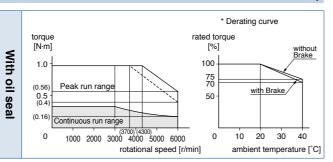
• Permissible load (For details, refer to P.183)

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, 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.>)



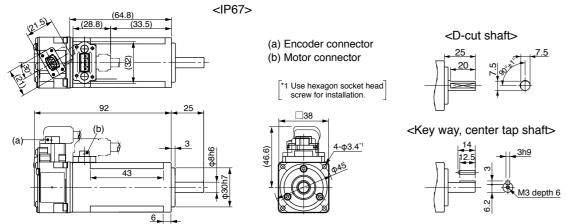


Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 0.46 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.

Specifications

		AC2	00 V		
		IP65		-	-
Motor mod	ei *1	IP67		MSME012G1□	MSME012S1
A	Mode	A5II, A5 series		MAD	T1505
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1505E	-
unven	F	rame sym	bol	A-frame	
Power sup	ply capaci	ty	(kVA)	0.5	
Rated outp	ut		(W)	1(00
Rated torqu	ne		(N·m)	0.:	32
Momentary	Max. pea	k torque	(N·m)	0.95	
Rated current (A(rms))		1.1			
Max. current (A(o-p))		4.7			
Regenerative brake frequency (times/min) Note)1		Without	option	No limit Note)2	
		DV0P	4280	No limit Note)2	
Rated rotational speed (r/min)		30	00		
Max. rotation	onal speed	t	(r/min)	6000	
Moment of	inertia	Without	brake	0.051	
of rotor (×1	of rotor (×10 ⁻⁴ kg·m ²)		orake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		le turn	1,048,576	131,072	

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

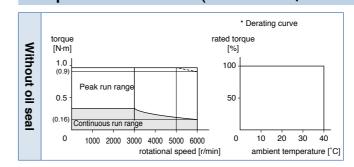
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

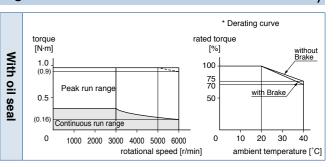
• Permissible load (For details, refer to P.183)

	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

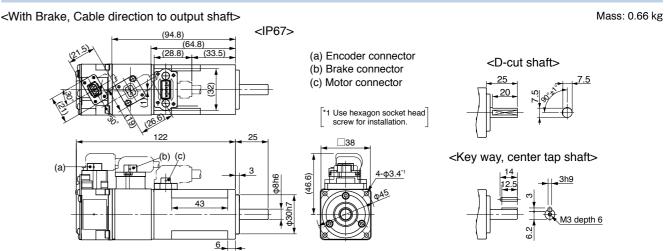
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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.

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

Diano oposinioanono (i si asiam	,
(This brake will be released when it is a Do not use this for braking the motor is	energized.) n motion.
Static friction torque (N·m)	1 27 or more

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
		Thrust load B-direction (N)	196
	During	Radial load P-direction (N)	245
	operation	Thrust load A, B-direction (N)	98
1			

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

* Derating curve

10 20 30

ambient temperature [°C]

rated torque

100

Specifications

			AC100 V	
Matanasadal		IP65	-	-
Motor model		IP67	MSME021G1□	MSME021S1
Amaliaahla	Model	A5II, A5 series	MBD<	T2110
Applicable driver *2	No.	A5IIE, A5E series	MBD ⊘T2110E	_
unven	Fi	ame symbol	B-fra	ame
Power supply	y capacit	y (kVA)	0	.5
Rated output	t	(W)	200	
Rated torque)	(N·m)	0.64	
Momentary N	Л ах. реа	k torque (N·m)	1.91	
Rated current (A(rms))		2.5		
Max. current (A(o-p))		10	0.6	
Regenerative brake Without option		No limi	t Note)2	
frequency (time	s/min) Note)1	DV0P4283	No limit Note)2	
Rated rotational speed (r/min)		3000		
Max. rotational speed (r/min)		6000		
Moment of in	ertia	Without brake	Without brake 0.14	
of rotor (×10	-4 kg·m²)	With brake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		1,048,576	131,072	

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

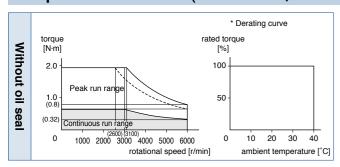
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

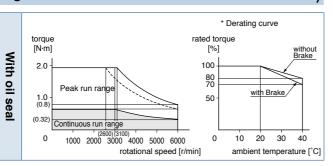
• Permissible load (For details, refer to P.183)

		Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147	
	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, 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.>)

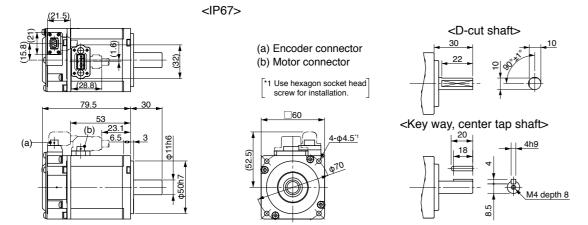




Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 0.78 kg



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

[Unit: mm]

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

Dimensions

(1.3) Peak run range

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

torque [N·m]

2.0

Without oil

driver

IP65

IP67

Model A5II, A5 series

Frame symbol

A5IIE, A5E series

(W)

(N·m)

(N·m)

(A(rms))

(A(o-p)) Without option

(r/min)

(r/min)

DV0P4283

Without brake

With brake

Resolution per single turn

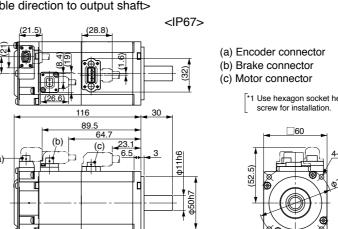
No.

Momentary Max. peak torque

<With Brake, Cable direction to output shaft>

1000 2000 3000 4000 5000 6000

rotational speed [r/min]



AC200 V

MAD<>T1507

A-frame

0.5

200

0.64

1.91

1.5

6.5

No limit Note)2

No limit Note)2

3000

6000

0.14

0.16

30 times or less

17-bit

Absolute

131,072

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

₩ith

<u>⊆</u>.

torque

2.0

20-bit

Incremental

1,048,576

* Derating curv

10 20 30

ambient temperature [°C]

rated torque

100

MSME022S1

MSME022G1

MAD \diamondsuit T1507E

	Mass: 1.2 kg
oder connector le connector or connector Use hexagon socket head screw for installation.	<d-cut shaft=""></d-cut>
□60	<key center="" shaft="" tap="" way,=""></key>
4-φ4.5*1	20 4h9

1000 2000 3000 4000 5000 6000

rotational speed [r/min]

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

[Unit: mm]

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

			AC1	00 V
Motor model		IP65	-	-
*1		IP67	MSME041G1□	MSME041S1□
Amaliaahla	Model	A5II, A5 series	MCD<	T3120
Applicable *2	No.	A5IIE, A5E series	MCD ⊘T3120E	_
dilvei	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.3	
Momentary 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	No limit Note)2	
		DV0P4282	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	0.26	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072

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

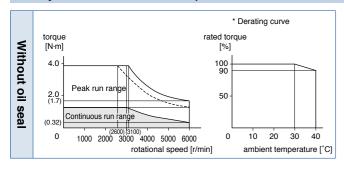
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

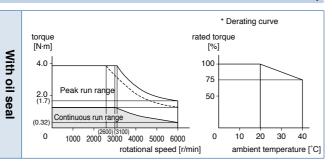
Permissible load (For details, refer to P.183)

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, 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.>)

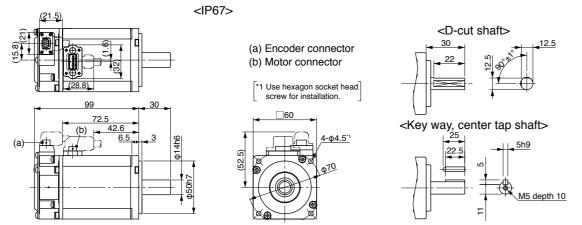




Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 1.2 kg



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

[Unit: mm]

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

Specifications

				AC2	00 V
M - t - · · · · - · · · · · · · · · · · · ·		IP65		-	-
Motor model		IP67		MSME042G1□	MSME042S1
	Model	A5II, A5 series		MBD ⊘ T2510	
Applicable driver *2	No.	A5IIE, A5E series		MBD ⊘T2510E	_
unver	Fr	ame sym	bol	B-fra	ame
Power suppl	y capacit	у	(kVA)	0.	.9
Rated output	t		(W)	40	00
Rated torque	9		(N·m)	1.	.3
Momentary I	Max. peal	k torque	(N·m)	3.8	
Rated current (A(rms))			2.4		
Max. current (A(o-p))			10.2		
Regenerative	brake	Without option		No limit Note)2	
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	6000	
Moment of ir	nertia	Without	brake	0.3	26
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per		n per sing	le turn	1,048,576	131,072

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

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

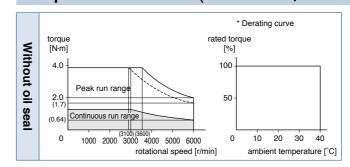
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

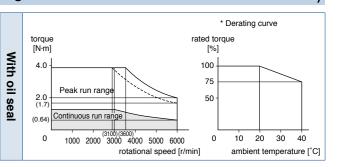
• Permissible load (For details, refer to P.183)

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

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

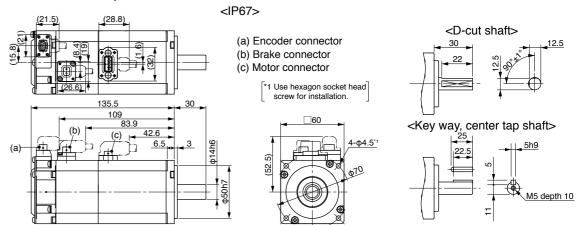




Dimensions

<With Brake, Cable direction to output shaft>

Mass: 1.6 kg



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

[Unit: mm]

			AC2	00 V
		IP65	-	_
Motor model *1		IP67	MSME082G1□	MSME082S1
A	Model	A5II, A5 series	MCD<	T3520
Applicable 42	No.	A5IIE, A5E series	MCD ♦T3520E	_
dilvei	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 Max. peak torque (N·m)			7.1	
Rated current (A(rms))			4.1	
Max. current (A(o-p))			17	7.4
Regenerative brake frequency (times/min) Note)1		Without option	No limit Note)2	
		DV0P4283	No limit Note)2	
Rated rotational speed (r/min)		d (r/min)	3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	rtia	Without brake	0.87	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less	
Rotary encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072
T	L		+ A COOO V of .	a a walta a

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

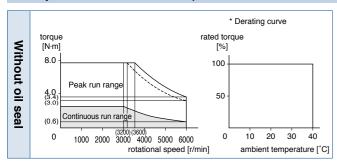
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

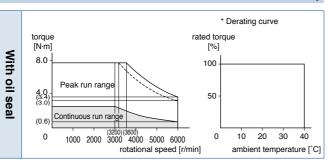
• Permissible load (For details, refer to P.183)

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

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

Mass: Without brake/ 2.3 kg <With Brake, Cable direction to output shaft> <IP67> With brake/ 3.1 kg <D-cut shaft> (a) Encoder connector (b) Brake connector (c) Motor connector *1 Use hexagon socket head 121.7[85.7 94. <Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

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

Specifications

			AC2	00 V		
		IP65		MSME102GC□	MSME102SC	
Motor mode) ⊧1	IP67		MSME102G1□	MSME102S1	
	Model	A5II, A5 series		MDD⇔T5540		
Applicable driver	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	_	
unven	Fi	rame sym	bol	D-fr	ame	
Power supp	ly capacit	у	(kVA)	1.	.8	
Rated outpo	ut		(W)	1.	.0	
Rated torqu	ie		(N·m)	3.	18	
Momentary	Max. pea	k torque	(N·m)	9.	9.55	
Rated curre	ent	(.	A(rms))	6.6		
Max. currer	nt	((A(o-p))	2	28	
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (times/min) Note)1		DV0P	4284	No limit Note)2		
Rated rotational speed (r/min)		(r/min)	3000			
Max. rotation	nal speed		(r/min)	5000		
Moment of	inertia	Without	brake	2.0	03	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	2.35		
Recommended moment of inertia ratio of the load and the rotor Note		tia Note)3	15 times	s or less		
Rotary encoder specif		fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution		n per sing	le turn	1,048,576	131,072	

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

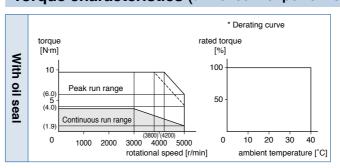
	•
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

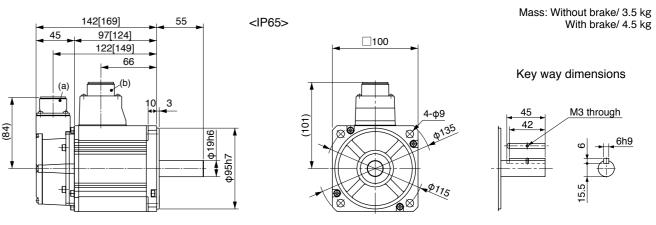
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

			AC200 V		
		IP65		MSME152GC□	MSME152SC
Motor model *1		IP67		MSME152G1□	MSME152S1
Amaliaabla	Model	A5II, A5	series	MDD<	T5540
Applicable driver *2	No.	A5IIE, A5E series		MDD \diamondsuit T5540E	-
unven	Fı	ame sym	bol	D-fra	ame
Power supply	capacit	у	(kVA)	2.	.3
Rated output			(W)	1.	.5
Rated torque			(N·m)	4.	77
Momentary Max. peak torque (N·m)			14.3		
Rated current		(.	A(rms))	8.2	
Max. current (A(o-p))			35		
Regenerative	orake	Without option		No limit Note)2	
frequency (times	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of ine	ertia	Without	brake	2.84	
of rotor (×10 ⁻²	kg·m²)	With b	rake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn			1,048,576	131,072

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

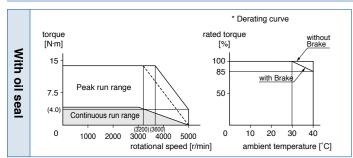
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

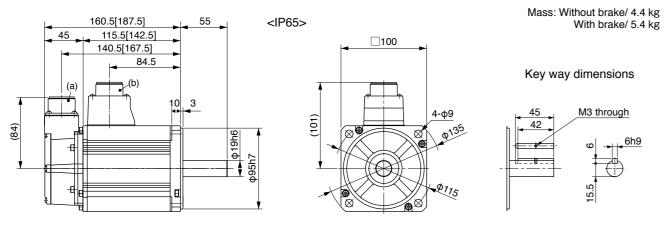
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

Specifications

				AC2	00 V
M - t - · · · · · · · · · · · · · · · · · ·	-1	IP65		MSME202GC□	MSME202SC
Motor mode	€I *1	IP67		MSME202G1□	MSME202S1
A II l. I .	Model	A5II, A5 series		MED ⊘T7364	
Applicable driver	*2 No.	A5IIE, A5E series		MED ⊘T7364E	-
unver	Fr	ame sym	bol	E-fra	ame
Power supp	oly capacit	у	(kVA)	3.	3
Rated outp	ut		(W)	2.	0
Rated torqu	ıe		(N·m)	6.5	37
Momentary	Max. peal	k torque	(N·m)	19.1	
Rated curre	ent	(A(rms))	11.3	
Max. current (A(o-p))			4	8	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0P4285		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed		(r/min)	5000	
Moment of	inertia	Without	brake	3.68	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		1,048,576	131,072		

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

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

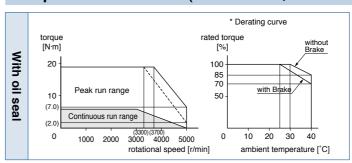
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

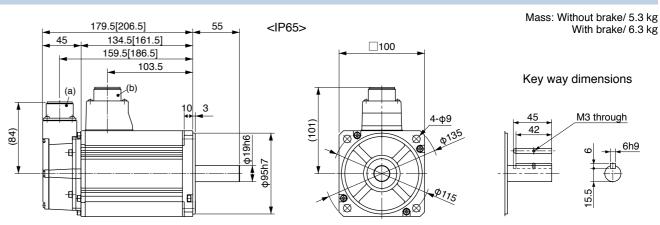
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



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



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

[Unit: mm]

A5 Family

Specifications

			AC2	AC200 V	
		MSME302GC□	MSME302SC□		
Motor model		IP67	MSME302G1□	MSME302S1	
	Model A5II, A5 series		MFD◇	TA390	
Applicable *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_	
dilvei	Fr	ame symbol	F-fra	ame	
Power supply of	capacity	y (kVA)	4.	.5	
Rated output		(W)	3	.0	
Rated torque		(N·m)	9.55		
Momentary Ma	ax. peal	k torque (N·m)	28.6		
Rated current		(A(rms))	18.1		
Max. current		(A(o-p))	77		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/m	nin) Note)1	DV0P4285×2	No limit Note)2		
Rated rotations	al spee	d (r/min)	3000		
Max. rotational	speed	(r/min)	5000		
Moment of ine	rtia	Without brake	6.50		
of rotor (×10 ⁻⁴	kg·m²)	With brake	7.85		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Re	esolutio	n per single turn	1,048,576	131,072	

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

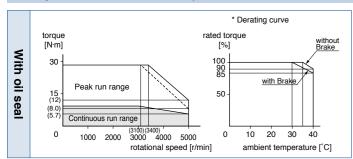
Permissible load (For details, refer to P.183)

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

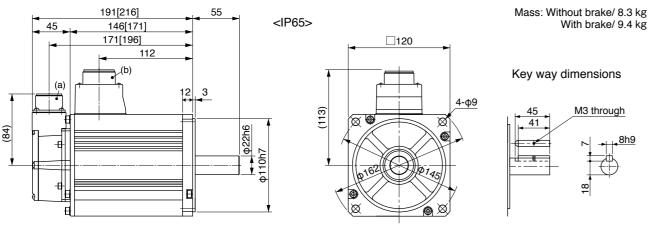
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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

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
M - t		IP65		MSME402GC□	MSME402SC
Motor mode	e 1	IP67		MSME402G1□	MSME402S1
A I' l. l .	Model	A5II, A5 series		MFD ◇TB3A2	
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TB3A2E	-
divei	Fr	ame sym	bol	F-fra	ame
Power supp	oly capacit	y	(kVA)	6	.0
Rated outpo	ut		(W)	4.	.0
Rated torqu	ie		(N·m)	12	2.7
Momentary	Max. peal	k torque	(N·m)	38.2	
Rated curre	ent	(A(rms))	19.6	
Max. currer	nt	((A(o-p))	8	3
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4285×2		No limi	t Note)2
Rated rotati	ional spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	4500	
Moment of	inertia	Without	brake	12	2.9
of rotor (×10	0 ⁻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	
	Resolutio	n per sing	le turn	1,048,576	131,072

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

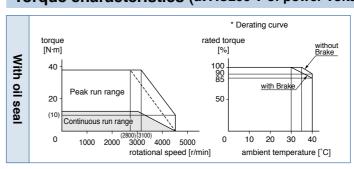
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

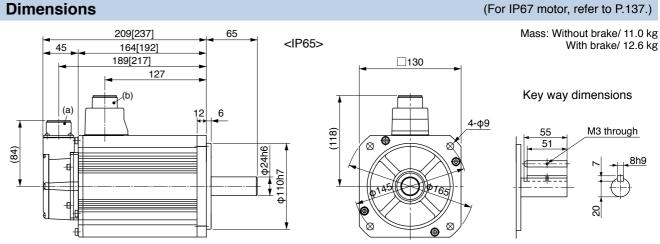
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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



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



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

[Unit: mm]

			AC200 V		
Motor model		IP65		MSME502GC□	MSME502SC□
*1		IP67		MSME502G1□	MSME502S1□
A mustice a late	Model	A5II, A5 series		MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
anvoi	Fı	ame symbo	ol	F-fra	ame
Power supply	capacit	y	(kVA)	7.	.5
Rated output			(W)	5	.0
Rated torque			(N·m)	15.9	
Momentary Ma	ax. pea	k torque	(N·m)	47.7	
Rated current		(A	(rms))	24.0	
Max. current		(A	(o-p))	102	
Regenerative b	rake	Without o	ption	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 b	rake	17.4	
of rotor (×10 ⁻⁴	kg·m²)	With bra	ake	18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	esolutio	n per single	turn	1,048,576	131,072

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

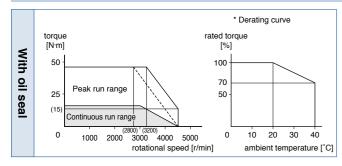
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

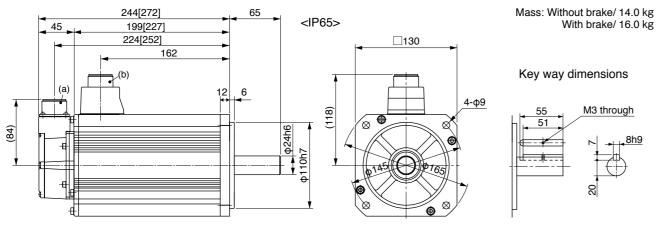
During assembly During	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

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

			AC200 V			
Matauanada		IP65		MDME102GC	MDME102SC	
Motor mode *		IP67		MDME102G1□	MDME102S1	
A 15 15 1	Model	A5II, A5 series		MDD ⊘ T3530		
Applicable driver **	No.	A5IIE, A	5E series	MDD ⊘T3530E	_	
divei	Fr	ame sym	bol	D-fr	ame	
Power suppl	y capacit	y	(kVA)	1.	.8	
Rated outpu	t		(W)	1.	.0	
Rated torque	Э		(N·m)	4.	77	
Momentary I	Max. peal	k torque	(N·m)	14.3		
Rated currer	nt	(A(rms))	5.7		
Max. current (A(o-p))			24			
Regenerative	brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0P4284		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	4.60		
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	5.9	.90	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn			1,048,576	131,072	

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.

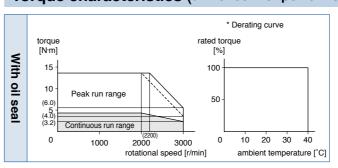
•	
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

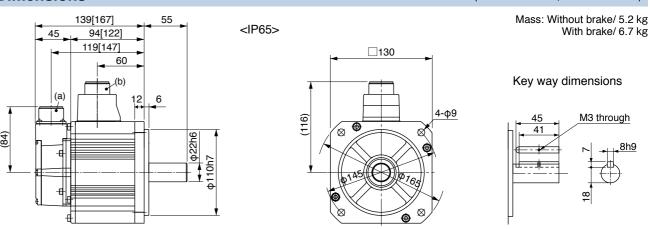
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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

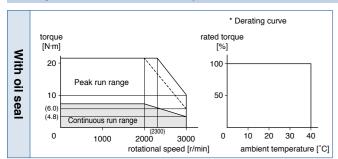
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

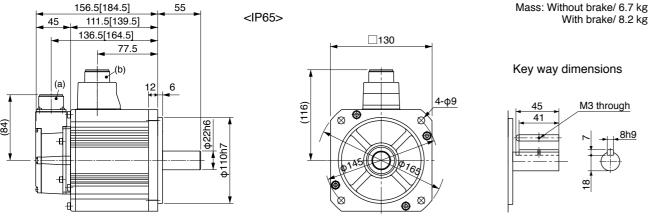
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
M-4		IP65		MDME202GC	MDME202SC
Motor mode	:1	IP67		MDME202G1□	MDME202S1
A I' l. l .	Model	A5II, A5 series		MED<	T7364
Applicable driver *	No.	A5IIE, A	5E series	MED ⊘T7364E	_
divei	Fr	ame sym	bol	E-fra	ame
Power supp	ly capacit	y	(kVA)	3	.3
Rated outpu	ut		(W)	2	.0
Rated torqu	е		(N·m)	9.	55
Momentary	Max. peal	k torque	(N·m)	28.6	
Rated curre	nt	(A(rms))	11.5	
Max. current (A(o-p))			4	9	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4285		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	inertia	Without	brake	8.72	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	10	0.0
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single			le turn	1,048,576	131,072

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

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

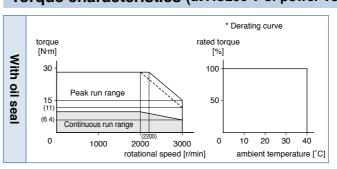
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

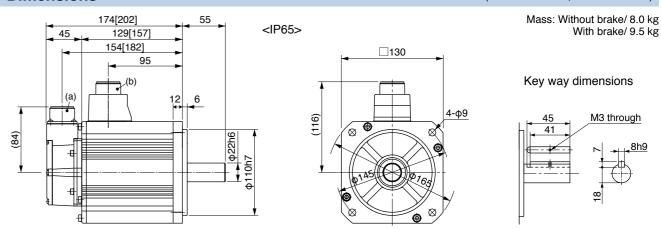
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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
Motor model	IP65			MDME302SC
wotor model *1		IP67	MDME302G1□	MDME302S1
A II I-I -	Model	A5II, A5 series	MFD<	TA390
Applicable *2	No.	A5IIE, A5E series	MFD ⊘TA390E	-
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4	5
Rated output		(W)	3	0
Rated torque		(N·m)	14	.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current	Max. current (A(o-p))			4
Regenerative b	Regenerative brake Without option		No limi	t Note)2
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	20	00
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	12.9	
of rotor (×10 ⁻⁴	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

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

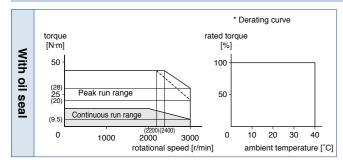
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

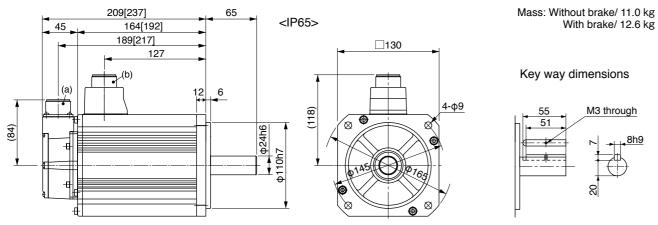
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

					AC2	00 V
Matauaradal		IP65		MDME402GC	MDME402SC	
Motor mode	€I ∗1		IP67		MDME402G1□	MDME402S1
A 1: 1:- 1		Model	A5 I I, A5	series	MFD♦	TB3A2
Applicable driver	*2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unven		Fr	ame sym	bol	F-fra	ame
Power supp	ply c	apacity	y	(kVA)	6	.0
Rated outp	ut			(W)	4.	.0
Rated torqu	ue			(N·m)	19).1
Momentary	Max	x. peal	k torque	(N·m)	57.3	
Rated curre	ent		(A(rms))	21.0	
Max. currer	nt		((A(o-p))	89	
Regenerativ	e br	ake	Without	option	No limit Note)2	
frequency (tin	mes/mi	n) Note)1	DV0P4	285×2	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	37.6	
of rotor (×1	0 ⁻⁴ k	g·m²)	With b	rake	38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution			n per sing	le turn	1,048,576	131,072

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.

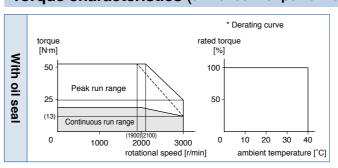
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

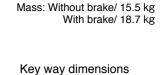
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

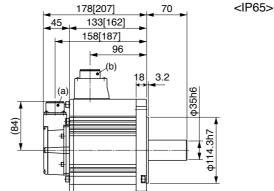
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

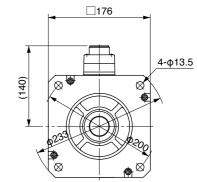


Dimensions

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







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

[Unit: mm]

Motor Specifications

Specifications

				00 V
		IP65	MDME502GC	MDME502SC
Motor model		IP67	MDME502G1	MDME502S1
Amalianda	Model	A5II, A5 series	MFD◇	TB3A2
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unvei	Fr	ame symbol	F-fr	ame
Power supply of	capacit	y (kVA)	7	.5
Rated output		(W)	5	.0
Rated torque		(N·m)	23	3.9
Momentary Ma	ax. peal	k torque (N·m)	71.6	
Rated current	Rated current (A(rms))		25.9	
Max. current		(A(o-p))	110	
Regenerative b	rake	Without option	120	
frequency (times/m		DV0P4285×2	No limit Note)2	
Rated rotations	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of ine	rtia	Without brake	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	With brake 48.8	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Re	esolutio	n per single turn	1,048,576	131,072

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

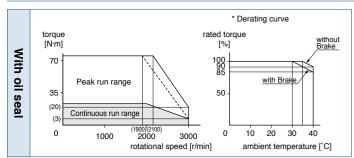
0, ,, (, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	0.4.5
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

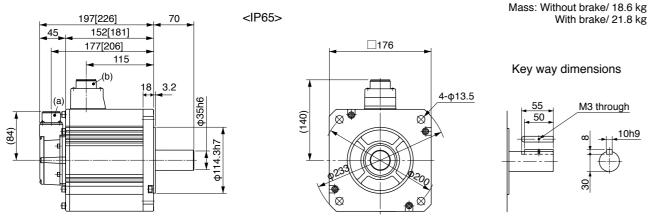
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
Mada al	-1	IP65		-	-
Motor mod	el *1	IP67		MDME752G1□	MDME752S1
	Model	A5II, A5	series	MGD♦	TC3B4
Applicable driver	*2 No.	A5IIE, A	5E series	-	-
unvei	Fr	ame sym	bol	G-fr	ame
Power supp	ply capacit	y	(kVA)	1	1
Rated outp	ut		(W)	7.	.5
Rated torqu	ne		(N·m)	47	'.8
Momentary	Max. peal	k torque	(N·m)	119	
Rated curre	ent	(.	A(rms))	44.0	
Max. current (A(o-p))				165	
Regenerativ	ve brake	Without	option	No limi	t Note)2
frequency (tir	mes/min) Note)1	e)1 DV0P4285×3		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1500	
Max. rotation	onal speed		(r/min)	3000	
Moment of	inertia	a Without brake		101	
of rotor (x1	0 ⁻⁴ kg·m ²)	With brake		107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enc	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1,048,576	131,072

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

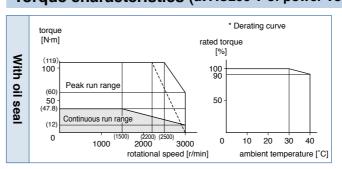
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

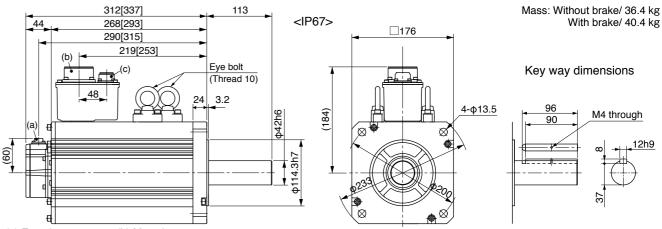
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

			AC2	00 V
		IP65	-	-
Motor model *1		IP67	MDMEC12G1	MDMEC12S1
Amaliaalala	Model	A5II, A5 series	МНО◇	TC3B4
Applicable driver *2	No.	A5IE, A5E series	_	_
unver	Fr	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	1	7
Rated output		(W)	11	.0
Rated torque		(N·m)	70	0.0
Momentary M	ax. peal	k 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	PM20058 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	esolutio	n per single turn	1,048,576	131,072

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

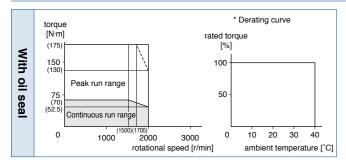
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

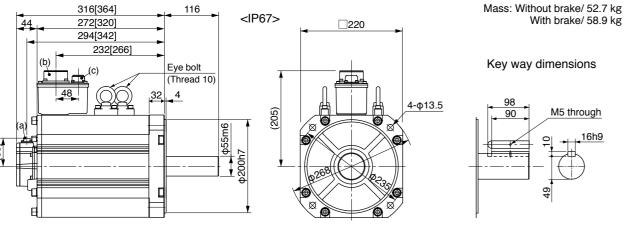
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



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

[Unit: mm]

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

Specifications

			AC2	00 V		
Matau		IP65		-	-	
Motor mode		IP67		MDMEC52G1	MDMEC52S1	
A 15 15 1	Model	A5 I I, A5	series	MHD♦	TC3B4	
Applicable driver **	No.	A5IIE, A	5E series	-	-	
unver	Fr	ame sym	bol	H-fr	ame	
Power suppl	y capacit	y	(kVA)	2	2	
Rated outpu	t		(W)	15	5.0	
Rated torque	Э		(N·m)	95	i.5	
Momentary I	Max. peal	k torque	(N·m)	22	224	
Rated current (A(rms))		66.1				
Max. current (A(o-p))		236				
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0PM20058		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	1500		
Max. rotation	nal speed		(r/min)	2000		
Moment of in	nertia	Without	brake	302		
of rotor (×10	⁻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		1,048,576	131,072			

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.

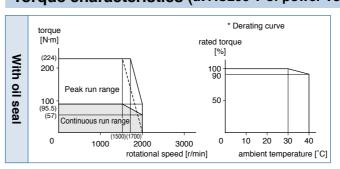
Static friction torque (N·m)	100 or more	
Engaging time (ms)	300 or less	
Releasing time (ms) Note)4 140 or les		
Exciting current (DC) (A)	1.08±10 %	
Releasing voltage (DC) (V)	2 or more	
Exciting voltage (DC) (V)	24±2.4	

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

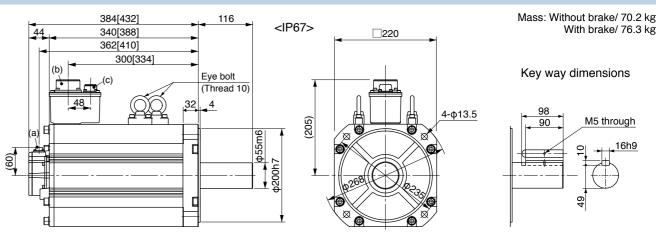
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

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

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



Dimensions



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

[Unit: mm]

			AC2	00 V	
Motor model		IP65	-	-	
*1		IP67	MFME152G1□	MFME152S1	
Annliaghla	Model	A5II, A5 series	MDD<	T5540	
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T5540E	_	
diivoi	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	2	.3	
Rated output		(W)	1	.5	
Rated torque		(N·m)	7.	16	
Momentary Ma	ax. peal	k torque (N·m)	21.5		
Rated current		(A(rms))	7.5		
Max. current		(A(o-p))	32		
Regenerative b	rake	Without option	100		
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	18.2		
of rotor (×10 ⁻⁴	kg·m²)	With brake	23.5		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	Resolution per single turn			131,072	

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

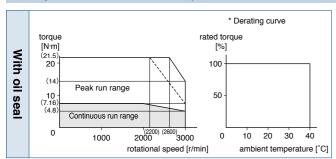
Static friction torque (N·m)	7.8 or more
1 \ /	
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

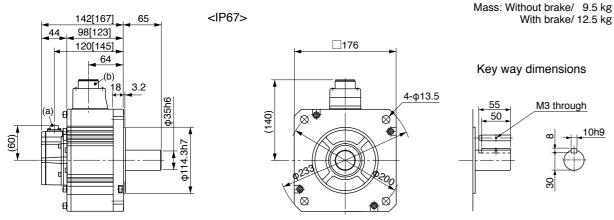
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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) 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	
Matawasada		IP65		-	-
Motor mode *		IP67		MFME252G1□	MFME252S1
	Model	A5II, A5	series	MED ⊘T7364	
Applicable driver **	No.	A5IIE, A	5E series	MED⇔T7364E	_
unver	Fr	ame sym	bol	E-fra	ame
Power suppl	y capacit	y	(kVA)	3	8
Rated outpu	t		(W)	2	5
Rated torque	Э		(N·m)	11	.9
Momentary I	Max. peal	k torque	(N·m)	30.4	
Rated current (A(rms))		13.4			
Max. current (A(o-p))		57			
Regenerative	e brake	Without	option	75	
frequency (time	es/min) Note)1	DV0P4285		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	35.8	
of rotor (×10	⁻⁴ kg·m ²)	With b	rake	45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		1.048.576	131.072		

200 V MFME 2.5 kW Middle inertia, Middle capacity

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

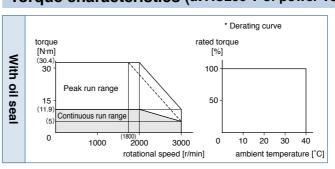
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

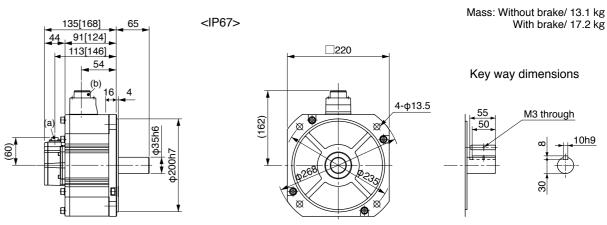
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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



- (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
Amaliaabla	Model	A5II, A5 series	MFD ♦TB3A2	
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fı	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.8
Rated output		(W)	4.	.5
Rated torque		(N·m)	21	.5
Momentary Ma	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/i	min) Note)1	DV0P4285×2	375	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	63.1	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072

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

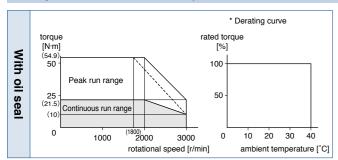
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

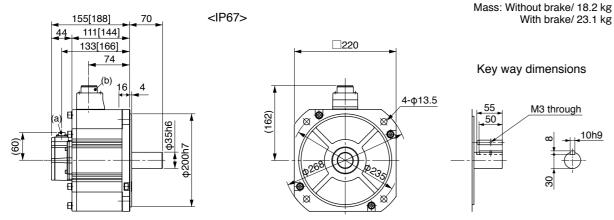
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

Torque characteristics (at 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
M - t - · · · · · · · · · · · · · · · · · ·		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	ut		(W)	0	.9
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		
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)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	inertia	Without brake		6.70	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			ıle turn	1.048.576	131.072

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

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

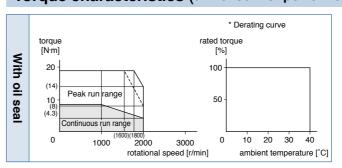
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

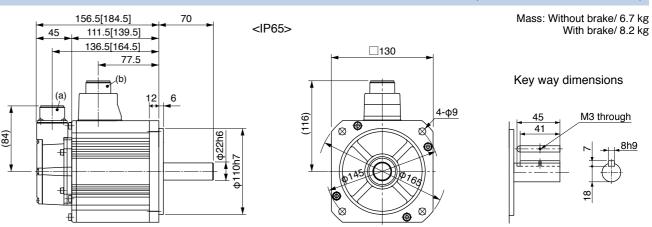
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.139.)



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

[Unit: mm]

			AC2	00 V	
		IP65		MGME202GC□	MGME202SC□
Motor model *1		IP67		MGME202G1□	MGME202S1
	Model	A5II, A5 series		MFD♦	TA390
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TA390E	_
anver	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	3	.8
Rated output			(W)	2	.0
Rated torque			(N·m)	19).1
Momentary Ma	ax. peal	k torque	(N·m)	47.7	
Rated current (A(rms))			17.0		
Max. current (A(o-p))			60		
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without	brake	30.3	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1,048,576	131,072

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

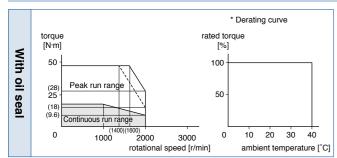
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

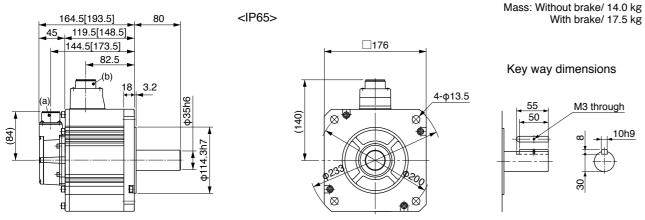
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver 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.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		MGME302GC□	MGME302SC
Motor mode) :1	IP67		MGME302G1□	MGME302S1
	Model	A5II, A5	series	MFD♦	TB3A2
Applicable driver *	No.	A5IIE, A	5E series	MFD ♦TB3A2E	_
unvei	Fi	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	4.	.5
Rated outpu	ut		(W)	3.	.0
Rated torqu	ie		(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 (tim		DV0P4	285×2	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	inertia	Without	brake	48	3.4
of rotor (×10	0 ⁻⁴ kg·m²)	With b	rake	49).2
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Not		Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		n per sing	le turn	1,048,576	131,072

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

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

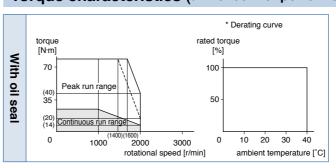
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

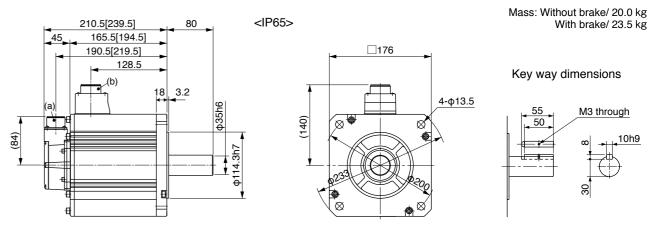
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

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

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



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



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

[Unit: mm]

			AC2	00 V
		IP65	-	-
Motor model *1		IP67	MGME452G1□	MGME452S1
	Model	A5II, A5 series	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output		(W)	4.	.5
Rated torque		(N·m)	43	3.0
Momentary Ma	ax. peal	k torque (N·m)	107	
Rated current (A(rms))			29.7	
Max. current (A(o-p))			110	
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	79.1	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	84.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072

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

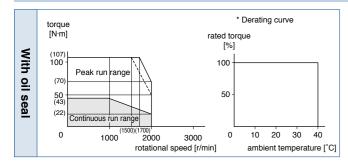
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

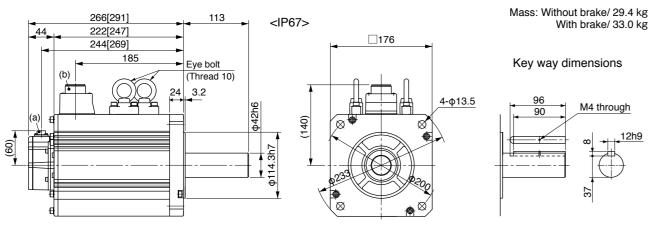
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

Specifications

			AC2	00 V	
Matanada		IP65		-	-
Motor mode	:1	IP67		MGME602G1□	MGME602S1
	Model	A5II, A5	series	MGD♦	тсзв4
Applicable driver *	No.	A5IIE, A	5E series	_	_
unven	Fr	ame sym	bol	G-fr	ame
Power supp	ly capacit	у	(kVA)	9	.0
Rated outpu	ıt		(W)	6	.0
Rated torqu	е		(N·m)	57	'.3
Momentary	Max. peal	k torque	(N·m)	143	
Rated curre	nt	(A(rms))	38.8	
Max. curren	t	((A(o-p))	149	
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4285×4		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	101	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1,048,576	131,072

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.

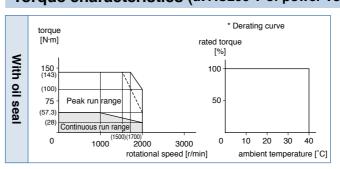
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

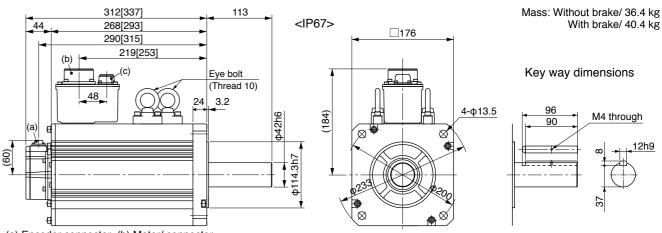
	During assembly During operation	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
		Radial load P-direction (N)	1764
		Thrust load A, B-direction (N)	588

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

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



Dimensions



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

[Unit: mm]

			AC2	00 V
IP65		MHME102GC	MHME102SC	
Motor model *1		IP67	MHME102G1	MHME102S1
A	Model	A5II, A5 series	MDD ⇔ T3530	
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T3530E	_
dilvei	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	1	.8
Rated output		(W)	1	.0
Rated torque		(N·m)	4.	77
Momentary Ma	ax. peal	k torque (N·m)	14.3	
Rated current		(A(rms))	5.7	
Max. current (A(o-p))		24		
Regenerative b	rake	Without option	8	3
frequency (times/r	min) Note)1	DV0P4284	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	24.7	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131,072

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

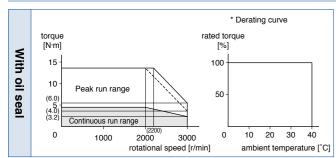
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

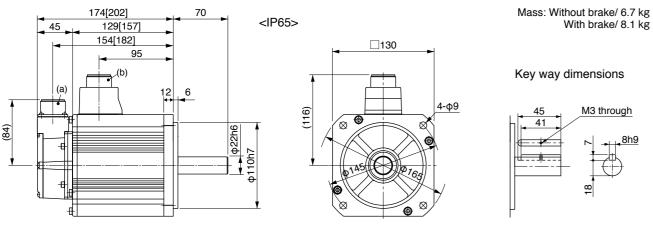
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
		IP65		MHME152GC□	MHME152SC
Motor mode	el *1	IP67		MHME152G1□	MHME152S1
	Model	A5II, A5	series	MDD<	T5540
Applicable driver	*2 No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	-
unven	F	rame sym	bol	D-fra	ame
Power supp	oly capacit	ty	(kVA)	2.	.3
Rated outp	ut		(W)	1.	.5
Rated torqu	ıe		(N·m)	7.	16
Momentary	Max. pea	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	9.4	
Max. currer	nt	((A(o-p))	40	
Regenerativ	e brake	Without	option	22	
frequency (tir		DV0P4284		130	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	t	(r/min)	3000	
Moment of	inertia	Without	brake	37.1	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per s			le turn	1,048,576	131,072

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.

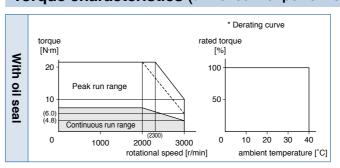
3.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

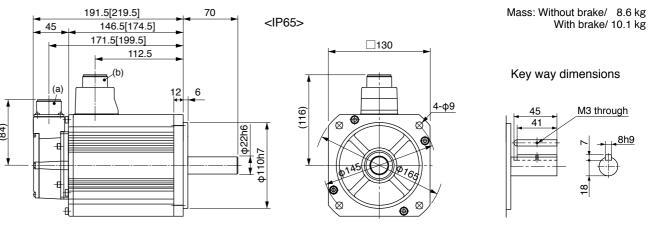
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
aooon	ibiy	Thrust load B-direction (N)	686
During	During operation	Radial load P-direction (N)	490
operat		Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC2	00 V
		IP65	MHME202GC	MHME202SC
Motor model *1		IP67	MHME202G1□	MHME202S1
A multipolate	Model	A5II, A5 series	MED<	T7364
Applicable driver *2	No.	A5IIE, A5E series	MED ⊘T7364E	_
unver	Fı	ame symbol	E-fra	ame
Power supply	capacit	y (kVA)	3	.3
Rated output		(W)	2	.0
Rated torque		(N·m)	9.	55
Momentary Ma	ax. pea	k torque (N·m)	28.6	
Rated current		(A(rms))	11.1	
Max. current		(A(o-p))	47	
Regenerative b	rake	Without option	45	
frequency (times/i	min) Note)1	DV0P4285	142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	57.8	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131,072

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

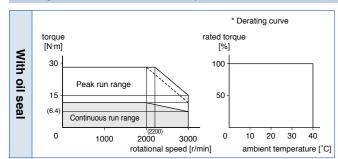
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

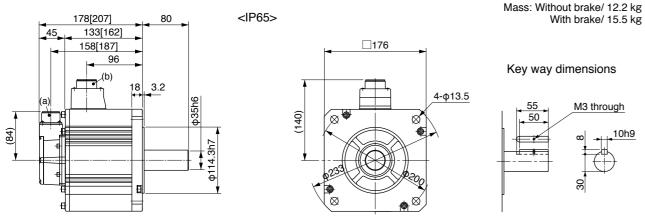
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC2	00 V
		IP65		MHME302GC□	MHME302SC
Motor mode	ÐI ⊧1	IP67		MHME302G1□	MHME302S1
	Model	A5II, A5	series	MFD◇	TA390
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TA390E	_
unven	Fi	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	4.	.5
Rated outpo	ut		(W)	3.	.0
Rated torqu	ie		(N·m)	14	.3
Momentary	Max. pea	k torque	(N·m)	43.0	
Rated current (A(rms))		16.0			
Max. current (A(o-p))		6	8		
Regenerativ	e brake	Without	option	19	
frequency (tin	nes/min) Note)1	DV0P4285×2		142	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	90.5	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution		n per sing	le turn	1,048,576	131,072

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

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

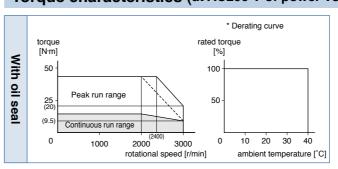
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

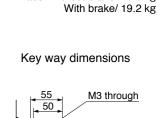
- For details of Note 1 to Note 5, refer to P.182, 183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver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

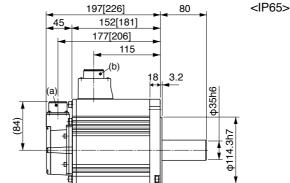


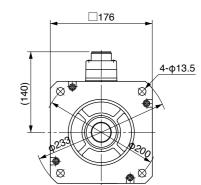
Dimensions

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



Mass: Without brake/ 16.0 kg





M3 through

w

10h9

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

[Unit: mm]

				AC2	00 V
Motor model	IP65		MHME402GC	MHME402SC	
*1		IP67		MHME402G1□	MHME402S1
Amaliaabla	Model	A5II, A5 series		MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5	E series	MFD ⊘TB3A2E	_
unver	Fr	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	6	.0
Rated output			(W)	4	.0
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/	min) Note)1	DV0P42	285×2	125	
Rated rotational speed (r/min)		(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	112	
of rotor ($\times 10^{-4}$	kg·m²)	With 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		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per singl	e turn	1,048,576	131,072

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

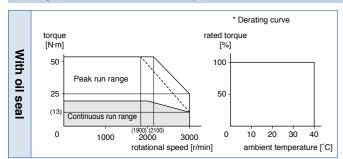
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

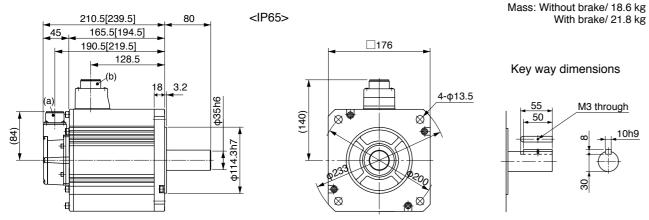
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

(For IP67 motor, refer to P.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
Matananadal		IP65		MHME502GC	MHME502SC
Motor mode	÷1	IP67		MHME502G1	MHME502S1
A 1: 1: 1	Model	A5II, A5 series		MFD ♦TB3A2	
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
divoi	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	7.	.5
Rated outpu	ut		(W)	5	.0
Rated torqu	е		(N·m)	23	3.9
Momentary	Max. peal	k torque	(N·m)	71.6	
Rated current (A(rms))		25.9			
Max. current (A(o-p))		110			
Regenerativ	e brake	Without	option	10	
frequency (tim	nes/min) Note)1	DV0P4285×2		76	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	inertia	Without	brake	162	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	rake	164	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1,048,576	131,072

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

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

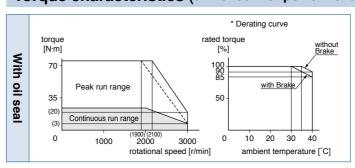
•	
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

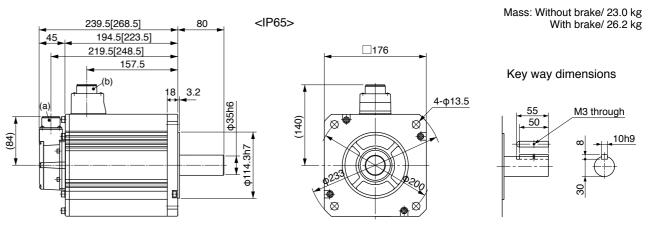
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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

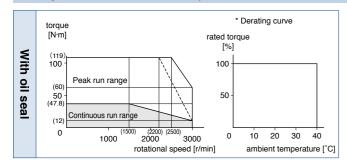
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

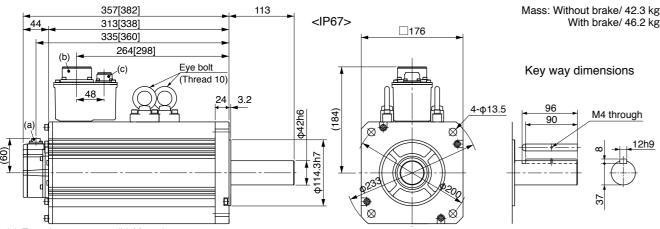
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

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

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

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

Specifications

			AC4	00 V	
Motor model		IP65	MSME084GC	MSME084SC	
*1		IP67	MSME084G1□	MSME084S1	
Amaliaabla	Model	A5II, A5 series	MDD<	T2412	
Applicable driver *2	No.	A5IIE, A5E series	MDD \diamondsuit T2412E	_	
unvoi	Fr	rame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	1.	.6	
Rated output		(W)	75	50	
Rated torque		(N·m)	2.5	39	
Momentary Ma	ax. peal	k torque (N·m)	7.16		
Rated current		(A(rms))	2.4		
Max. current		(A(o-p))	1	10	
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/r	min) Note)1	DV0PM20048	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	1.61		
of rotor (×10 ⁻⁴	kg·m²)	With brake	1.93		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	Resolution per single turn			131,072	

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

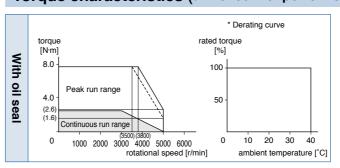
•	
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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, 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.>)



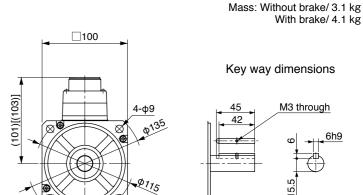
Dimensions

132.5[159.5]

87.5[114.5]

112.5[139.5] 56.5[53.5]

(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.

<IP65>

103

			AC4	00 V
Motor model	IP65		MSME104GC	MSME104SC□
Wotor model *1		IP67	MSME104G1□	MSME104S1
	Model	A5II, A5 series	MDD<	T3420
Applicable driver *2	No.	A5IIE, A5E series	MDD ⊘T3420E	-
unver	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	1.	.8
Rated output		(W)	1.	.0
Rated torque		(N·m)	3.18	
Momentary M	ax. peal	k torque (N·m)	9.55	
Rated current		(A(rms))	3.3	
Max. current	current (A(o-p))		14	
Regenerative b	orake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0PM20048	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	ıl speed	(r/min)	5000	
Moment of ine	ertia	Without brake	2.03	
of rotor (×10 ⁻⁴ kg·m ²)		With brake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		
Rotary encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1,048,576	131,072

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

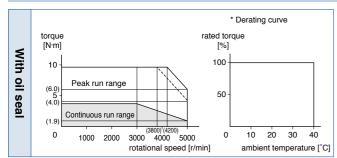
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

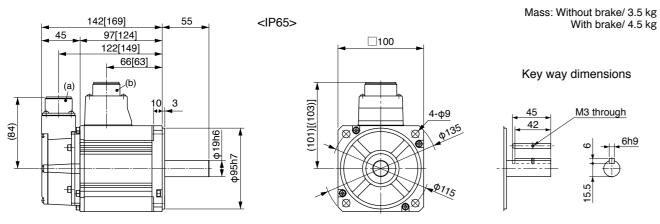
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver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

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



Dimensions

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



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

[Unit: mm]

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

Dimensions are subject to change without notice. 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		MSME154GC	MSME154SC
Motor model		IP67		MSME154G1□	MSME154S1
A II I. I .	Model	A5 I I, A5	series	MDD<	T3420
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unvoi	Fr	ame sym	bol	D-fr	ame
Power suppl	y capacit	y	(kVA)	2	.3
Rated outpu	t		(W)	1.	.5
Rated torque	Э		(N·m)	4.	77
Momentary I	Max. peal	k torque	(N·m)	14.3	
Rated currer	nt	(A(rms))	4.2	
Max. current	t	((A(o-p))	18	
Regenerative	e brake	Without option		No limit Note)2	
frequency (time	es/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of ir	nertia	Without brake		2.84	
of rotor (×10	⁻⁴ kg·m²)	With brake		3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn			1,048,576	131,072

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.

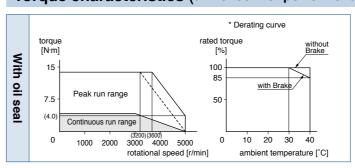
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

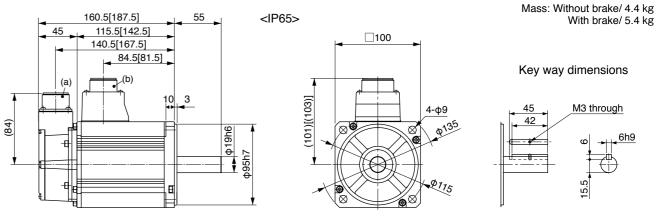
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
documbry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

				AC4	00 V
M-4		IP65		MSME204GC□	MSME204SC□
Motor model *1		IP67		MSME204G1□	MSME204S1
A 15 1-1	Model	A5II, A5	series	MED<	T4430
Applicable *2	No.	A5IIE, A	5E series	MED ⊘T4430E	-
unver	Fr	ame sym	ıbol	E-fra	ame
Power supply of	capacity	/	(kVA)	3.	.3
Rated output			(W)	2.	.0
Rated torque			(N·m)	6.37	
Momentary Ma	ıx. peal	torque	(N·m)	19.1	
Rated current (A(rms))		5.7			
Max. current (A(o-p))		24			
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/m	nin) Note)1	DV0PM20049		No limit Note)2	
Rated rotations	al spee	d	(r/min)	3000	
Max. rotational	speed		(r/min)	5000	
Moment of iner	rtia	Withou	t brake	3.68	
of rotor ($\times 10^{-4}$)	kg·m²)	With I	orake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Re	Resolution per single turn			1,048,576	131,072

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

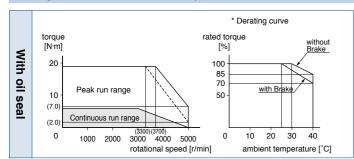
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

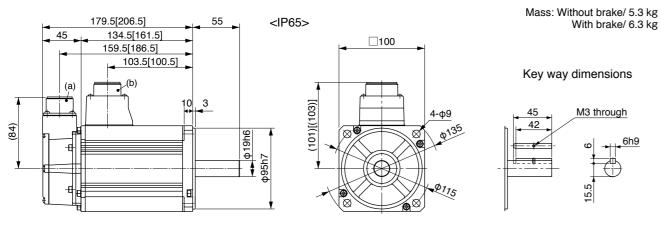
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

Specifications

			AC4	00 V	
		IP65		MSME304GC□	MSME304SC
Motor mode	9I ∗1	IP67		MSME304G1□	MSME304S1
A 1: 11	Model	A5II, A5	series	MFD◇	T5440
Applicable driver	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unven	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	ty	(kVA)	4.	.5
Rated outp	ut		(W)	3.	.0
Rated torqu	ıe		(N·m)	9.9	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated current (A(rms))		9.2			
Max. current (A(o-p))		39			
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tir	nes/min) Note)	DV0PM20049×2		No limit Note)2	
Rated rotational speed (r/min)		3000			
Max. rotation	onal speed	t	(r/min)	5000	
Moment of	inertia	Without	brake	6.9	50
of rotor (×10 $^{-4}$ kg·m 2)		With b	orake	7.85	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		n per sina	le turn	1,048,576	131,072

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

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

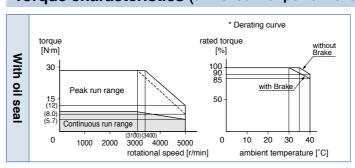
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

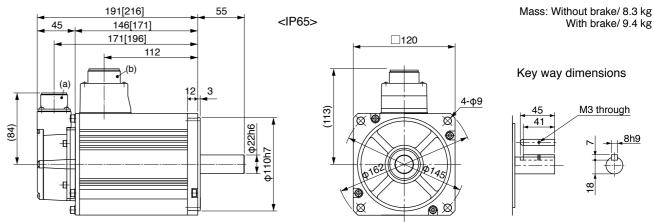
		Radial load P-direction (N)	980
During	•	Thrust load A-direction (N)	588
aooon	ibiy	Thrust load B-direction (N)	686
During	During operation	Radial load P-direction (N)	490
operat		Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

				AC4	00 V
		IP65		MSME404GC□	MSME404SC
Motor model *1		IP67		MSME404G1□	MSME404S1
A 11 11	Model	A5Ⅱ, A5	series	MFD♦	TA464
Applicable driver *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unver	Fı	ame sym	ıbol	F-fra	ame
Power supply	capacit	у	(kVA)	6.	.8
Rated output			(W)	4.	.0
Rated torque			(N·m)	12	2.7
Momentary M	ax. pea	k torque	(N·m)	38.2	
Rated current		((A(rms))	9.9	
Max. current (A(o-p))		42			
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)	3000	
Max. rotationa	al speed		(r/min)	4500	
Moment of ine	ertia	Withou	t 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		15 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

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

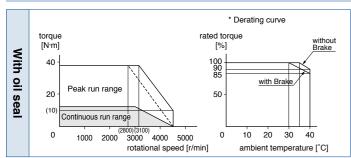
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

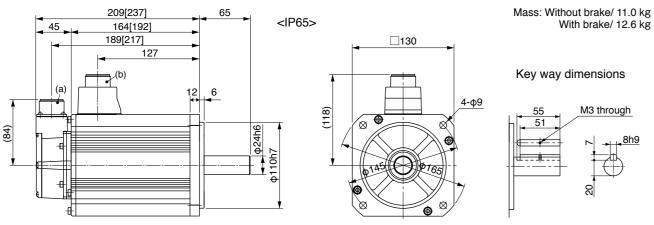
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

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

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

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

Specifications

			AC4	00 V		
N4 - 4	-1	IP65		MSME504GC□	MSME504SC	
Motor mod	*1	IP67		MSME504G1□	MSME504S1	
	Model	A5II, A5	series	MFD◇	TA464	
Applicable driver	*2 No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-	
unven	F	rame sym	bol	F-fra	ame	
Power supp	oly capacit	ty	(kVA)	7.	.5	
Rated outp	ut		(W)	5	.0	
Rated torqu	ıe		(N·m)	15	5.9	
Momentary	Max. pea	k torque	(N·m)	47.7		
Rated current (A(rms))			12.0			
Max. current (A(o-p))		51				
Regenerativ	/e brake	Without	option	357		
frequency (tir	mes/min) Note)1	DV0PM2	V0PM20049×2 No lim		it Note)2	
Rated rotat	ional spee	ed	(r/min)	3000		
Max. rotation	onal speed	i	(r/min)	4500		
Moment of	inertia	Without	brake	17	'.4	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	rake	18.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution		n per sing	le turn	1,048,576	131,072	

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

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

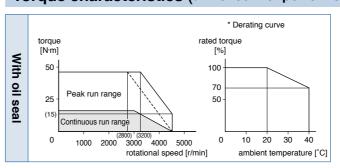
1	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

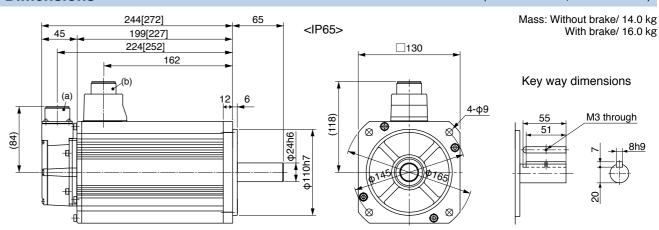
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

109

Motor model **1 IP65 MDME044GC□ MDME044 Applicable driver **2 Model No. A5II, A5 series A5IE, A5E series MDD T2407 MDD T2407 Power supply capacity (kVA) 0.9 Rated output (W) 400 Rated torque (N·m) 1.91 Momentary Max. peak torque (N·m) 5.73 Rated current (A(rms)) 1.2 Max. current (A(o-p)) 4.9 Regenerative brake frequency (times/min) Note)1 Without option 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) Without brake 1.61 With brake 1.9		
#1	4SC□	
Applicable driver *2 Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m) Momentary Max. peak torque (N·m) Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Moment of inertia ASIE, ASE series MDD T2407E - MDD T2407E - MDD T2407E - Constitution of inertia (A(ras)) Logo ASIE, ASE series MDD T2407E - MDD T2407E - Constitution of inertia (A(ras)) AU AU AU AU AU AU AU AU AU	4 S1□	
ASILE, ASE series Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m) 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) Month 12407E - MDD T2407E - 0.9 A00 A01 A00 A00 No limit Note)2 Rote frequency (times/min) Note)1 A000 Max. rotational speed (r/min) Month 101 M		
Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m) 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) Monent of inertia Without brake (N·m) Double (N·		
Rated output (W) 400 Rated torque (N·m) 1.91 Momentary Max. peak torque (N·m) 5.73 Rated current (A(rms)) 1.2 Max. current (A(o-p)) 4.9 Regenerative brake frequency (times/min) Note)1 DV0PM20048 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61		
Rated torque (N·m) 1.91 Momentary Max. peak torque (N·m) 5.73 Rated current (A(rms)) 1.2 Max. current (A(o-p)) 4.9 Regenerative brake frequency (times/min) Note)1 DV0PM20048 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61		
Momentary Max. peak torque (N·m) 5.73 Rated current (A(rms)) 1.2 Max. current (A(o-p)) 4.9 Regenerative brake frequency (times/min) Note)1 DV0PM20048 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61		
Rated current (A(rms)) 1.2 Max. current (A(o-p)) 4.9 Regenerative brake frequency (times/min) Note)1 DV0PM20048 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61	1.91	
Max. current (A(o-p)) 4.9 Regenerative brake frequency (times/min) Note)1 DV0PM20048 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61	5.73	
Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Max. rotational speed (r/min) Molimit Note)2 No limit Note)2 Rated rotational speed (r/min) Max. rotational speed (r/min) Moment of inertia Without brake 1.61	1.2	
frequency (times/min) Note)1 DV0PM20048 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61		
Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61		
Max. rotational speed (r/min) 3000 Moment of inertia Without brake 1.61	No limit Note)2	
Moment of inertia Without brake 1.61		
of rotor (×10 ⁻⁴ kg·m²) With brake 1 Q		
, o / with bland 1.9		
Recommended moment of inertia ratio of the load and the rotor Note)3		
Rotary encoder specifications Note)5 20-bit Incremental Absolu		
Resolution per single turn 1,048,576 131,07	72	

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

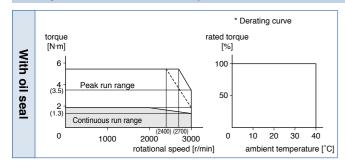
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

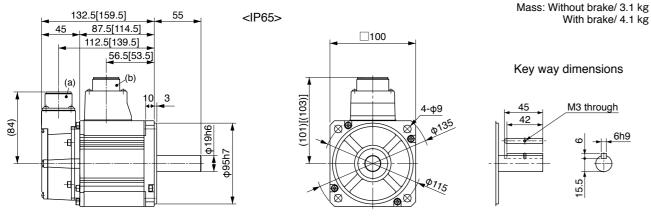
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

111

[Unit: mm]

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

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

Specifications

					AC4	00 V
Matauaradal		IP65		MDME064GC	MDME064SC	
Motor mode	€I ∗1		IP67		MDME064G1□	MDME064S1
Annlinable		Model	A5II, A5	series	MDD<	T2407
Applicable driver	*2	No.	A5IIE, A5E series		MDD ⊘T2407E	-
unver		Fr	ame sym	bol	D-fr	ame
Power supp	oly c	capacity	y	(kVA)	1.	2
Rated outp	ut			(W)	60	00
Rated torqu	ıe			(N·m)	2.	86
Momentary	Ма	x. peal	k torque	(N·m)	8.59	
Rated curre	ent		(A(rms))	1.5	
Max. current (A(o-p))		6.5				
Regenerativ	/e bi	rake	Without option		No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without	brake	2.03	
of rotor (×1	0 ⁻⁴ l	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		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per			n per sing	le turn	1,048,576	131,072

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

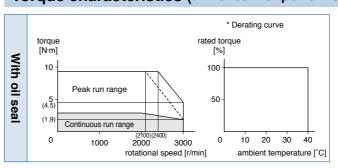
,	,
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

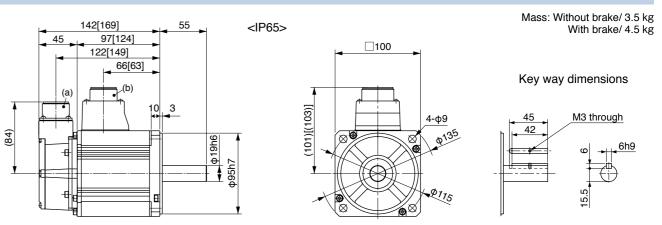
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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	MDME104GC	MDME104SC
Motor model *1		IP67	MDME104G1	MDME104S1
A Ii I. I .	Model	A5II, A5 series	MDD<	T2412
Applicable 42	No.	A5IIE, A5E series	MDD \diamondsuit T2412E	_
unver	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	1.	.8
Rated output		(W)	1.	.0
Rated torque		(N·m)	4.	77
Momentary Ma	ax. peal	k torque (N·m)	14.3	
Rated current		(A(rms))	2.8	
Max. current (A(o-p))			12	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM20048	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	4.60	
of rotor ($\times 10^{-4}$	kg·m²)	With 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		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072
· ·				

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

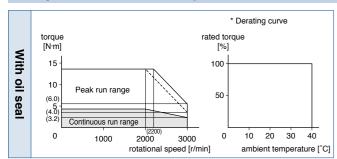
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

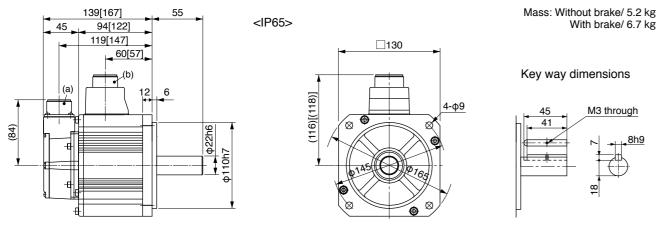
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

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

Specifications

			AC4	00 V	
M-4	-1	IP65		MDME154GC	MDME154SC
Motor mode	₽I *1	IP67		MDME154G1	MDME154S1
	Model	Model A5II, A5 series		MDD ◇T3420	
Applicable driver	No.	A5IIE, A5E series		MDD ⊘T3420E	_
unven	Fi	ame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	2	.3
Rated outp	ut		(W)	1.	.5
Rated torqu	ıe		(N·m)	7.	16
Momentary	Max. pea	k torque	(N·m)	21.5	
Rated current (A(rms))			4.7		
Max. current (A(o-p))			2	0	
Regenerativ	e brake	Without option No limit Note)2		t Note)2	
frequency (tir	nes/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	onal speed		(r/min)	3000	
Moment of	inertia	Without	brake	6.70	
of rotor (×1	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		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sina	le turn	1,048,576	131,072

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

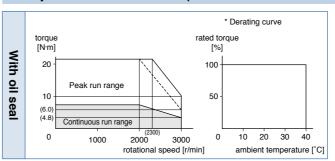
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

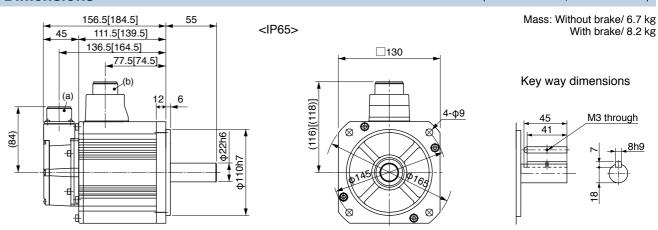
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

114

[Unit: mm]

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

			AC4	00 V	
		IP65	MDME204GC	MDME204SC	
Motor model		IP67	MDME204G1□	MDME204S1	
	Model	A5II, A5 series	MED<	T4430	
Applicable driver *2	No.	A5IIE, A5E series	MED ⊘T4430E	_	
unver	Fr	ame symbol	E-fra	ame	
Power supply	capacit	y (kVA)	3	.3	
Rated output		(W)	2	.0	
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))			2	5	
Regenerative b	rake	Without option	No limi	it Note)2	
frequency (times/	min) Note)1	DV0PM20049	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	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			131,072	

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

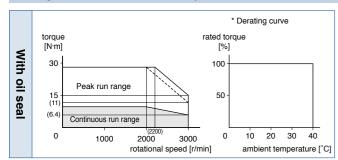
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

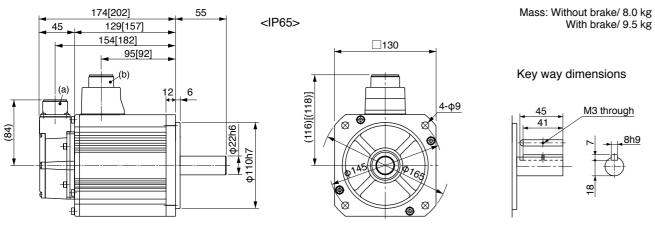
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC4	00 V	
		IP65		MDME304GC□	MDME304SC	
Motor mode	:1	IP67		MDME304G1□	MDME304S1	
	Model	A5II, A5	series	MFD ◇ T5440		
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_	
unven	Fr	ame sym	bol	F-fra	ame	
Power supp	ly capacit	y	(kVA)	4.	.5	
Rated outpu	ut		(W)	3	.0	
Rated torqu	е		(N·m)	14	.3	
Momentary	Max. peal	k torque	(N·m)	43.0		
Rated curre	nt	(A(rms))	8.7		
Max. curren	t		(A(o-p))	3	37	
Regenerative	e brake	Without	option	No limi	t Note)2	
frequency (tim	es/min) Note)1	DV0PM20049×2		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	Without brake		12.9		
of rotor (×10 ⁻⁴ kg·m ²) W		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 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sina	le turn	1,048,576	131,072	

400 V MDME 3.0 kW [Middle inertia, Middle capacity]

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

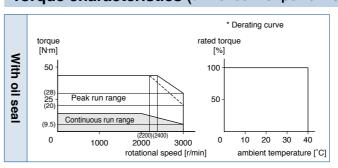
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

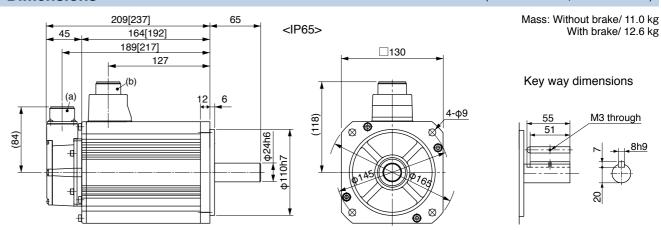
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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

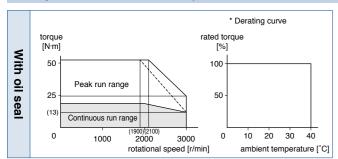
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

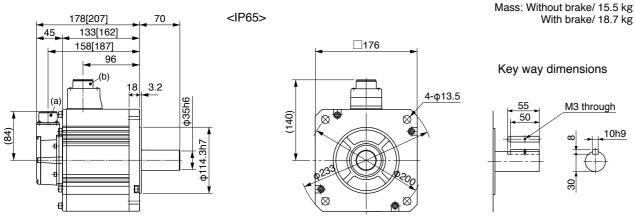
- For details of Note 1 to Note 5, refer to P.182, 183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

400 V MDME 5.0 kW [Middle inertia, Middle capacity]

Specifications

				AC4	00 V	
Matanaga	IP65		MDME504GC	MDME504SC		
Motor model		IP67		MDME504G1	MDME504S1	
	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 supply	capacit	y	(kVA)	7.	.5	
Rated output			(W)	5.	.0	
Rated torque			(N·m)	23	3.9	
Momentary Ma	ax. peal	k torque	(N·m)	71.6		
Rated current		(A(rms))	13.0		
Max. current		((A(o-p))	5	55	
Regenerative b	rake	Without option		120		
		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		48.0		
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	48	3.8	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072		

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

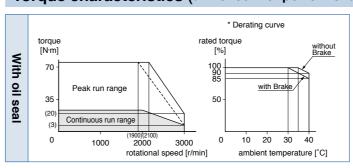
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

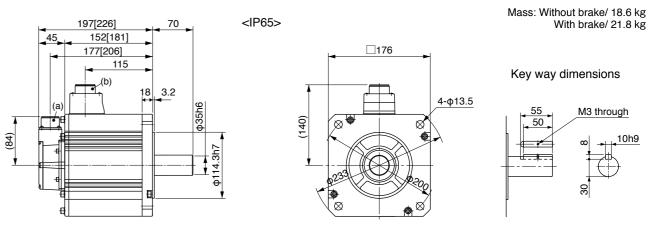
Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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			
Matanasadal		IP65		-	-
Motor model *1		IP67		MDME754G1□	MDME754S1
Amaliaabla	Model	A5II, A5 serie	s	MGD ⊘TB4A2	
Applicable 42	No.	A5IIE, A5E s	eries	_	_
divei	Fı	ame symbol		G-fr	ame
Power supply	capacit	y (k	VA)	1	1
Rated output			(W)	7.	.5
Rated torque		(N	l·m)	47.8	
Momentary Ma	ax. pea	k torque (N	l·m)	119	
Rated current		(A(rn	ns))	22	
Max. current		(A(o	-p))	83	
Regenerative b	rake	Without opti	ion	No limit Note)2	
frequency (times/min) Note)1 DV0PM20049×3		9×3	No limit Note)2		
Rated rotation	al spee	d (r/n	nin)	1500	
Max. rotationa	l speed	(r/n	nin)	3000	
Moment of ine	rtia	Without bra	ke	101	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	е	107	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		ote)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			ırn	1,048,576	131,072

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

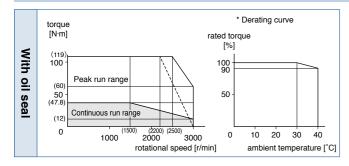
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

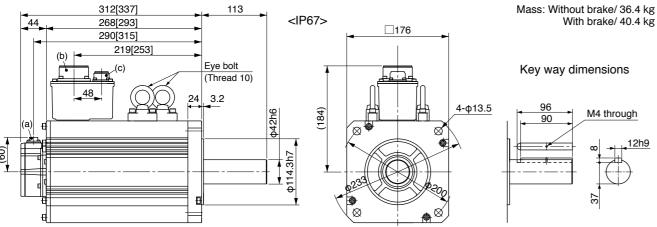
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

Specifications

				AC4	00 V	
N 4 - 4	1-1	IP65		-	-	
Motor mod	*1	IP67		MDMEC14G1□	MDMEC14S1	
	Model	A5II, A5 series		MHD	TB4A2	
Applicable driver	*2 No.	A5IIE, A	5E series	-	-	
unver	F	rame sym	bol	H-fra	H-frame	
Power sup	ply capacit	у	(kVA)	1	7	
Rated outp	out		(W)	11	.0	
Rated torq	ue		(N·m)	7	0	
Momentary	y Max. pea	k torque	(N·m)	175		
Rated current (A(rms))		27.1				
Max. current (A(o-p))		101				
Regenerati	ve brake	Without	option	No limit Note)2		
frequency (ti	imes/min) Note)1	DV0PM	120059	No limit Note)2		
Rated rota	tional spee	d	(r/min)	1500		
Max. rotati	onal speed	l	(r/min)	2000		
Moment of	inertia	Without	t brake	2 ⁻	12	
of rotor (×1	10 ⁻⁴ kg·m²)	With b	orake	220		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		1,048,576	131,072			

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

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

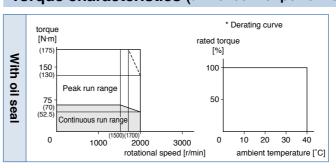
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

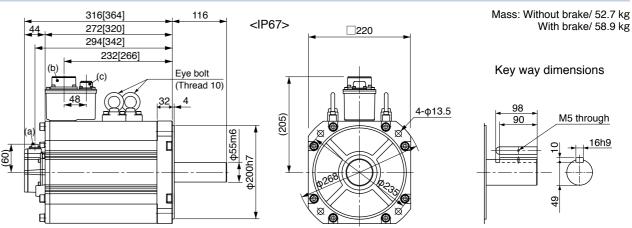
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

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

			AC400 V	
Motor model		IP65	-	_
*1		IP67	MDMEC54G1	MDMEC54S1
	Model	A5II, A5 series	MHD◇	TB4A2
Applicable driver *2	No.	A5IIE, A5E series	_	_
unvei	Fr	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	2	2
Rated output		(W)	15	5.0
Rated torque		(N·m)	95.5	
Momentary M	ax. peal	k torque (N·m)	224	
Rated current (A(rms))		33.1		
Max. current (A(o-p))		118		
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	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			1,048,576	131,072

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

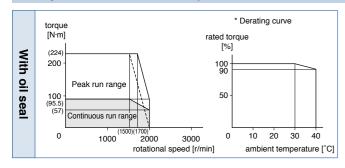
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

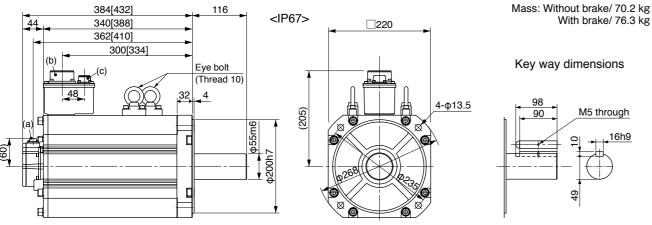
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
accombiy	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

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

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



Dimensions



121

- (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	
Mataumada		IP65		-	-
Motor mode	?I ⊧1	IP67		MFME154G1	MFME154S1
A I' l. I .	Model	A5II, A5 series		MDD ⊘ T3420	
Applicable driver *	No.	A5IIE, A5E series		MDD ⊘T3420E	_
unver	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	2	.4
Rated outpu	ut		(W)	1.	.5
Rated torqu	ie		(N·m)	7.	16
Momentary	Max. peal	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	3.8	
Max. curren	nt	((A(o-p))	16	
Regenerativ	e brake	Without	option	100	
frequency (tim	nes/min) Note)1	DV0PM	20048	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	18.2	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	rake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1,048,576	131,072

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

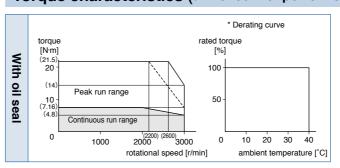
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Exciting voltage (DC) (V)	24±2.4

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

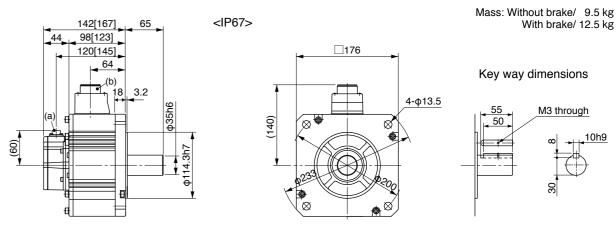
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

		AC400 V			
		IP65	_	-	
Motor model		IP67	MFME254G1□	MFME254S1	
A	Model	A5II, A5 series	MED<	T4430	
Applicable driver *2	No.	A5IIE, A5E series	MED ⊘T4430E	_	
unver	Fr	ame symbol	E-fr	ame	
Power supply	capacit	y (kVA)	3	.9	
Rated output		(W)	2	.5	
Rated torque		(N·m)	11	11.9	
Momentary M	ax. peal	k torque (N·m)	30.4		
Rated current (A(rms))		6.7			
Max. current		(A(o-p))	29		
Regenerative b	rake	Without option	75		
frequency (times/	min) Note)1	DV0PM20049	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	35.8		
of rotor (×10 ⁻⁴	kg·m²)	With brake	45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

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

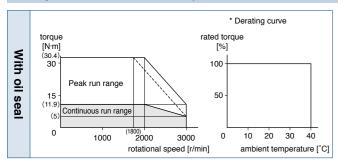
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

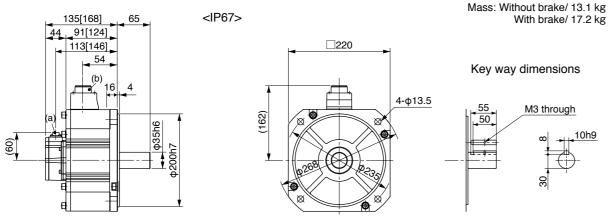
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, 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
	-1	IP65		-	-
Motor mod	*1	IP67		MFME454G1□	MFME454S1
	Mode	A5II, A5	series	MFD ◇TA46 4	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unven	ı	rame sym	bol	F-frame	
Power sup	ply capac	ity	(kVA)	6	.9
Rated outp	out		(W)	4.	.5
Rated torq	ue		(N·m)	21	.5
Momentary	/ Max. pe	ak torque	(N·m)	54.9	
Rated curr	ent	(A(rms))	12.4	
Max. curre	nt	((A(o-p))	53	
Regenerati	ve brake	Without	option	67	
frequency (ti	mes/min) Note	DV0PM2	.0049×2	375	
Rated rota	tional spe	ed	(r/min)	2000	
Max. rotati	onal spee	d	(r/min)	3000	
Moment of	inertia	Without	brake	63.1	
of rotor (×1	0 ⁻⁴ kg·m ²	With b	orake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1,048,576	131,072

400 V MFME 4.5 kW Middle inertia, Middle capacity

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

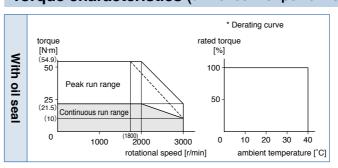
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

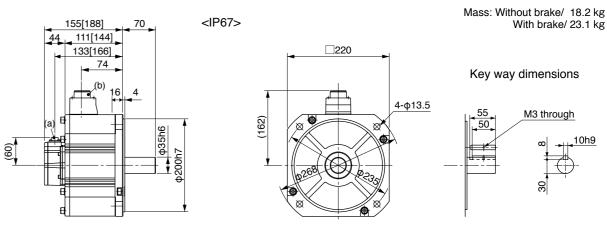
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
documbry	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

[Unit: mm]

				00 V
IP65		MGME094GC□	MGME094SC□	
Motor model *1		IP67	MGME094G1□	MGME094S1
A 15 1- 1 -	Model	A5II, A5 series	MDD<	T3420
Applicable driver *2	No.	A5IE, A5E series	MDD ⊘T3420E	-
unver	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	1.	.8
Rated output		(W)	0	.9
Rated torque		(N·m)	8.	59
Momentary Ma	ax. peal	k torque (N·m)	19.3	
Rated current		(A(rms))	3.8	
Max. current		(A(o-p))	12	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0PM20048	No limit Note)2	
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	6.70	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1,048,576	131,072

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

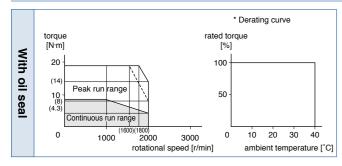
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

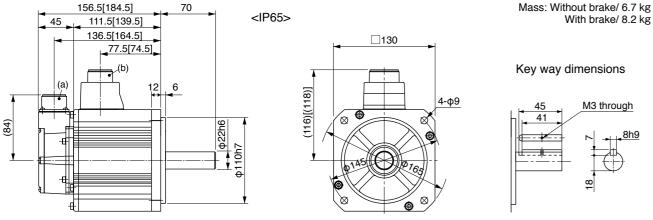
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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.139.)



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

[Unit: mm]

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

Specifications

			AC4	00 V		
M-4	-1	IP65		MGME204GC□	MGME204SC	
Motor mode	*1	IP67		MGME204G1□	MGME204S1	
	Model	A5 I I, A5	series	MFD◇	T5440	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-	
unven	F	rame sym	bol	F-fra	ame	
Power supp	oly capacit	У	(kVA)	3	.8	
Rated outp	ut		(W)	2	.0	
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))	30		
Regenerativ	e brake	Without	option	No limi	No limit Note)2	
frequency (tir	mes/min) Note)1	DV0PM20049×2		No limit Note)2		
Rated rotat	ional spee	d	(r/min)	1000		
Max. rotation	onal speed	I	(r/min)	2000		
Moment of	inertia	Without brake		30.3		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		31.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sing	le turn	1,048,576	131,072	

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

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

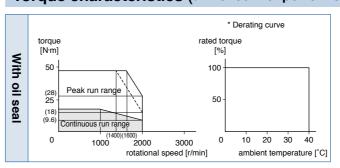
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

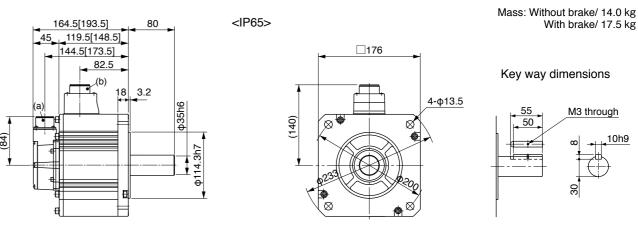
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

			AC400 V		
		IP65		MGME304GC□	MGME304SC□
Motor model *1		IP67		MGME304G1□	MGME304S1
A 1' 11	Model	A5II, A5 series		MFD ⊘TA464	
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-
unver	Fr	rame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	4.	.5
Rated output			(W)	3	.0
Rated torque			(N·m)	28.7	
Momentary Ma	ax. peal	k torque	(N·m)	71.7	
Rated current		(,	A(rms))	11.3	
Max. current		(A(o-p))	40	
Regenerative brake Without option		No limit Note)2			
frequency (times/r	min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without	brake	48.4	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	49.2	
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			le turn	1,048,576	131,072

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

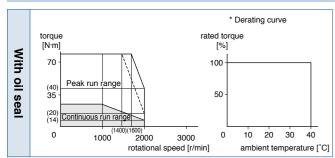
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

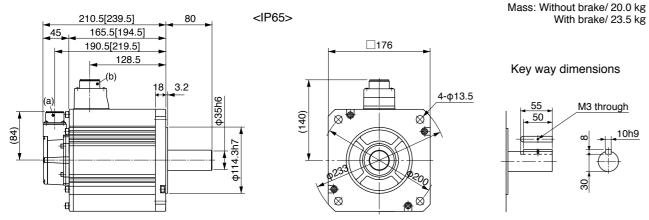
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC400 V		
Mataumaada		IP65		-	-	
Motor mode	.	IP67		MGME454G1□	MGME454S1	
Annlinable	Model	A5II, A5 series		MFD⇔TA464		
Applicable driver **	No.	A5IE, A5E series		MFD \diamondsuit TA464E	_	
diivei	Fr	ame sym	bol	F-fra	ame	
Power suppl	ly capacit	y	(kVA)	7.	.5	
Rated outpu	t		(W)	4.	.5	
Rated torque	е		(N·m)	43	3.0	
Momentary I	Max. peal	k torque	(N·m)	107		
Rated currer	nt	(A(rms))	14.8		
Max. current (A(o-p))				55		
Regenerative		Without	•	No limit Note)2		
frequency (time	es/min) Note)1	DV0PM2	0049×2	No limit Note)2		
Rated rotation	onal spee	d	(r/min)	1000		
Max. rotation	nal speed		(r/min)	2000		
Moment of in	nertia	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	s or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
Resolution per single turn				1,048,576	131,072	

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.

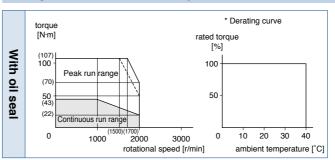
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

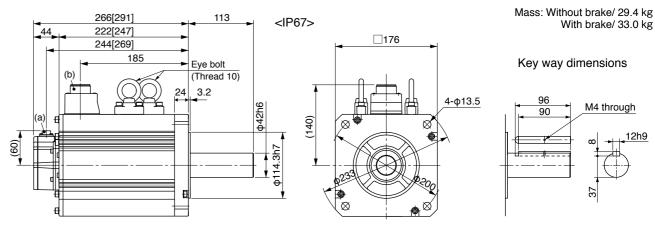
Radial load P-direction (N)	2058
Thrust load A-direction (N)	980
Thrust load B-direction (N)	1176
Radial load P-direction (N)	1470
Thrust load A, B-direction (N)	490
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

A5 Family

Specifications

				AC400 V		
Motor model	IP65			-	-	
*1		IP67		MGME604G1□	MGME604S1	
	Model	A5II, A5 series		MGD\TB4A2		
Applicable driver *2	No.	A5IIE, A	5E series	_	_	
unvoi	Fı	rame sym	ıbol	G-fr	ame	
Power supply	capacit	у	(kVA)	9.	.0	
Rated output			(W)	6.	.0	
Rated torque			(N·m)	57.3		
Momentary Ma	ax. pea	k torque	(N·m)	143		
Rated current (A(rms))				19.4		
Max. current (A(o-p))				74		
Regenerative brake Without option			option	No limit Note)2		
frequency (times/	min) Note)1	DV0PM2	20049×3	No limit Note)2		
Rated rotation	al spee	d	(r/min)	1000		
Max. rotationa	l speed		(r/min)	2000		
Moment of ine	rtia	Without	t brake	101		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	107		
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				1,048,576	131,072	

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

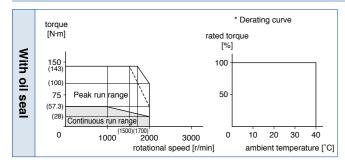
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

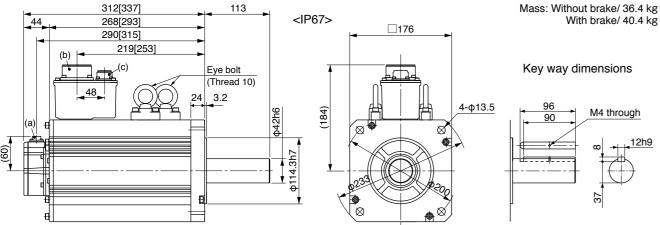
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

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

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



Dimensions



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

[Unit: mm]

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

Specifications

			AC4	00 V	
M-4		IP65		MHME104GC	MHME104SC
Motor mode	2 I ⊧1	IP67		MHME104G1	MHME104S1
A 1: 1- 1 -	Model	A5 I I, A5	series	MDD<	T2412
Applicable driver	No.	A5IIE, A5E series		MDD \diamondsuit T2412E	-
unven	Fi	ame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	1.	.8
Rated outp	ut		(W)	1.	.0
Rated torqu	ie		(N·m)	4.	77
Momentary	Max. pea	k torque	(N·m)	14.3	
Rated curre	ent	(.	A(rms))	2.9	
Max. currer	nt	((A(o-p))	12	
Regenerativ	e brake	Without option		8	3
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		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			5 times	or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Resolutio	n per sina	le turn	1,048,576	131,072

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

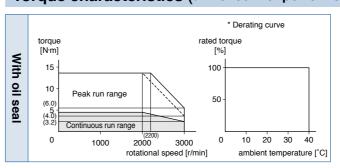
r more
r less
r less
±10 %
more
±2.4

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

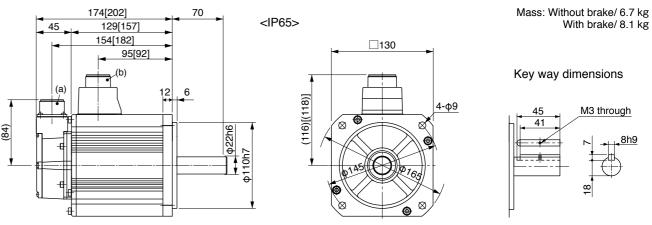
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

- poomounomo						
					AC4	00 V
Motor mode	al		IP65		MHME154GC	MHME154SC
	∂ I ∗1		IP67		MHME154G1	MHME154S1
A 11 1.1		Model	A5II, A5	series	MDD<	T3420
Applicable driver	¢2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven		Fr	ame sym	nbol	D-fr	ame
Power supp	oly (capacit	y	(kVA)	2	.3
Rated outpo	ut			(W)	1.	.5
Rated torqu	ıe			(N·m)	7.16	
Momentary Max. peak torque (N·m)				21.5		
Rated current (A(rms))				4.7		
Max. current (A(o-p))			20			
Regenerative brake		Without option		22		
frequency (tin	nes/n	nin) Note)1	DV0PM20048		130	
Rated rotati	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	l speed		(r/min)	3000	
Moment of	ine	rtia	Withou	t brake	37.1	
of rotor (×1	0-4	kg·m²)	With	brake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3					5 times or less	
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn			gle turn	1,048,576	131,072

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

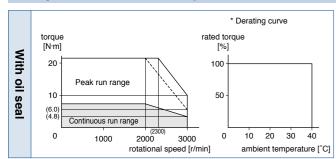
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

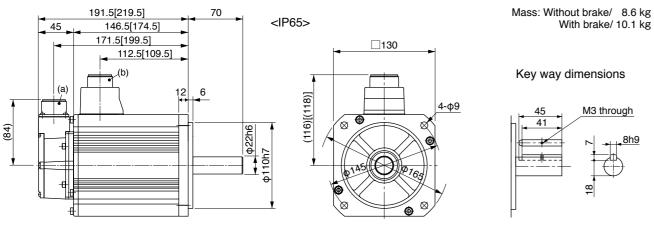
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

131

[Unit: mm]

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

400 V MHME 2.0 kW [High inertia, Middle capacity]

Specifications

			AC4	00 V		
Matanaaa	-1	IP65		MHME204GC	MHME204SC	
Motor mode	el *1	IP67		MHME204G1□	MHME204S1	
	Model	A5Ⅱ, A5	series	MED<	MED ◇T4430	
Applicable driver	*2 No.	A5IIE, A5E series		MED ◇T4430 E	-	
ulivei	Fi	rame sym	bol	E-fra	ame	
Power supp	oly capacit	у	(kVA)	3	.3	
Rated outp	ut		(W)	2	.0	
Rated torqu	ıe		(N·m)	9.	55	
Momentary	Max. pea	k torque	(N·m)	28.6		
Rated curre	ent	(.	A(rms))	5.5		
Max. current (A(o-p))		2	4			
Regenerativ	/e brake	Without	option	45		
frequency (tir	mes/min) Note)1	DV0PM20048		142		
Rated rotat	ional spee	d	(r/min)	2000		
Max. rotation	onal speed		(r/min)	3000		
Moment of	inertia	Without	brake	57.8		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		59.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sina	le turn	1,048,576	131,072	

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

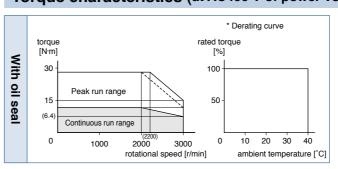
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

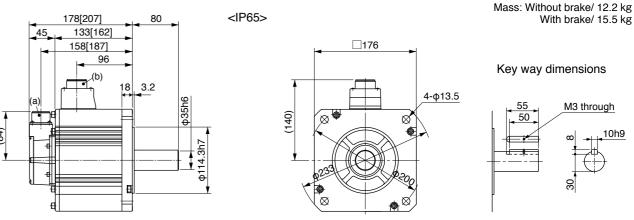
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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



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



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

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

[Unit: mm]

			AC4	AC400 V	
Mataria		IP65	MHME304GC	MHME304SC□	
Motor model *1		IP67	MHME304G1□	MHME304S1	
Amaliaabla	Model	A5II, A5 series	MFD ⊘ T5440		
Applicable driver *2	No.	A5IIE, A5E series	MFD ◇T5440 E	_	
unver	Fı	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	4.	.5	
Rated output		(W)	3	.0	
Rated torque		(N·m)	14	1.3	
Momentary Ma	ax. pea	k torque (N·m)	43.0		
Rated current		(A(rms))	8.0		
Max. current		(A(o-p))	34		
Regenerative b	rake	Without option	19		
frequency (times/	min) Note)1	DV0PM20049×2	14	12	
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	90.5		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

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

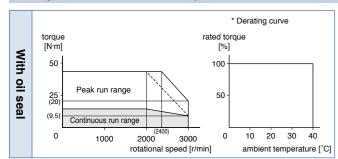
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

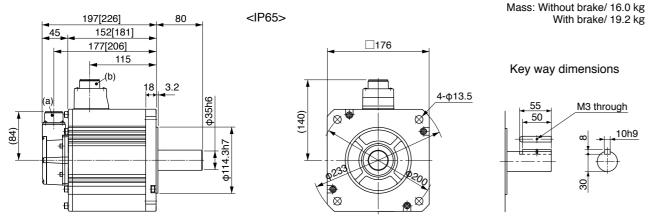
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V	
M-4	-1	IP65		MHME404GC	MHME404SC
Motor mode	el *1	IP67		MHME404G1	MHME404S1
	Model	A5Ⅱ, A5	series	MFD◇	TA464
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unven	Fi	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	6	.8
Rated outp	ut		(W)	4.	.0
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	57.3	
Rated curre	ent	(A(rms))	10.5	
Max. current (A(o-p))			4	5	
Regenerativ	/e brake	Without	option	17	
frequency (tir	mes/min) Note)1	DV0PM20049×2		125	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	onal speed	l	(r/min)	3000	
Moment of	inertia	Without	brake	11	12
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1,048,576	131,072

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.

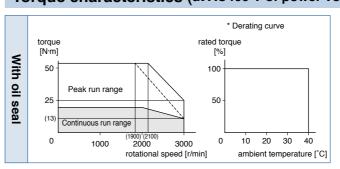
24.5 or more
24.5 01 111016
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

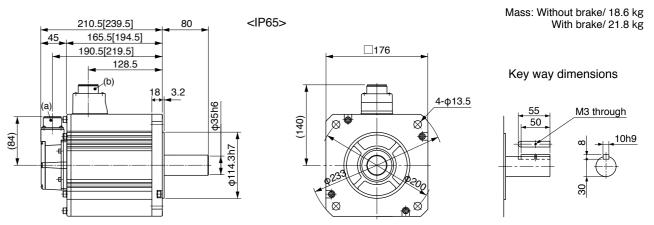
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

A5 Family

Specifications

			AC4	00 V		
Matanasadal		IP65		MHME504GC	MHME504SC	
Motor model		IP67		MHME504G1	MHME504S1	
Ammliaalala	Model	A5II, A5 s	series	MFD◇	TA464	
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_	
anver	Fı	ame symb	ool	F-fra	ame	
Power supply	capacit	y	(kVA)	7.	.5	
Rated output			(W)	5	.0	
Rated torque			(N·m)	23	23.9	
Momentary M	ax. pea	k torque	(N·m)	71.6		
Rated current (A(rms))			13.0			
Max. current		(/	A(o-p))	55		
Regenerative b	rake	Without	option	10		
frequency (times/	min) Note)1	DV0PM20	0049×2	76		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia	Without	brake	162		
of rotor ($\times 10^{-4}$	kg·m²)	With bi	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 turn			e turn	1,048,576	131,072	

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

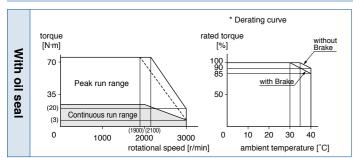
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

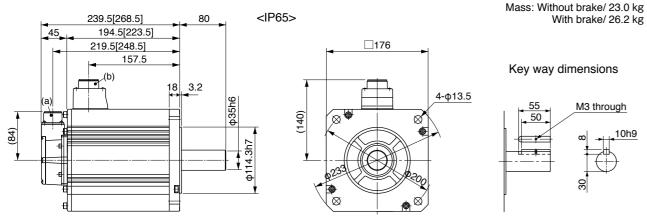
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V		
Mataumaada		IP65		-	-	
Motor mode *	.	IP67		MHME754G1	MHME754S1	
A I' l. l .	Model	A5 I I, A5	series	MGD♦	TB4A2	
Applicable driver **	No.	A5IIE, A	5E series	_	_	
unver	Fr	ame sym	bol	G-fr	ame	
Power supp	ly capacit	y	(kVA)	9	.0	
Rated outpu	it		(W)	7.	.5	
Rated torque	е		(N·m)	47	'.8	
Momentary	Max. peal	k torque	(N·m)	119		
Rated curre	nt	(A(rms))	22.0		
Max. current	t	((A(o-p))	83		
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0PM20049×3		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	1500		
Max. rotation	nal speed		(r/min)	3000		
Moment of in	nertia	Without	brake	273		
of rotor (×10) ⁻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 enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072		

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

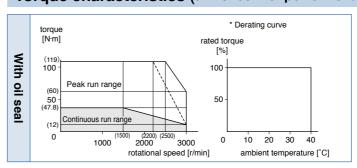
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

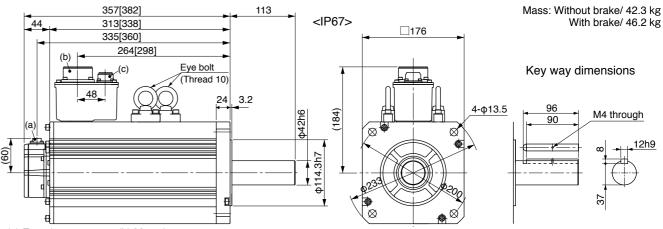
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

243[271]

199[227]

221[249]

141[168]

97[124]

66[63]

119[146]

162

[Unit: mm]

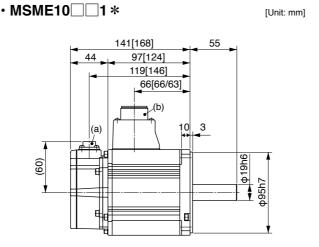
[Unit: mm]

65

12

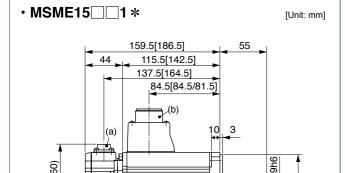
A5 Family

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

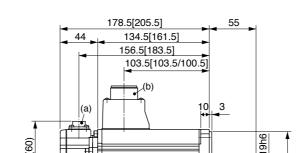


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

[Unit: mm]

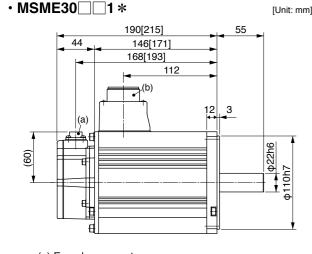


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



MSME20□□1*

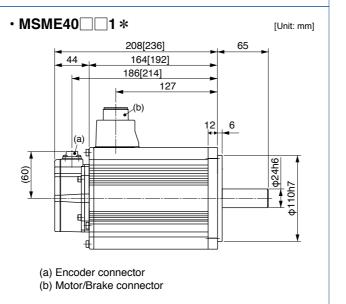
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



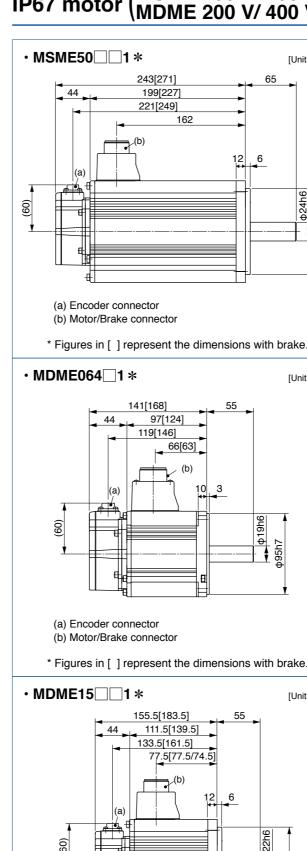
- (a) Encoder connector
- (b) Motor/Brake connector

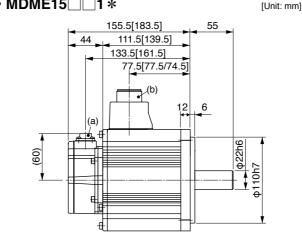
* For motor specifications, refer to IP65 motor page.

* Figures in [] represent the dimensions with brake.

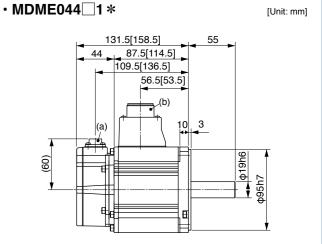


* Figures in [] represent the dimensions with brake.

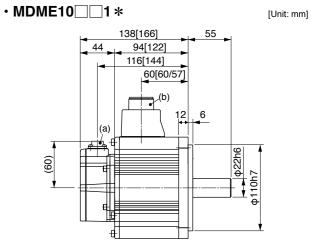




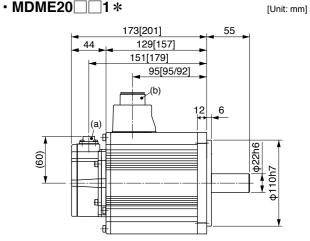
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.



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



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



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

137

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

Dimensions

• MDME30 ☐ 1 *

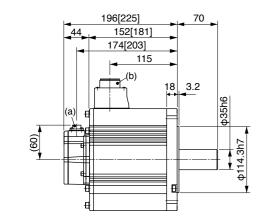
[Unit: mm]

[Unit: mm]

[Unit: mm]

208[236] . 44 164[192] 186[214] 127

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

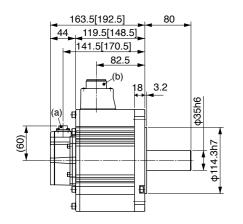


(a) Encoder connector

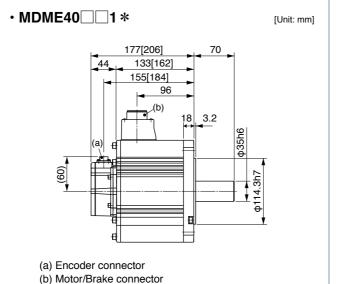
• MGME20□□1 *

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

[Unit: mm]

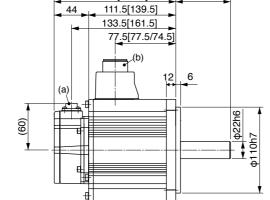


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

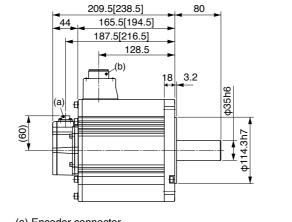


 MGME09□□1 * [Unit: mm] 155.5[183.5] 111.5[139.5] 133.5[161.5]

* Figures in [] represent the dimensions with brake.

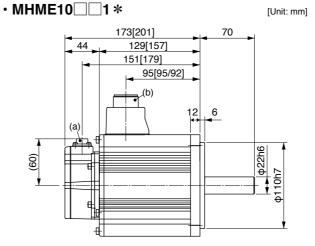


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.
- MGME30□□1 * [Unit: mm]



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

* For motor specifications, refer to IP65 motor page.



IP67 motor (MHME 200 V/ 400 V type)

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

190.5[218.5]

146.5[174.5]

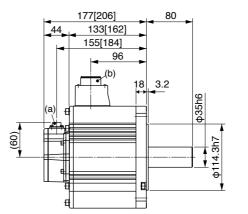
112.5[112.5/109.5]

168.5[196.5]

• MHME15□□1 *

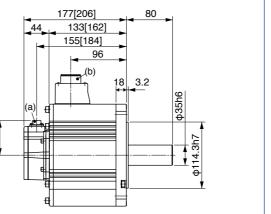
9

[Unit: mm]

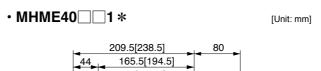


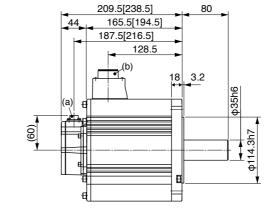
MHME20□□1*

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

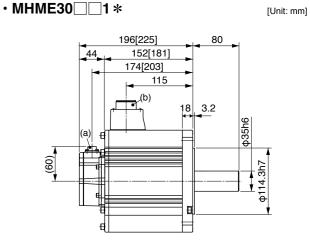


- (a) Encoder connector





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



(a) Encoder connector

• MHME50 □ □ 1 *

- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.
- 238.5[267.5] 80 194.5[223.5] 216.5[245.5] 157.5 3.2
 - (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

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

Motor Types with Gear Reducer

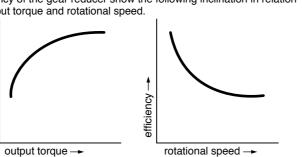


Type and Specifications

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.

Efficiency of the gear reducer show the following inclination in relation
to output torque and rotational speed



Specifications of Motor with Gear Reducer

	Items	Specifications	
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer	
	Composition of gear	Planetary gear	
	Gear efficiency	65 % to 85 %	
Coor roduces	Lubrication	Grease lubrication	
Gear reducer	Rotational direction at output shaft	Same direction as the motor output shaft	
	Mounting method	Flange mounting	
	Permissible moment of inertia of the load (conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor	
	Protective structure	IP44 (at gear reducer)	
	Ambient temperature	0 to 40 °C (free from condensation)	
Environment	Ambient humidity	85 %RH (free from condensation) or less	
Environment	Vibration resistance	49 m/s² or less (at motor frame)	
	Impact resistance	98 m/s² or less	

M S M

		Motor ra	ated output
Symbol	Type	Symbol	Specifications
MSMD Low inertia		01	100 W
	100 W to 750 W	02	200 W
MSME	Low inertia 100 W to 750 W	04	400 W
	100 44 10 730 44		

08 750 W High inertia MHMD 200 W to 750 W Voltage specifications

	•
Symbol	Rated output
1	100 V
2	200 V

Rotary encoder specifications

Model Designation

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

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

Motor types with gear reducer

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

^{*} MHMD 100 W is not prepared.

Motor structure

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

The Combination of the Driver and the Motor

	100 V	<i>I</i>	200 V	
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	3-phase, 200 V
	with reducer	Part No. of driver	with reducer	Part No. of driver
400 W	MSME011	MADHT1107 MADKT1107	MSME012	MADHT1505 MADKT1505
100 W	MSMD011□□□N	MADHT1107E MADKT1107E	MSMD012	MADHT1505E MADKT1505E
000 W	MSME021	MBDHT2110 MBDKT2110	MSME022 N MSMD022 N MHMD022 N	MADHT1507 MADKT1507
200 W	MSMD021□□□N MHMD021□□□N	MBDHT2110E MBDKT2110E		MADHT1507E MADKT1507E
400 W	MSME041□□□N MSMD041□□□N	MCDHT3120 MCDKT3120	MSME042	MBDHT2510 MBDKT2510
400 W	MHMD041 N	MCDHT3120E MCDKT3120E	MSMD042 N MHMD042 N	MBDHT2510E MBDKT2510E
			MSME082 N MSMD082 N	MCDHT3520 MCDKT3520
750 W	_	_	MHMD082	MCDHT3520E MCDKT3520E

^{*} Motor specifications enter to \(\subseteq \

Torque Characteristics of Motor

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor +	of inertia reducer/ erted or shaft)	Ma	iss	Permissible radial load	Permissibl thrust load
			_							w/ brake	w/o brake	w/ brake		
		(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J(×10 ⁻	⁴kg∙m²)	(k	g)	(N)	(N)
	MSME01 1N		1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 2N	100	1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N		1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01 4N		1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
	MSME02 1N		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
MSME	MSME02	200	1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
Ĭ	MSME02 3N	-	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
	MSME02 4N		1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
₹	MSME04 1N	-	1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 2N	400	1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
Ø.	MSME04 3N		1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04 4N		1/25	332	120	240	26.4	79.2	0.56	0.58	4.4	4.8	2060	1030
	MSME082 1N	-	1/5	672	600	1200	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSME082 2N	750	1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N		1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01 1N	-	1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 2N	100	1/9	80	333	555	2.25	6.86	0.0853	0.0883	1.02	1.23	588	294
	MSMD01 3N	-	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01 4N		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
_	MSMD02	200	1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
MSMD	MSMD02 2N		1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
₽	MSMD02 3N	-	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
٥	MSMD02 4N	200	1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low iner	MSMD04 DD 1N		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
ertia	MSMD04 DD 2N	400	1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
ש	MSMD04 3N	-	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04		1/25 1/5	332 672	120 600	200 900	26.4	79.2 32.1	0.56 1.583	0.58 1.683	4.4	4.9 5.2	2060 980	1030 490
	MSMD082		1/9	635	333	500	18.2	32.1 54.7	1.583	1.62	5.7	6.5	1470	735
	MSMD082 3N	750	1/15	635	200	300	30.4	91.2	1.52	1.67	6.1	6.9	1760	882
	MSMD082		1/25	635	120	180	50.4	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02 1N		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02	-	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
≤	MHMD02		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
	MHMD04		1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
High inertia	MHMD04 3N	400	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
ine	MHMD04		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
rtia	MHMD082		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
-	MHMD082	-	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
-	MHMD082 3N	750	1/15	635	200	300	30.4	91.2	2.10	2.31	6.3	7.1	1760	882
		I	1/10	505	200	500	JU.7	V1.2	۱ ۲۰۰۲	2.01	0.0	7.1	1700	552

Table of Motor Specifications

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

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

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

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

145

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

MHM	D series	(200 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
100 V	200 W	MHMD021 1N torque [N-m] 8.0 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run fange Continuous run fange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [N-m] 20 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD021 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
100 V	400 W	MHMD041 1N torque [N·m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD041 2N torque [N·m] 40 Peak Continudus run range 0 400 800 rotational speed [r/min]	MHMD041 3N torque [N-m] 60 30 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD041 4N torque [N·m] 80 Peak run range Continuous run range 100 200 rotational speed [r/min]
	200 W	MHMD022 1 1 N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 500 1000 rotational speed [r/min]	MHMD022 2N torque [N·m] 16.0 Peak run tange Continuous run jange 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N-m] 20 Peak run tange Continuous run range 0 200 400 rotational speed [r/min]	MHMD022 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MHMD042 1N torque [N-m] 20 Peak run tange Continuous run range 500 1000 rotational speed [r/min]	MHMD042 2N torque [N·m] 40 PBak run range Continuous run range 0 400 800 rotational speed [r/min]	MHMD042 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD042 4N torque [N·m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MHMD082 1N torque [N·m] 40 Peak run range Continuous run range	MHMD082 2N torque [N·m] 80 Peak run range Continuous run range	MHMD082 3N torque [N·m] 120 60 Peak run range Continuous run range	MHMD082 4N torque [N·m] 160 Peak run range Continuous run range

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

Dimensions of Motor

Encoder connecter

Brake connector

Motor connector

LE

LW

9489

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

4499

(Key way dimensions)

T(Key-way depth)

H

LC

[Unit: mm]

^{*} The figure represents the dimentions 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										78			
			232	122 92								M6					
MSME01		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	6								-	89.5	3		
MCMEOO	200	1/15	229.5	79.5										100			
MSME02 3N		1/15	266	116													
MSME02		1/25	229.5	79.5													
WISINIEUZ 414		1/23	266	116	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5
MSME04		1/5	238.5	99			, 0	, 0			.,	20				OXOXEE	0.0
			275	135.5										89.5			
MSME04 2N		1/9	238.5	99													
	400		275	135.5													
MSME04□□□3N		1/15	249 285.5	99										100			
			265.5	99								M8					
MSME04 U U4N		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								20					
MSME082 2N	750	1/9	306.7	148.2										97.5			
NACHAEOOO CON	750	4/45	283.2	112.2		40	00	00	445	0.4	40	M8	0.5		_	0.7.00	
MSME082□□3N		1/15	319.2	148.2	61	40	98	90	115	24	24 18		35	110	5	8×7×30	4
MCME092 AN		1/25	283.2	112.2										110			
IVISIVIEU62	SME082 4N	1/23	319.2	148.2													

Upper column: without brake [

Lower column: with brake

 * The figure represents the dimentions without brake.

MSMD series

DLC A-LZ

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т	
	(,		191.5	92														
MSMD01 == 1N		1/5	221.5	122														
MOMPO4		4/0	191.5	92	00	00	52	50	00	40	40	M5	40	67.5		4 4 40	0.5	
MSMD01 2N	100	1/9	221.5	122	32	20	32	50	60	12	10	Depth 12	18			4×4×16	2.5	
MSMD01□□□3N	100	1/15	202	92										78				
INISINIDO I		1/13	232	122										76				
MSMD01 4N		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5	
		1720	264	122	50	00	,,	,,	30	10	.,	20		<i>52</i>		ONONEL	0.0	
MSMD02 1N		1/5	184	79.5	32	32 20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5	
		1/0	220.5	116	02	20		50	00	12	10	12		72.0		74410	2.0	
MSMD02 2N		1/9	219	79.5										89.5	3			
	200	0	255.5	116										00.0				
MSMD02 3N		1/15	229.5	79.5														
	-		266	116										100				
MSMD02 4N		1/25	229.5	79.5								M6						
	266 238.5	116	50	30	78	70	90	19	17	Depth	26			6×6×22	3.5			
MSMD04				1/5		99								20				
			275	135.5									89.5	89.5				
MSMD04□□□2N		1/9	238.5	99														
	400		275 249	135.5 99														
MSMD04□□□3N		1/15	285.5	135.5										100				
	-		264	99								M8						
MSMD04□□□4N		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth	35	104	5	8×7×30	4	
			255.7	112.2								20 M6						
MSMD082□□1N		1/5	292.7	149.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5	
			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

MHMD series

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

□LC

[Unit: mm]

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

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
			203.5	99								M5					
MHMD02 1N		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5
		1/9	238.5	99										89.5			
MHMD02 D2N	200	1/9	275	135.5										89.5			
MHMD02 3N	200	1/15	249	99													
MILIMIDO5		1/15	285.5	135.5										100			
MHMD02		1/25	249	99										100	3		
		1/25	285.5	135.5	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5
MHMD04		1/5	258	118.5	30	30	70	, ,			''	20	20			UNUNZZ	3.3
		.,,0	294.5	155										89.5			
MHMD04 2N	400	1/9	258	118.5										00.0			
		400		294.5	155												
MHMD04	400	1/15	268.5	118.5										100			
		1710	305	155													
MHMD04		1/25	283.5	118.5	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4
		1720	320	155	0.	10			110		.0	20	00		Ŭ	ON NOO	·
		4 /5	270.7	127.2			70	70		40		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
		4 10	285.7	127.2													
MHMD0822N	0082□□2N 750	1/9	322.7	164.2										97.5			4
MUMDOSOLLSM		1/15	298.2	127.2	61	40	98	90	115	24	10	M8 Dopth	35		5	8×7×30	
MHMD082□□3N		1/15	335.2	164.2	61	40	98	90	115	24	18	Depth 20	35	110	5	0×/×30	
MHMD082			298.2	127.2									110				
MHMD082□□4N		1/25	335.2	164.2													

Upper column: without brake	
Lower column: with broke	

MEMO

* 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 (1,048,576 pulse)
- 17-bit absolute encoder (131,072 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



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (from 4.0 kW)

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

Enclosure : IP65

Middle capacity



MGMF (Low speed/ High torque type) High inertia

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

Rated output: IP65 0.9 kW to 3.0 kW

Enclosure : IP65



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



Middle inertia

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

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65



MHME High inertia

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

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65

Special Order Product Motor Contents

MSMJ (200 V)

200 W to 750 W.....

MSME (200 V)

1.0 kW to 5.0 kW P.158

MDME (200V)

1.0 kW to 5.0 kW P.164

MGME (200 V)

0.9 kW to 5.0 kW P.170

MHMJ (200 V)

200 W to 750 W P.173

MHME (200V)

1.0 kW to 5.0 kW P.176

Model Designation

Servo Motor

M S M E 5 0 2 G C S 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

Symbol Type MSMJ Low inertia (200 W to 750 W) Low inertia (1.0 kW to 5.0 kW) MSMF MDMF Middle inertia (1.0 kW to 5.0 kW) High inertia (0.9 kW to 5.0 kW) MGMF High inertia (200 W to 750 W) MHMJ MHME High inertia (1.0 kW to 5.0 kW)

Motor rated output

Symbol	Rated output
02	200 W
04	400 W
08	750 W
09	0.9 kW
10	1.0 kW
15	1.5 kW
20	2.0 kW
30	3.0 kW
40	4.0 kW
50	5.0 kW

Rotary encoder specifications

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

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

<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

	Shaft Holding brake				Oil seal		
Symbol	Round	Key-way, center tap	without	with	without	with	
Α	•		•		•		
В	•			•	•		
С	•		•			•	
D	•			•		•	
S		•	•		•		
Т		•		•	•		
U		•	•			•	
V		•		•		•	

MSME, MDME, MGME, MHME

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

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

Supply voltage specifications

Specifications Symbol 3-phase, 200 V Single/3-phase, 200 V

Power device Max. current rating

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

Current detector current rating Symbol 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

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

A5 Family

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

			Moto				Driver		Power				Option	al parts						
			0	Part No.	Rating/	A5II series Part No.	A5IIE series Part No.		capacity	Encode	er Cable		Motor	Cable	Brake Cable	External	Reactor	Noise Filter		
N	lotor series	Power supply	Output (W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type)	(Position control type Note) 2	Frame	rated load	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3		without Brake Note) 3	with Brake Note) 3	Note) 3	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase		
	MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MFECA			MFMCA		MFMCB		DV0P227 DV0P220	DV0P4170		
	(Leadwire) type	Single	400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	MFECA 0**0EAE		0**0EED	_	0**0GET	DV0P4283	DV0P228	DV0PM2004		
	3000 r/min	phase/ 3-phase	750	MSMJ082 □ 1 *	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4						DV0P220	DV0PM2004		
Low		200 V	1000	MSME102 □ C * M	158	MDDKT5540	MDDKT5540E	D-frame	Арргох. 1.8				MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220		
inertia	моме		1500	MSME152 ☐ C * M	159	MDDKT5540	MDDKT5540E		Approx. 2.3			l l	0**2ECD	0**2FCD			DV0P222			
	MSME 3000 r/min		2000	MSME202 ☐ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3						_	DV0P4285 Note) 5	DV0P223	DV0PM2004		
		3-phase 200 V	3000	MSME302 ☐ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5				MFMCA	MFMCA		DV0P4285	DV0P224	-		
		200 1	4000 5000	MSME402 □ C * M MSME502 □ C * M	162 163	MFDKTB3A2 MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 7.5				0**3ECT	0**3FCT		×2 in parallel	DV0P225	DV0P3410		
		Single phase/	1000	MDME102 □ C * M	164	MDDKT3530	MDDKT3530E		Approx. 1.8								Note) 6 DV0P228 DV0P222			
Middle		3-phase 200 V	1500	MDME152 □ C * M	165	MDDKT5540	MDDKT5540E			D-frame	Approx. 2.3				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220
<u>e</u> in	MDME 2000 r/min		2000	MDME202 □ C * M	166	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	.5						DV0P4285 Note) 5	DV0P223	DV0PM2004		
inertia	2000 17111111	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	DV0P3410		
		0: 1	5000	MDME502 ☐ C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5								Note) 6			
	MGME Low speed/\ High torque		900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E	D-frame Approx. 1.8	D-frame	e Approx. 1.8			MFMCD 0**2ECD	MFMCA **2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220		
	type /	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	F-frame	Approx. 3.8				MFMCA	MFMCA		DV0P4285	DV0P223	DV0P3410		
	1000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	r-irame	Approx. 4.5			(0**3ECT	0**3FCT		×2 in parallel	DV0P224	DV0F3410		
	MHMJ /Leadwire\		200	MHMJ022 ☐ 1 *	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MFECA	MFECA		MFMCA		MFMCB		DV0P227 DV0P220	DV0P4170 DV0PM2004		
High	(type) 3000 r/min	Single	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	0**0EAE Note) 4		0**0EED	_	0**0GET	DV0P4283	DV0P228	D V 0F IVI2004		
h inertia	0000 17111111	phase/ 3-phase	750	MHMJ082 □ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		14010) 4						DV0P220	DV0PM2004		
<u>n</u> .		200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E	D-frame	Approx. 1.8				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220		
			1500	MHME152 ☐ C * M	177	MDDKT5540	MDDKT5540E		Approx. 2.3								DV0P222			
	MHME 2000 r/min		2000	MHME202 □ C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE		MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 5	DV0P223	DV0PM2004		
		3-phase	3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5				MENAGA	MENACA		DV0D4005	DV0P224	_		
		200 V	4000	MHME402 C * M		MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225 —	DV0P3410		
			5000	MHME502 ☐ C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5								Note) 6			

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

153

· Options

	Title		Part No.	F			
Interface Cable			DV0P4360	ſ			
			DV0P4120	ĺ			
			DV0P4121	İ			
iterface Conve	rsion Cab	le	DV0P4130	ľ			
			DV0P4131	l			
			DV0P4132	ł			
		Cinalo row	D V 01 4102	ł			
Connector Kit	A to	Single row type	DV0PM20032				
Supply Input Connection	D-frame	Double row type	DV0PM20033	1			
	E-frame		DV0PM20044	L			
Connector Kit	A to D-fra	ame	DV0PM20034				
for Motor Connection	E-frame		DV0PM20046				
Connector Kit or Regenerative Resistor	E-frame		DV0PM20045				
			DV0P4290				
			DV0P4310	Γ			
Connector Kit fo	r		DV0P4320	l			
Motor/Encoder (n	DV0P4330	t			
			DV0P4340	l			
			DV0P4380	t			
	RS485, I	35232	DV0PM20024	f			
	Safety	.0202	DV0PM20024	198			
	Interface		DV0FW20025 DV0P4350) 19			
Connector Kit				+			
	External	ocale	DV0PM20026	19			
	Encoder		DV0PM20010				
D		lonitor Signal	DV0PM20031	-			
Battery For Abso	olute Enco	aer	DV0P2990	20			
Battery Box			DV0P4430	-			
	A-frame		DV0PM20027				
Mounting	B-frame		DV0PM20028	ļ			
Bracket	C-frame		DV0PM20029				
	D-frame		DV0PM20030				
			MFECA0**0EAD	ļ			
	without E	Battery Box	MFECA0**0EAM	J			
Encoder Cable			MFECA0**0ESD	ſ			
	with D-"	on, Pou	MFECA0**0EAE	Ī			
	with Batt	ery BOX	MFECA0**0ESE	İ			
			MFMCA0**0EED	t			
			MFMCD0**2ECD	ļ			
	without E	Brake	MFMCE0**2ECD	l			
Motor Cable			MFMCA0**3FCT	t			
Motor Cable			MFMCA0**3ECT	t			
Motor Cable	with Brak	ke	MFMCA0**2FCD	t			
	with Brak	(e	MFMCA0**2FCD MFMCA0**3FCT	t			
		(e	MFMCA0**2FCD	t			
	A-frame	Ke	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET	t			
Brake Cable	A-frame B-frame	ке	MFMCA0**2FCD MFMCA0**3FCT	t			
Brake Cable External	A-frame B-frame C-frame	Ke	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283				
Brake Cable External Regenerative	A-frame B-frame C-frame D-frame	se .	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET				
Brake Cable External Regenerative	A-frame B-frame C-frame D-frame E-frame	Ke	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283				
Brake Cable External Regenerative	A-frame B-frame C-frame D-frame E-frame F-frame		MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285				
Brake Cable External Regenerative Resistor	A-frame B-frame C-frame D-frame E-frame F-frame DV0P220 DV0P220	D, DV0P221,	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285 DV0P222,				
Motor Cable Brake Cable External Regenerative Resistor	A-frame B-frame C-frame D-frame E-frame F-frame DV0P22 DV0P22 DV0P41	D, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285 DV0P222, DV0P225, DV0PM20047				
Brake Cable External Regenerative Resistor Reactor	A-frame B-frame C-frame D-frame E-frame F-frame DV0P22 DV0P22 DV0P41 DV0P42	0, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285 DV0P222, DV0P225, DV0PM20047				
Brake Cable External Regenerative Resistor Reactor	A-frame B-frame C-frame D-frame E-frame F-frame DV0P22 DV0P22 DV0P41	0, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285 DV0P222, DV0P225, DV0PM20047				
Brake Cable External Regenerative Resistor Reactor Noise Filter	A-frame B-frame C-frame D-frame E-frame F-frame DV0P22 DV0P22 DV0P41 DV0P42	0, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285 DV0P222, DV0P225, DV0PM20047				
Brake Cable External Regenerative Resistor Reactor	A-frame B-frame C-frame D-frame E-frame F-frame DV0P222 DV0P222 DV0P412 DV0P422	0, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2	MFMCA0**2FCD MFMCA0**3FCT MFMCB0**0GET DV0P4283 DV0P4284 DV0P4285 DV0P222, DV0P225, DV0PM20047 0042 0043				

Note) 2 Because A5IE series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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

Note) 4 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.

Note) 5 Other combinations exist, and refer to P.210 for details.

Note) 6 Reactor should be prepared by the user.

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

200 V MSMJ 200 W [Low inertia, Small capacity] Please contact us for more information.

Specifications

				AC2	00 V	
Makannadal		IP65		MSMJ022G1□	MSMJ022S1□	
Motor model *1	IP67			-	-	
Amuliaalala	Model	A5II series		MADK	T1507	
Applicable 42	No.	A5IIE series		MADKT1507E	-	
diver	Fr	ame symb	ol	A-fra	ame	
Power supply	capacit	y	(kVA)	0.	.5	
Rated output			(W)	20	00	
Rated torque			(N·m)	0.0	64	
Momentary Ma	ax. peal	k torque	(N·m)	1.91		
Rated current		(A	(rms))	1.6		
Max. current		(/	۹(o-p))	6.9		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4	283	No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	50	00	
Moment of ine	rtia	Without	brake	0.	14	
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	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 single	e turn	1,048,576	131,072	

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

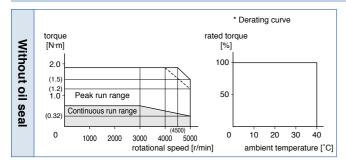
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

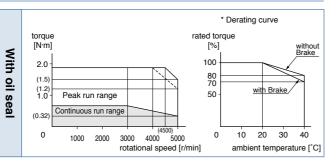
• Permissible load (For details, refer to P.183)

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

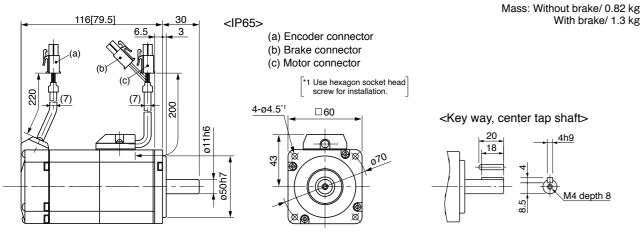
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

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

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

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

Please contact us for more information

Specifications

			AC200 V		
Mataumaad	-1	IP65		MSMJ042G1□	MSMJ042S1
Motor mode	€I *1	IP67		-	-
A I' l. l .	Model	Model A5II series		MBDK	T2510
Applicable driver	No.	A5IIE ser	ies	MBDKT2510E	-
unven	F	rame sym	bol	B-fra	ame
Power supp	oly capacit	у	(kVA)	0.	9
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	1.	3
Momentary	Max. pea	k torque	(N·m)	3.8	
Rated curre	ent	(A(rms))	2.6	
Max. currer	nt		(A(o-p))	11.0	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	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		0.26	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1,048,576	131,072

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

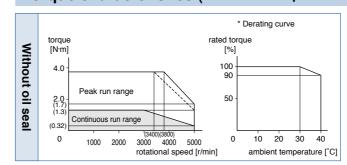
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

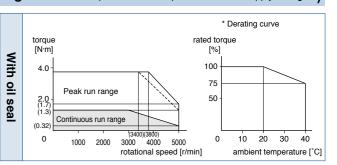
• Permissible load (For details, refer to P.183)

	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

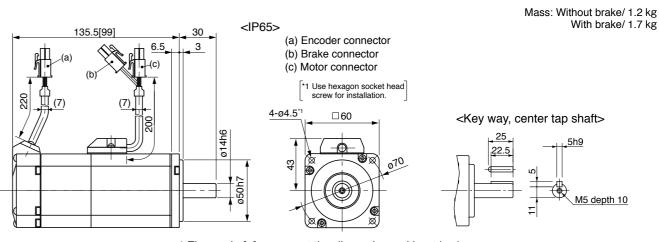
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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.

155

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
IP65			MSMJ082G1□	MSMJ082S1□	
Motor model		IP67		-	-
A	Model	A5II serie	s	MCDKT3520	
Applicable driver *2	No.	A5IIE series		MCDKT3520E	-
unver	Fr	ame sym	bol	C-fra	ame
Power supply	capacit	y	(kVA)	1.	3
Rated output			(W)	75	50
Rated torque			(N·m)	2.	4
Momentary M	ax. peal	k torque	(N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current		((A(o-p))	17.0	
Regenerative I	orake	Without	option	No limit Note)2	
frequency (times	min) Note)1	DV0P	4283	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	4500	
Moment of ine	ertia	Without	t brake	0.87	
of rotor (×10 ⁻²	kg·m²)	With b	orake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
F	Resolutio	n per sing	le turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) 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)

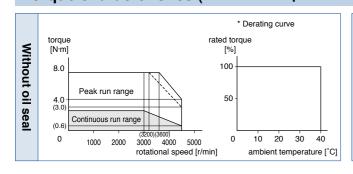
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
documbry	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

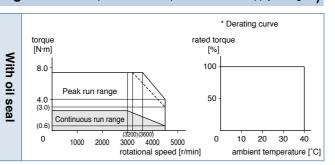
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MSMJ 750 W [Low inertia, Small capacity]

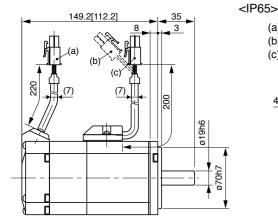
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

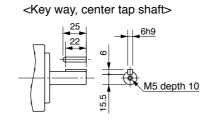


(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

4-ø6*

1 Use hexagon socket head



Mass: Without brake/ 2.3 kg

With brake/ 3.1 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MSME 1.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V
		IP65		MSME102GC□M	MSME102SC□
Motor model		IP67		-	_
	Model	A5II serie	s	MDDK	T5540
Applicable driver *2	No.	A5IE se	ries	MDDKT5540E	-
ulivei	Fi	rame sym	ıbol	D-fr	ame
Power suppl	y capacit	у	(kVA)	1.	.8
Rated outpu	t		(W)	1.	.0
Rated torque	Э		(N·m)	3.	18
Momentary I	Max. pea	k torque	(N·m)	9.55	
Rated currer	nt	((A(rms))	6.6	
Max. current	İ		(A(o-p))	28	
Regenerative	brake	Without	option	No limit Note)2	
requency (time	es/min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of ir	nertia	Without brake		2.03	
of rotor (×10	⁻⁴ kg·m²)	With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

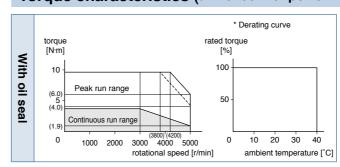
-	
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

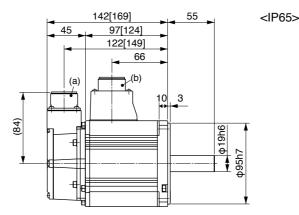
		Radial load P-direction (N)	980
During	•	Thrust load A-direction (N)	588
aooon	ibiy	Thrust load B-direction (N)	686
During	During operation	Radial load P-direction (N)	490
operat		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.>)



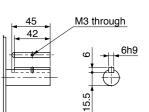
Dimensions



100

Mass: Without brake/ 3.5 kg With brake/ 4.5 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. 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 1.5 kW [Low inertia, Middle capacity]

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V	
			MSME152GC□M	MSME152SC□M	
Motor model *1		IP67	-	_	
Amaliaabla	Model	A5II series	MDDK	T5540	
Applicable 42	No.	A5IIE series	MDDKT5540E	_	
unver	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	2	.3	
Rated output		(W)	1	.5	
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))	3	35	
Regenerative b	rake	Without option	No lim	No limit Note)2	
frequency (times/		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		
R	esolutio	n per single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

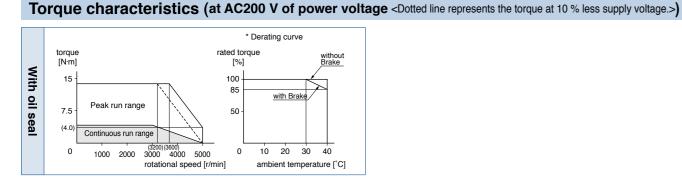
Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

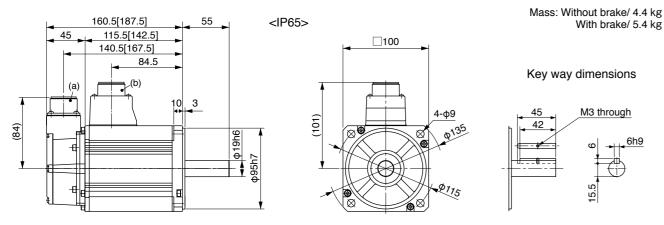
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

With brake/ 5.4 kg

[Unit: mm]



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MSME 2.0 kW [Low inertia, Middle capacity]

Specifications

					AC2	00 V
Matau madal		IP65		MSME202GC□M	MSME202SC□M	
Motor mode	9I *1	IP67		-	-	
A	N	lodel	A5II series		MEDK	T7364
Applicable driver	*2 N	lo.	A5IIE series		MEDKT7364E	_
unvoi		Fr	ame sym	bol	E-fr	ame
Power supp	oly ca	pacit	y	(kVA)	3	.3
Rated outpo	ut			(W)	2	.0
Rated torqu	ıe			(N·m)	6.	37
Momentary	Max	. peal	c torque	(N·m)	19.1	
Rated curre	ent		(.	A(rms))	11.3	
Max. currer	nt		((A(o-p))	48	
Regenerativ	e bra	ke	Without option		No lim	it Note)2
frequency (tin	nes/min)) Note)1	DV0P4285		No lim	it Note)2
Rated rotat	ional	spee	d	(r/min)	30	00
Max. rotation	onal s	peed		(r/min)	50	00
Moment of	inerti	a	Without brake		3.68	
of rotor (×1	0 ⁻⁴ kε	g·m²)	With brake		4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less		
Rotary encoder specifications		Note)5	20-bit Incremental	17-bit Absolute		
	Res	Resolution per single			1,048,576	131,072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

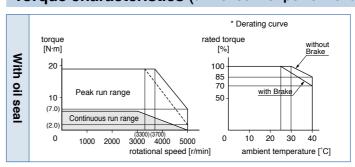
,
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

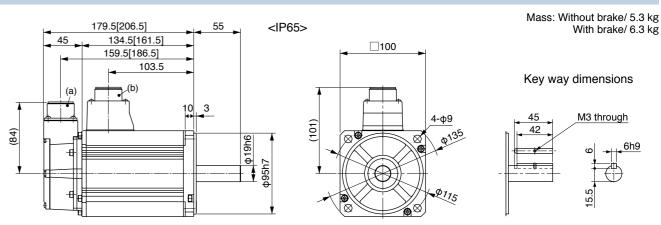
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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

			AC2	00 V
		IP65	MSME302GC□M	MSME302SC□M
Motor model *1		IP67	-	-
Amaliaabla	Model	A5II series	MFDKTA390	
Applicable 42	No.	A5IIE series	MFDKTA390E	_
diver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4	.5
Rated output		(W)	3	.0
Rated torque		(N·m)	9.	55
Momentary M	ax. peal	k torque (N·m)	28.6	
Rated current		(A(rms))	18.1	
Max. current		(A(o-p))	77	
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4285×2	2 No limit Note)2	
Rated rotation	al spee	d (r/min)	30	00
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	6.50	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	7.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

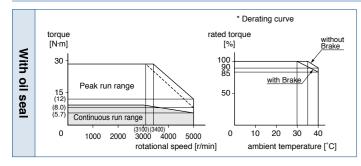
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

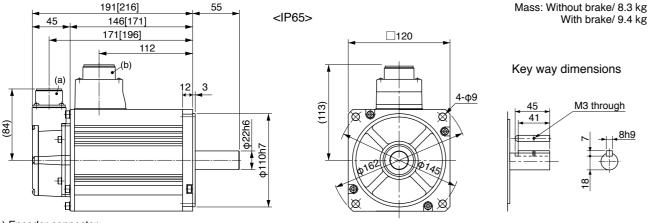
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MSME 4.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

					AC2	00 V	
Matanasadal		IP65			MSME402GC□M	MSME402SC□M	
Motor mod	€I *1		IP67		-	-	
Annlinable		Model	A5II serie	s	MFDK	MFDKTB3A2	
Applicable driver	*2	No.	A5IE series		MFDKTB3A2E	_	
anvoi		Fr	ame sym	bol	F-fra	ame	
Power supp	ply (capacity	y	(kVA)	6	.0	
Rated outp	ut			(W)	4.	.0	
Rated torqu	ue			(N·m)	12	2.7	
Momentary	/ Ma	ax. peal	torque	(N·m)	38.2		
Rated curre	ent		(A(rms))	19.6		
Max. curre	nt		((A(o-p))	8	3	
Regenerativ	ve b	rake	Without	option	No limi	it Note)2	
frequency (tir	mes/n	nin) Note)1	DV0P4	285×2	No limit Note)2		
Rated rotat	tion	al spee	d	(r/min)	3000		
Max. rotation	ona	speed		(r/min)	4500		
Moment of	ine	rtia	Without brake		12.9		
of rotor (×1	0-4	kg·m²)	With brake		14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute				
	Re	esolutio	n per sing	le turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

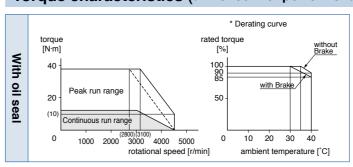
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

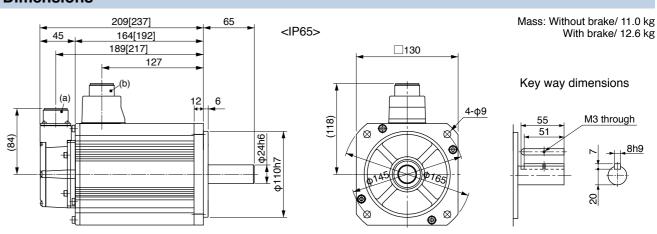
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
[Radial load P-direction (N)	784
C		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

Motor Specifications

Please contact us for more information

Specifications

			AC200 V	
IP65		IP65	MSME502GC□M	MSME502SC□M
Motor model *1		IP67	-	_
	Model	A5II series	MFDKTB3A2	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	_
unver	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	7.	.5
Rated output		(W)	5	.0
Rated torque		(N·m)	15.9	
Momentary Ma	x. peal	torque (N·m)	47.7	
Rated current		(A(rms))	24.0	
Max. current		(A(o-p))	1(02
Regenerative br	rake	Without option	357	
frequency (times/m	iin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotationa	al spee	d (r/min)	3000	
Max. rotational	speed	(r/min)	4500	
Moment of iner	tia	Without brake	17.4	
of rotor (×10 ⁻⁴ l	kg·m²)	With brake	18.6	
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	solutio	n per single turn	1,048,576	131,072

• Brake specifications (For 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)

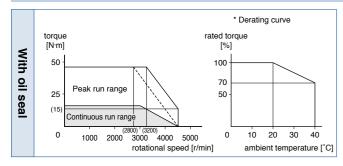
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

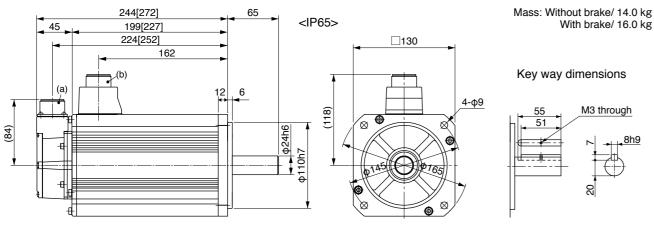
200 V MSME 5.0 kW [Low inertia, Middle capacity]

*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.

163

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

Special Order Product

			AC2	00 V		
		IP65			MDME102GC□M	MDME102SC N
Motor mod	€I *1		IP67		-	_
A 1: 1- 1 -		Model	A5I series		MDDK	T3530
Applicable driver	*2	No.	A5IIE ser	ies	MDDKT3530E	_
diivoi		Fr	ame sym	bol	D-fr	ame
Power supp	ply (capacity	y	(kVA)	1.	.8
Rated outp	ut			(W)	1.	.0
Rated torqu	ue			(N·m)	4.	77
Momentary	/ Ma	ax. peal	c torque	(N·m)	14.3	
Rated curre	ent		(.	A(rms))	5.7	
Max. curre	nt		((A(o-p))	2	4
Regenerativ	ve b	rake	Without	option	No limi	t Note)2
frequency (tir	mes/n	nin) Note)1	DV0P4284		No limi	t Note)2
Rated rotat	tion	al spee	d	(r/min)	2000	
Max. rotation	ona	speed		(r/min)	3000	
Moment of	ine	rtia	Without brake		4.60	
of rotor (×10 ⁻⁴ kg·m²) With		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 Resolution per single turn			20-bit Incremental	17-bit Absolute		
			1,048,576	131,072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

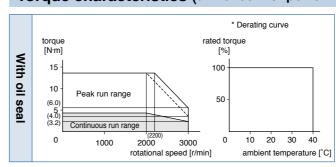
r more
r less
r less
±10 %
more
±2.4

• Permissible load (For details, refer to P.183)

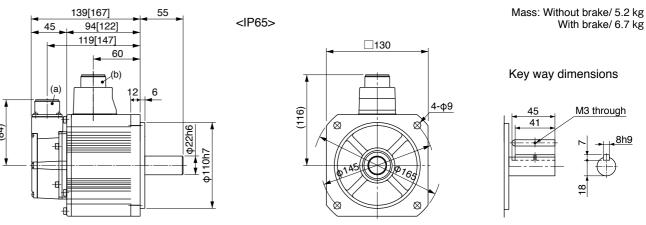
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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
Motor model	IP65			MDME152GC□M	MDME152SC□M
*1		IP67		-	_
	Model	A5II series		MDDKT5540	
Applicable driver *2	No.	A5IIE seri	ies	MDDKT5540E	_
divoi	Fr	ame sym	bol	D-fr	ame
Power supply	capacit	y	(kVA)	2	.3
Rated output			(W)	1.	.5
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))	4	0
Regenerative b	orake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P	4284	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	6.70	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
R	Resolution per single turn			1,048,576	131,072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

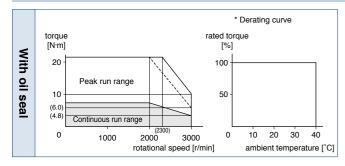
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

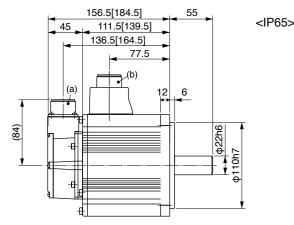
200 V MDME 1.5 kW [Middle inertia, Middle capacity]

*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.>)



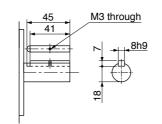
Dimensions



□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.

165

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MDME 2.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

			AC200 V			
		IP65			MDME202GC□M	MDME202SC N
Motor mode	€I ∗1		IP67		-	-
Amaliaabla		Model	A5II serie	s	MEDK	T7364
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	-
anvoi		Fr	ame sym	bol	E-fra	ame
Power supp	ply c	capacit	y	(kVA)	3.	.3
Rated outp	ut			(W)	2	.0
Rated torqu	ue			(N·m)	9.	55
Momentary	/ Ма	x. peal	k torque	(N·m)	28.6	
Rated curre	ent		(A(rms))	11.5	
Max. currer	nt		((A(o-p))	4	9
Regenerativ	/e bi	rake	Without option		No limi	t Note)2
frequency (tir	mes/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 (×10 ⁻⁴ kg·m ²)			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 Resolution per single turn			Note)5	20-bit Incremental	17-bit Absolute	
			le turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

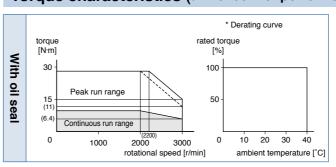
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

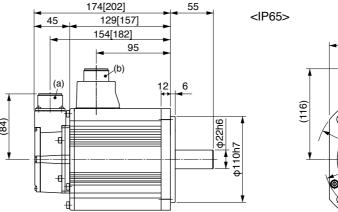
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



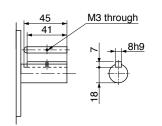
Dimensions



130

Mass: Without brake/ 8.0 kg With brake/ 9.5 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC2	AC200 V		
Matanasalal		IP65		MDME302GC□M	MDME302SC□M		
Motor model *1		IP67		-	-		
A constitue de la	Model	A5II series		MFDK	TA390		
Applicable driver *2	No.	A5IIE serie	es	MFDKTA390E	_		
unven	Fr	ame symb	ool	F-fra	ame		
Power supply	capacit	y	(kVA)	4	.5		
Rated output			(W)	3	.0		
Rated torque			(N·m)	14	l.3		
Momentary M	ax. peal	k torque	(N·m)	43.0			
Rated current		(A	A(rms))	17.4			
Max. current		(/	A(o-p))	7	4		
Regenerative I	orake	Without	option	No limi	t Note)2		
frequency (times/	min) Note)1	DV0P42	285×2	No limit Note)2			
Rated rotation	nal spee	d	(r/min)	2000			
Max. rotationa	al speed		(r/min)	3000			
Moment of ine	ertia	Without	brake	12.9			
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	14.2			
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less				
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
F	Resolution per single turn			1,048,576	131,072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

16.2 or more
110 or less
50 or less
0.90±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

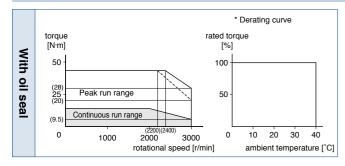
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

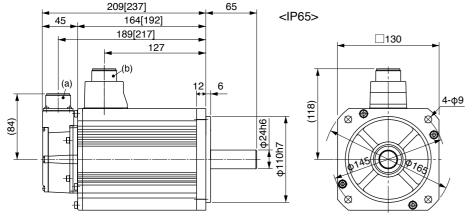
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



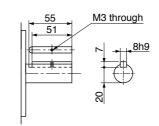
Dimensions



Mass: Without brake/ 11.0 kg

With brake/ 12.6 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MDME 4.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

			AC200 V			
		IP65		MDME402GC□M	MDME402SC□N	
Motor mode	€I ∗1		IP67		-	-
A		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	capacity	y	(kVA)	6	.0
Rated outp	ut			(W)	4.	.0
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 bi	rake	Without option		No limit Note)2	
frequency (tin	nes/m	nin) Note)1	DV0P4285×2		No limi	t Note)2
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without brake		37.6	
of rotor (×1	0 ⁻⁴ l	kg·m²)	With brake		38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sing	le turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

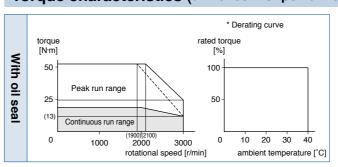
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

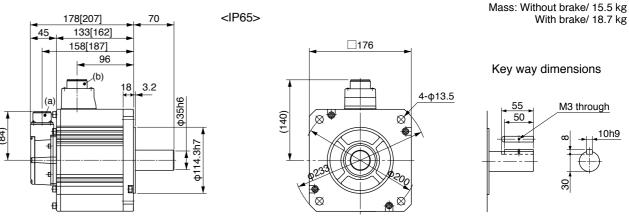
	During assembly During operation	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
		Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V	
Matanasadal		IP65	MDME502GC□M	MDME502SC□M	
Motor model *1		IP67	-	-	
Ammliaalala	Model	A5II series	MFDK	MFDKTB3A2	
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	_	
dilvei	Fr	ame symbol	F-fr	ame	
Power supply	capacit	y (kVA)	7	.5	
Rated output		(W)	5	.0	
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))	1	110	
Regenerative b	orake	Without option	120		
frequency (times/	min) Note)1 DV0P4285×2		2 No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	ıl speed	(r/min)	3000		
Moment of ine	ertia	Without brake	48.0		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	48.8		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1,048,576	131,072	

• Brake specifications (For 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.

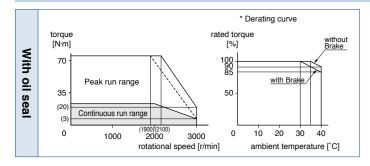
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

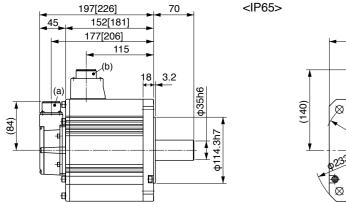
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



4-φ13.5

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

Please contact us for more information

Specifications

				AC200 V	
		IP65		MGME092GC□M	MGME092SC□N
Motor mode) :1	IP67		-	-
A	Model	A5II serie	S	MDDK	T5540
Applicable driver *	No.	A5IIE ser	ies	MDDKT5540E	-
unven	Fr	ame sym	bol	D-fra	ame
Power supp	ly capacit	у	(kVA)	1.	.8
Rated outpu	ut		(W)	0.	.9
Rated torqu	ie		(N·m)	8.9	59
Momentary	Max. peal	k torque	(N·m)	19.3	
Rated curre	ent	(A(rms))	7.6	
Max. curren	nt		(A(o-p))	24	
Regenerativ	e brake	Without option		No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0P	4284	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	inertia	Without brake		6.70	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

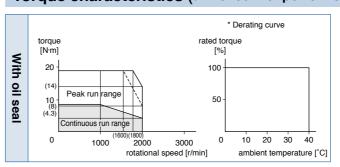
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

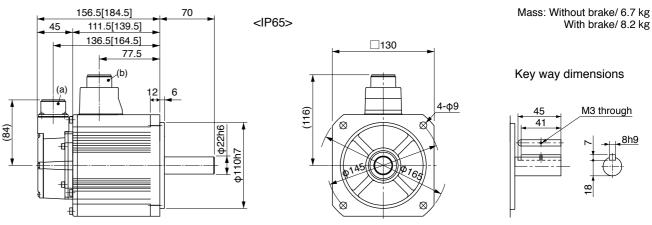
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	686
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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 MGME 2.0 kW [Middle inertia, Middle capacity] Please contact us for more information.

Specifications

			AC2	00 V
		IP65	MGME202GC□M	MGME202SC□M
Motor model *1		IP67	-	-
Amaliaahla	Model	A5II series	MFDK	TA390
Applicable *2	No.	A5IIE series	MFDKTA390E	_
divei	Fı	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	3	.8
Rated output		(W)	2	.0
Rated torque		(N·m)	19).1
Momentary Ma	ax. pea	k torque (N·m)	47.7	
Rated current		(A(rms))	17.0	
Max. current		(A(o-p))	6	0
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/	min) Note)1 DV0P4285×2		No limit Note)2	
Rated rotation	Rated rotational speed (r/min)		1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	30.3	
of rotor (×10 ⁻⁴	kg·m²)	With brake	31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

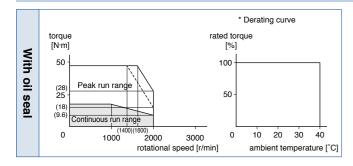
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

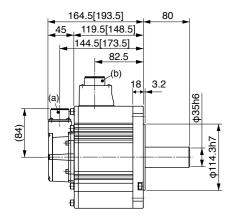
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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.>)

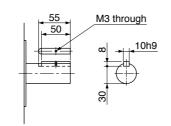


Dimensions



<IP65> 4-φ13.5 Mass: Without brake/ 14.0 kg With brake/ 17.5 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

171

[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 3.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V	
M-4		IP65		MGME302GC□M	MGME302SC_N	
Motor mode	ÐI ⊧1	IP67		-	_	
A II l. l .	Mode	A5II serie	s	MFDK	ГВЗА2	
Applicable driver	No. ⊧2	A5IIE ser	ries	MFDKTB3A2E	_	
unver		Frame sym	ıbol	F-fra	ame	
Power supp	oly capac	city	(kVA)	4.	5	
Rated outpo	ut		(W)	3	0	
Rated torqu	ıe		(N·m)	28	3.7	
Momentary	Max. pe	ak torque	(N·m)	71.7		
Rated curre	ent	((A(rms))	22.6		
Max. currer	nt		(A(o-p))	8	80	
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tin	nes/min) Note	e)1 DV0P4	285×2	No limit Note)2		
Rated rotat	ional spe	ed	(r/min)	1000		
Max. rotation	nal spe	ed	(r/min)	2000		
Moment of	inertia	Without	t brake	48.4		
of rotor (×1	0 ⁻⁴ kg·m ²	With b	orake	49.2		
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			ıle turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

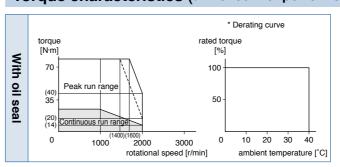
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

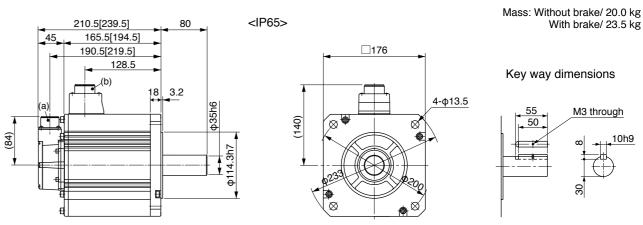
		Radial load P-direction (N)	2058
Duri	ng embly	Thrust load A-direction (N)	980
uooc	assembly	Thrust load B-direction (N)	1176
Duri	ng	Radial load P-direction (N)	1470
oper	operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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.

172

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC2	00 V	
IP65		MHMJ022G1□	MHMJ022S1			
Motor model *1		IP67		-	_	
Amaliaabla	Model	A5II series		MADKT1507		
Applicable driver *2	No.	A5IIE ser	ries	MADKT1507E	_	
unver	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 Ma	ax. peal	k torque	(N·m)	1.91		
Rated current		(A(rms))	1.6		
Max. current		((A(o-p))	6.9		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/i	min) Note)1	DV0P	4283	No limit Note)2		
Rated rotation	ated rotational speed		I speed (r/min)		3000	
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	rtia	Without	t brake	0.42		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	0.45		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

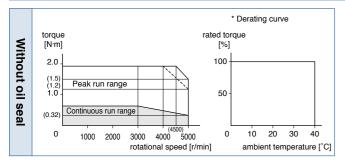
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
accombiy	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

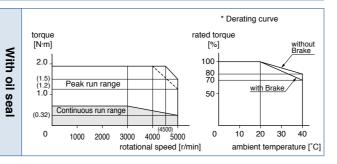
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MHMJ 200 W [High inertia, Small capacity]

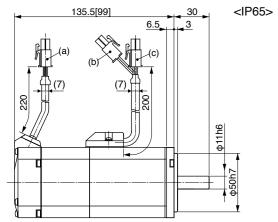
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector

<Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

[Unit: mm]

Mass: Without brake/ 0.96 kg

With brake/ 1.4 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

173

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MHMJ 400 W [High inertia, Small capacity]

Specifications

					AC2	00 V
Motor model		IP65		MHMJ042G1□	MHMJ042S1	
	*1		IP67		-	-
A 1: 1- 1		Model	A5II series	s	MBDK	T2510
Applicable driver	*2	No.	A5IIE series		MBDKT2510E	_
unver		Fr	ame sym	bol	B-fr	ame
Power sup	ply o	capacity	/	(kVA)	0	.9
Rated outp	ut			(W)	40	00
Rated torqu	ue			(N·m)	1	.3
Momentary	/ Ma	x. peal	torque	(N·m)	3.8	
Rated curre	ent		(.	A(rms))	2.6	
Max. current (A(o-p))			11	11.0		
Regenerativ	ve b	rake	Without	option	No lim	t Note)2
frequency (ti	mes/m	nin) Note)1	DV0P	4283	No limit Note)2	
Rated rotal	tiona	al spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	5000	
Moment of	iner	tia	Without brake		0.67	
of rotor (x1	0-4	kg·m²)	With b	rake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
	Resolution per single turn			le turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

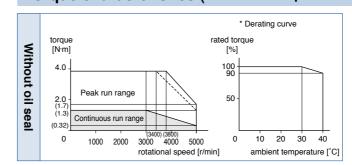
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

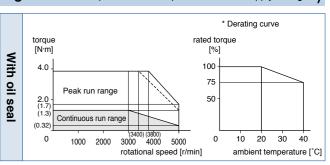
• Permissible load (For details, refer to P.183)

	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

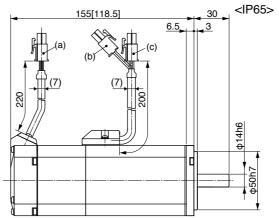
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





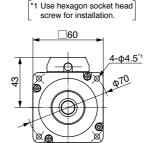
Dimensions



(a) Encoder connector

(b) Brake connector

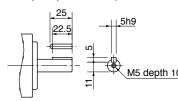
(c) Motor connector



<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.

200 V MHME 1.0 kW [High inertia, Middle capacity]

A5 Family

Motor Specifications

Specifications

			AC200 V		
		IP65		MHMJ082G1□	MHMJ082S1
Motor model		IP67		-	-
Ammliaalala	Model	A5II series	i	MCDKT3520	
Applicable driver *2	No.	A5IIE serie	es	MCDKT3520E	_
divoi	Fr	ame symb	ool	C-fr	ame
Power supply	capacit	У	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2.4	
Momentary Ma	ax. peal	k torque	(N·m)	7.1	
Rated current		(A	A(rms))	4.0	
Max. current (A(o-p))			17.0		
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4	1283	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	4500	
Moment of ine	rtia	Without	brake	1.51	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per singl	e turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

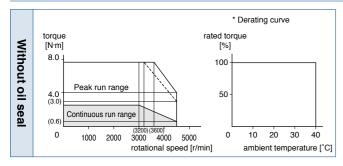
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
document	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

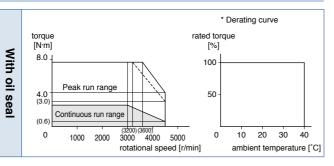
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MHMJ 750 W [High inertia, Small capacity]

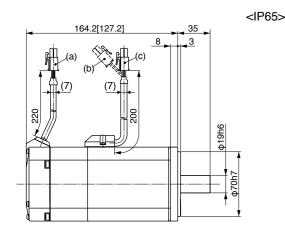
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





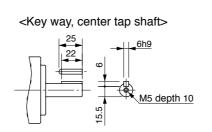
Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

*1 Use hexagon socket head screw for installation.



Mass: Without brake/ 2.5 kg

With brake/ 3.5 kg

* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

Please contact us for more information

Specifications

			AC2	00 V	
Matanasadal		IP65		MHME102GC□M	MHME102SC N
Motor model		IP67		-	-
A	Model	A5II serie	S	MDDKT3530	
Applicable driver *2	No.	A5IIE ser	ies	MDDKT3530E	_
divoi	Fr	ame sym	bol	D-fr	ame
Power supply	y capacit	y	(kVA)	1.	.8
Rated output	:		(W)	1.	.0
Rated torque			(N·m)	4.	77
Momentary N	/lax. peal	k torque	(N·m)	14.3	
Rated current (A(rms))		5.7			
Max. current		((A(o-p))	2	4
Regenerative	brake	Without	option	83	
frequency (time		DV0P4284		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	2000	
Max. rotation	al speed		(r/min)	3000	
Moment of in	ertia	Without	brake	24.7	
() () () ()		With b	rake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			1,048,576	131,072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

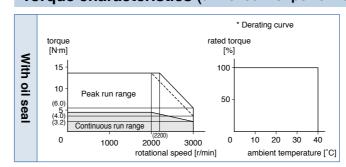
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

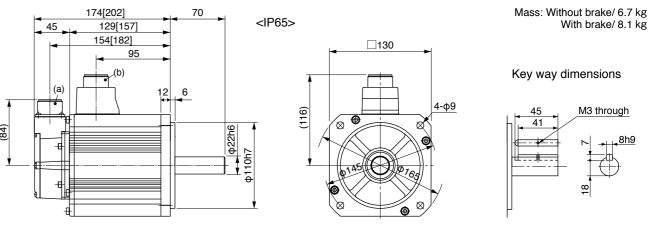
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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 1.5 kW [High inertia, Middle capacity]

Please contact us for more information.

Please contact us for more information

Specifications

			AC200 V	
		IP65	MHME152GC□M	MHME152SC□M
Motor model *1		IP67	_	-
Applicable	Model	A5I series	MDDKT5540	
Applicable *2	No.	A5IE series	MDDKT5540E	_
divei	Fr	ame symbol	D-fr	ame
Power supply	capacity	y (kVA)	2	.3
Rated output		(W)	1.	.5
Rated torque		(N·m)	7.	16
Momentary Ma	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	9.4	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	22	
frequency (times/r	nin) 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 (×10 ⁻⁴	kg·m²)	With brake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

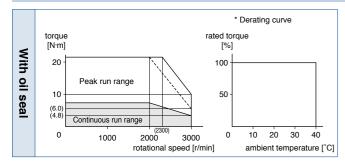
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

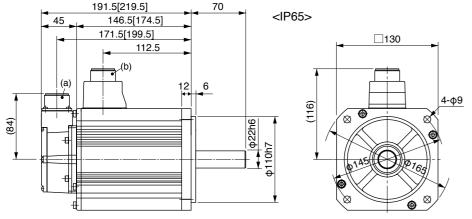
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.>)



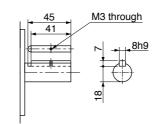
Dimensions



Key way dimensions

Mass: Without brake/ 8.6 kg

With brake/ 10.1 kg



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

177

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 2.0 kW [High inertia, Middle capacity]

Specifications

				AC2	00 V
		IP65		MHME202GC□M	MHME202SC N
Motor model		IP67		_	-
Amaliaalala	Model	A5II series		MEDKT7364	
Applicable driver *2	No.	A5IE series		MEDKT7364E	_
diivoi	Fr	ame sym	bol	E-fra	ame
Power suppl	y capacit	/	(kVA)	3.	3
Rated output	t		(W)	2	.0
Rated torque)		(N·m)	9.	55
Momentary N	Max. peal	torque	(N·m)	28.6	
Rated currer	nt	(A(rms))	11.1	
Max. current		((A(o-p))	4	7
Regenerative	brake	Without	option	4	5
frequency (time	s/min) Note)1	DV0P4285		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 b	rake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1,048,576	131,072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

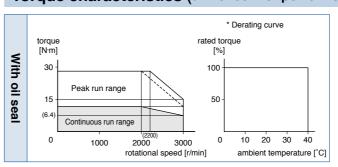
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

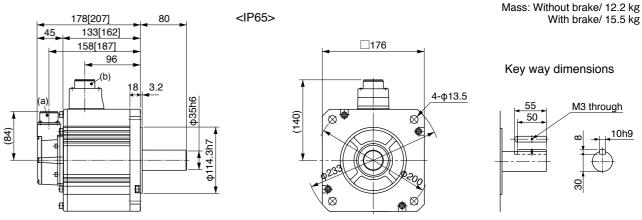
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

			AC200 V		
		MHME302GC□M	MHME302SC□M		
Motor model *1		IP67		-	-
A	Model	A5II series	s	MFDKTA390	
Applicable driver *2	No.	A5IIE series		MFDKTA390E	-
divei	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	4.	.5
Rated output			(W)	3	.0
Rated torque			(N·m)	14	1.3
Momentary M	ax. peal	k torque	(N·m)	43.0	
Rated current		(.	A(rms))	16.0	
Max. current		((A(o-p))	68	
Regenerative b	rake	Without	option	19	
frequency (times/	min) Note)1	DV0P4	285×2	142	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	90.5	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1,048,576	131,072

• Brake specifications (For 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)

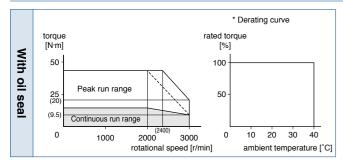
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

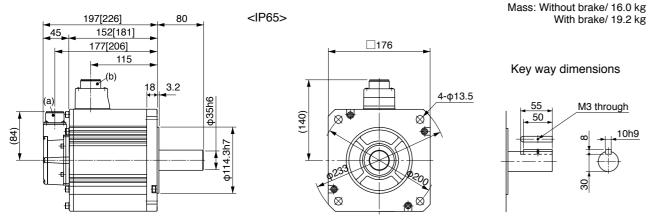
200 V MHME 3.0 kW [High inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (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.

179

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MHME 4.0 kW [High inertia, Middle capacity]

Please contact us for more information

Specifications

				AC200 V		
		IP65		MHME402GC□M	MHME402SC□N	
Motor mode *	•	IP67		-	-	
A	Model	A5II serie	S	MFDK	TB3A2	
Applicable driver *	No.	A5IIE ser	ies	MFDKTB3A2E	-	
unven	Fr	ame sym	bol	F-fra	ame	
Power supp	ly capacit	у	(kVA)	6	.0	
Rated outpu	ıt		(W)	4.	.0	
Rated torqu	е		(N·m)	19).1	
Momentary	Max. peal	k torque	(N·m)	57.3		
Rated curre	nt	(A(rms))	21.0		
Max. curren	t	((A(o-p))	89		
Regenerative	e brake	Without	option	17		
frequency (tim	es/min) Note)1	DV0P4285×2		125		
Rated rotation	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	Without	brake	112		
of rotor (×10 ⁻⁴ kg·m²) With brake			rake	114		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less				
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

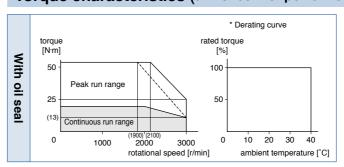
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

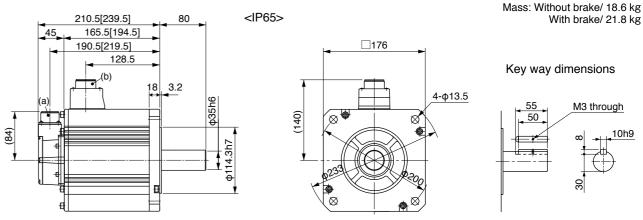
		Radial load P-direction (N)	1666
	During assembly	Thrust load A-direction (N)	784
	accombiy	Thrust load B-direction (N)	980
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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

Specifications

			AC200 V		
		IP65	MHME502GC□M	MHME502SC□M	
Motor model		IP67	-	-	
Amaliaabla	Model	A5I series	MFDK	ТВЗА2	
Applicable *2	No.	A5IE series	MFDKTB3A2E	_	
divei	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	7.	.5	
Rated output		(W)	5.	.0	
Rated torque		(N·m)	23.9		
Momentary Ma	ax. peal	k torque (N·m)	71.6		
Rated current		(A(rms))	25.9		
Max. current		(A(o-p))	110		
Regenerative b	rake	Without option	10		
frequency (times/i	min) Note)1	DV0P4285×2	76		
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	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

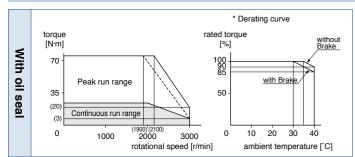
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

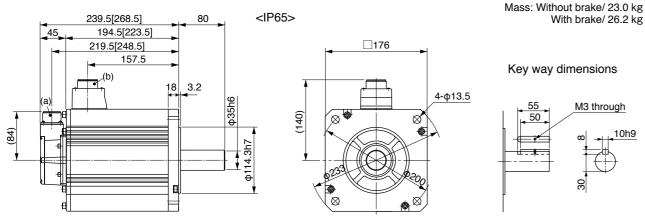
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

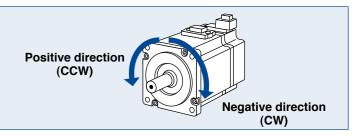
Environmental Conditions

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 ter	mperature *2	-20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation *5)
Storage hu	midity	20 % to 85 % RH (free from condensation ⁻⁵)
Vibration	Motor only	50 W to 5.0 kW : Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW to 15.0 kW : Lower than 24.5 m/s² (2.5 G) at running, 24.5 m/s² (2.5 G) at stall
Impact	Motor only	Lower than 98 m/s ² (10 G)
		MSMD, MHMD, MSMJ, MHMJ (except rotating portion of output shaft and readwire end.)
rating (Motor only)	IP65 *3	M * ME (IP65 motor: 0.9 kW or more) (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)
	IP67 *3*4	M * ME IP67 motor (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)
Alti	tude	Lower than 1000 m

- *1 Ambient temperature to be measured at 5 cm away from the motor.
- *2 Permissible temperature for short duration such as transportation.
- *3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in application where water proof performance is required such as continuous wash-down operation.
- *4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.
- *5 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

<Note>

Initial setup of rotational direction: positive = CCW and negative = CW. Pay an extra attention.



Notes on [Motor specification] page

Note) 1. [At AC100 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC115 V (at 100 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

[At AC200 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC230 V (at 200 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

Motor Specification Description

[At AC400 V of power voltage]

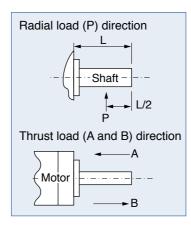
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC460 V (at 400 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

-Notos

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

183

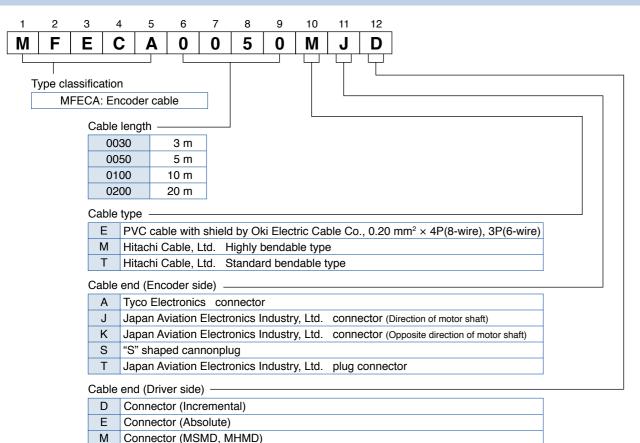
· Specifications of Built-in Holding Brake

Motor series	Motor output	Static friction torque N·m	Rotor inertia × 10 ⁻⁴ kg·m ²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage	Permissible work (J) per one braking		Permissible angular acceleration rad/s ²
MSMD	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3		39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1 V or more	137	44.1	30000
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42		196	147	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3		39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1 V or more	137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42		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	DC2 V	392	490	10000
	3.0 kW	11.8 or more		80 or less			or more			10000
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200	
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7		392	490	
MDME	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59	DC2 V or more	588	780	10000
	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less	0.79		1176	1500	
	3.0 kW	16.2 or more		110 or less	(130)	0.9		1470	2200	
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83		1372 1470	2900	10000
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	s 0.75	DC2 V or more		1500	
	4.5 kW	31.4 or more	0.75	130 01 1033	100 01 1033	0.73		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	DC2 V	1372		5440
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	or more		2900	
	4.5 kW, 6.0 kW				50 or less					5000
MHMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1 V	137	44.1	
MSMJ MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	or more	196	147	30000
мнме	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000
	1.5 kW	13.7 or more	1.00	100 or less	50 or less (130)	0.79	DC2 V	1176	1500	10000
	2.0 kW~5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3	or more	1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000

- Excitation voltage is DC24 V±10 % (Large type motor) and DC24 V±5 % (Small type motor).
- Releasing time values represent the ones with DC-cutoff using a varistor.
 Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)
- · Above values (except static friction torque, releasing voltage and excitation current) represent typical values.
- Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.
- Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

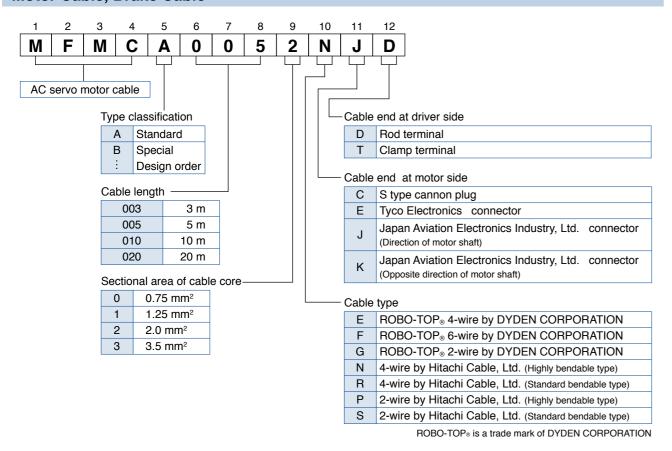
Options

Encoder Cable



Cable part No. Designation

Motor Cable, Brake Cable

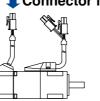


Specifications of Motor connector

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.)

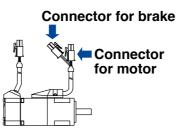
Connector for encoder

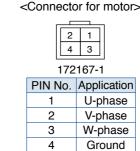


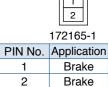
			,		PIN No.	Application
	3	2	1		1	NC
	6	5	4		2	PS
					3	PS
172168-1 20-bit Incremental					4	E5V
20	-bit I	ncre	mer	ntai	5	E0V
					6	FG(SHIELD)

			,		PIN No.	Application
	3	2	1		1	BAT+
	6	5	4		2	BAT-
9 8 7					3	FG(SHIELD
172169-1 17-bit Absolute					4	PS
					5	PS
					6	NC
					7	E5V
					8	E0V
ng to NC.					9	NC
5						

<Remarks> Do not connect anything to No







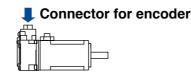
<Connector for brake>

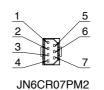
Electromagnetic brake is a nonpolar device.

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.

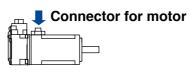


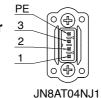


2 — 2 BAT— 3 E0V 3 E0V 4 PS 4 PS 5 — 5 BAT+ 6 E5V 6 E5V	20-bit Incremental			17-bit Absolute		
2 — 2 BAT— 3 E0V 3 E0V 4 PS 4 PS 5 — 5 BAT+ 6 E5V 6 E5V	PIN No.	Application		PIN No.	Application	
3 E0V 4 PS 5 - 5 BAT+ 6 E5V 6 E5V	1	FG(SHIELD)		1	FG(SHIELD)	
4 PS 4 PS 5 BAT+ 6 E5V 6 E5V	2	_		2	BAT-	
5 — 5 BAT+ 6 E5V 6 E5V	3			3	E0V	
6 E5V 6 E5V	4	PS		4	PS	
	5	_		5	BAT+	
7 DC 7 DC	6	E5V		6	E5V	
/ PS / PS	7	PS		7	PS	

Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.



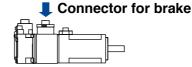


	1	U-phase
	2	V-phase
	3	W-phase
	PE	Ground
\smile		

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.

PIN No. Application

lar device. Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.

Encoder Cable

* It doesn't correspond to IP65 and IP67.

Options

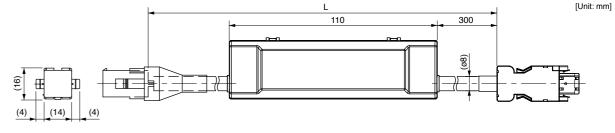
A5 Family

[Unit: mm]

MSMD 50 W to 750 W, MHMD 200 W to 750 W Compatible MFECA0 * * 0EAM Part No. motor output MSMJ 200 W to 750 W, MHMJ 200 W to 750 W For 20-bit incremental encoder (Without battery box)

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAM
Connector (Motor side)	172160-1	Tyco Electronics	10	MFECA0100EAM
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

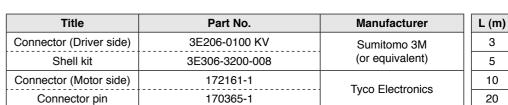
Part No.	MFECA0 * * 0EAE	Compatible motor output		50 W to 750 W, 200 W to 750 W,	
Specifications	For 17-bit absolute encode	er (With battery bo	ox)		



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EA
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EA
Connector (Motor side)	172161-1	Tyco Electronics	10	MFECA0100EA
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EA
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]



0.20 mm²×3P (6-wire)

Cable

3 MFECA0030EAD 5 MFECA0050EAD MFECA0100EAD 10 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

<Encoder connector for IP65 motor>

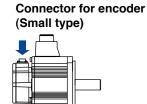
IP65 motor Connector for encoder (Large type)

N/MS3102A20-29P

<Encoder connector for IP67 motor>

JN2AS10ML3-R

20-bit In	cremental	17-bit Absolute		20-bit Incremental			17-bit A	Absolute
PIN No.	Application	PIN No.	Application	PIN No.	Application	I	PIN No.	Application
Α	NC	Α	NC	1	E0V		1	E0V
В	NC	В	NC	2	NC		2	NC
С	NC	С	NC	3	PS		3	PS
D	NC	D	NC	4	E5V	Г	4	E5V
Е	NC	E	NC	5	NC	Г	5	BAT-
F	NC	F	NC	6	NC		6	BAT+
G	E0V	G	E0V	7	PS	Г	7	PS
Н	E5V	Н	E5V	8	NC		8	NC
J	FG(SHIELD)	J	FG(SHIELD)	9	FG(SHIELD)		9	FG(SHIELD)
K	PS	K	PS	10	NC		10	NC
I	PS	1	PS					



IP67 motor

N	NC	N	NC
Р	NC	Р	NC
R	NC	R	NC
S	NC	S	BAT-

NC T BAT+

М

<Remarks>

Do not connect anything to NC.

[6.0 kW or more] Connector for motor

<Motor>

JL04V-2E32-17PE-B-R

MDME 7.5 kW to 15.0 kW

PIN No. Application

U-phase

V-phase

W-phase

Ground

MGME 6.0 kW

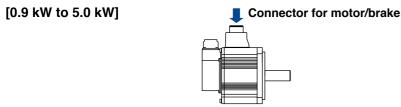
MHME 7.5 kW

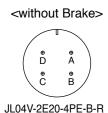
D

<Brake>

Connector for brake

Connector for motor/brake

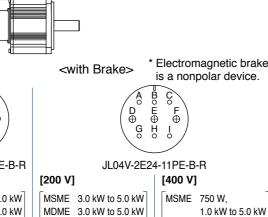




	# A o B ⊕ C o o o o
B-R	JL04V-2E20-18PE-B
/),	[200 V]

-04 V-2E2U-4FE-D-N			JLU4V-2	2E2U-18PE-B-R	
SME	750 W(400 V),		[200 V]		
	1.0 kW to 2.0 kW		MSME	1.0 kW to 2.0 kW	
DME	400 W (400 V),		MDME	1.0 kW to 2.0 kW	
	600 W (400 V),		MFME*	1.5 kW	
	1.0 kW to 2.0 kW		MGME	0.9 kW	
GME	0.9 kW		MHME	1.0 kW to 1.5 kW	
HME	1 0 kW to 1 5 kW		_	_	

VIIIIVIE I.U	1.5 KW			
_04HV-2E	22-22PE-B-F	}		
MSME 3.0	kW to 5.0 kW		PIN No.	Application
	kW to 5.0 kW		G	Brake
	kW to 4.5 kW		Н	Brake
	kW to 5.0 kW		Α	NC
			F	U-phase
PIN No.	Application		I	V-phase
Α	U-phase		В	W-phase
В	V-phase		Е	Ground
С	W-phase		D	Ground
D	Ground		С	NC



187

MSME 3.	0 kW	to 5.0 kW		MSME	75	60 W,		
MDME 3.	0 kW	/ to 5.0 kW			1.0	0 kW	to 5.0	kW
MFME* 2.	5 kW	/, 4.5 kW		MDME	40	00 W,	600 V	٧,
MGME 2.	0 kW	to 4.5 kW			1.0	0 kW	to 5.0	kW
MHME 2.	0 kW	/ to 5.0 kW		MFME*	1.	5 kW	to 4.5	kW
-		_		MGME	0.9	9 kW	to 4.5	kW
				MHME	1.0	0 kW	to 5.0	kW
			_					
		PIN No.	Αŗ	oplication	วท			
		Α		Brake				
		В		Brake				
		С		NC				
		D	Į	J-phase	9			
		Е	١	/-phase	,			
		F	۷	V-phas	е			
		G		Ground				

Ground

	U	Ground			INC				
* MFME is common to with or without brake.									
<rei< td=""><td colspan="8"><remarks></remarks></td></rei<>	<remarks></remarks>								
Do n	ot conne	ect anythin	ıg '	to NC.					

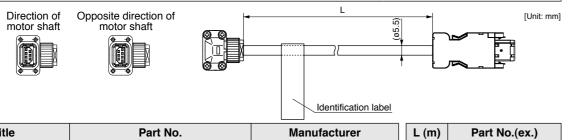
	D A C B
N/MS310	2A 14S-2P
MDME 7.5 MGME 6.0 MHME 7.5	
PIN No.	Application
Α	Brake
В	Brake
С	NC
D	NC

* Electromagnetic brake is a nonpolar device.

Oki Electric Cable Co., Ltd.

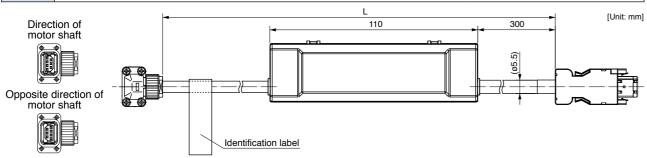
Encoder Cable

* It doesn't correspond to IP65 and IP67.



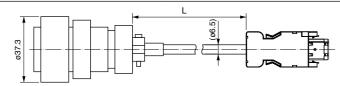
Title	Part No.	Manufacturer	L(
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	[;
Shell kit	3E306-3200-008	(or equivalent)	[;
Connector (Motor side)	JN6FR07SM1	Japan Aviation	1
Connector pin	LY10-C1-A1-10000	Electronics Ind.	2
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.	

Part No.	MFECA0 ** 0MJE (Highly bendable type, Direction of motor shaft) MFECA0 ** 0MKE (Highly bendable type, Opposite direction of motor shaft) MFECA0 ** 0TJE (Standard bendable type, Direction of motor shaft) MFECA0 ** 0TKE (Standard bendable type, Opposite direction of motor shaft)	Compatible motor output	MSME 50 W to 750 W (200 V)
Specifications	For 17-bit absolute encoder (With battery box)		



Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJE
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJE
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJE
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.		

Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)	
Specifications	For 20-bit incremental encoder (Without battery box)			



Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	ΙΓ
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	ΙΓ
Cable clamp	N/MS3057-12A	Electronics Ind.	
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.	-

L (m)	Part No.
3	MFECA0030ESD
5	MFECA0050ESD
10	MFECA0100ESD
20	MFECA0200ESD

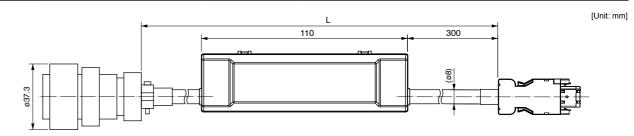
[Unit: mm]

MFECA0030MJD MFECA0050MJD MFECA0100MJD MFECA0200MJD

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 end	oder (Without bat	ttery box)

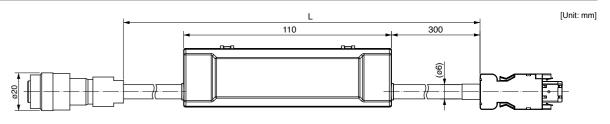
Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation		MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ESE	Compatible motor output	0.9 kW to 5.0 kW (IP65 Motor)
Specifications	For 17-bit absolute encoder (With battery box)		



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)			



Title	Part No.	Manufacturer	L (m)	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	
Shell kit	3E306-3200-008	(or equivalent)	5	
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

[Unit: mm]

Part No. MFECA0030ETE MFECA0050ETE MFECA0100ETE MFECA0200ETE

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

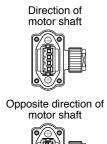
=10

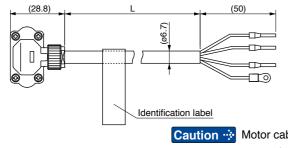
Title	Part No.	Manufacturer	
Connector	172159-1	Type Fleetrenies	
Connector pin	170366-1	Tyco Electronics	
Rod terminal	AI0.75-8GY	Phoenix Contact	
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION	

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(200\
Part No.	MFMCA0 * * 0RJD (Standard bendable type, Direction of motor shaft)	model	MSME 50 W to 750 W(200V)
	MFMCA0 * * ORKD (Standard bendable type, Opposite direction of motor shaft)		MSME 200 W to 750 W(200\

[Unit: mm]





Caution : Motor cable for opposite direction of motor shaft cannot be used with a motor 50W and 100W.

Title	Part No.	Manufacturer
Connector	JN8FT04SJ1	Japan Aviation
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.
Rod terminal	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFMCA0030NJD
5	MFMCA0050NJD
10	MFMCA0100NJD
20	MFMCA0200NJD

Part No.	MFMCA0 * * 2ECD	Applicable model	MFME	1.5 kW(200 V)
----------	-----------------	------------------	------	---------------

191

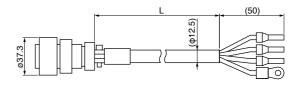
•	Part No	
037.3	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	

Title	Part No.	Manufacturer		L
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation		
Cable clamp	JL04-2022CK(14)-R Electronics			
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.		
Nylon insulated round terminal	N2-M4			
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION		

Part No.
MFMCA0032ECD
MFMCA0052ECD
MFMCA0102ECD
MFMCA0202ECD

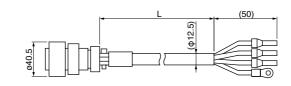
MSME 750 W(400 V), 1.0 kW to 2.0 kW, Applicable model MDME 400 W(400 V), 600 W(400 V), 1.0 kW to 2.0 kW MFMCD0 * * 2ECD Part No. MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	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		

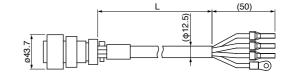
Part No. M		Applicable model	MHME 2.0 kW (200 V and 400 V commonness)	
------------	--	------------------	--	--



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 Mfg. Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	1.5 kW(400 V), 2.5 kW(200 V and 400 V commonness)
----------	-----------------	------------------	------	---

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCF0032ECD
Cable clamp	JL04-2428CK(17)-R	.04-2428CK(17)-R Electronics Ind.		MFMCF0052ECD
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCF0102ECD
Nylon insulated round terminal	N2-M4	J.S.1 Milg. Co., Ltd.	20	MFMCF0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

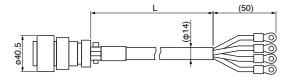
Options

A5 Family

Motor Cable (without Brake)
* It doesn't correspond to IP65 and IP67.

Part No. MFMCA0 * * 3ECT

MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kWApplicable model MHME 3.0 kW to 5.0 kW, MGME 2.0kW to 4.5 kW (All model 200 V and 400 V commonness)

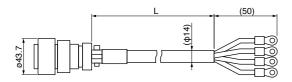


Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

Part No.		Applicable model	MFME 4.5 kW (200 V and 400 V commonness)
----------	--	------------------	--

[Unit: mm]

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

Part No.	MFMCA0 * * 2FCD	Applicable model	MDME MFME MHME	1.0 kW to 2.0 kW(200 V), 1.0 kW to 2.0 kW(200 V), 1.5 kW(200 V), 1.0 kW(200 V) to 1.5 kW(200 V) 0.9 kW(200V)
----------	-----------------	------------------	----------------------	--

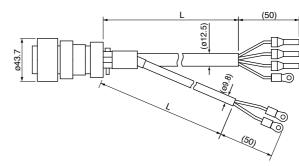
[Unit:	m

Title		Part No.	Manufacturer	L(
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation	;
Cable clamp		JL04-2022CK(14)-R	Electronics Ind.	
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	1
Nylon insulated	Earth	N2-M4	LC T Mfa Co Ltd	2
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 2.0 mm ² 6-wire	DYDEN CORPORATION	

L (m)	Part No.
3	MFMCA0032FCD
5	MFMCA0052FCD
10	MFMCA0102FCD
20	MFMCA0202FCD

Part No.	MFMCE0 * * 2FCD	Applicable model	MSME 750 W(400 V) to 2.0 kW(400 V), MDME 400 W(400 V) to 2.0 kW(400 V), MFME 1.5 kW(400 V), 2.5 kW(200 V/400 V), MGME 0.9 kW(400 V) MHME 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)
----------	-----------------	------------------	--

[Unit: mm]



Title			Part No.	Manufacturer	L (m)
Connector			JL04V-6A24-11SE-EB-R	Japan Aviation	3
	Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	5
	Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10
	Nylon insulated	Earth	N2-M4	LC TMfc Co Ltd	20
	round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable			ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 2.0 mm ² 6-wire	DYDEN CORPORATION	

Part No.					
MFMCE0032FCD					
MFMCE0052FCD					
MFMCE0102FCD					
MFMCE0202FCD					

Brake Cable

* It doesn't correspond to IP65 and IP67.

A5 Family

Options

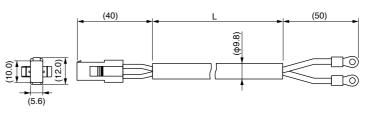
Motor Cable (with Brake)
* It doesn't correspond to IP65 and IP67.

			MSME	3.0 kW to 5.0 kW	, MDME	3.0 kW to 5.0 kW
Part No	MFMCA0 * * 3FCT	Applicable	MFME	4.5 kW,	MHME	3.0 kW to 5.0 kW
Part No. MFMCAU · · SF	WEWCAU	model	MGME	2.0 kW to 4.5 kW		
			(All mode	I 200 V and 400 V com	monness)	

L	(50)	[Unit: mm]
(014)		
(6)		

Title		Part No.	Manufacturer	
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	
Nylon insulated	Earth	N5.5-5	J.S.T Mfg. Co., Ltd.	
round terminal	Brake	N1.25-M4	J.S.1 Mig. Co., Ltd.	
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 3.5 mm ² 6-wire	DYDEN CORPORATION	

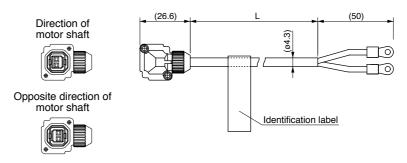
L (m)	Part No.					
3	MFMCA0033FCT					
5	MFMCA0053FCT					
10	MFMCA0103FCT					
20	MFMCA0203FCT					



Title	Part No.	Manufacturer	L (m)	Part No.
Connector			3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ² 2-wire	DYDEN CORPORATION	20	MFMCB0200GET

	MFMCB0 * * 0PJT (Highly bendable type, Direction of motor shaft)		MSME	
Part No.		Applicable model	50 W to 750 W (200 V)	
	MFMCB0 * * 0SKT (Standard bendable type, Opposite direction of motor shaft)		(200)	

[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

[Unit: mm]

Cable for Interface

Part No. DV0P4360

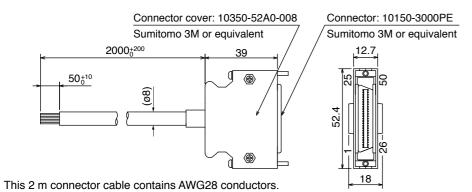


Table for wiring

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)
	,	_	White (Black2)	_	` '		, ,	_	` ′

<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

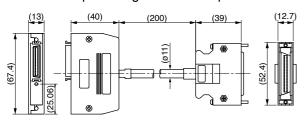
|--|

Interface cables for old product (XX series or V series) can be connected to the current product by using the connector conversion cable shown below.

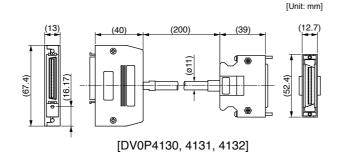
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control
DV0P4132	MINAS V → A5II, A5 series (A4, A series) for torque control

^{*} For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.



[DV0P4120, 4121]



Connector Kit

Connector Kit for Communication Cable (for RS485, RS232) (Excluding A5IE, A5E Series)

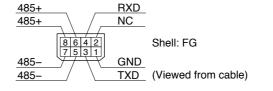
Part No. DV0PM20024

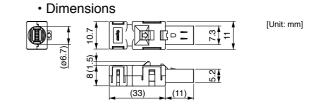
· Components

[Unit: mm]

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

Pin disposition of connector, connector X2





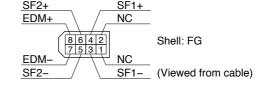
Connector Kit for Safety (Excluding A5IE, A5E Series)

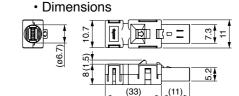
Part No. DV0PM20025

· Components

Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

· Pin disposition of connector, connector X3





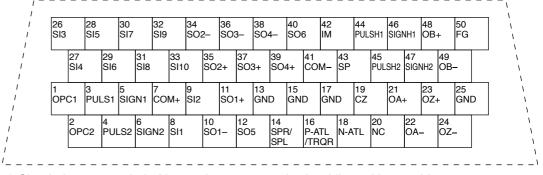
Connector Kit for Interface

Part No. DV0P4350

Components

Title	Part No.	Number	Manufacturer	Note
Connector	10150-3000PE	1	Sumitomo 3M	For Connector X4
Connector cover	10350-52A0-008	1	(or equivalent)	(50-pins)

• Pin disposition (50 pins) (viewed from the soldering side)



- 1) Check the stamped pin-No. on the connector body while making a wiring.
- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

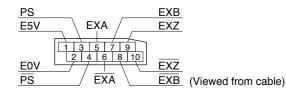
Connector Kit for External Scale (Excluding A5IIE, A5E Series)

Part No	DV0PM20026
---------	------------

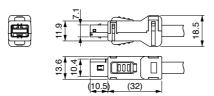
Components

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



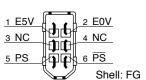
Connector Kit for Encoder

Part No. DV0PM20010

Components

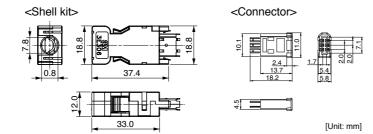
Title	Part No.	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector V6
Shell kit	3E306-3200-008	(or equivalent)	For Connector X6

• Pin disposition of connector, connector X6



(Viewed from cable)

Dimensions



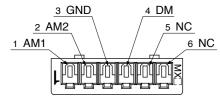
Connector Kit for Analog Monitor Signal

Part No. DV0PM20

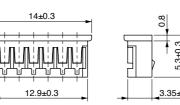
Components

	Title	Part No.	Number	Manufacturer	Note
С	onnector	510040600	1	Molex Inc	For Connector X7 (6-pins)
Cor	nector pin	500118100	6		

• Pin disposition of connector, connector X7



Dimensions



[Unit: mm]

<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B

Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A to C-frame 100 V, A to D-frame 200 V: Single row type)

Components

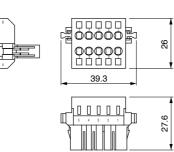
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector VA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20033 (For A to D-frame 200 V: Double row type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-C	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT	2		For Connector XA

Dimensions



Part No. DV0PM20044 (For E-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-L	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20051 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-M	1	LC TMfc Co Ltd	For Connector VA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20052 (For E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	LC T Mfg. Co. Ltd	For Connector VA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Connector Kit

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

A5 Family

Options

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	J.S.T Mfg. Co., Ltd.	For Connector VD
Handle lever	MJFAT-0T	1		For Connector XD

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. DV0PM20045 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	LOTME On Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	J.S.T Mfg. Co., Ltd.	For Connector VC
Handle lever	J-FAT-OT-L	2		For Connector XC

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A to C-frame 100 V, A 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.	For Connector AB

Part No. DV0PM20054 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector	03JFAT-SAXGSA-M	1	LCTMfc Co Ltd	For Connector VD	
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XB	

Connector Kit for Motor/Encoder Connection

Part No.		Applicable	MSMD 50 W to 750 W, MHMD 200 W to 750 W
		model	(absolute encoder type)

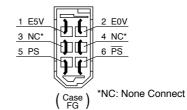
Components

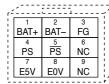
Title Part No. Nun		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Connector	172161-1	1	Type Fleetrenies	For Encoder cable	
Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
Connector	172159-1	1	Tues Flastranies	For Motor cable	
Connector pin	170366-1	70366-1 Tyco Electronics	(4-pins)		

• Pin disposition of connector, • Pin disposition of connector connector X6

for encoder cable

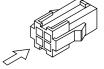
• Pin disposition of connector for motor cable











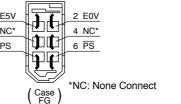
* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

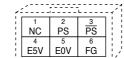
Part No.	DV0P4380	Applicable model	MSMD MSMJ	50 W to 750 W, 200 W to 750 W,	MHMD MHMJ	200 W to 750 W 200 W to 750 W	
		illouci	(incremental encoder type)				

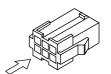
· Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Connector	172160-1	1	Tues Floatronies	For Encoder cable	
Connector pin	170365-1	6	Tyco Electronics	(6-pins)	
Connector	172159-1	1	Tyco Electronics	For Motor cable	
Connector pin	170366-1	4		(4-pins)	

· Pin disposition of connector, · Pin disposition of connector connector X6 for encoder cable



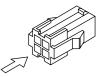






for motor cable

· Pin disposition of connector



Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

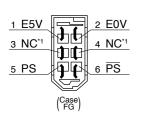
Part No. DV0PM20035 MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

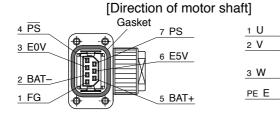
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)	
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable	
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.	(4-pins)	

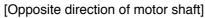
• Pin disposition of connector, • Pin disposition of connector connector X6 for encoder cable

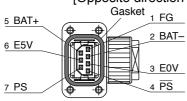
· Pin disposition of connector for motor cable

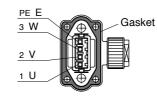


*1 NC: None Connect









* Pins 2 and 5 are left unused (NC) with an incremental encoder.

Remarks - Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.	DV0PM20036	Applicable model	<ip67 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW, MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)</ip67>	Without brake	
----------	------------	------------------	--	------------------	--

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1 (or equivalent)		For Connector X6 (6-pins)	
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 co		
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

			<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>\A/:+b o+</th></ip65>	notor>			\A/:+b o+	
P	art No.		Applicable model	MSME	1.0 kW to 2.0 kW,	MDME	1.0 kW to 2.0 kW	Without brake
				MHME	1.0 kW to 1.5 kW,	MGME	0.9 kW	Diake

Components

Title Part No. Nu		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
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 cable	
Cable clamp	N/MS3057-12A	S3057-12A 1 Electronics Ind.		FOI MOLOI Cable	

Part No.	DV0PM20037	Applicable model	<ip67 motor=""> MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)</ip67>	Without brake	
----------	------------	------------------	---	------------------	--

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	6-0100 KV 1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1 (or equivalent)			
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation For Meter ask		
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

		<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>\A/i+b o+</th></ip65>	notor>			\A/i+b o+	
Part No.		Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	Without
		lilouci	MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 kW	brake

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	E206-0100 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 Franciscopia	
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
----------	------------	------------------	---	---------------

Components

Title	Title Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		Fan Oanna atan VO (O nina)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FOI WIGGOT CADIE	

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No.		Applicable model	MSME UKW 10 / UKW MIDME UKW 10 / UKW	With brake
----------	--	------------------	--	---------------

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freedor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1	Japan Aviation For Meter of		
Cable clamp	N/MS3057-12A 1 E		Electronics Ind.	For Motor cable	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	With brake
----------	------------	------------------	--	---------------

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.		

Part No.		Applicable model		With brake	
----------	--	------------------	--	---------------	--

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.		
Motor connector	N/MS3106B24-11S	1	Japan Aviation	For Motor cable	
Cable clamp	N/MS3057-16A	1	Electronics Ind.		

<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 nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	

^{*} 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	For Motor cable	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.		
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Broke coble	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

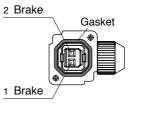
Part No.	DV0PM20040	Applicable model	MSME 50 W to 750 W
----------	------------	------------------	--------------------

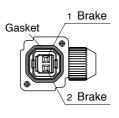
Components

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.	FOI DIAKE CADIE	

• Pin disposition of connector for brake cable

[Direction of motor shaft] [Opposite direction of motor shaft]



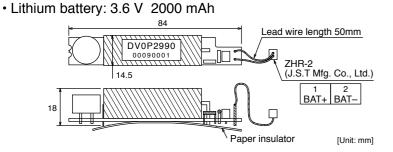


<Remarks>

Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

<Remarks>

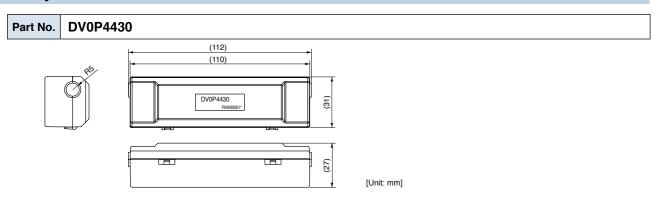
• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".



<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 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.

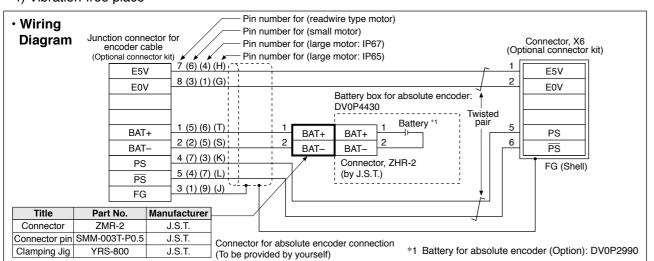
<Caution>

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.

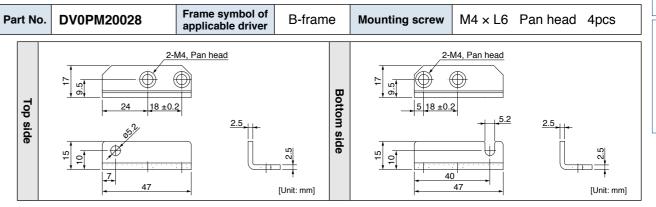
Refer to the instruction manual of the battery for handling the battery.

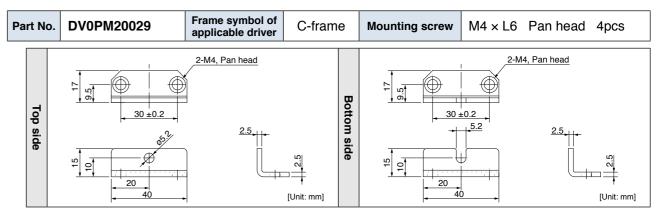
Installation Place of Battery

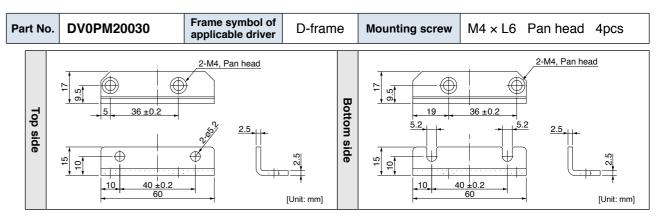
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable 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 Bottom side 11 ±0.2



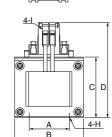


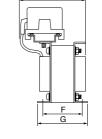


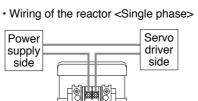
For E, F and G-frame, it is possible to make both a front end and back end mounting by changing the mounting direction of L-shape bracket (attachment).

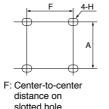
Fig.2

Reactor









[Unit: mm]

	Part No.	Α	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
	DV0P220	65±1	125±1	(93)	136мах	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3
	DV0P221	60±1	150±1	(113)	155мах	130	60+3/-0	75±2	4-7φ×12	M4	4.02	5
Eig 1	DV0P222	60±1	150±1	(113)	155мах	140	70+3/-0	85±2	4-7φ×12	M4	2	8
Fig.1	DV0P223	60±1	150±1	(113)	155мах	150	79+3/-0	95±2	4-7φ×12	M4	1.39	11
	DV0P224	60±1	150±1	(113)	160мах	155	84+3/-0	100±2	4-7φ×12	M5	0.848	16
	DV0P225	60±1	150±1	(113)	160мах	170	100+3/-0	115±2	4-7φ×12	M5	0.557	25
	DV0P227	55±0.7	80±1	66.5±1	110мах	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.2	DV0P228	55±0.7	80±1	66.5±1	110мах	95	46±2	60±2	4-5φ×10	M4	2	8
	DV0PM20047	55±0.7	80±1	66.5±1	110мах	105	56±2	70±2	4-5φ×10	M4	1.39	11

^{*} For application, refer to P.21 to P.28 and P.153 to P.154 "Table of Part Numbers and Options".

Harmonic restraint

Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers' Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. We are pleased to inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver was modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

			Spec				
Part No.	Manufacturer's	Resistance	cable core			power nce) *1	Activation
Part No.	part No.	nesistance	outside diameter	Weight	Free air	with fan 1 m/s	temperature of built-in thermostat
		Ω	mm	kg	W	W	
DV0P4280	RF70M	50		0.1	10	25	
DV0P4281	RF70M	100		0.1	10	25	
DV0P4282	RF180B	25	41.07	0.4	17	50	140±5 °C
DV0P4283	RF180B	50	φ1.27 / AWG18 \	0.2	17	50	B-contact
DV0P4284	RF240	30	stranded	0.5	40	100	Open/Close capacity
DV0P4285	RH450F	20	\ wire /	1.2	52	130	(resistance load)
DV0PM20048	RF240	120		0.5	35	80	1 A 125 VAC 6000 times
DV0PM20049	RH450F	80		1.2	65	190	0.5 A 250 VAC 10000 times
DV0PM20058	RH450F × 6	3.3	_ *2	16	_ *3	780	
DV0PM20059	RH450F × 6	13.3	— *2	16	_ *3	1140	

Manufacturer : Iwaki Musen Kenkyusho

External Regenerative Resistor

A built-in thermal fuse and a thermal protector are provided for safety.

The circuit should be so designed that the power supply will be turned off as the thermal protector operates.

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit, power supply voltage or load.

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed 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.

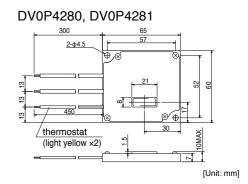
*2 Terminal block with screw tightening torque as shown below.

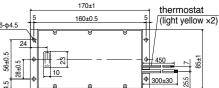
T1, T2, 24 V, 0 V, E: M4: 1.2 N·m to 1.4 N·m : M5 : 2.0 N·m to 2.4 N·m

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						
A	DV0P4280	DV0P4281 (50 W, 100 W)							
A	D V 0F 4260	DV0P4283 (200 W)	_						
В	DV0P4283	DV0P4283							
С	DV0P4282	DV0F4263							
D		DV0P4284	DV0PM20048						
E		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049						
F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel						
G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel						
Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0PM20049 × 6 in parallel or DV0PM20059						





DV0P4282, DV0P4283

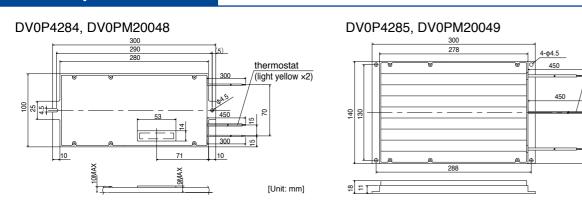


^{*1} Power with which the driver can be used without activating the built-in thermostat.

Surge Absorber for Motor Brake

A5 Family

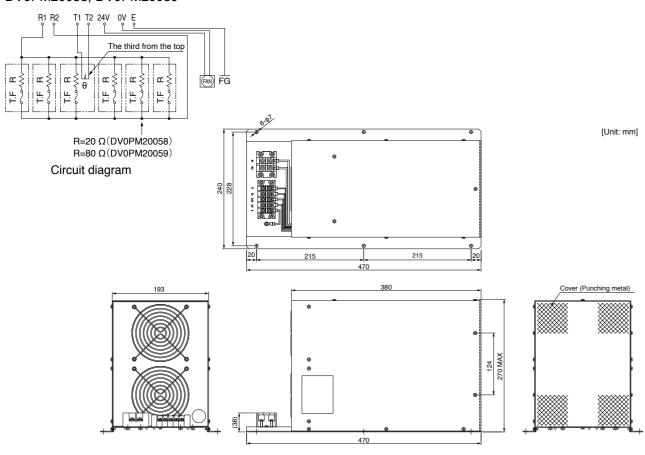




External Regenerative Resistor

(light yellow ×2)

DV0PM20058, DV0PM20059



<Remarks>

Thermal fuse is installed for safety. Compose the circuit so that the power will be turned off when the thermostat is activated. The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation.

Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Install a fan for a forced cooling if necessary.

<Caution>

Regenerative resistor gets very hot.

Take preventive measures for fire and burns. Avoid the installation near inflammable objects, and easily accessible place by hand.

	Motor	Part No.	Manufacturer		
MSMD	50 W to 750 W	Z15D271	SEMITEC Corporation		
MSMJ	200 W to 750 W	or TNR15G271K	or NIPPON CHEMI-CON		
	50 W to 750 W	INN 13G27 IK	CORPORATION		
MSME	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation		
	400 W (400 V), 600 W (400 V)				
MDME	1.0 kW to 3.0 kW	NVD07SCD082	KOA Corporation		
	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation		
	11 kW, 15 kW				
MFME	1.5 kW	NVD07SCD082	KOA Corporation		
IVIFIVIE	2.5 kW, 4.5 kW				
MGME	0.9 kW to 6.0 kW	Z15D151	SEMITEC Corporation		
MHMD MHMJ	200 W to 750 W	Z15D271 or TNR15G271K	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION		
MHME	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation		
IVITIVIE	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 Swich, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for holding brake
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Noise filter for signal lines
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/	
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	
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	
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable
Mitutoyo Corporation	+81-44-813-8236 http://www.mitutoyo.co.jp/eng/	
Magnescale Co., Ltd.	+81-463-92-7973 http://www.mgscale.com/mgs/language/english/	
MicroE Systems	+1-781-266-5700 http://www.microesys.com/	External scale
Renishaw plc	+44 1453 524524 www.renishaw.com	
Fagor Automation S.Coop	+34-943-719-200 http://www.fagorautomation.com	
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/	Nicion filter
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	Noise filter

^{*} The above list is for reference only. We may change the manufacturer without notice.

MEMO		

Compact Servo Only for Position Control.

Ultra compact position control type

MINAS E Series



Best Fit to Small Drives

- Further evolution in down-sizing, by 47 % in size. (Note)
- Exclusively designed for position control.

(Note) Compared to MUDS043A1

2

Easy to Handle, Easy to Use

- DIN-rail mounting unit (option) improves handling/installation.
- User-friendly Console makes the setup easy.
- High functionality Real-Time Auto-Gain Tuning enables adjustment-free operation.



High-Speed Positioning with Resonance Suppression Filters

- Built-In notch filter suppresses resonance of the machine.
- Built-in adaptive filter detect resonance frequency and suppress vibration.

4

Smoother operation for Low Stiffness Machine

Damping control function suppresses vibration during acceleration/deceleration

,	U	•	IL	e	Ш	เธ	

Features	21
Motor Line-up	21
Model Designation	22
Overall Wiring	22
Driver and List of Applicable Peripheral Equipments	22
Driver	
Driver Specifications	
Standard Wiring Example of Main Circuit	
Encorder Wiring Diagram	
Control Circuit Standard Wiring Example	22
Dimensions of Driver	22
Motor	22
Specifications/Model designation/Torque Characteristics	
Dimensions of Moter	
Motors with Gear Reducer	
Options	23
Setup Support Software	
Cable part No. Designation	
Cable Set	
Encoder Cable	23
Motor Cable	23
Brake Cable	23
Connector Kit	23
Interface Cable	24
Communication Cable	24
Console	24
DIN Rail Mounting Unit	24
External Regenerative Resistor	24
Reactor	24
Surge Absorber for Motor Brake	24
List of Peripheral Components	24

Leasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

MINAS E Series

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

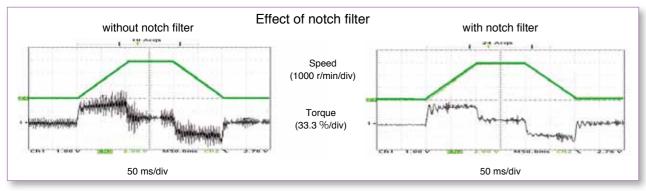
?. Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.

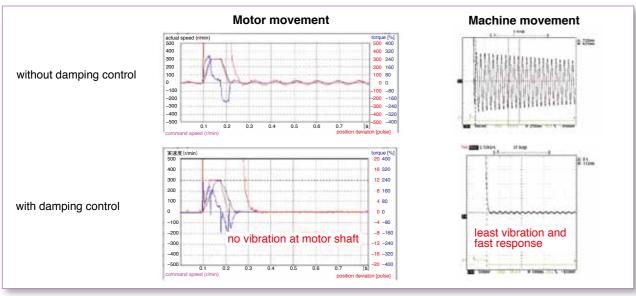
Notch filter (Note1)

- 1-channel notch filter is equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.



Damping control (Note1)

You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up. vibration frequency in 0.1 Hz unit. Note) Only applies to manual adjustment



217

(Note1) Select at positioning action mode

- · At high speed positioning mode (Pr02=0) Select either one of notch filter, damping control or high-functionality real-time auto-gain tuning. Not possible to use them all at the same time. Adaptive filter cannot be used
- · At high-functionality positioning mode (Pr02=1) All of notch filter, damping control, high-functionality real-time auto-gain tuning and adaptive filter can be

1 Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to P.241, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control mode.

Inrush current suppressing function

- Inrush suppressing resistor, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on, is equipped in this driver.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with external resistor, where energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/ CCW over- travel inhibition, power shutdown and trip.
- You can select the action sequence depending on the machine requirement.

Setup support software (Option)

With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters.

Note) Refer to P.236 for setup support software.

Key-way shaft and tapped shaft end

- Easy pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup

Note) Refer to P.236 for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup

Note) Refer to P.236 for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards







Subject		Standard conformed				
Motor	IEC60034-1	34-1 IEC60034-5 UL1004 CSA22.2 No.100				
	EN50178	UL508C CSA22.2 No.14	Directives			
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency EquipmentI	Conforms to references by EMC Directives			
	EN61000-6-2	Immunity for Industrial Environments				
Motor	EC61000-4-2	Electrostatic Discharge Immunity Test				
and driver	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test				
unven	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test				
	IEC61000-4-5	Lightening Surge Immunity Test				
	IEC61000-4-6	High Frequency Conduction Immunity Test				
	IEC61000-4-11 Instantaneous Outage Immunity Test					

: International Electrotechnical Commission

EN : Europaischen Normen

EMC: Electromagnetic Compatibility

CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC article 9(2)

Panasonic Testing Centre a division of Panasonic Marketing Europe GmbH Winsbergring 15.22525 Hamburg, F.R. Germany

* When exporting this product, follow statutory provisions of the destination country

Motor Line-up

MINAS E series

		Rated output (kW)	Rated rotational	Rotary	encoder	Brake	Gear				
	Motor series		speed (Max.) (speed) (r/min)	2500 P/r incremental	17bit absolute/ incremental	Holding	High precision	UL/ CSA	Enclosure	Features	Applications
	MUMA										
Ultra low inertia		0.05 to 0.4 0.05 0.1 0.2 0.4	3000 (5000)	0	-	0	0	0	IP65 Except shaft throughhole and connector	Small capacity Ultra low inertia	SMT machines Inserters High repetitive positioning application

Model Designation

Servo Motor



Motor rated output

Symbol	Rated output
5A	50 W
01	100 W
02	200 W
04	400 W

Voltage specifications

Symbol	Specifications
1	100 V
2	200 V
Z	100 V/200 V common (50 W only)

center tap

* Motor with oil seal is manufactured by order.

Design order Symbol Specifications

1 Standard

S

Т

Rotary encoder specifications

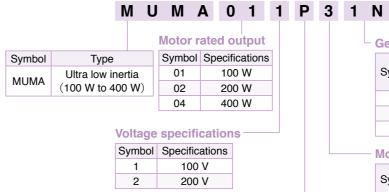
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10,000	5

See P.227 for motor specifications

•

Oil seal

■ Motor with gear reducer



Potary angoder engoifications

Rotary encoder specifications							
	Symbol	Format	Pulse counts	Resolution	Wires		
	Р	Incremental	2500 P/r	10,000	5		

Gear Motor output (W)

Gear reduction ration, gear type

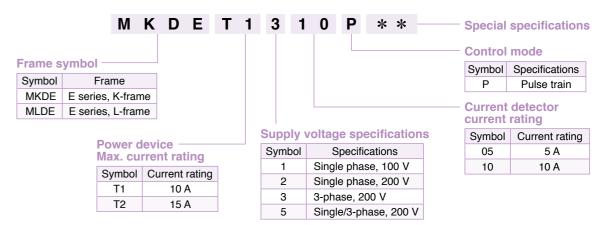
	• (••,	· catpa	141010		Symbol	
Gear type	400	200	100	reduction ratio		
For bigh				1/5	1N	
For high accuracy	•	•	•	1/9	2N	
accuracy	•	•	•	1/25	4N	

Motor structure

Cumbal	Shaft	Holding brake			
Symbol	Key-way	without	with		
3	•	•			
4	•		•		

See P.232 for motor with gear reducer specifications

Servo Driver



See P.223 for driver specifications

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.)

Parts customer to prepare

· Wiring of main circuit

Prevents external noise from the power lines. And reduces an

effect of the noise generated by

Magnetic Contactor (MC)

Surge absorber to be used

Turns on/off the main power of

Reduces harmonic current of the

Circuit Breaker (MCCB)

Protects the power lines. Shuts off the circuit when

overcurrent passes.

Noise Filter (NF)

the servo driver.

the servo driver.

together with this.

Reactor (L)

main power.

Motor to P.227 Driver Option

to P.223 to P.236 Recommended equipments

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)

List of recommneded prripheral equipments

	Motor		Power			Magnetic	
Power supply	Series	Output	(at rated) output	Circuit Breaker (Rated current)	Noise Filter	Contactor (Contact Composition)	Wire diameter (L1, L2, L3, U, V and W)
Single		50 W	0.3 kVA	(Ε.Δ.)	DV0P4160	10 A (3P+1a)	
phase,		100 W	0.4 kVA	(5 A)			0.75 mm ² to 0.85 mm ² AWG18
100 V	MUMA	200 W	0.5 kVA	(10 A)			
		50 W	0.01970	(5 A)		15 A (3P+1a)	
Single		100 W	0.3 kVA				
phase, 200 V		200 W	0.5 kVA				
		400 W	0.9 kVA	(10 A)			
		50 W	0.01970	(5 A)		10 A (3P+1a)	
3-phase		100 W	0.3 kVA				
200 V		200 W	0.5 kVA				
		400 W	0.9 kVA	(10 A)			

- * Select the single and 3-phase common specifications corresponding to the power supplies.
- To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, (9) marked) between noise filter and power supply.
- For details of the noise filters, refer to P.256.

<Remarks>

· Use a copper conductor cables with temperature rating of 60 °C or higher for main power connector and ground

Use a cable for ground with diameter of 2.0 mm² (AWG14) or larger.

Corrying page

Carrying p	age)				
	Opti	ions	•	Part No.	Carrying page	
Technical Refe		_	Japanese	DV0P3680	_	
recillical hele	renc	е	English	DV0P3700	_	
Console			DV0P4420	241		
Setup Support			Japanese	DV0P4460	236	
Software, PANATERM			English	DV0F4460	230	
RS232 Commu (for Connection				DV0P1960	241	
Interface Cable		DV0P0800	241			
Connector Kit f	or E	xteri	nal Equipment	DV0P0770	240	
Connector Kit f	or M	lotor	and Encoder	DV0P3670	239	
Connector Kit f	or D	river	Power Supply	DV0P2870	239	
Encoder Cable	!		MFECA0 * *	MFECA0 * * 0EAM		
Motor Cable			MFMCA0 * *	0AEB	238	
Brake Cable			MFMCB0 * *	238		
Cable Set (3 m) ^{(Note}	93)	DV0P37300	238		
Cable Set (5 m) ^{(Note}	e 3)	DV0P39200	238		
DIN Rail Moun	t Uni	it	DV0P3811	242		
External	100	V 0	50 Ω 10 W	DV0P2890	242	
Regenerative Resistor	200	V 0	100 Ω 10 W	DV0P2891	242	
	,		100.1/	DV0P227		
Reactor			100 V	DV0P228	243	
			200 V	DV0P220		
Noise Filter				DV0P4160	256	
			gle phase O V, 200 V	DV0P4190	256	
		3-р	hase 200 V	DV0P1450		
Noise Filter for	Sigr	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, Inc	remental				Option						
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable	Brake Cable	External Regenerative Resistor	Reactor	7 B DV0P4160			
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)					DVADAAT				
phase	100	MUMA011P1 🗌	227	MKDET1110P	226 (K)				DV0P2890	DVUFZZI				
100 V	200	MUMA021P1 🗌	227	MLDET2110P	226 (L)				Regenerative Resistor DV0P2890	DV0P228				
	50	MUMA5AZP1 🗌	229	MKDET1505P	226 (K)									
Single	100	MUMA012P1	229	MKDET1505P	226 (K)	MFECA0**0EAM MFMCA0**0AEB MFMCB0**0GET	MEEGAA II I I I I I I I I I I I I I I I I I							
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)			MEEO A O de de OE A A A	DAO II II OFAM MEMOAO II II OAFD				D\/0D4400	
	400	MUMA042P1	229	MLDET2510P	226 (L)				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)				D'					
200 V	400	MUMAO 40D4	000	MLDET2510P	000 (1)					DV0P228 DV0P416				
	400	MUMA042P1 □	229	MLDET2310P	226 (L)									

- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

		0:	l 400 V	0:1		
	Inpu	Sing	le phase, 100 V	Single phase, 100 V to 115 V +10 % 50/60 Hz		
	Input power	Single phase, 200 V		Single phase, 200 V to 240 V +10 % 50/60 Hz		
	/er	3-ph	ase, 200 V	3-phase, 200 V to 240 V +10 % 50/60 Hz		
В	En	Temperature		Operating: 0 to 55 °C, Storage: -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>		
	Environment	Hum	nidity	Both operating and storage : 90 %RH or less (free from condensation)		
	mer	Altitu	ıde	1000 m or lower		
	=	Vibr	ation	5.88 m/s² or less, 10 to 60 Hz (No continuous use at resonance frequency)		
Basi	With	hstand voltage		Should be 1500 VAC (Sensed current: 20 mA) for 1 minute between Primary and Ground.		
Sp	Con	trol me	ethod	IGBT PWM Sinusoidal wave drive		
Basic Specifications	Enc	oder fe	eedback	2500 P/r (10000 resolution) incremental encoder		
	န္ င	Inpu	t	7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode.		
snc	Control signal	Output		4 outputs (1) Servo alarm, (2) Alarm, (3) Release signal of external brake and other outputs vary depending on the control model.		
	σπ	Input		2 inputs Supports both line driver I/F and open collector I/F.		
	Pulse signal	Output		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.		
	Con	mmunication function RS232		1 : 1 communication to a host with RS232 interface is enabled.		
	Disp	play LED		(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)		
		enera		No built-in regenerative resistor (external resistor only)		
	Dyn	amic b	rake	Built-in		
	-	trol mo		3 modes of (1) High-speed position control, (2) Internal velocity control and (3) High-functionality positioning control are selectable with parameter.		
		Con	trol 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)		
	Positio		Max. command pulse frequency	Line driver : 500 kpps, Open collector : 200 kpps		
	Position control	Pulse	Type of input pulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)		
	<u>o</u>	input	Electronic gear (Division/Multiplication) of command pulse	Setup of electronic gear ratio Setup range of (1-10000) $\times 2^{(0-17)}/(1-10000)$		
			Smoothing filter	Primary delay filter or FIR type filter is selectable to the command input.		
	Inter	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		
	nal	Con	trol output	(1) Speed arrival (at-speed)		
	spee	Inter	nal speed command	Internal 4-speed is selectable with control input.		
IJ	Internal speed control	Soft	-start/down function	Individual setup of acceleration and deceleration are enabled, with 0 to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.		
Functions	<u>0</u>	Zero	-speed clamp	0-clamp of internal speed command with speed zero clamp input is enabled.		
ons		Auto-gain	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.		
		ain tuning	Normal mode	Estimates the load inertia with an action command inside of the driver, and sets up the gain automatically corresponding to setup of the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.		
		Mas inpu	king of unnecessary t	Masking of the following input signal is enabled. (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching		
	Common	puls	sion of encoder feedbac e	1 P/r to 2500 P/r (encoder pulses count is the max.).		
	on .	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.		
		Dan	ping control function	Manual setup with parameter		
		Setu	Manual	Console		
	1	~				

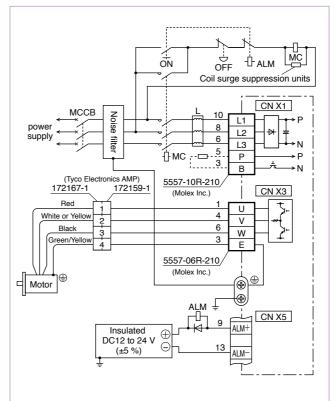
Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

E Series

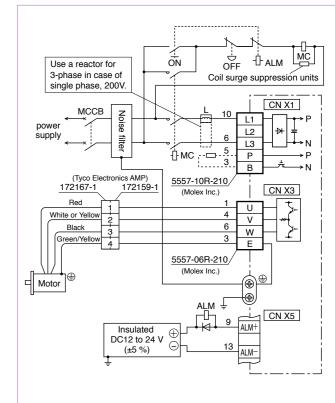
Wiring Diagram

Standard Wiring Example of Main Circuit

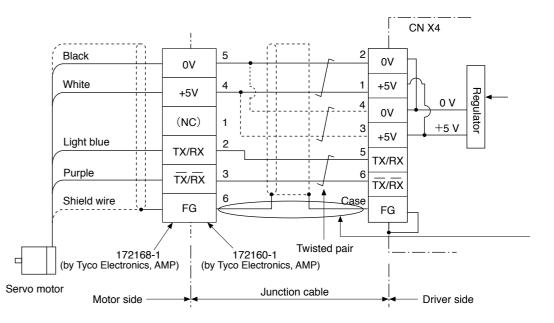
3-Phase, 200 V



■ Single Phase, 100 V / 200 V



Encorder Wiring Diagram



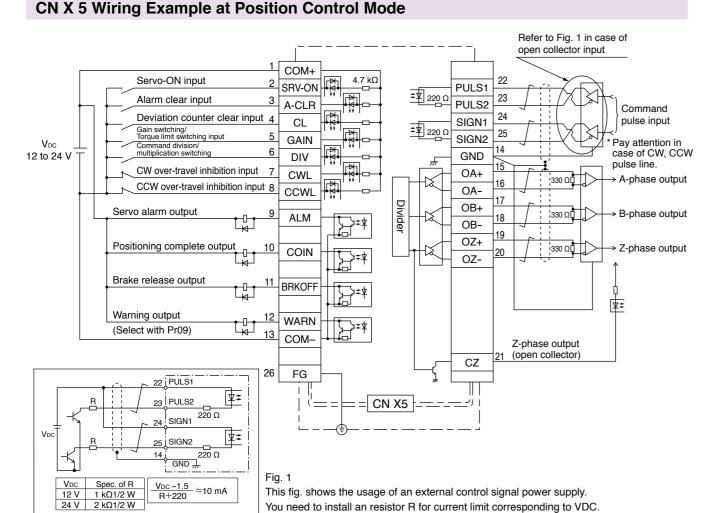
When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

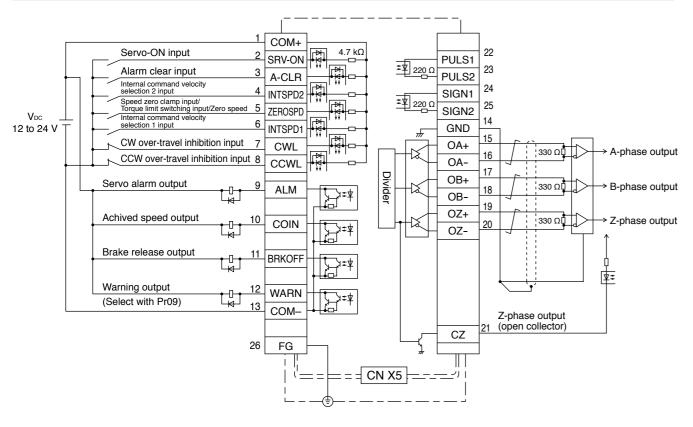
Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

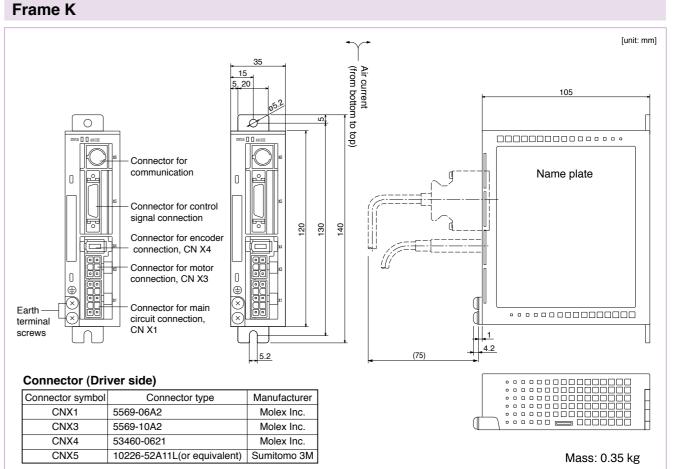
Setup support software PANATERM (Supporting OS : Windows98, Windows ME, Windows2000, and WindowsXP)

Control Circuit Standard Wiring Example

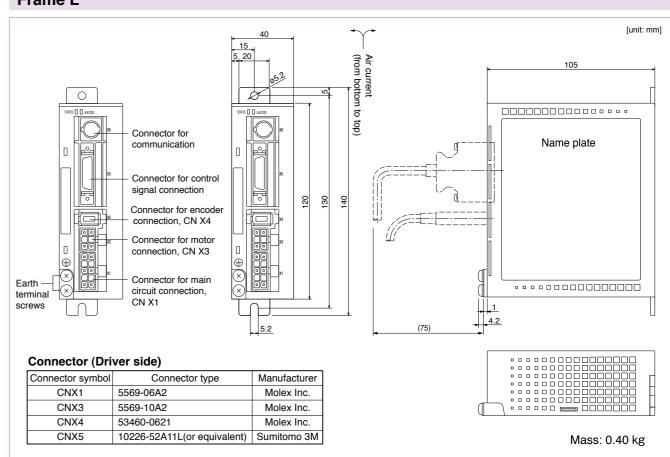


CN X 5 Wiring Example at Internal Velocity Control Mode





Frame L



Motor Specifications

100 V **MUMA** 50 W to 200 W

AC100 V 5AZP1 011P1 021P1 MUMA Motor model Model No. MKDET1105P MKDET1110P MLDET2110P Applicable driver Frame symbol Frame K Frame L Power supply capacity (kVA) 0.5 0.3 0.4 50 Rated output (W) 100 200 Rated torque (N·m) 0.16 0.32 0.64 Momentary Max. peak torque (N·m) 0.48 0.95 1.91 Rated current (Arms) 2.5 1.0 1.6 Max. current (Ao-p) 4.3 6.9 11.7 Regenerative brake Without option No limit Note)2 frequency DV0P2890 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia Without brake 0.021 0.032 0.10 of rotor (×10⁻⁴ kg·m²) 0.026 0.036 0.13 Recommended moment of inertia ratio 30 times or less of the load and the rotor Note)3 2500 P/r Rotary encoder specifications Incremental Resolution per single turn 10000 Protective enclosure rating IP65 (except rotating portion of output shaft and lead wire end) 0 °C to 40 °C (free from freezing), Storage : –20 °C to 65 °C Ambient temperature (Max.temperature guarantee 80 °C for 72 hours <nomal humidity>) Ambient humidity 85 %RH or lower (free from condensing) Environment Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust Installation location 1000 m or lower Altitude 49 m/s2 or less Vibration resistance Mass (kg), () represents holding brake type 0.4 (0.6) 0.5 (0.7) 0.96 (1.36)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)					
Static friction torque (N m)	0.29	1.27			
Engaging time (ms)	25	50			
Releasing time (ms) Note)4	20 (30)	15 (100)			
Exciting current (DC) (A)	0.26	0.36			
Releasing voltage	DC 1 V or more				
Exciting voltage	DC 24 V 10 %				

Permissible load					
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
	Thrust load B-direction (N)	117	196		
During operation	Radial load P-direction (N)	68	245		
	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

For motor dimensions, refer to P.231, and for the diver, refer to P.226.

Model Designation

Design order Symbol Type

Ultra low inertia MUMA (50 W to 200 W)

otor rated output					
Symbol	Rated out	put			
5A	50 W				
01	100 W				
02	200 W				

Voltage specifications Symbol Specifications 100 V 100/200 V Z (50 W only)

1 : Standard

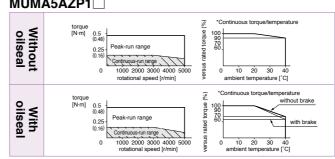
Motor structure Shaft Holding brake Oil seal Symbol Key-way, center tap without with without with

Rotary encoder specifications

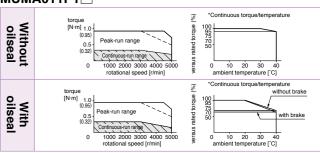
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

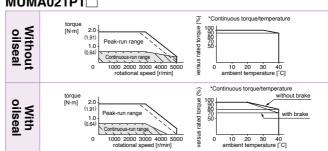
MUMA5AZP1



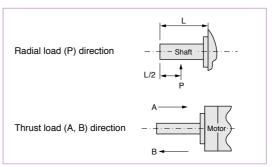
MUMA011P1



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 regenera-
 - tive brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent). () represents the actually measured value using a diode (200 V, 1 A or

equivalent)

Motor Specifications

200 V **MUMA** 50 W to 400 W

Low inertia

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	DC 24 V 10 %				

Permissible load					
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
,	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

For motor dimensions, refer to P.231, and for the driver, refer to P.226.

Note) Driver for 50 W and 100 W has a common power supply of single phase and 3-phase 200 V.

Driver for 200 W, the upper row is the power supply of 3-phase 200 V, and lower is the power supply of single-phase 200 V.

Driver for 400 W, the upper row is the power supply of 3-phase 200 V, and lower is the common power supply of single-phase and 3-phase 200 V.

Model Designation

M S Design order

Symbol Type Ultra low inertia MUMA (50 W to 400 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W 04 400 W

Voltage specifications Symbol Specifications 2 200 V 100/200 V Z (50 W only)

1 : Standard

Motor structure

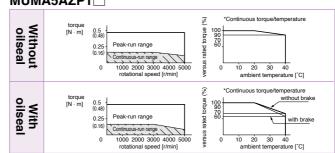
	Shaft	Holding	brake	Oil s	eal	
Symbol	Key-way, center tap	without	with	without	with	
S	•	•		•		
Т	•		•	•		

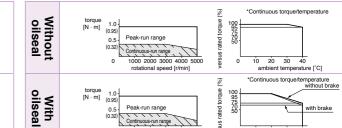
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

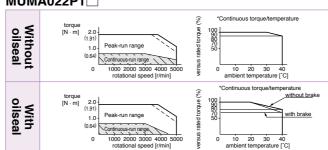
Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

MUMA5AZP1





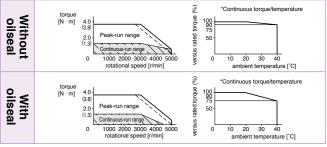
MUMA022P1



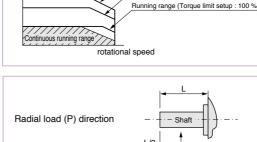
Running range (Torque limit setup: 200 %)

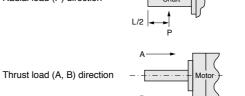


MUMA012P1



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %)





- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC240 V (at 200 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in regenerative brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent).
 - () represents the actually measured value using a diode (200 V, 1 A or equivalent)

Encoder

connector

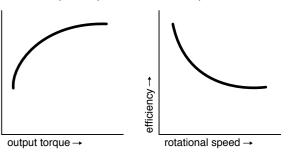
MINAS E Series

Motors with Gear Reducer

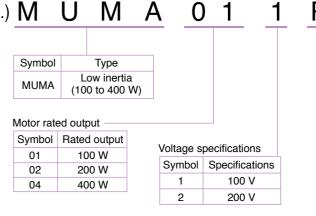
Motor Types with Gear Reducer

Reduction	Мо	Type of		
ratio	100	200	400	reducer
1/5	•	•	•	
1/9	•	•	•	For high precision
1/25	•	•	•	precision

Efficiency of the gear reducer shows the following inclination in relation to output torque and rotational speed.



Model No. Designation



Rotary encoder specifications						
Symbol	Format	Pulse counts	Pulse counts	Wire		
Р	Incremental	2500 P/r	10000	5		

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			
Symbol	Key-way	wuthout	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 %		
	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft		
Gear	Composition of gear	Planetary gear		
reducer	Mounting method	Flange mounting		
	Permissible moment of inertia of the load	10 times or smaller than rotor moment of inertia of the motor		
	(conversion to the motor shaft)			
	Protective structure	IP44 (at gear reducer)		
	Ambient temperature	0 to 40 °C		
	Ambient humidity	85 %RH (free from condensation) or less		
Environment	Vibration resistance	49 m/s ² or less (at motor frame)		
	Impact resistance	98 m/s ² or less		

* Dimensions are subject to change without notice. Contact us or a dealer for the latest information [Unit: mm] MUMA series (Ultra low inertia) Motor output 50 W 100 W 200 W 400 W MUMA 04□P1□ Motor model 5A 🗆 P1 🗆 01 🗆 P1 🗀 02 P1 2500 P/r 2500 P/r 2500 P/r 2500 P/r Rotary encoder specifications Incremental Incremental Incremental Incremental Without brake 75.5 92.5 96 123.5 LL With brake 107 124 129 156.5 LR 24 30 30 S 8 11 14 LA 48 48 70 70 LΒ 22 22 50 50 LC 42 42 60 60 2 LE 2 3 3 LF 7 7 7 34 LΗ 34 43 43 LΖ 3.4 3.4 4.5 4.5 LW 14 20 25 14 LK 12.5 12.5 18 22.5 KW3h9 3h9 4h9 5h9 Key way 3 4 5 ΚH 3 6.2 RH6.2 8.5 11 TP M3 × 6 (depth) $M3 \times 6$ (depth) M4 × 8 (depth) M5 × 10 (depth) 0.40 0.50 0.96 1.5 Without brake Mass (kg) 0.60 1.36 1.9 With brake 0.70

MUMA 50 W to 400 W

Brake connector

4-φLZ

(Key way dimensions)

□LC

Motor connector

LR LE

LL

[Unit: mm]

<Cautions>

Connector/Plug specifications

Reduce the moment of inertia ratio if high speed response operation is required.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

refer to Options, P.239, P.240.

Motors with Gear Reduce

Table of Motor Specifications/ The Combination of the Driver and the Motor

Torque Characteristics

Motors with Gear Reducer

E Series

Table of Motor Specifications

	Motor					M	JMA with g	ear reduc	er				
Model	Output	Reduction	Output	Rated	Max.		Peak max.	/motor + redu	Moment of inertia (motor + reducer/converted) to motor shaft		ass	Permissible	
		ratio		speed	speed	torque			w/ brake	w/o brake	w/ brake	radial load	thrust load
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10 ⁻⁴ kg⋅m²) (kg)		(N)	(N)		
MUMA01□P□1N		1/5	75	600	1000	1.18	3.72	0.072	0.076	1.05	1.25	490	245
MUMA01□P□2N	100	1/9	80	333	555	2.25	6.86	0.0663	0.0703	1.05	1.25	588	294
MUMA01□P□4N		1/25	80	120	200	6.27	19.0	0.0645	0.0685	2.20	2.40	1670	833
MUMA02□P□1N		1/5	170	600	1000	2.65	8.04	0.218	0.248	1.68	2.08	490	245
MUMA02□P□2N	200	1/9	132	333	555	3.72	11.3	0.368	0.398	2.66	3.06	1180	588
MUMA02□P□4N		1/25	140	120	200	11.1	33.3	0.388	0.418	2.66	3.06	1670	833
MUMA042P□1N		1/5	340	600	1000	5.39	16.2	0.533	0.563	3.2	3.6	980	490
MUMA042P□2N	400	1/9	332	333	555	9.51	28.5	0.438	0.468	3.2	3.6	1180	588
MUMA042P□4N		1/25	332	120	200	26.4	79.2	0.470	0.500	4.7	5.1	2060	1030

For dimensions, refer to P.235.

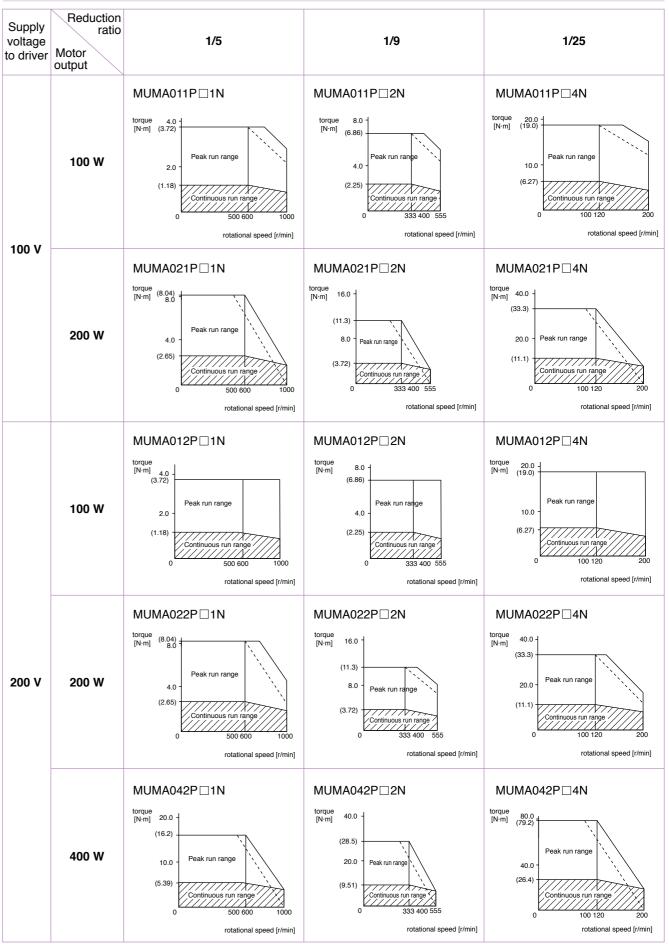
The Combination of the Driver and the Motor

Combination w	ith driver	10	0 V	200 V			
Encodor	Encoder Motor output Part No. of motor with reducer Single phase, 100 V Part No. of driver		Part No. of motor Single phase, 100 V		3-phase, 200 V	Single phase, 200 V	
Elicodei			with reducer	Part No. of driver	Part No. of driver		
	100 W MUMA011P□□N MKDET1110P MUMA012P□□N		MKDET1505P	MKDET1505P			
2500 P/r	200 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P	
Incremental	.			MUMA042P□□N	MLDET2510P	MLDET2510P	
	400 W _		_	MUMAU42PULIN	MLDET2310P	WILDL 123 TOP	

233

For dimensions, refer to P.235.

For High Precision (MUMA Series 100 W to 400 W)



Dotted line represents the torque at 10 % less supply voltage.

Setup Support Software

MUMA series with Gear Reducer

[Unit: mm] (Detailed dimensions of shaft end) (LG) LR Encoder connecter (AMP) Motor connector (AMP) Brake connector (AMP) \Box LC LK

Motor Dimensions

2500 P/r Encoder

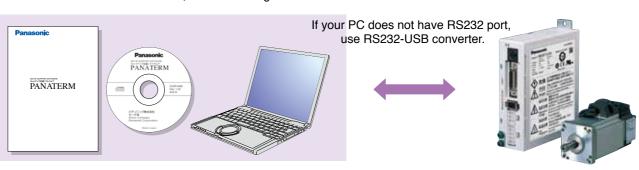
	Motor	Reduction														Key way	Jnit: mm]		
Model	output	ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	B×H×LD	T		
MUMA01□P□1N		1/5	192	92.5							12 10								
WOW/YOTE ETT		173	223.5	124	32	20	20 52 5	50	60	12		M5	18	67.5		4×4×16	2.5		
MUMA01□P□2N	100 W	1/9	192	92.5	52	20	52	30	00	12		(Depth: 12)	12)	07.0		4,4,10	2.5		
WOW/OILI LEV	100 00	173	223.5	124															
MUMA01□P□4N		1/25	234.5	92.5	50	50 30 78	70	70	90	19	17	M6	26	92	3	6×6×22	3.5		
WOWAUTET EN		1/23	266	124	50		10	, ,	90	19		(Depth: 20)	20			UNIONEE	3.5		
MUMA02□P□1N		1/5	200.5	96	32	32 20	20 52	20	52	50	60	12	10	M5	18	72.5		4×4×16	2.5
WOW/WOZEIT EITY		173	233.5	129	52			52	30		12	10	(Depth: 12)	10	72.5		424210	2.5	
MUMA02 P 2N	200 W	1/9	235.5	96										89.5					
WOWAOZ I ZIV	200 W	173	268.5	129															
MUMA02 P 4N		1/25	246	96											100				
WOWAUZ 1 1414		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	30	30	70	70	90	19	17	(Depth: 20)	20			0x0x22			
WOWA0421 LITT		173	296	156.5										89.5					
MUMA042P□2N	400 W	1/9	263	123.5										89.5					
IVIOIVIAU42FZIN	400 W	1/9	296	156.5															
MUMA042P□4N		1/25	288.5	123.5	61	40	98	90	115	0.4	4 40	M8 (Depth: 20)	35 104	104	5	0700	4		
IVIOIVIAU42F 4IN		1/23	321.5	156.5	01	40	96	90	115	24	18			104	5	8×7×30			

Upper column : without brake [Lower column : with brake

Setup Support Software "PANATERM" for MINAS series AC Servo Motor & Driver

Part No. DV0P4460 (Japanese/English version)

The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A4 series, E series through the RS232 serial interface.



Basic Function

Parameter setup

- · After a parameter is defined on the screen, it will be sent to the driver immediately.
- Once you register parameters you frequently use, they can be easily set up on the screen.

Monitoring Control Conditions

Monitor

- · Control conditions: Control mode, velocity, torque, error and warning
- Driver input signal
- · Load conditions: Total count of command/feedback pulses, Load ratio, Regenerative resistor load ratio

Alarm

- · Displays the numbers and contents of the current alarm and up to 14 error events in the past.
- · Clears the numbers and contents of the current alarm and up to 14 error events in the past.

Setup

Auto tuning

· Gain adjustment and inertia ratio measurement

Graphic waveform display

• The graphic display shows command velocity, actual velocity, torque, and error waveforms.

Absolute encoder setup

- · Clears absolute encoder at the origin.
- · Displays single revolution/multi-revolution data.
- · Displays absolute encoder status.

Analysis of Mechanical Operation Data

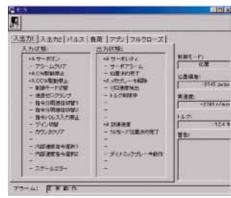
Frequency analysis

• Measures frequency characteristics of the machine, and displays Bode diagram.

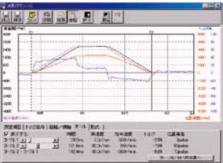
■ Can not use with A5 family.

HEROLDHICH - SPED. M.O.S. (HEROLD) HY. ADA-DED II RIGEN THO 2 MINUS-TRACTOR D ROBBERSON 4 MINNODOWNERS 15 ##3+-#3+9-# 15 24-#2+9-#2453#\$\$

Parameter



Monitor



Graphic waveform display

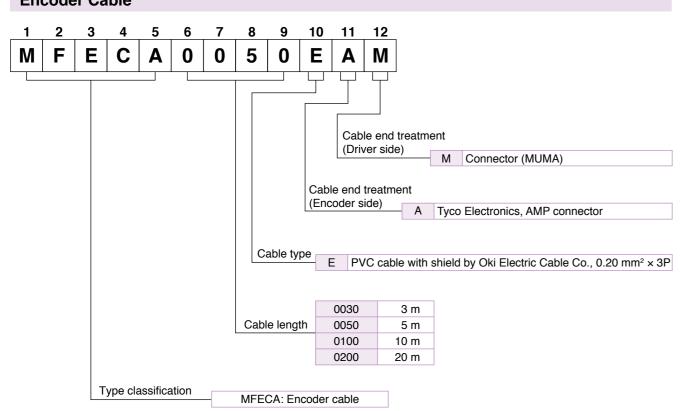
[Personal computer] • CPU : Pentium 100MHz or more • Memory : 16 MB or more (32 MB recommended)

- · Hard disk capacity (vacancy of 25 MB or more recommended) · OS: Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version)
- · Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

[Display] • Resolution : 640*480 (VGA) or more (desirably 1024*768) • Number of colors : 256 colors or more

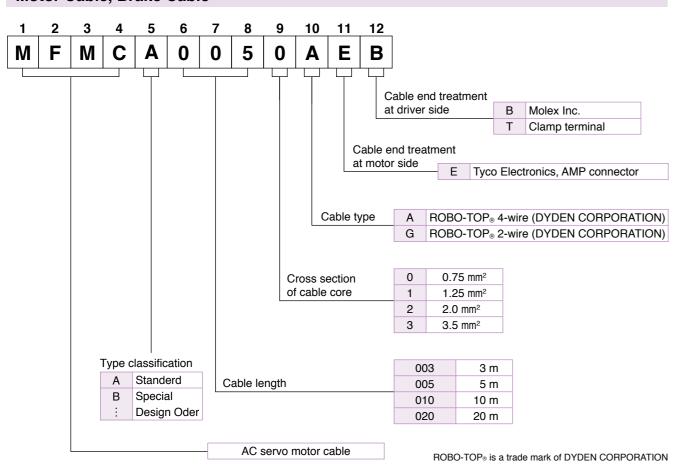
[CD-ROM drive] · CD-ROM drive operable on the above-mentioned personal computer

Encoder Cable



Cable part No. Designation

Motor Cable, Brake Cable



Cable Set (3 m)

Part No. DV0P37300

- 1) Interface cable : DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m): MFMCA0030AEB
- 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

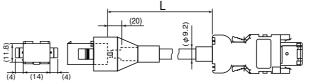
Encoder Cable

Part No. MFECA0 * * 0EAM

[Unit: mm]

[Unit: mm]

[Unit: mm]

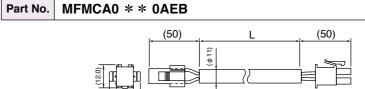


Title	Part No.	Manufacturer		L (m)
Connector (Driver side)	3E206-0100KV	Sumitomo 3M		3
Shell kit	3E306-3200-008	or equivalent		5
Connector	172160-1	Tugo Flootronico		10
Connector Pin	170365-1	Tyco Electronics		20
Cable	2.0 mm ² x 3P	Oki Flectric Cable Co. Ltd.		

	L (m)	Part No.
	3	MFECA0030EAM
	5	MFECA0050EAM
	10	MFECA0100EAM
	20	MFECA0200EAM
± ~l		

Motor Cable (ROBO-TOP_® 105 °C 600 V . DP)

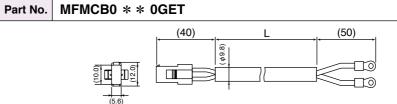
ROBO-TOP_® is a trade mark of DYDEN CORPORATION



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172159-1	Tues Fleetrenies		MFMCA0030AEB
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCA0050AEB
Connector	5557-06R-210	Molex Inc	10	MFMCA0100AEB
Connector Pin	5556T	IVIOLEX IIIC	20	MFMCA0200AEB
Cable	BOBO-TOP 600 V 0.75 mm ²	Daiden Co. Ltd		

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

 $\ensuremath{\mathsf{ROBO\text{-}TOP}}\xspace_{\otimes}$ is a trade mark of DYDEN CORPORATION



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Floatranics	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

Connector Kit

Connector Kit for Power Supply Connection

Part No. DV0P2870

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (10 pins)	5557-10R-210	1	Molex Inc.	For connector, CN X1
Connector pin	5556PBTL	6	iviolex IIIc.	(10 pins)

Pin configuration of connector CN X1

7						73
- 1	10	9	8	7	6	ı i
- 1	L1	(NC)	L2	(NC)	L3	
- 1	5	4	3	2	1	
- 1	Р	(NC)	В	(NC)	Е	



 Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material
i ait ivo.	Cable Illaterial
57026-5000	UL1007
57027-5000	UL1015

<Cautions>

- 1. The above pin disposition is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.
- 3. Do not connect anything to pins marked "NC".

Connector Kit for Motor/Encoder Connection

Part No. DV0P3670 (Incremental 2500 pulse, 5-wire)

This option is required when you make your own encoder cable and motor cable. (Brake cable is required for brake.)

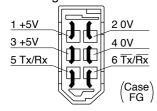
Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For connector, CN X4
Shell kit	3E306-3200-008	1	or equivalent	(6 pins)
Connector (6 pins)	172160-1	1	Tugo Floatronico	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tyco Electronics	For junction to motor power cable
Connector pin	170366-1	4	Tyco Electronics	(4 pins)
Connector (6 pins)	5557-06R-210	1	Molex Inc.	For connector, CN X3
Connector pin	5556PBTL	4	Molex IIIC.	(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

Title	Part No.	Manufacturer	Cable material	
For encoder cable junction	755330-1	30-1 Type Fleetronics		
For motor power cable junction	755331-1	Tyco Electronics	_	
For Connector CN X3	57026-5000	Moley Inc	UL1007	
For Connector CN X3	57027-5000	Molex Inc.	UL1015	

<Remarks>

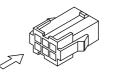
1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.

239

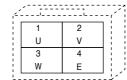
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

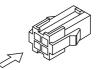
Pin configuration of encoder cable junction

<u>, </u>	,,,,,,,,,			
	1	2	3	-
	NC	TX/RX	TX/RX	:
	4	5	6	i
	+5V	0V	FG	1,

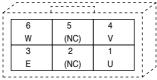


Pin configuration of motor power cable junction





Pin configuration of mating connector to CN X3 connector





<Cautions>

- 1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.

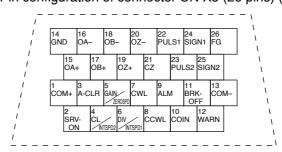
Connector Kit for External Peripheral Equipment

Part No.	. DV0P0770	

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector	10126-3000PE	1	Sumitomo 3M	For connector, CN X5
Connector cover	10326-52A0-008	1	or equivalent	(26 pins)

Pin configuration of connector CN X5 (26 pins) (viewed from the soldering side)

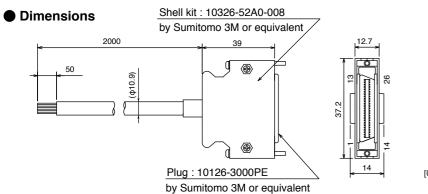


<Cautions>

- 1. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.225 for symbols and functions of the above signals.

DIN Rail Mounting Unit/ External Regenerative Resistor

Cable of 2 m is connected.



Interface Cable/

Communication Cable/ Console

Wiring table

Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable
1	COM+	Orange (Red 1)	10	COIN	Pink (Black 1)	19	OZ+	Pink (Red 2)
2	SRV-ON	Orange (Black 1)	11	BRK-OFF	Orange (Red 2)	20	OZ-	Pink (Black 2)
3	A-CLR	Gray (Red 1)	12	WARN	Orange (Black 2)	21	CZ	Orange (Red 3)
4	CL/INTSPD2	Gray (Black 1)	13	COM-	Gray (Red 2)	22	PULS1	Gray (Red 3)
5	GAIN/ZEROSPD	White (Red 1)	14	GND	Gray (Black 2)	23	PULS2	Gray (Black 3)
6	DIV/INTSPD1	White (Black 1)	15	OA+	White (Red 2)	24	SIGN1	White (Red 3)
7	CWL	Yellow (Red 1)	16	OA-	White (Black 2)	25	SIGN2	White (Black 3)
8	CCWL	Yellow (Black 1)	17	OB+	Yellow (Red 2)	26	FG	Orange (Black 3)
9	ALM	Pink (Red 1)	18	OB-	Yellow (Black 2)			

<Notes>

e. g. of Pin No. designation: Pin No. 1 Wire color is orange, and one red dot.

Pin No. 12 ... Wire color is orange, and two black dot.

The shield of this cable is not connected to a connector pin. To connect the shield to FG or GND at the driver side, use a connector kit for external device connection.

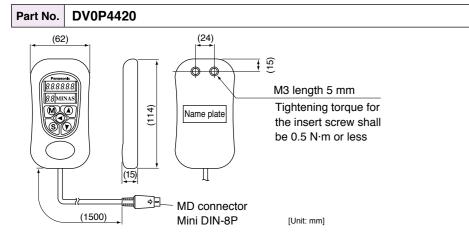
[Unit: mm]

Communication Cable (For Connection with PC)

Part No. DV0P1960 2000 Mini-DIN 8P

Console

D-sub connector 9P

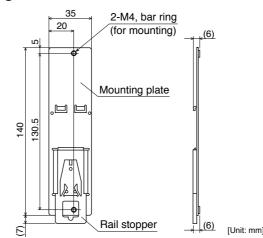


MD connector

DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

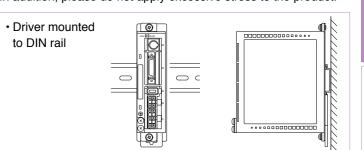


<Notes>

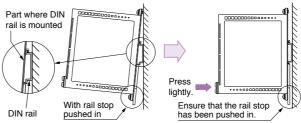
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.

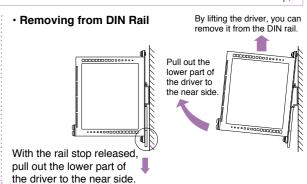


· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

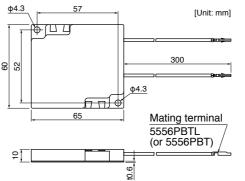


External Regenerative Resistor

			Specifi		
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>

Regenerative resistor gets very hot.

Take preventive measures for fire and burns. Avoid the installation near inflammable objects, and easily accessible place by hand.

Thermal fuse is installed for safety. The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation.

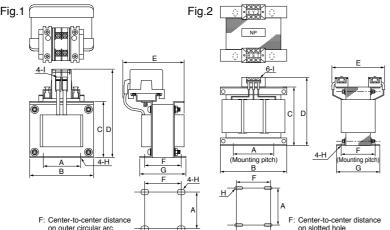
Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short)

List of Peripheral Components

E Series

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.	
	Single phase, 100 V	50 to 100 W	DV0P227	1	
MKDE	Single phase, 200 V	50 to 100 W	DV0P220	2	
	3-phase, 200 V	50 to 200 W			
	Single phase, 100 V	200 W	DV0P228	1	
MLDE	Single phase, 200 V	200 to 400 W	DV0P220	2	
	3-phase, 200 V	400 W			



Surge Absorber for Motor Brake

Jnit: mm]

	Part No.	A	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
Eig 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				
Wiotoi	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 Swich, 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

Contents

A5 Family	247
EC Directives	247
Conformity to UL Standards	247
Composition of Peripheral Equipments	249
E Series	255
Compliance to EC and EMC Directives	255
Composition of Peripheral Components	255
Conformity to UL Standards	256
Motor capacity selection software	257
AC Servo Motor Capacity Selection Software	257
Option Selection Software for AC Servo Motor	257
Guide to the International System of Units (SI)	258
Selecting Motor Capacity	260
Request Sheet for Motor Selection	266
Connection Between Driver and Controller	274
Connection Between A5 Family Driver and Controller	274
Replacing Old Model Servo Driver with MINAS A5II and A5 Series	279
Connection Between E Series Driver and Controller	283
Index	288
Sales Office	305

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

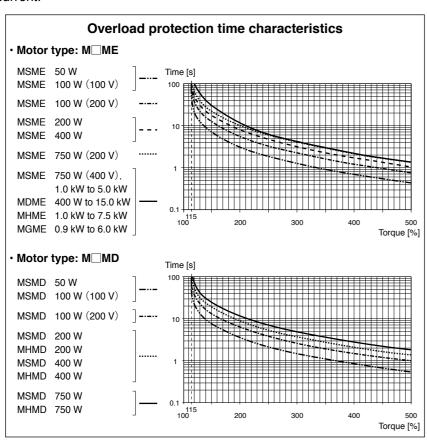
Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (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 Equip-
 - 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.

247

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
EC	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
Directives	Machinery Directives Functional safety 11	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards CSA Standards Korea Radio Law (KC) *2		UL508C (E164620)	UL1004-1 (E327868: 50 W to 750 W 6.0 kW to 15.0 kW) UL1004 (E327868: 400 W(400 V), 600 W(400 V), 750 W(400 V), 0.9 kW to 5.0 kW)
		C22.2 No.14	C22.2 No.100
		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	_

: International Electrotechnical Commission

: Europaischen Normen **EMC**: Electromagnetic Compatibility : Underwriters Laboratories CSA: Canadian Standards Association

Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

FΝ

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.

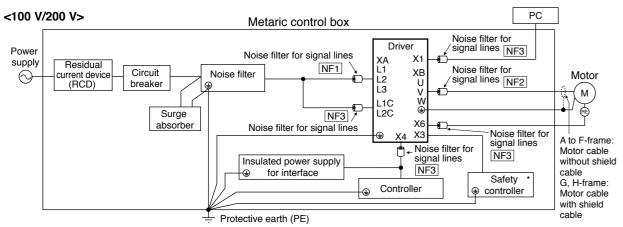
A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

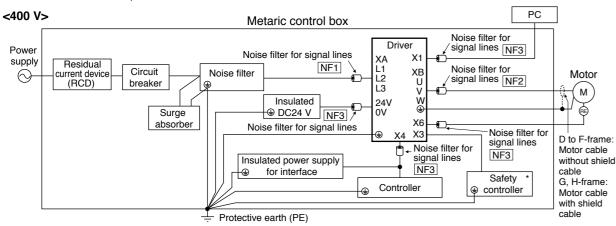
Installation Environment

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 to C-frame)	Single phase, 100 V +10 % to 120 V +10 % -15 %	50/60 Hz
200 V type (A to D-frame)	Single/3-phase, 200 V +10 % to 240 V +10 % -15 %	50/60 Hz
200 V type (E to H-frame)	3-phase, 200 V ⁺¹⁰ % to 230 V ⁺¹⁰ % ₋₁₅ %	50/60 Hz
400 V type [Main power supply] (D to H-frame)	3-phase, 380 V ⁺¹⁰ % to 480 V ⁺¹⁰ % ₋₁₅ %	50/60 Hz
400 V type [Control power supply] (D to H-frame)	DC 24 V ±15 %	

⁽¹⁾ This product is designed to be used in over-voltage category (installation category) **I** of EN 61800-5-1:2007.

Circuit Breaker

Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

The short-circuit protection circuit on the product is not for protection of branch circuit.

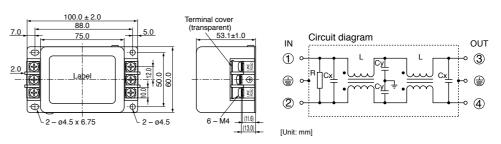
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

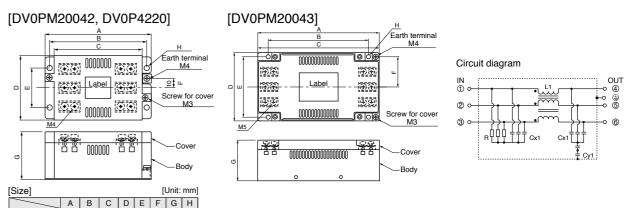
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170 Single phase 100 V, 200 V		SUP-EK5-ER-6	A 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 and B-frame	
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame	



DV0PM20042 115 105 95 70 43 10 52 5.5

DV0PM2200 145 135 125 70 50 10 52 5.5

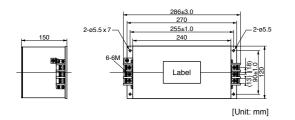
DV0PM20043 165 136 165 90 80 40 54 5.5

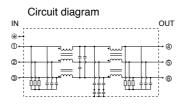
For single phase application, use 2 terminals among 3 terminals, leaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

⁽²⁾ Use an insulated power supply of DC12 V to 24 V which has CE marking or complies with EN60950.

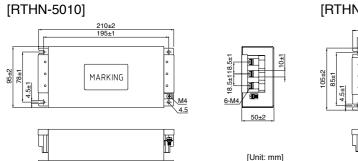
Option part No. Voltage specification for driver		Manufacturer's part No.	Applicable driver (frame)	Manufacturer	
DV0P3410	3-phase 200 V	3SUP-HL50-ER-6B	F-frame	Okaya Electric Ind.	

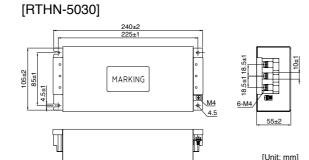


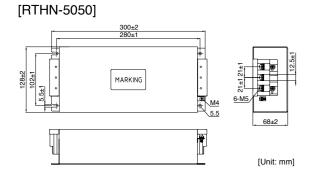


Recommended components

Part No.	Voltage specifications for driver	ions Current rating Applicable		Manufacturer
RTHN-5010		10	A, B, C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E, F-frame	



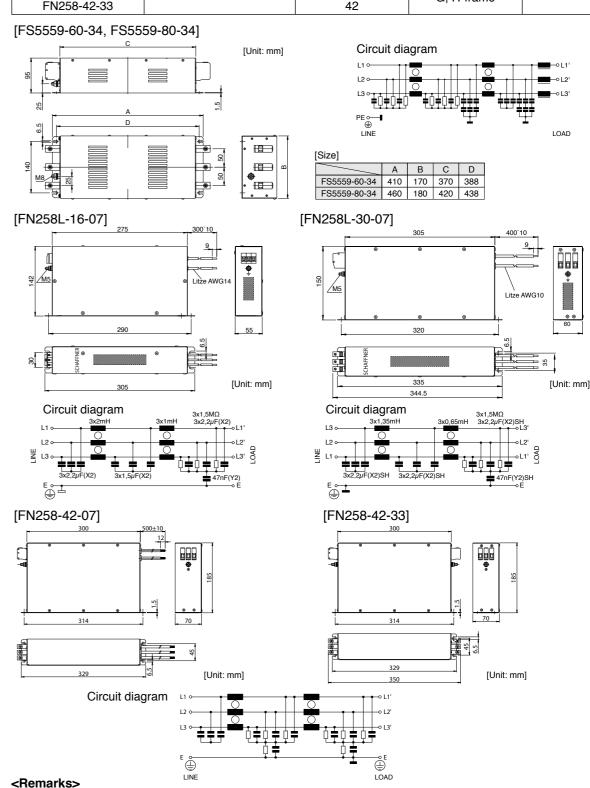




<Remarks>

- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

Part No.	art No. Voltage specifications for driver (A)		Applicable driver (frame)	Manufacturer	
FS5559-60-34	3-phase 200 V	60	G-frame		
FS5559-80-34		80	H-frame		
FN258L-16-07		16	D, E-frame	Schaffner EMC, Inc.	
FN258L-30-07	2 phase 400 V	30	F-frame	Schainlei Eivic, inc.	
FN258-42-07	3-phase 400 V	42	G, H-frame		
FN258-42-33		42	G, n-frame		

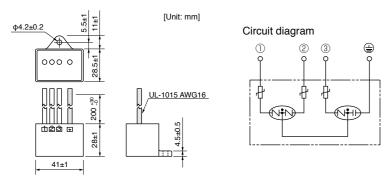


- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

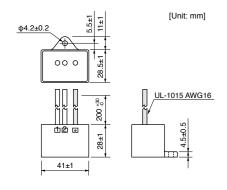
Surge Absorber

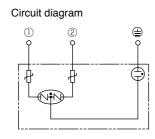
Provide a surge absorber for the primary side of noise filter.

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 Liectiic iiid.	



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190 Single phase 100 V, 200 V		R·A·V-781BWZ-4	Okaya Electric Ind.





Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Symbol*1	Cable Name	100 V/200 V Amp. frame symbol	400 V Amp. frame symbol	Option part No.	Manufacturer's part No.	Manufacturer	Qty.	
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4	
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1	
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1	
	Motor cable G, H • 24 V Power cable • Encoder cable	A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4	
NF2				G, H	Recommended components	T400-61D	MICROMETALS	1
NF3		-	DV0P1460	ZCAT3035-1330	TDK Corp.	4		

^{*1} For symbols, refer to the Block Diagram "Installation Environment" (P.249).

<Remarks>

To connect the noise filter to the connector XB connection cable, adjust the sheath length at the tip of the cable, as required.

<Caution>

Fix the signal line noise filter in order to prevent excessive stress to the cables.

<Fig.2: Dimensions>

	•										
	Part No.	Current	100 kHz		Size [Unit: mm]						
	rail No.	Part No. Current	(μH)	Α	В	С	D1	D2	Core thickness	Е	F
	RJ8035	35 A	9.9±3	170	150	23	80	53	24	R3.5	7
	RJ8095	95 A	7.9±3	200	180	34	130	107	35	R3.5	7

Fig.1: DV0P1460(Option)

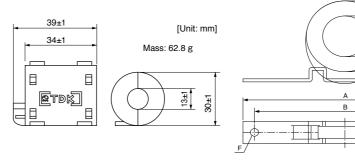
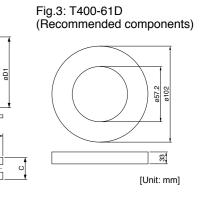


Fig.2: RJ8035, RJ8095 (Recommended components)



Residual Current Device

Install a type B Residual current device (RCD) at primary side of the power supply.

Type B: Residual current device which detects a direct-current ingredient.

Grounding

- (1) Connect the protective earth terminal () 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]				
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to				
Motor	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references				
and driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives				
	IEC61000-4-5	Lightening Surge Immunity Test	1				
	IEC61000-4-6	High Frequency Conduction Immunity Test	1				
	IEC61000-4-11	Instantaneous Outage Immunity Test					

Composition of Peripheral Components

- IEC: International Electrotechnical Commission
- EN : Europaischen Normen **EMC: Electromagnetic Compatibility**
- UL: Underwriters Laboratories
- CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC, article 9(2)

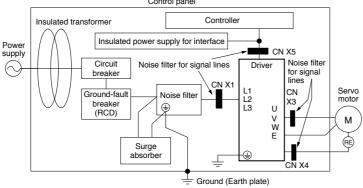
- Panasonic Testing Centre
- Panasonic Service Furone
- a division of Panasonic Marketing Europe GmbH Winsbergring 15,22525 Hamburg, F.R. Germany

<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 $^{+10~\%}_{-15~\%}$	50/60 Hz
200 V system	Single phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50/60 Hz
200 V system	3-phase, 200 V ⁺¹⁰ / ₋₁₅ % to 240 V ⁺¹⁰ / ₋₁₅ %	50/60 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 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.

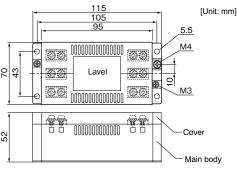
Noise Filter

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		285 1 200-0-0-1 1#11 1#11 1#11 1#11 1#11 1#11 1	[Unit: mm]	Circuit diagr		28-21 11 11 11 11 11 11 11 11 11 11 11 11 1	UL-1015 AWG16
		41±1				41±1	

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged

Noise Filter for Signal Lines

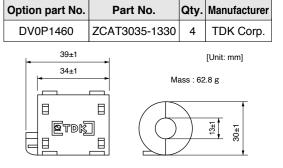
Install noise filters for signal lines to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- Please fix a line noise filter to avoid excessive stress to the cable.
- · When using multiple axes, noise generated from each driver might influence driver and peripheral equipment and result to

Please insert line noise filters between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)



Grounding

- (1) Connect the protective earth terminal of the driver ((1) and protective earth terminal of the control panel (PE) without fail to prevent electrical shocks.
- (2) Do not co-clamp to the ground terminals ((\perp)). Two ground terminals are provided.

Ground-Fault Breaker

Install a ground fault curcuit braker (RCD) to the primary side of the power supply.

Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Install a circuit breaker or fuse which are UL recognized (LISTED (1) marked) between the power supply and the noise filter without fail.

Three-step selection

the real machine.

To simulate the

target machine as practical as

possible, use

maximum

number of

available.

parameters

(Multiples of 10) Table1: Basic unit Table 2: Auxiliary unit Derived unit

SI unit —

Table 4: Unit combined with SI unit

Organization of the System of Units

Table 3: Derived unit with proper name

Other derived unit

3. Select the motor

When the data required in step 1 and 2 above have been input, the software lists the motors,

which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.

AC Servo Motor Capacity Selection Software

Option Selection Software for AC Servo Motor



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

Table1: Basic unit

Table 2: Auxiliary unit

- Table 5 : Prefix

Quantity	Name of unit	Symbol of unit
Plane angle	radian	rad
Solid angle	steradian	sr

2. Enter operation pattern

Input the planned operation pattern that will contain [speed and rotation standard] or [absolute position

AC Servo Motor Capacity Selection Software

Consult our sales representative or authorized distributor.

1. Select components and specified values

Select appropriate mechanical parameter items

and fill them with parameter values derived from

We have prepared PC software "M-SELECT" for AC servo motor capacity selection.

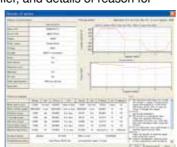
standard] with optional settings such as S-acceleration/de celeration.



Details of motor

Once the motor is selected, specifications of the motor and amplifier, and details of reason for

determination are displayed and may be printed out.



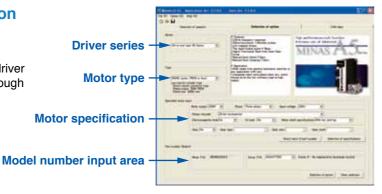
Option Selection Software for AC Servo Motor

We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software.

Two procedures for option selection

1. Selection according to driver series and motor type

Suitable option can be selected by selecting driver series, motor type and motor specification through pulldown menu.



2. Entry of model number

If you know the model number based on the servo motor and driver currently used, enter the model number.

Result of selection

Tab sheet specific to each of option model numbers is used for easier identification of the desired option.

* When you are using the motor capacity selection software, simply press [Option Selection] tab and the screen as shown right will appear.



Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/i e/25000/motor fa e/motor fa e.html

Table 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	Е
10 ¹⁵	peta	Р
10 ¹²	tera	Т
10°	giga	G
10 ⁶	mega	M
10 ³	kilo	k
10 ²	hecto	h
10	deca	da
10 ⁻¹	deci	d
10 ⁻²	centi	С
10 ⁻³	milli	m
10 ⁻⁶	micro	μ
10 ⁻⁹	nano	n
10 ⁻¹²	pico	р
10 ⁻¹⁵	femto	f
10 ⁻¹⁸	atto	а

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	1 mH ₂ O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg ⁽²⁾	1 mmHg = 133.322 Pa
	Torr	Pa	3
Stress	kgf/mm ²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
			=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
			= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m ²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m ²
			1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf-m	J (joule)	1 kgf⋅m = 9.80665 J
3,,	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf-m/s	W (watt)	1 kgf-m/s = 9.80665 W
, , , , , , , , , , , , , , , , , , , ,	PS	W	1 PS = 0.7355 kW
Viscosity	PP	Pa·s	1 P = 0.1 Pa·s
Kinetic viscosity	St	mm²/s	10 ⁻² St = 1 mm ² /s
Thermodynamic temperature	К	K (kelvin)	1 K = 1 K
Temperature interval	deg	K ⁽³⁾	1 deg = 1 K
Amount of heat	cal	J	1 cal = 4.18605 J
Heat capacity	cal/°C	J/K ⁽³⁾	1 cal/°C = 4.18605 J/K
Specific heat, Specific heat capacity	cal/ (kgf·°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kgf·°C) = 4.18605 J/ (kg·K)
Entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K)
Internal energy (Enthalpy)	cal	J	1 cal = 4.18605 J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	W	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m²	1 kcal/ (h·m²) = 1.16279 W/m²
Thermal conductivity	cal/ (h·m·°C)	W/ (m·K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m²·°C) = 1.16279 W/ (m²·K)
Intensity of magnetic field	Oe	A/m	1 Oe = 10 ³ / (4π) A/m
Interiority of magnetic field		/ /////	

Major Compatible Unit

Note

(1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.

Gs,G

Wb (weber)

T (tesla)

 $1 \text{ Mx} = 10^{-8} \text{ Wb}$

 $1 \text{ Gs} = 10^{-4} \text{ T}$

- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Magnetic flux

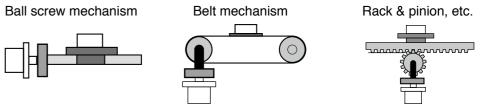
Magnetic flux density

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

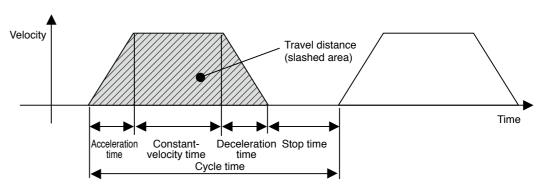
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<Typical mechanism>



2. Definition of operating pattern.

Acceleration/deceleration time, Constant-velocity time, Stop time, Cycle time, Travel distance



Note) Selection of motor capacity significantly varies depending on the operating pattern.

The motor capacity can be reduced if the acceleration/deceleration time and stop time are set as long as possible.

3. Calculation of load inertia and inertia ratio.

Calculate load inertia for each mechanical component. (Refer to "General inertia calculation method" described later.)

Divide the calculated load inertia by the inertia of the selected motor to check the inertia ratio. For calculation of the inertia ratio, note that the catalog value of the motor inertia is expressed as " \times 10⁻⁴ kg·m²".

4. Calculation of motor velocity

Calculate the motor velocity from the moving distance, acceleration / deceleration time and constant-velocity time.

5. Calculation of torque

Calculate the required motor torque from the load inertia, acceleration/deceleration time and constant-velocity time.

6. Calculation of motor

Select a motor that meets the above 3 to 5 requirements.

Description on the Items Related to Motor Selection

1. Torque

(1) Peak torque

Indicate the maximum torque that the motor requires during operation (mainly in acceleration and deceleration steps). The reference value is 80% or less of the maximum motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

(2) Traveling torque, Stop holding torque

Indicates the torque that the motor requires for a long time. The reference value is 80% or less of the rated motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

Traveling torque calculation formula for each mechanism

Ball screw mechanism

Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{P}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W} + \mathsf{F})$

W: Weight [kg]

η: Mechanical efficiency

P:Lead [m]

μ: Coefficient of friction

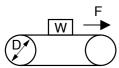
F: External force [N]

g: Acceleration of gravity 9.8[m/s²]

Belt mechanism

Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{D}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W}\!+\!\mathsf{F})$



W: Weight [kg]

P : Pulley diameter [m]

η: Mechanical efficiency μ: Coefficient of friction

F: External force [N]

g: Acceleration of gravity 9.8[m/s2]

(3) Effective torque

Indicates a root-mean-square value of the total torque required for running and stopping the motor per unit time. The reference value is approx. 80% or less of the rated motor torque.

Trms =
$$\sqrt{\frac{Ta^2 x ta + Tf^2 x tb + Td^2 x td}{tc}}$$

Ta: Acceleration torque [N·m]

Td: Deceleration torque [N·m]

ta: Acceleration time [s]

tc: Cycle time [s]

Tf: Traveling torque [N·m]

tb: Constant-velocity time [s] td: Deceleration time [s]

(Run time + Stop time)

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition.

Inertia ratio is calculated by dividing load inertia by rotor inertia.

Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less.

If you need quicker response, a lower inertia ratio is required.

/ For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further \increased.

General inertia calculation method

Shape	J calculation formula	Shape	J calculation formula
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$	Hollow cylinder	$J = \frac{1}{8} W(D^2 + d^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $d : Inner diameter [m]$
Prism	$J = \frac{1}{12} W (a^{2} + b^{2}) [kg \cdot m^{2}]$ $W : Weight [kg]$ a, b, c : Side length [m]	Uniform rod	$J = \frac{1}{48} W(3D^2 + 4L^2)_{[kg \cdot m^2]}$ $W : Weight_{[kg]}$ $D : Outer_{diameter_{[m]}}$ $L : Length_{[m]}$
Straight rod	$J = \frac{1}{3} WL^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $L : Length [m]$	Separated rod	$J = \frac{1}{8} WD^2 + WS^2 [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $S : Distance [m]$
Reduction gear	Inertia on shaft "a" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[kg \cdot m^2]$ $n_1 : \text{A rotational speed of a shaft } [r/min]$ $n_2 : \text{A rotational speed of b shaft } [r/min]$		
Conveyor	$J = \frac{1}{4} W D^{2} [kg \cdot m^{2}]$ $W : \text{Workpiece weight on conveyor } [kg]$ $D : \text{Drum diameter } [m]$ * Excluding drum J	Ball screw	$J = J_B + \frac{W \cdot P^2}{4\pi^2} \text{ [kg·m²]}$ $W : \text{Weight [kg]}$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$

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

To Drive Ball Screw Mechanism

Example of Motor Selection

Acceleration torque = $Ta = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

11. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

To Drive Ball Screw Mechanism

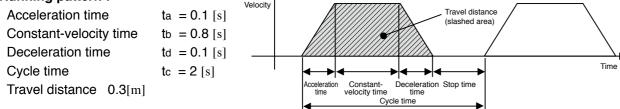
1. Example of motor selection for driving ball screw mechanism

Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$

Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :



BW =
$$\rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$$

= 1.24 [kg]

4. Load inertia

$$JL = JC + JB = JC + \frac{1}{8}BW \times BD^{2} + \frac{WA \cdot BP^{2}}{4\pi^{2}}$$
$$= 0.00001 + (1.24 \times 0.02^{2}) / 8 + 10 \times 0.02^{2} / 4\pi^{2}$$
$$= 1.73 \times 10^{-4} [kg \cdot m^{2}]$$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-4} Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: JM = 0.051×10^{-4} Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

 $\frac{1}{2}$ ×Acceleration time×Vmax+Constant-velocity time×Vmax+ $\frac{1}{2}$ ×Deceleration time×Vmax = Travel distance

$$\frac{1}{2} \times 0.1 \times \text{Vmax} + 0.8 \times \text{Vmax} + \frac{1}{2} \times 0.1 \times \text{Vmax} = 0.3$$

 $0.9 \times \text{Vmax} = 0.3$
 $0.9 \times \text{Vmax} = 0.3 / 0.9 = 0.334 \text{ [m/s]}$

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
$$Tf = \frac{BP}{2\pi B \, \eta} \ (\mu gWA + F) = \frac{0.02}{2\pi \ x \ 0.9} \ (0.1 \times 9.8 \times 10 + 0)$$

$$= 0.035 \ [\text{N·m}]$$
Acceleration torque
$$Ta = \frac{(\text{JL} + \text{JM}) \times 2\pi \text{N}[\text{r/s}]}{\text{Acceleration time [s]}} + \text{Traveling torque}$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 \ [\text{N·m}]$$

Example of Motor Selection

Example of motor selection for timing belt mechanism

1.Mechanism Workpiece weight WA = 2[kg] (including belt)

> Pulley diameter PD = 0.05[m]

Pulley weight WP= 0.5[kg] (Use manufacturer-specified catalog value, or calculation value.)

Mechanical efficiency $B\eta = 0.8$

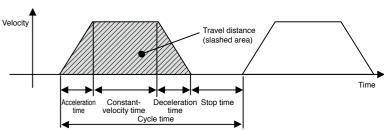
Coupling inertia Jc = 0 (Direct connection to motor shaft)

Belt mechanism inertia Pulley inertia

2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time Cycle time tc = 2[s]Travel distance 1[m]





3. Load inertia JL = JC + JB + JP

= JC +
$$\frac{1}{4}$$
WA × PD² + $\frac{1}{8}$ WP × PD² × 2
= 0 + $\frac{1}{4}$ × 2 × 0.05² + $\frac{1}{8}$ × 0.5 × 0.05² × 2
= 0.00156 = 15.6 × 10⁻⁴ [kg·m²]

4. Provisional motor selection

In case of MSME 750 W motor : $JM = 0.87 \times 10^{-4} \, [kg \cdot m^2]$

5. Calculation of inertia ratio

JL / JM = $15.6 \times 10^{-4} / 0.87 \times 10^{-4}$ Therefore, the inertia ratio is "17.9" (less than "20")

Request Sheet for Motor Selection

Request for motor selection I : Ball screw drive

mm/s

mm

6. Calculation of maximum velocity (Vmax)

$$\frac{1}{2}$$
 × Acceleration time × Vmax + Constant-velocity time × Vmax + $\frac{1}{2}$ × Deceleration time × Vmax = Travel distance $\frac{1}{2}$ × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 1 0.9 × Vmax = 1

$$0.9 \times Vmax = 1$$

 $Vmax = 1 / 0.9 = 1.111[m/s]$

7. Calculation of motor velocity (N [r/min])

A single rotation of pulley :
$$\pi \times PD = 0.157[m]$$

N = 1.111 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{PD}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} \ (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061[\,N\cdot m\,]$$
Acceleration torque
$$T_a = \frac{(JL + JM)\,\times\,2\pi N[\,r/s\,]}{Acceleration\,time[\,s\,]} + Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812[\,N\cdot m\,]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi N[\,r/s\,]}{Deceleration\,time[\,s\,]} - Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

$$= 0.751 - 0.061 = 0.69[\,N\cdot m\,]$$

9. Verification of maximum torque

Acceleration torque $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor)

10. Verification of effective torque

Trms =
$$\sqrt{\frac{\text{Ta}^2 \times \text{ta} + \text{Tf}^2 \times \text{tb} + \text{Td}^2 \times \text{td}}{\text{tc}}}$$

= $\sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$
= 0.241 [N·m] < 2.4 [N·m] (Rated torque of MSME 750 W motor)

11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

1. Driven mechanism and running data

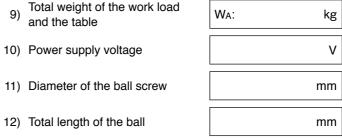
)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	
2)	Cycle time	to:	s	Ru
	(Fill in items 3) and 4) if required.)			velocity
3)	Acceleration time	ta:	s	§ /
!)	Deceleration time	td:	s	<u>/</u> 1 =
5)	Stopping time	ts:	S	

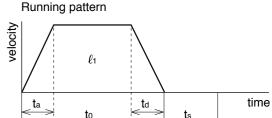
V:

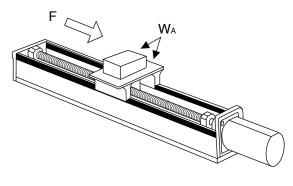
F:	N
±	mm
	F: ±

6) Max. velocity

13) Lead of the ball screw







۸۱	Traveling direction	
4)	(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
1)	load per one cycle

ravei distance of the work	
oad per one cycle	

ℓ ₁ :	mm	15)	Di

iameter of

(or item 17) and 18))

	Moto	or side	Ball so	crew side
15) Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
16) Weight of the pulley	W1:	kg	W2:	kg

(Fill in items 3) and 4) if required.)

ta:	s	

17) Width of the pulley

L1:	mm

4) Deceleration time

3) Acceleration time

2) Cycle time

ı		
ì		
	to:	_

19) Weight of the belt

18) Material of the pulley

W _M :	kg

6) Max. velocity

7) External force

11)

5) Stopping time

V:	mm/
Г.	

8) Positioning accuracy of the work load

8)	work load	±	mm
9)	Total weight of the work load and the table	WA:	kg

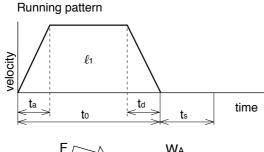
10) Power supply voltage

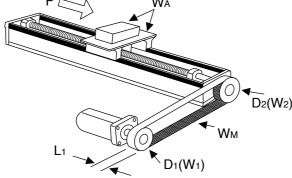
Diameter of the ball screw	mm

12) Total length of the ball screw

mm

Traveling direction (horizontal, vertical etc.)





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

mm

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection **II**: Belt drive

N

mm

kg

٧

mm

1. Driven mechanism and running data

Travel distance of the work load per one cycle	ℓ 1:	mm
) Cycle time	to:	S

(Fill in items 3) and 4) if required.)

) Acceleration time	ta:
) Deceleration time	ta

5) Stopping time ts:

mm/s

F: 7) External force

Positioning accuracy of the	
work load	*

9) Total weight of the work load WA:

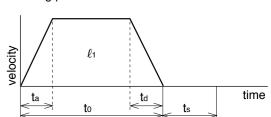
10) Power supply voltage

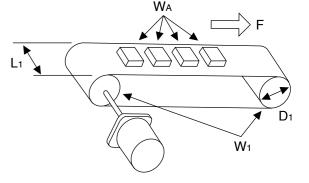
Weight of the belt	W _M :	kg

12) Diameter of the driving pulley

13)	Total weight of the pulley	W ₁ : k _k	ξ
.0	rotal woight of the pulley	1.0	>

Running pattern





L₁:

(or item 14) and 15))

14)	Width	of the	pulley
-----	-------	--------	--------

15)	Material of the pulley	

16)	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. I	Oriven mechanism an	d runn	ing data	
1)	Travel distance of the work load per one cycle	d ₁ :	deg	14) Dimensions of the work load
2)	Cycle time	to:	S	
	(Fill in items 3) and 4) if requi	red.)		
3)	Acceleration time	ta:	s	15) Number of work lo
4)	Deceleration time	td:	s	Running patter
5)	Stopping time	ts:	s	>
6)	Max. rotational speed of the table	v:	deg/s	velocity
	(or)	V:	r/s	t _a
7)	Positioning accuracy of the work load	±	deg	
8)	Weight of one work load	WA:	kg	WA
9)	Driving radius of the center of gravity of the work	R ₁ :	mm	
10)	Diameter of the table	D ₁ :	mm	D_1
11)	Mass of the table	W ₁ :	kg	

T₁:

Diameter of the table

13) Power supply voltage

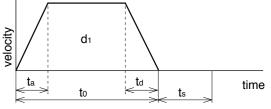
support

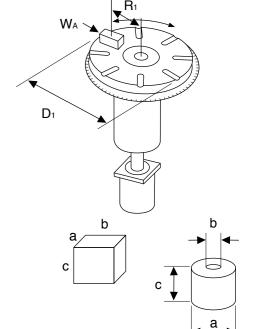
Prism		Cylinder	
a:	mm	a:	mm
b:	mm	b:	mm
c:	mm	c:	mm

ber of work loads

pcs

kunning	pattern
1	





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

 mm

٧

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection IV: Timing pulley + Belt drive

1. Driven mechanism and running data

Travel distance of the work load per one cycle	k	mm
2) Cycle time	to:	s

load per one cycle	
2) Cycle time	to:

(Fill in items 3) and 4) if required.)

16)	Diameter of the pulley	
		_

16) Diameter of the pulley	D3:	mm	D4:	mm
17) Weight of the pulley	W3:	kg	W4:	kg

W_M:

Motor side

Belt side

mm

kg

(or item 18) and 19))

18) Width of the pulley

20) Weight of the belt

Running pattern

19) Material of the pulley

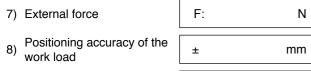
Traveling direction

(horizontal, vertical etc.)



	td:	s
Ï		





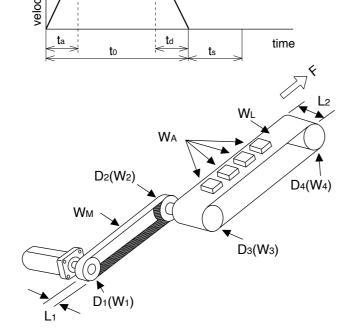
9)	Total weight of the work load and the table	WA: kg	g
10)	Power supply voltage	\	_ V

11) Weight of motor side belt	W _M :	kg

	Moto	r side	Bel	lt side
Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
Weight of the pulley	W ₁ :	kg	W ₂ :	kg

(or item 14) and 15))

14)	Width of the belt	L1:	mm
15)	Material of the pulley		



2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

mm

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

one cycle	Q1:	deg
ne	to:	s

Cycle time	to:	s
(Fill in items 3) and 4) if requi	red.)	

3)	Acceleration time	ta:	s
			,

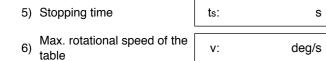


table		
(or)	V:	r/s
7) Positioning accuracy of the	±	deg

8) Weight of one work	K load VVA:	Kg
9) Driving radius of the of gravity of the wo	e center R ₁ :	mm

10) Diameter of the table D ₁ : mm	10) Diameter of the table	D ₁ :	mm
---	---------------------------	------------------	----

11)	Mass of the table
10\	Diameter of the table

4) Deceleration time

12)	support	

13) Power supply voltage

4 4\	Dimension of the
14)	work load

		(Prism)		(Cylinder)
Dimension of the work load	a:	mm	a:	mm
	b:	mm	b:	mm
	c:	mm	c:	mm
15) Number of work loads				pcs

T₁:

16) Diameter of the pulley	D ₂ :	mm	D ₃ :	mr
17) Weight of the pulley	W2:	kg	W3:	k

Motor side

or it	em 1	18)	and	19))	
-------	------	-----	-----	------	--

18) Width of the pulley	
-------------------------	--

19)	Material of the pulley
-----	------------------------

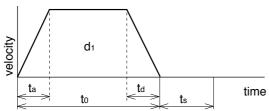
20)	Weight	of the	halt
20)	weigni	OI LITE	neii

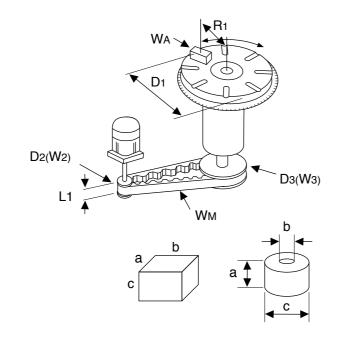
L1:	mm
-----	----

Turntable side

eight of the belt	W _M :

Running pattern





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

kg

mm

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection VII: Roller feed drive

pcs

mm

kg

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	Running
2)	Cycle time	to:	s	
	(Fill in items 3) and 4) if required.)			velocity
3)	Acceleration time	ta:	S	¥/ _ta_
4)	Deceleration time	td:	S	
5)	Stopping time	ts:	S	
6)	Max. velocity	v:	mm/s	
7)	External nulling force	F.	N	

D₁:

External pulling force	١.	
		Ξ
Docitioning accuracy of the		

8)	Positioning accuracy of the			
	work load			

	I
	I
Power supply voltage	I

11) Diameter of the roller	
----------------------------	--

9) Number of rollers

12)	Mass of the roller	
-----	--------------------	--

nunning pa	lleiii			
velocity	ℓ 1			
t a →	to	t d →	t _e	tim

⊋ F _
Li
D ₁ (W ₁)

(or item 13) and 14))

13)	Width	of the	rolle
.0,	VVICE	01 1110	10110

) Mate	rial of the roller	

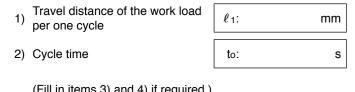
L₁:

2. Other data	(Fill the details on specific mechanism and its configurations in the follow	ing blank
---------------	--	-----------

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request for motor selection III: Driving with Rack & Pinion

1. Driven mechanism and running data



	(Fill in items 3) and 4) if required.)		
3)	Acceleration time	ta:	s
4)	Deceleration time	td:	s
5)	Stopping time	ts:	s
6)	Max. velocity	V:	mm/s
7)	External force	F:	N
8)	Positioning accuracy of the work load	±	mm
9)	Total weight of the work load	WA:	kg
10)	Power supply voltage		V

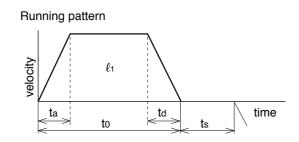
11) Diameter of the pinion

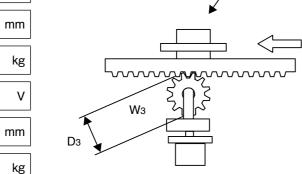
Traveling direction (horizontal, vertical, etc.)

12) Mass of the pinion

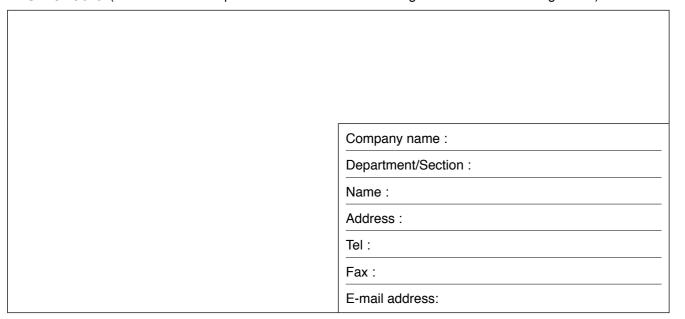
D3:

W3:

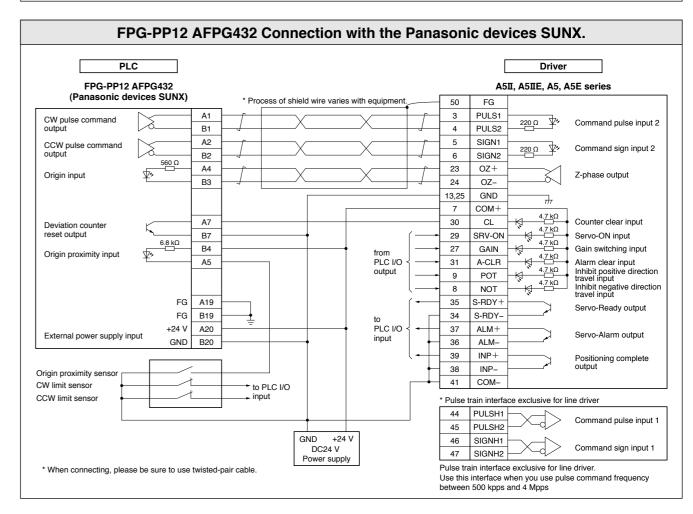


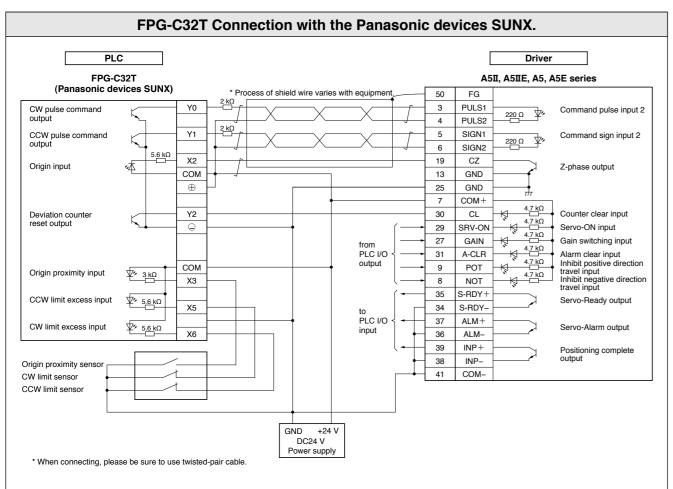


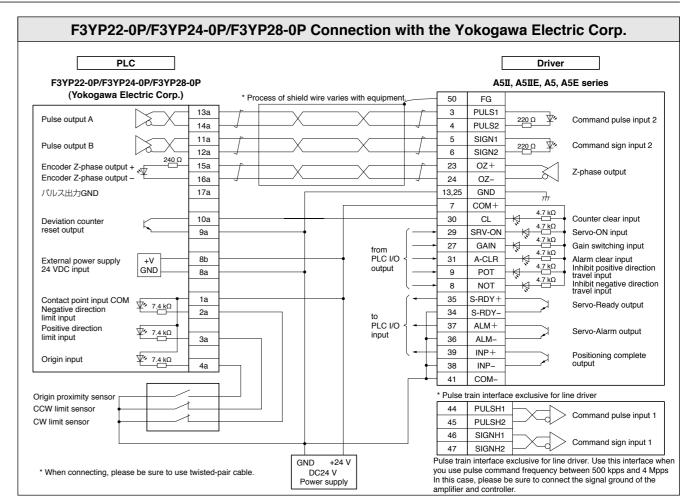
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

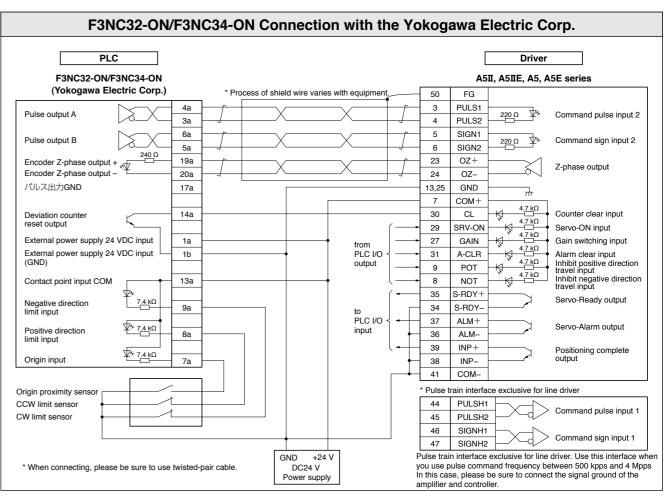


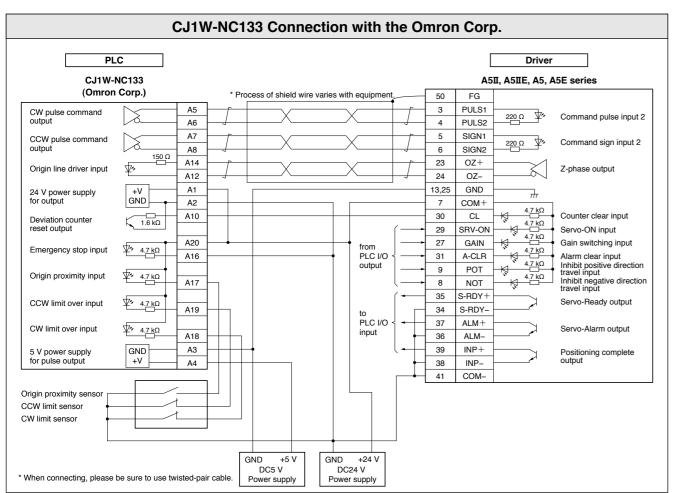
FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) Connection with the Panasonic devices SUNX. PLC Driver FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) A5II, A5IIE, A5, A5E series (Panasonic devices SUNX) PULS1 A1 A10 3 CW pulse command 220 Ω 💯 Command pulse input 2 B1 B10 PULS2 A2 A11 CCW pulse comma output 5 SIGN1 220 Ω 💯 Command sign input 2 B2 B11 SIGN2 3.9 kΩ A3 A12 07+23 Z-phase output Origin input (5 VDC) A4 A13 OZ-24 B3 B12 13,25 GND B5 B14 COM+ Servo-ON output A7 A16 30 CL Counter clear input Deviation counter reset output B7 B16 29 SRV-ON Servo-ON input 3.6 kΩ B4 B13 27 GAIN 🙀 Gain switching input Origin proximity input 4.7 κΩ from PLC I/O A5 A14 31 A-CLR Alarm clear input 6.8 kΩ Inhibit positive direction travel input Inhibit negative direction travel input POT 😽 Limit excess (+) 4.7 kΩ A6 A15 8 NOT 35 S-RDY+ Limit excess ⊝ Servo-Ready output B6 B15 34 S-RDYto PLC I/O +24 V A20 A20 37 ALM+ Servo-Alarm output External power supply input GND B20 B20 36 ALM-INP+ 39 Positioning complete 38 INP-Origin proximity sensor 41 COM-CW limit sensor CCW limit sensor * Pulse train interface exclusive for line driver 44 PULSH1 Command pulse input PULSH2 45 GND +24 V 46 SIGNH1 Command sign input 1 DC24 V SIGNH2 47 Pulse train interface exclusive for line driver. * When connecting, please be sure to use twisted-pair cable Use this interface when you use pulse command frequency between 500 kpps and 4 Mpps

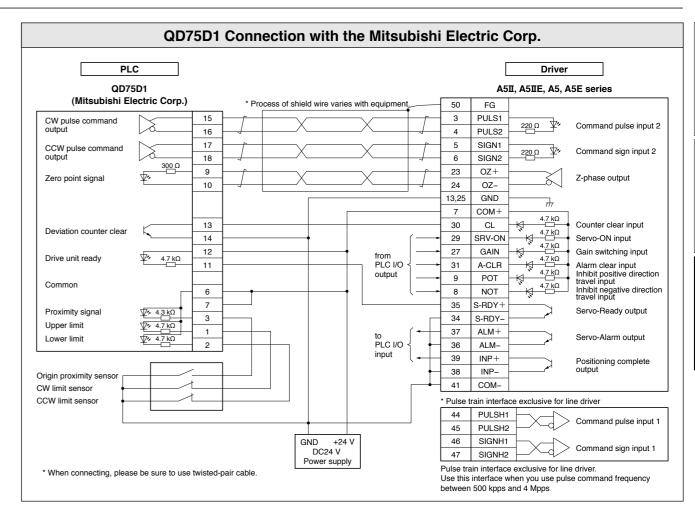


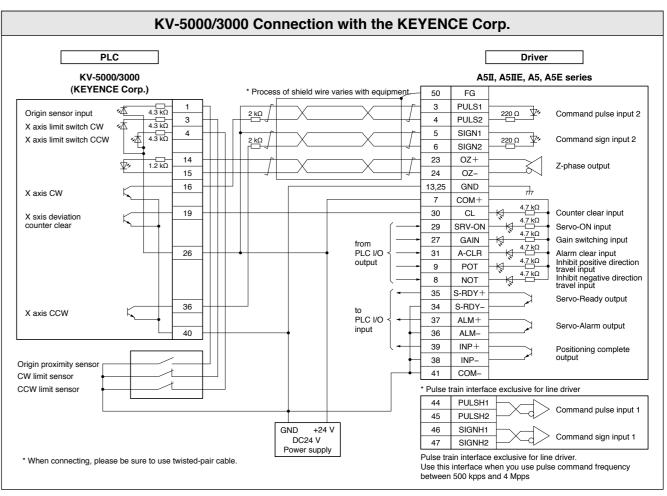












Conversion Wiring Table

connector.

⟨36-pin → 50-pin⟩ ⟨50-pin → 50-pin⟩ Old Old model model Driver Driver Host Host controller controller 36-pin 36-pin 50-pin 50-pin Current Current model model Driver Driver Host Host controller controller 50-pin 50-pin 50-pin 50-pin 36-pin 50-pin 36-pin → 50-pin 50-pin → 50-pin **Conversion cable Conversion cable** DV0P4120 DV0P4130

Replacing Old Model Servo Driver

with MINAS A5II, A5 series

For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion

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.

DV0P4131 DV0P4132

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	P.201
	Torque control	DV0P4132	P.282

279

*	For	external	dimensions,	refer to I	P.197.
---	-----	----------	-------------	------------	--------

DV0P4121

		DV0P4120		DV0P4121		
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-
3	13	Signal ground	GND	13	Signal ground	GND
4	19	Z-phase output	CZ	19	Z-phase output	CZ
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL
14	14	Speed command input	SPR	NC		
15	15	Signal ground	GND	15	Signal ground	GND
16	43	Speed monitor output	SP	43	Speed monitor output	SP
17	25	Signal ground	GND	25	Signal ground	GND
18	50	Frame ground	FG	50	Frame ground	FG
19	21	A-phase output	OA+	21	A-phase output	OA+
20	22	A-phase output	OA-	22	A-phase output	OA-
21	48	B-phase output	OB+	48	B-phase output	OB+
22	49	B-phase output	OB-	49	B-phase output	OB-
23	NC			NC		
24	NC			NC		
25	39	Positionning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positionning complete output Speed arrival output	COIN+ AT-SPEED+
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+
	34	Positionning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positionning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-
28	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-
	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (-)	S-RDY-
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR
35	17	Signal ground	GND	17	Signal ground	GND
36	42	Torque monitor output	IM	42	Torque monitor output	IM
				-		

^{* &}quot;NC" is no connect.

A5 Family Connection Between Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

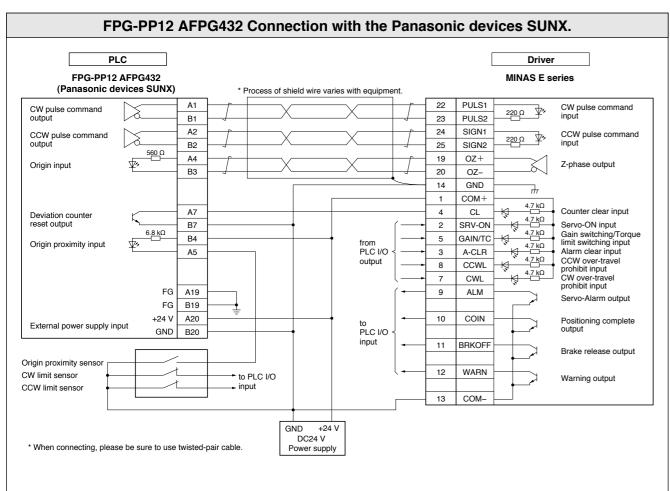
		DV0P4130			DV0P4131			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol		
1	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL		
2	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL		
3	3	Command pulse input 2	PULS1	NC				
4	4	Command pulse input 2	PULS2	NC				
5	5	Command pulse sign input 2	SIGN1	NC				
6	6	Command pulse sign input 2	SIGN2	NC				
7	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+		
8	NC			NC				
9	NC			NC				
10	NC			NC				
11	11	External brake release signal	BRK-OFF+	11	External brake release signal	BRK-OFF+		
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP		
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC		
14	NC			14	Speed command input	SPR		
15	15	Signal ground	GND	15	Signal ground	GND		
16	16	CCW direction torque limit input	CCWTL	16	CCW direction torque limit input	CCWTL		
17	17	Signal ground	GND	17	Signal ground	GND		
18	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL		
19	19	Z-phase output	CZ	19	Z-phase output	CZ		
20	NC			NC				
21	21	A-phase output	OA+	21	A-phase output	OA+		
22	22	A-phase output	OA-	22	A-phase output	OA-		
23	23	Z-phase output	OZ+	23	Z-phase output	OZ+		
24	24	Z-phase output	OZ-	24	Z-phase output	OZ-		
25	50	Frame ground	FG	50	Frame ground	FG		
26	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD		
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN		
28	NC			33	Selection 1 input of internal command speed	INTSPD1		
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON		
30	30	Deviation counter clear input	CL	NC				
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR		
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE		
33	33	Command pulse inhibition input	INH	NC				
34	NC			NC				
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+		
36	NC			NC				
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+		
38	NC			NC				
39	39	Positionning complete output	COIN+	39	Speed arrival output	AT-SPEED-		
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC		
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (-)	BRK-OFF-		
	34	Positionning complete output (-)	COIN-	34	Speed arrival output (-)	AT-SPEED-		
41	36	Servo-Alarm output (-)	ALM-	36	Servo-Alarm output (–)	ALM-		
	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (–)	S-RDY-		
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (–)	COM-		
42	42	Torque monitor output	IM	42	Torque monitor output	IM		
43	43	Speed monitor output	SP	43	Speed monitor output	SP		
44	25	Signal ground	GND	25	Signal ground	GND		
45	25	Signal ground	GND	25	Signal ground	GND		
46	25	Signal ground	GND	25	Signal ground	GND		
47	NC			NC				
48	48	B-phase output	OB+	48	B-phase output	OB+		
49	49	B-phase output	OB-	49	B-phase output	OB-		
	50	Frame ground	FG	50	Frame ground	FG		

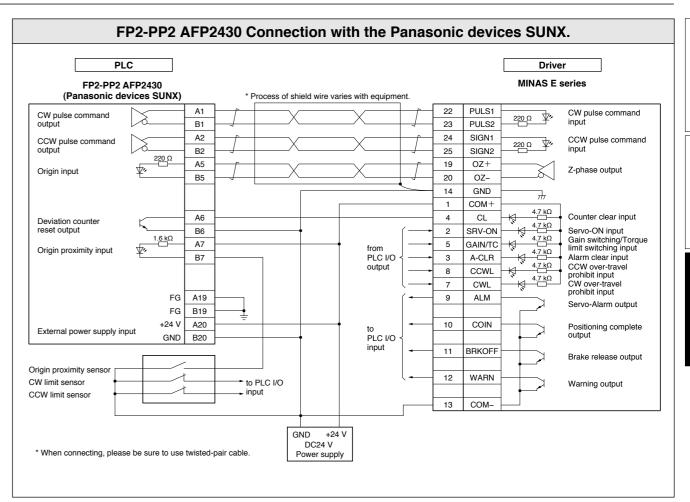
281

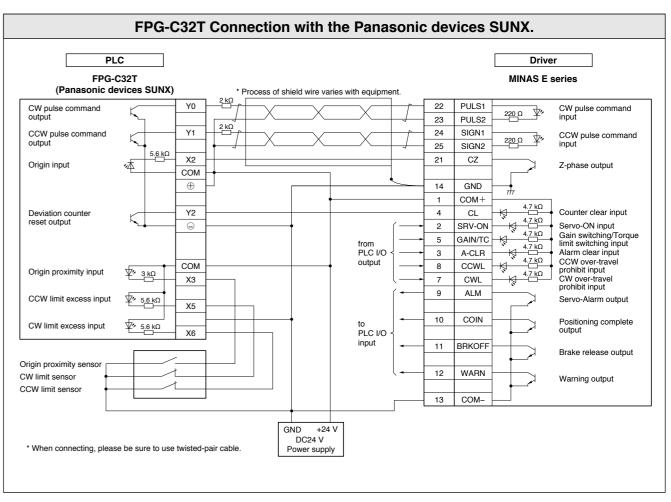
*	"NC"	is	no	connect.
---	------	----	----	----------

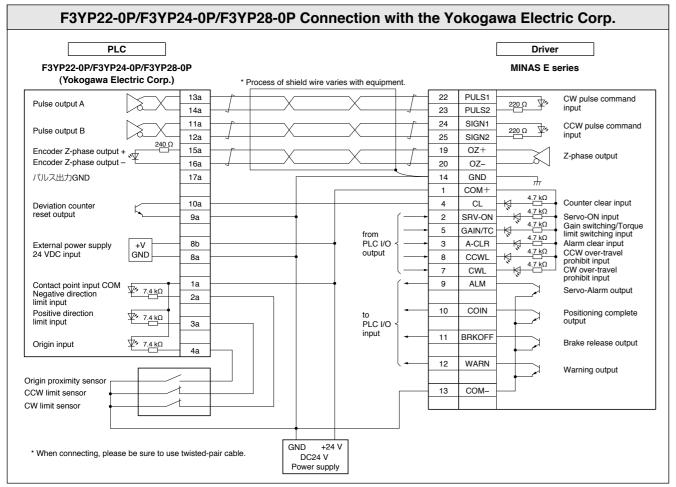
DV0P4132				
Pin No. Pin on Old No. on				
Model	Current Model	Signal Name	Symbol	
1	8	CW over-travel inhibit input	CWL	
2	9	CCW over-travel inhibit input	CCWL	
3	NC			
4	NC			
5	NC			
6	NC			
7	7	Power supply for control signal (+)	COM+	
8	NC			
9	NC			
10	NC			
11	11	External brake release signal	BRK-OFF+	
12	12	Zero-speed detection output signal	ZSP	
13	13	Torque in-limit signal output	TLC	
14	NC			
15	15	Signal ground	GND	
16	16	Torque command input	TRQR	
17	17	Signal ground	GND	
18	18	CW direction torque limit input	CWTL	
19	19	Z-phase output	CZ	
20	NC			
21	21	A-phase output	OA+	
22	22	A-phase output	OA-	
23	23	Z-phase output	OZ+	
24	24	Z-phase output	OZ-	
25	50	Frame ground	FG	
26	26	Speed zero clamp input	ZEROSPD	
27	27	Gain switching input	GAIN	
28	NC			
29	29	Servo-ON input	SRV-ON	
30	NC			
31	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	
33	NC			
34	NC			
35	35	Servo-Ready output	S-RDY+	
36	NC			
37	37	Servo-Alarm output	ALM+	
38	NC			
39	39	Speed arrival output	AT-SPEED+	
40	40	Torque in-limit signal output	TLC	
	10	External brake release signal (–)	BRK-OFF-	
	34	Speed arrival output (–)	AT-SPEED-	
41	36	Servo-Alarm output (–)	ALM-	
	38	Servo-Ready output (–)	S-RDY-	
	41	Power supply for control signal (–)	COM-	
42	42	Torque monitor output	IM	
43	43	Speed monitor output	SP	
44	25	Signal ground	GND	
45	25	Signal ground	GND	
46	25	Signal ground	GND	
47	NC			
48	48	B-phase output	OB+	
49	49	B-phase output	OB-	
50	50	Frame ground	FG	

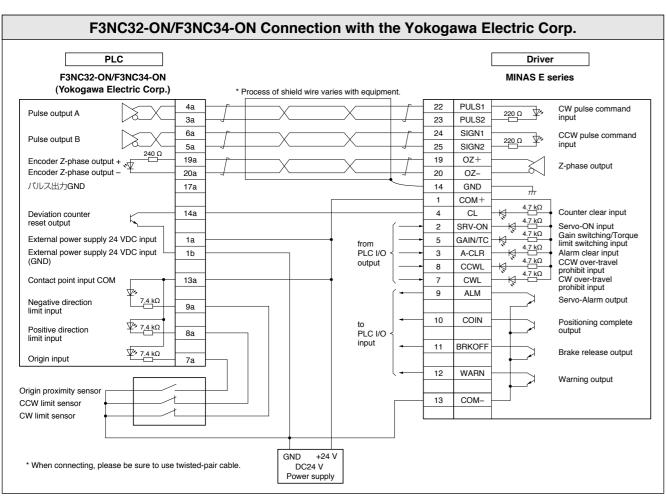
^{* &}quot;NC" is no connect.

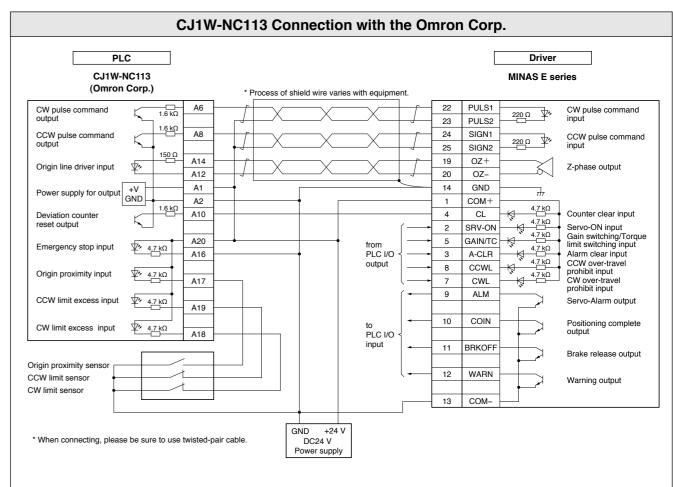


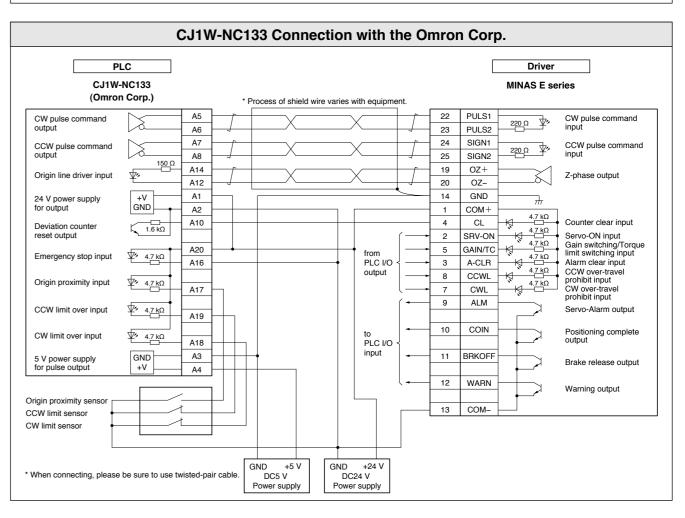


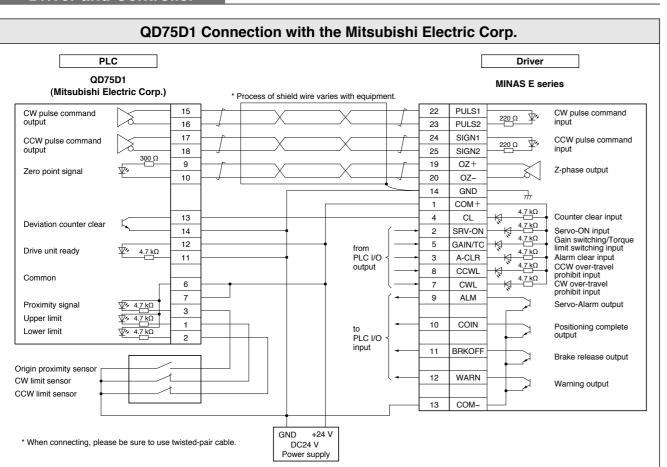












Connection Between Driver and Controller

Pag
241 253,2: 254,2: 241 209 209 209 209 209 209 209 209 209 209
253,2: 254,2: 241 209 209 209 209 209 209 209 209 209 209
241 209 209 209 209 209 209 209 209 209 209
209 209 209 209 209 209 209 209 209 209
209 209 209 209 209 209 209 209 209 209
209 209 209 209 209 209 209 209 209 209
209 209 209 209 209 209 209 209 209 209
209 209 209 209 209 209 209 209 209 209
209 209 209 209 209 209 209 200 200 200
209 tion 239 242 242 207 251 ction 239 238 242 238 242 238 197 197 197 256 250 253,2 255 W 210 30 W 210
209 tion 239 242 242 207 251 ction 239 ————————————————————————————————————
tion 239 242 242 207 251 ction 239 ————————————————————————————————————
242 242 247 251 251 251 251 258 242 238 242 238 197 197 197 256 250 253,2 250 25 W 210 25 W 210 30 W 210
242 207 251 ction 239 ————————————————————————————————————
207 251 ction 239 ————————————————————————————————————
251 ction 239 ————————————————————————————————————
ction 239 ———————————————————————————————————
242 238 197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 30 W 20 ection 204 ection 204 ection 205 ection 205 ection 205 ection 205 ection 205 ection 205 198
242 238 197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 30 W 20 ection 204 ection 204 ection 205 ection 205 ection 205 ection 205 ection 205 ection 205 198
242 238 197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 30 W 20 ection 204 ection 204 ection 205 ection 205 ection 205 ection 205 ection 205 ection 205 198
238 197 197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 ection 204 ection 204 ection 205 ection 205 ection 205 ection 205 ection 205 198
238 197 197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 ection 204 ection 204 ection 205 ection 205 ection 205 ection 205 ection 205 198
197 197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 ection 204 ection 205 ection 205 ection 205 ection 205 198
197 197 197 197 256 250 253,2: 250 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 ection 204 ection 205 ection 205 ection 205 ection 205 ection 205 198
197 197 197 256 253,2: 253,2: 25 W 210 25 W 210 50 W 210 60 W 210 30 W 210 9ection 202 ection 204 ection 205 ection 205 ection 205 ection 205 198
197 197 256 253,2: 253,2: 25 W 210 25 W 210 50 W 210 60 W
197 256 253,2: 253,2: 25 W 210 25 W 210 50 W 210 60 W 210
256 253,2: 255 W 210 25 W 210 25 W 210 30 W 210 30 W 210 30 W 210 ection 202 ection 204 ection 205 ection 205 ection 205 ection 205 198
250 253,2: 25 W 210 25 W 210 50 W 210 50 W 210 50 W 210 50 W 210 60
253,2: 25 W 210 25 W 210 50 W 210 50 W 210 60 W
250 W 210 25 W 210 25 W 210 50 W 210 50 W 210 60
25 W 210 25 W 210 50 W 210 50 W 210 50 W 210 50 W 210 50 W 210 60 W 2
25 W 210 50 W 210 50 W 210 50 W 210 50 W 210 60 W 210 90 W 210 90 ection 202 90 ection 204 90 ection 205 90 ection 2
50 W 210 50 W 210 50 W 210 50 W 210 50 W 210 50 W 210 60 Ection 202 60 Ection 204 60 Ection 205 60 Ect
50 W 210 00 W 210 30 W 210 ection 202 ection 204 ection 205 ection 205
00 W 210 30 W 210 ection 202 ection 204 ection 205 ection 205 ection 205 ection 205 198
30 W 210 ection 202 ection 204 ection 204 ection 205 ection 205 198
ection 202 ection 204 ection 204 ection 205 ection 205 198 197
ection 204 ection 204 ection 205 ection 205 ection 205 198
ection 204 ection 205 ection 205 ection 198 197
ection 205 ection 205 198 197
ection 205 198 197
198 197
197
notion i and
ection 202 241
207
or 236
199
198
198
190
199
208
208 208
208 208 208
208 208 208 208
208 208 208 208 208 199
208 208 208 208 199 nection 200
208 208 208 208 208 199
208 208 208 208 208 199 nection 200 nection 200
208 208 208 208 208 199 nection 200 nection 200 D-frame) 201
208 208 208 208 208 199 nection 200 nection 200 D-frame) 201 ection 203
208 208 208 208 208 199 nection 200 nection 200 O-frame) 201 ection 203 ection 203
208 208 208 208 208 199 nection 200 nection 201 ection 203 ection 203 ection 204
208 208 208 208 208 199 nection 200 nection 201 ection 203 ection 203 ection 204 ection 204 ection 204
208 208 208 208 208 199 nection 200 nection 200 D-frame) 201 ection 203 ection 204 ection 204 ection 205
208 208 208 208 208 199 nection 200 nection 201 ection 203 ection 203 ection 204 ection 204 ection 204

Part No.	Title	Page
DV0PM20044	Connector for Power Supply Input Connection (E-frame)	200
DV0PM20045	Connector for Regenerative Resistor (E-frame 200 V/400 V common)	201
DV0PM20046	Connector for Motor Connection (E-frame 200 V/400 V common)	201
DV0PM20047	Reactor	209
DV0PM20048	External Regenerative Resistor: 120 Ω 240 W	210
DV0PM20049	External Regenerative Resistor: 80 Ω 450 W	210
DV0PM20050	Surge absorber (3-phase)	253
DV0PM20051	Connector for Power Supply Input Connection (D-frame 400 V)	200
DV0PM20052	Connector for Power Supply Input Connection (E-frame 400 V)	200
DV0PM20053	Connector for Control Power Supply Input Connection (D,E-frame 400 V)	201
DV0PM20054	Connector for Motor Connection (D-frame 400V)	201
DV0PM20055	Connector for Regenerative Resistor (D-frame 400 V)	201
DV0PM20056	Connector Kit for Motor/Encoder Connection	206
DV0PM20057	Connector Kit for Motor/Encoder Connection	206
DV0PM20058	External Regenerative Resistor: 3.3 Ω 780 W	210
DV0PM20059	External Regenerative Resistor:13.3 Ω 1140 W	210

Title	Page
A5 series Driver: A-frame	29,42
A5E series Driver: A-frame	31,42
A5 series Driver: A-frame	29,42
A5E series Driver: A-frame	31,42
A5 series Driver: A-frame	29,42
A5E series Driver: A-frame	31,42
A5 series Driver: A-frame	29,42
A5E series Driver: A-frame	31,42
	A5 series Driver: A-frame A5E series Driver: A-frame A5 series Driver: A-frame A5E series Driver: A-frame A5 series Driver: A-frame A5E series Driver: A-frame A5E series Driver: A-frame A5 series Driver: A-frame

MADKT		
Part No.	Title	Page
MADKT1105	A5II series Driver: A-frame	29,42
MADKT1105E	A5IIE series Driver: A-frame	31,42
MADKT1107	A5I series Driver: A-frame	29,42
MADKT1107E	A5IIE series Driver: A-frame	31,42
MADKT1505	A5II series Driver: A-frame	29,42
MADKT1505E	A5IIE series Driver: A-frame	31,42
MADKT1507	A5I series Driver: A-frame	29,42
MADKT1507E	A5IIE series Driver: A-frame	31,42

MBDHT		
Part No.	Title	Page
MBDHT2110	A5 series Driver: B-frame	29,42
MBDHT2110E	A5E series Driver: B-frame	31,42
MBDHT2510	A5 series Driver: B-frame	29,42
MBDHT2510E	A5E series Driver: B-frame	31,42

MBDKT		
Part No.	Title	Page
MBDKT2110	A5 ■ series Driver: B-frame	29,42
MBDKT2110E	A5IIE series Driver: B-frame	31,42
MBDKT2510	A5II series Driver: B-frame	29,42
MBDKT2510E	A5IIE series Driver: B-frame	31,42

MCDHT		
Part No.	Title	Page
MCDHT3120	A5 series Driver: C-frame	29,43
MCDHT3120E	A5E series Driver: C-frame	31,43
MCDHT3520	A5 series Driver: C-frame	29,43
MCDHT3520E	A5E series Driver: C-frame	31,43
MCDHT3520E	A5E series Driver: C-frame	31

MCDKT		
Part No.	Title	Page
MCDKT3120	A5II series Driver: C-frame	29,43
MCDKT3120E	A5IE series Driver: C-frame	31,43

/Alm	haha	tioal	Orde	r.
(AID	Habe	licai	Olue	Ц

MCDKT		
Part No.	Title	Page
MCDKT3520	A5 ■ series Driver: C-frame	29,43
MCDKT3520E	A5IIE series Driver: C-frame	31,43

MDDHT		
Part No.	Title	Page
MDDHT2407	A5 series Driver: D-frame	29,44
MDDHT2407E	A5E series Driver: D-frame	31,44
MDDHT2412	A5 series Driver: D-frame	29,44
MDDHT2412E	A5E series Driver: D-frame	31,44
MDDHT3420	A5 series Driver: D-frame	29,44
MDDHT3420E	A5E series Driver: D-frame	31,44
MDDHT3530	A5 series Driver: D-frame	29,44
MDDHT3530E	A5E series Driver: D-frame	31,44
MDDHT5540	A5 series Driver: D-frame	29,44
MDDHT5540E	A5E series Driver: D-frame	31,44

MDDKT		
Part No.	Title	Page
MDDKT2407	A5II series Driver: D-frame	29,44
MDDKT2407E	A5IE series Driver: D-frame	31,44
MDDKT2412	A5II series Driver: D-frame	29,44
MDDKT2412E	A5IIE series Driver: D-frame	31,44
MDDKT3420	A5II series Driver: D-frame	29,44
MDDKT3420E	A5IIE series Driver: D-frame	31,44
MDDKT3530	A5II series Driver: D-frame	29,44
MDDKT3530E	A5IIE series Driver: D-frame	31,44
MDDKT5540	A5II series Driver: D-frame	29,44
MDDKT5540E	A5IIE series Driver: D-frame	31,44

MDME (Middle in Part No.	Title	Page
MDME044G1C	MDME 400 W Incremental encoder	111
MDME044G1D	MDME 400 W Incremental encoder	111
MDME044G1G	MDME 400 W Incremental encoder	111
MDME044G1H	MDME 400 W Incremental encoder	111
MDME044GCC	MDME 400 W Incremental encoder	111
MDME044GCD	MDME 400 W Incremental encoder	111
MDME044GCG	MDME 400 W Incremental encoder	111
MDME044GCH	MDME 400 W Incremental encoder	111
MDME044S1C	MDME 400 W Absolute encoder	111
MDME044S1D	MDME 400 W Absolute encoder	111
MDME044S1G	MDME 400 W Absolute encoder	111
MDME044S1H	MDME 400 W Absolute encoder	111
MDME044SCC	MDME 400 W Absolute encoder	111
MDME044SCD	MDME 400 W Absolute encoder	111
MDME044SCG	MDME 400 W Absolute encoder	111
MDME044SCH	MDME 400 W Absolute encoder	111
MDME064G1C	MDME 600 W Incremental encoder	112
MDME064G1D	MDME 600 W Incremental encoder	112
MDME064G1G	MDME 600 W Incremental encoder	112
MDME064G1H	MDME 600 W Incremental encoder	112
MDME064GCC	MDME 600 W Incremental encoder	112
MDME064GCD	MDME 600 W Incremental encoder	112
MDME064GCG	MDME 600 W Incremental encoder	112
MDME064GCH	MDME 600 W Incremental encoder	112
MDME064S1C	MDME 600 W Absolute encoder	112
MDME064S1D	MDME 600 W Absolute encoder	112
MDME064S1G	MDME 600 W Absolute encoder	112
MDME064S1H	MDME 600 W Absolute encoder	112
MDME064SCC	MDME 600 W Absolute encoder	112
MDME064SCD	MDME 600 W Absolute encoder	112
MDME064SCG	MDME 600 W Absolute encoder	112
MDME064SCH	MDME 600 W Absolute encoder	112
MDME102G1C	MDME 1.0 kW Incremental encoder	80
MDME102G1D	MDME 1.0 kW Incremental encoder	80
MDME102G1G	MDME 1.0 kW Incremental encoder	80
MDME102G1H	MDME 1.0 kW Incremental encoder	80
MDME102GCC	MDME 1.0 kW Incremental encoder	80
MDME102GCCM	MDME 1.0 kW Incremental encoder	164
MDME102GCD	MDME 1.0 kW Incremental encoder	80
MDME102GCDM	MDME 1.0 kW Incremental encoder	164
MDME102GCG	MDME 1.0 kW Incremental encoder	80

MDME (Middle in Part No.	Title	Page
MDME102GCGM	MDME 1.0 kW Incremental enco	
MDME102GCH	MDME 1.0 kW Incremental enco	der 80
MDME102GCHM	MDME 1.0 kW Incremental enco	der 164
MDME102S1C	MDME 1.0 kW Absolute encoder	80
MDME102S1D	MDME 1.0 kW Absolute encoder	80
MDME102S1G	MDME 1.0 kW Absolute encoder	80
MDME102S1H	MDME 1.0 kW Absolute encoder	80
MDME102SCC	MDME 1.0 kW Absolute encoder	
MDME102SCCM	MDME 1.0 kW Absolute encoder	
MDME102SCD	MDME 1.0 kW Absolute encoder	
MDME102SCDM	MDME 1.0 kW Absolute encoder	
MDME102SCG	MDME 1.0 kW Absolute encoder	
MDME102SCGM	MDME 1.0 kW Absolute encoder	
MDME102SCH	MDME 1.0 kW Absolute encoder	
MDME102SCHM MDME104G1C	MDME 1.0 kW Absolute encoder MDME 1.0 kW Incremental encoder	
MDME104G1D	MDME 1.0 kW Incremental enco	
MDME104G1G	MDME 1.0 kW Incremental enco	
MDME104G1H	MDME 1.0 kW Incremental enco	
MDME104GTT	MDME 1.0 kW Incremental enco	
MDME104GCD	MDME 1.0 kW Incremental enco	
MDME104GCG	MDME 1.0 kW Incremental enco	
MDME104GCH	MDME 1.0 kW Incremental enco	
MDME104S1C	MDME 1.0 kW Absolute encoder	
MDME104S1D	MDME 1.0 kW Absolute encoder	1.14
MDME104S1G	MDME 1.0 kW Absolute encoder	113
MDME104S1H	MDME 1.0 kW Absolute encoder	113
MDME104SCC	MDME 1.0 kW Absolute encoder	113
MDME104SCD	MDME 1.0 kW Absolute encoder	113
MDME104SCG	MDME 1.0 kW Absolute encoder	113
MDME104SCH	MDME 1.0 kW Absolute encoder	113
MDME152G1C	MDME 1.5 kW Incremental enco	der 81
MDME152G1D	MDME 1.5 kW Incremental enco	
MDME152G1G	MDME 1.5 kW Incremental enco	
MDME152G1H	MDME 1.5 kW Incremental enco	
MDME152GCC	MDME 1.5 kW Incremental enco	
MDME152GCCM	MDME 1.5 kW Incremental enco	
MDME152GCD	MDME 1.5 kW Incremental enco	
MDME152GCDM MDME152GCG	MDME 1.5 kW Incremental enco	
MDME152GCG MDME152GCGM	MDME 1.5 kW Incremental enco	
MDME152GCGW	MDME 1.5 kW Incremental enco	
MDME152GCHM	MDME 1.5 kW Incremental enco	
MDME152S1C	MDME 1.5 kW Absolute encoder	
MDME152S1D	MDME 1.5 kW Absolute encoder	
MDME152S1G	MDME 1.5 kW Absolute encoder	
MDME152S1H	MDME 1.5 kW Absolute encoder	
MDME152SCC	MDME 1.5 kW Absolute encoder	
MDME152SCCM	MDME 1.5 kW Absolute encoder	
MDME152SCD	MDME 1.5 kW Absolute encoder	
MDME152SCDM	MDME 1.5 kW Absolute encoder	165
MDME152SCG	MDME 1.5 kW Absolute encoder	81
MDME152SCGM	MDME 1.5 kW Absolute encoder	165
MDME152SCH	MDME 1.5 kW Absolute encoder	81
MDME152SCHM	MDME 1.5 kW Absolute encoder	165
MDME154G1C	MDME 1.5 kW Incremental enco	der 114
MDME154G1D	MDME 1.5 kW Incremental enco	
MDME154G1G	MDME 1.5 kW Incremental enco	
MDME154G1H	MDME 1.5 kW Incremental enco	
MDME154GCC	MDME 1.5 kW Incremental enco	
MDME154GCD	MDME 1.5 kW Incremental enco	
MDME154GCG	MDME 1.5 kW Incremental enco	
MDME154GCH	MDME 1.5 kW Incremental enco	
MDME154S1C	MDME 1.5 kW Absolute encoder	
MDME154S1D	MDME 1.5 kW Absolute encoder	
MDME154S1G	MDME 1.5 kW Absolute encoder	
MDME154S1H	MDME 1.5 kW Absolute encoder MDME 1.5 kW Absolute encoder	
MDME154SCC	MDME 1.5 kW Absolute encoder	
MDME154SCD MDME154SCG	MDME 1.5 kW Absolute encoder MDME 1.5 kW Absolute encoder	
MDME154SCH	MDME 1.5 kW Absolute encoder	

MDME (Middle in Part No.	Title	Page
MDME202G1D	MDME 2.0 kW Incremental encoder	82
MDME202G1G	MDME 2.0 kW Incremental encoder	82
MDME202G1H	MDME 2.0 kW Incremental encoder	82
MDME202GCC	MDME 2.0 kW Incremental encoder	82
MDME202GCCM	MDME 2.0 kW Incremental encoder	166
MDME202GCCW	MDME 2.0 kW Incremental encoder	82
MDME202GCDM	MDME 2.0 kW Incremental encoder	166
MDME202GCG	MDME 2.0 kW Incremental encoder	82
MDME202GCGM	MDME 2.0 kW Incremental encoder	166
MDME202GCH	MDME 2.0 kW Incremental encoder	82
MDME202GCHM	MDME 2.0 kW Incremental encoder	166
MDME202GCHW	MDME 2.0 kW Incremental encoder	82
MDME202S1D	MDME 2.0 kW Absolute encoder	
		82 82
MDME202S1G	MDME 2.0 kW Absolute encoder	
MDME202S1H	MDME 2.0 kW Absolute encoder	82
MDME202SCC	MDME 2.0 kW Absolute encoder	82
MDME202SCCM	MDME 2.0 kW Absolute encoder	166
MDME202SCD	MDME 2.0 kW Absolute encoder	82
MDME202SCDM	MDME 2.0 kW Absolute encoder	166
MDME202SCG	MDME 2.0 kW Absolute encoder	82
MDME202SCGM	MDME 2.0 kW Absolute encoder	166
MDME202SCH	MDME 2.0 kW Absolute encoder	82
MDME202SCHM	MDME 2.0 kW Absolute encoder	166
MDME204G1C	MDME 2.0 kW Incremental encoder	115
MDME204G1D	MDME 2.0 kW Incremental encoder	115
MDME204G1G	MDME 2.0 kW Incremental encoder	115
MDME204G1H	MDME 2.0 kW Incremental encoder	115
MDME204GCC	MDME 2.0 kW Incremental encoder	115
MDME204GCD	MDME 2.0 kW Incremental encoder	115
MDME204GCG	MDME 2.0 kW Incremental encoder	115
MDME204GCH	MDME 2.0 kW Incremental encoder	115
MDME204S1C	MDME 2.0 kW Absolute encoder	115
MDME204S1D	MDME 2.0 kW Absolute encoder	115
MDME204S1G	MDME 2.0 kW Absolute encoder	115
MDME204S1H	MDME 2.0 kW Absolute encoder	115
MDME204SCC	MDME 2.0 kW Absolute encoder	115
MDME204SCD MDME204SCG	MDME 2.0 kW Absolute encoder	115
MDME204SCG MDME204SCH	MDME 2.0 kW Absolute encoder MDME 2.0 kW Absolute encoder	115
MDME302G1C	MDME 3.0 kW Incremental encoder	83
MDME302G1D	MDME 3.0 kW Incremental encoder	83
MDME302G1G	MDME 3.0 kW Incremental encoder	83
MDME302G1H	MDME 3.0 kW Incremental encoder	83
MDME302GCC	MDME 3.0 kW Incremental encoder	83
MDME302GCCM	MDME 3.0 kW Incremental encoder	167
MDME302GCD	MDME 3.0 kW Incremental encoder	83
MDME302GCDM	MDME 3.0 kW Incremental encoder	167
MDME302GCG	MDME 3.0 kW Incremental encoder	83
MDME302GCGM	MDME 3.0 kW Incremental encoder	167
MDME302GCH	MDME 3.0 kW Incremental encoder	83
MDME302GCHM	MDME 3.0 kW Incremental encoder	167
MDME302S1C	MDME 3.0 kW Absolute encoder	83
MDME302S1D	MDME 3.0 kW Absolute encoder	83
MDME302S1G	MDME 3.0 kW Absolute encoder	83
MDME302S1H	MDME 3.0 kW Absolute encoder	83
MDME302SCC	MDME 3.0 kW Absolute encoder	83
MDME302SCCM	MDME 3.0 kW Absolute encoder	167
MDME302SCD	MDME 3.0 kW Absolute encoder	83
MDME302SCDM	MDME 3.0 kW Absolute encoder	167
MDME302SCDM MDME302SCG	MDME 3.0 kW Absolute encoder	83
MDME302SCGM	MDME 3.0 kW Absolute encoder	
		167
MDME302SCHM	MDME 3.0 kW Absolute encoder	83
MDME302SCHM	MDME 3.0 kW Absolute encoder	167
MDME304G1C	MDME 3.0 kW Incremental encoder	116
MDME304G1D	MDME 3.0 kW Incremental encoder	116
MDME304G1G	MDME 3.0 kW Incremental encoder	116
MDME304G1H	MDME 3.0 kW Incremental encoder	116
MDME304GCC	MDME 3.0 kW Incremental encoder	116
MDME304GCD	MDME 3.0 kW Incremental encoder	116
MDME304GCG	MDME 3.0 kW Incremental encoder	116
	MDME 3.0 kW Incremental encoder	116
MDME304GCH	IVIDIVIL 3.0 KW IIICIEIIIEIILAI EIICOGEI	110

MDME (Middle in	ertia)	
Part No.	Title	Page
MDME304S1D	MDME 3.0 kW Absolute encoder	116
MDME304S1G	MDME 3.0 kW Absolute encoder	116
MDME304S1H	MDME 3.0 kW Absolute encoder	116
MDME304SCC	MDME 3.0 kW Absolute encoder	116
MDME304SCD	MDME 3.0 kW Absolute encoder	116
MDME304SCG	MDME 3.0 kW Absolute encoder	116
MDME304SCH MDME402G1C	MDME 3.0 kW Absolute encoder MDME 4.0 kW Incremental encoder	116 ler 84
MDME402G1C	MDME 4.0 kW Incremental encode	
MDME402G1G	MDME 4.0 kW Incremental encode	
MDME402G1H	MDME 4.0 kW Incremental encode	
MDME402GCC	MDME 4.0 kW Incremental encode	
MDME402GCCM	MDME 4.0 kW Incremental encode	ler 168
MDME402GCD	MDME 4.0 kW Incremental encode	ler 84
MDME402GCDM	MDME 4.0 kW Incremental encode	ler 168
MDME402GCG	MDME 4.0 kW Incremental encode	ler 84
MDME402GCGM	MDME 4.0 kW Incremental encode	ler 168
MDME402GCH	MDME 4.0 kW Incremental encode	ler 84
MDME402GCHM	MDME 4.0 kW Incremental encode	ler 168
MDME402S1C	MDME 4.0 kW Absolute encoder	84
MDME402S1D	MDME 4.0 kW Absolute encoder	84
MDME402S1G	MDME 4.0 kW Absolute encoder	84
MDME402S1H	MDME 4.0 kW Absolute encoder	84
MDME402SCC	MDME 4.0 kW Absolute encoder MDME 4.0 kW Absolute encoder	84
MDME402SCCM MDME402SCD	MDME 4.0 kW Absolute encoder	168 84
MDME402SCDM	MDME 4.0 kW Absolute encoder	168
MDME402SCDIM	MDME 4.0 kW Absolute encoder	84
MDME402SCGM	MDME 4.0 kW Absolute encoder	168
MDME402SCH	MDME 4.0 kW Absolute encoder	84
MDME402SCHM	MDME 4.0 kW Absolute encoder	168
MDME404G1C	MDME 4.0 kW Incremental encode	ler 117
MDME404G1D	MDME 4.0 kW Incremental encode	ler 117
MDME404G1G	MDME 4.0 kW Incremental encode	ler 117
MDME404G1H	MDME 4.0 kW Incremental encode	ler 117
MDME404GCC	MDME 4.0 kW Incremental encode	-
MDME404GCD	MDME 4.0 kW Incremental encode	
MDME404GCG	MDME 4.0 kW Incremental encod	
MDME404GCH	MDME 4.0 kW Incremental encod	
MDME404S1C MDME404S1D	MDME 4.0 kW Absolute encoder MDME 4.0 kW Absolute encoder	117
MDME404S1D	MDME 4.0 kW Absolute encoder	117
MDME404S1H	MDME 4.0 kW Absolute encoder	117
MDME404SCC	MDME 4.0 kW Absolute encoder	117
MDME404SCD	MDME 4.0 kW Absolute encoder	117
MDME404SCG	MDME 4.0 kW Absolute encoder	117
MDME404SCH	MDME 4.0 kW Absolute encoder	117
MDME502G1C	MDME 5.0 kW Incremental encode	ler 85
MDME502G1D	MDME 5.0 kW Incremental encode	ler 85
MDME502G1G	MDME 5.0 kW Incremental encode	ler 85
MDME502G1H	MDME 5.0 kW Incremental encode	
MDME502GCC	MDME 5.0 kW Incremental encode	
MDME502GCCM	MDME 5.0 kW Incremental encod	
MDME502GCD	MDME 5.0 kW Incremental encode	
MDME502GCDM	MDME 5.0 kW Incremental encod	
MDME502GCG	MDME 5.0 kW Incremental encode	
MDME502GCGM MDME502GCH	MDME 5.0 kW Incremental encode MDME 5.0 kW Incremental encode	
MDME502GCHM	MDME 5.0 kW Incremental encode	
MDME502S1C	MDME 5.0 kW Absolute encoder	85
MDME502S1D	MDME 5.0 kW Absolute encoder	85
MDME502S1G	MDME 5.0 kW Absolute encoder	85
MDME502S1H	MDME 5.0 kW Absolute encoder	85
MDME502SCC	MDME 5.0 kW Absolute encoder	85
MDME502SCCM	MDME 5.0 kW Absolute encoder	169
MDME502SCD	MDME 5.0 kW Absolute encoder	85
MDME502SCDM	MDME 5.0 kW Absolute encoder	169
MDME502SCG	MDME 5.0 kW Absolute encoder	85
MDME502SCGM	MDME 5.0 kW Absolute encoder	169
MOMETOCOCII	MDME 5.0 kW Absolute encoder	85
MDME502SCH MDME502SCHM	MDME 5.0 kW Absolute encoder	169

(Alphabetical Order)

MDME (Middle in	ertia)	
Part No.	Title	Page
MDME504G1D	MDME 5.0 kW Incremental encoder	118
MDME504G1G	MDME 5.0 kW Incremental encoder	118
MDME504G1H	MDME 5.0 kW Incremental encoder	118
MDME504GCC	MDME 5.0 kW Incremental encoder	118
MDME504GCD	MDME 5.0 kW Incremental encoder	118
MDME504GCG	MDME 5.0 kW Incremental encoder	118
MDME504GCH	MDME 5.0 kW Incremental encoder	118
MDME504S1C	MDME 5.0 kW Absolute encoder	118
MDME504S1D	MDME 5.0 kW Absolute encoder	118
MDME504S1G	MDME 5.0 kW Absolute encoder	118
MDME504S1H	MDME 5.0 kW Absolute encoder	118
MDME504SCC	MDME 5.0 kW Absolute encoder	118
MDME504SCD	MDME 5.0 kW Absolute encoder	118
MDME504SCG	MDME 5.0 kW Absolute encoder	118
MDME504SCH	MDME 5.0 kW Absolute encoder	118
MDME752G1C	MDME 7.5 kW Incremental encoder	86
MDME752G1D	MDME 7.5 kW Incremental encoder	86
MDME752G1G	MDME 7.5 kW Incremental encoder	86
MDME752G1H	MDME 7.5 kW Incremental encoder	86
MDME752S1C	MDME 7.5 kW Absolute encoder	86
MDME752S1D	MDME 7.5 kW Absolute encoder	86
MDME752S1G	MDME 7.5 kW Absolute encoder	86
MDME752S1H	MDME 7.5 kW Absolute encoder	86
MDME754G1C	MDME 7.5 kW Incremental encoder	119
MDME754G1D	MDME 7.5 kW Incremental encoder	119
MDME754G1G	MDME 7.5 kW Incremental encoder	119
MDME754G1H MDME754S1C	MDME 7.5 kW Incremental encoder MDME 7.5 kW Absolute encoder	119
MDME754S1D	MDME 7.5 kW Absolute encoder	119
MDME754S1G	MDME 7.5 kW Absolute encoder	119
MDME754S1H	MDME 7.5 kW Absolute encoder	119
MDMEC12G1C	MDME 11.0 kW Incremental encoder	87
MDMEC12G1D	MDME 11.0 kW Incremental encoder	87
MDMEC12G1G	MDME 11.0 kW Incremental encoder	87
MDMEC12G1H	MDME 11.0 kW Incremental encoder	87
MDMEC12S1C	MDME 11.0 kW Absolute encoder	87
MDMEC12S1D	MDME 11.0 kW Absolute encoder	87
MDMEC12S1G	MDME 11.0 kW Absolute encoder	87
MDMEC12S1H	MDME 11.0 kW Absolute encoder	87
MDMEC14G1C	MDME 11.0 kW Incremental encoder	120
MDMEC14G1D	MDME 11.0 kW Incremental encoder	120
MDMEC14G1G	MDME 11.0 kW Incremental encoder	120
MDMEC14G1H	MDME 11.0 kW Incremental encoder	120
MDMEC14S1C	MDME 11.0 kW Absolute encoder	120
MDMEC14S1D	MDME 11.0 kW Absolute encoder	120
MDMEC14S1G	MDME 11.0 kW Absolute encoder	120
MDMEC14S1H	MDME 11.0 kW Absolute encoder	120
MDMEC52G1C	MDME 15.0 kW Incremental encoder	88
MDMEC52G1D	MDME 15.0 kW Incremental encoder	88
MDMEC52G1G	MDME 15.0 kW Incremental encoder	88
MDMEC52G1H	MDME 15.0 kW Incremental encoder	88
MDMEC52S1C	MDME 15.0 kW Absolute encoder	88
MDMEC52S1D	MDME 15.0 kW Absolute encoder	88
MDMEC52S1G	MDME 15.0 kW Absolute encoder	88
MDMEC52S1H	MDME 15.0 kW Absolute encoder	88
MDMEC54G1C	MDME 15.0 kW Incremental encoder	121
MDMEC54G1D	MDME 15.0 kW Incremental encoder	121
MDMEC54G1G	MDME 15.0 kW Incremental encoder	121
MDMEC54G1H	MDME 15.0 kW Incremental encoder	121
MDMEC54S1C	MDME 15.0 kW Absolute encoder	121
MDMEC54S1D	MDME 15.0 kW Absolute encoder	121
MDMEC54S1G	MDME 15.0 kW Absolute encoder	121
MDMEC54S1H	MDME 15.0 kW Absolute encoder	121

MEDHT		
Part No.	Title	Page
MEDHT4430	A5 series Driver: E-frame	29,45
MEDHT4430E	A5E series Driver: E-frame	31,45
MEDHT7364	A5 series Driver: E-frame	29,44
MEDHT7364E	A5E series Driver: E-frame	31,44

MEDKT		
Part No.	Title	Page
MEDKT4430	A5II series Driver: E-frame	29,45
MEDKT4430E	A5IIE series Driver: E-frame	31,45
MEDKT7364	A5 ■ series Driver: E-frame	29,44
MEDKT7364E	A5IIE series Driver: E-frame	31,44

MFDHT		
Part No.	Title	Page
MFDHT5440	A5 series Driver: F-frame	29,45
MFDHT5440E	A5E series Driver: F-frame	31,45
MFDHTA390	A5 series Driver: F-frame	29,45
MFDHTA390E	A5E series Driver: F-frame	31,45
MFDHTA464	A5 series Driver: F-frame	29,45
MFDHTA464E	A5E series Driver: F-frame	31,45
MFDHTB3A2	A5 series Driver: F-frame	29,45
MFDHTB3A2E	A5E series Driver: F-frame	31,45

MFDKT		
Part No.	Title	Page
MFDKT5440	A5II series Driver: F-frame	29,45
MFDKT5440E	A5IE series Driver: F-frame	31,45
MFDKTA390	A5II series Driver: F-frame	29,45
MFDKTA390E	A5IE series Driver: F-frame	31,45
MFDKTA464	A5 ■ series Driver: F-frame	29,45
MFDKTA464E	A5IIE series Driver: F-frame	31,45
MFDKTB3A2	A5II series Driver: F-frame	29,45
MFDKTB3A2E	A5IE series Driver: F-frame	31,45

MFECA Part No.	Title	Done
	_	Page
MFECA0030EAD	Encoder Cable (without Battery Box)	188
MFECA0030EAE	Encoder Cable (with Battery Box)	188
MFECA0030EAM	Encoder Cable (without Battery Box)	188,238
MFECA0030ESD	Encoder Cable (without Battery Box)	189
MFECA0030ESE	Encoder Cable (with Battery Box)	190
MFECA0030ETD	Encoder Cable (without Battery Box)	190
MFECA0030ETE	Encoder Cable (with Battery Box)	190
MFECA0030MJD	Encoder Cable (without Battery Box)	189
MFECA0030MJE	Encoder Cable (with Battery Box)	189
MFECA0030MKD	Encoder Cable (without Battery Box)	189
MFECA0030MKE	Encoder Cable (with Battery Box)	189
MFECA0030TJD	Encoder Cable (without Battery Box)	189
MFECA0030TJE	Encoder Cable (with Battery Box)	189
MFECA0030TKD	Encoder Cable (without Battery Box)	189
MFECA0030TKE	Encoder Cable (with Battery Box)	189
MFECA0050EAD	Encoder Cable (without Battery Box)	188
MFECA0050EAE	Encoder Cable (with Battery Box)	188
MFECA0050EAM	Encoder Cable (without Battery Box)	188,238
MFECA0050ESD	Encoder Cable (without Battery Box)	189
MFECA0050ESE	Encoder Cable (with Battery Box)	190
MFECA0050ETD	Encoder Cable (without Battery Box)	190
MFECA0050ETE	Encoder Cable (with Battery Box)	190
MFECA0050MJD	Encoder Cable (without Battery Box)	189
MFECA0050MJE	Encoder Cable (with Battery Box)	189
MFECA0050MKD	Encoder Cable (without Battery Box)	189
MFECA0050MKE	Encoder Cable (with Battery Box)	189
MFECA0050TJD	Encoder Cable (without Battery Box)	189
MFECA0050TJE	Encoder Cable (with Battery Box)	189
MFECA0050TKD	Encoder Cable (without Battery Box)	189
MFECA0050TKE	Encoder Cable (with Battery Box)	189
MFECA0100EAD	Encoder Cable (without Battery Box)	188
MFECA0100EAE	Encoder Cable (with Battery Box)	188
MFECA0100EAM	Encoder Cable (without Battery Box)	188,238
MFECA0100ESD	Encoder Cable (without Battery Box)	189
MFECA0100ESE	Encoder Cable (with Battery Box)	190
MFECA0100ETD	Encoder Cable (with Battery Box)	190
MFECA0100ETE	Encoder Cable (with Battery Box)	190
MFECA0100LTL	Encoder Cable (without Battery Box)	189
MFECA0100MJE	Encoder Cable (with Battery Box)	189
MFECA0100MJE	Encoder Cable (with battery Box) Encoder Cable (without Battery Box)	189
MFECA0100MKE		189
	Encoder Cable (with Battery Box)	
MFECA0100TJD	Encoder Cable (without Battery Box)	189
MFECA0100TJE	Encoder Cable (with Battery Box)	189

Part No.	Title	Page
MFECA0100TKD	Encoder Cable (without Battery Box)	189
MFECA0100TKE	Encoder Cable (with Battery Box)	189
MFECA0200EAD	Encoder Cable (without Battery Box)	188
MFECA0200EAE	Encoder Cable (with Battery Box)	188
MFECA0200EAM	Encoder Cable (without Battery Box)	188,238
MFECA0200ESD	Encoder Cable (without Battery Box)	189
MFECA0200ESE	Encoder Cable (with Battery Box)	190
MFECA0200ETD	Encoder Cable (without Battery Box)	190
MFECA0200ETE	Encoder Cable (with Battery Box)	190
MFECA0200MJD	Encoder Cable (without Battery Box)	189
MFECA0200MJE	Encoder Cable (with Battery Box)	189
MFECA0200MKD	Encoder Cable (without Battery Box)	189
MFECA0200MKE	Encoder Cable (with Battery Box)	189
MFECA0200TJD	Encoder Cable (without Battery Box)	189
MFECA0200TJE	Encoder Cable (with Battery Box)	189
MFECA0200TKD	Encoder Cable (without Battery Box)	189
MFECA0200TKE	Encoder Cable (with Battery Box)	189

MFMCA Part No.	Title	Page
MFMCA0030AEB	Motor Cable	238
MFMCA0030AED	Motor Cable (without Brake)	191
MFMCA0030LLD	Motor Cable (without Brake)	191
MFMCA0030NKD	Motor Cable (without Brake)	191
MFMCA0030RJD	Motor Cable (without Brake)	191
MFMCA0030RKD	Motor Cable (without Brake)	191
MFMCA0030ARD	Motor Cable (without Brake)	191
MFMCA0032ECD	Motor Cable (with Brake)	191
	, ,	1.5.
MFMCA0033ECT	Motor Cable (without Brake)	193
MFMCA0033FCT	Motor Cable (with Brake)	195
MFMCA0050AEB	Motor Cable	238
MFMCA0050EED	Motor Cable (without Brake)	191
MFMCA0050NJD	Motor Cable (without Brake)	191
MFMCA0050NKD	Motor Cable (without Brake)	191
MFMCA0050RJD	Motor Cable (without Brake)	191
MFMCA0050RKD	Motor Cable (without Brake)	191
MFMCA0052ECD	Motor Cable (without Brake)	191
MFMCA0052FCD	Motor Cable (with Brake)	194
MFMCA0053ECT	Motor Cable (without Brake)	193
MFMCA0053FCT	Motor Cable (with Brake)	195
MFMCA0100AEB	Motor Cable	238
MFMCA0100EED	Motor Cable (without Brake)	191
MFMCA0100NJD	Motor Cable (without Brake)	191
MFMCA0100NKD	Motor Cable (without Brake)	191
MFMCA0100RJD	Motor Cable (without Brake)	191
MFMCA0100RKD	Motor Cable (without Brake)	191
MFMCA0102ECD	Motor Cable (without Brake)	191
MFMCA0102FCD	Motor Cable (with Brake)	194
MFMCA0103ECT	Motor Cable (without Brake)	193
MFMCA0103FCT	Motor Cable (with Brake)	195
MFMCA0200AEB	Motor Cable	238
MFMCA0200EED	Motor Cable (without Brake)	191
MFMCA0200NJD	Motor Cable (without Brake)	191
MFMCA0200NKD	Motor Cable (without Brake)	191
MFMCA0200RJD	Motor Cable (without Brake)	191
MFMCA0200RKD	Motor Cable (without Brake)	191
MFMCA0202ECD	Motor Cable (without Brake)	191
MFMCA0202FCD	Motor Cable (with Brake)	194
MFMCA0203ECT	Motor Cable (without Brake)	193
MFMCA0203FCT	Motor Cable (with Brake)	195

MEMCB		
Part No.	Title	Page
MFMCB0030GET	Brake Cable	196,238
MFMCB0030PJT	Brake Cable	196
MFMCB0030PKT	Brake Cable	196
MFMCB0030SJT	Brake Cable	196
MFMCB0030SKT	Brake Cable	196
MFMCB0050GET	Brake Cable	196,238
MFMCB0050PJT	Brake Cable	196
MFMCB0050PKT	Brake Cable	196
MFMCB0050SJT	Brake Cable	196

Part No.	Title	Page
MFMCB0050SKT	Brake Cable	196
MFMCB0100GET	Brake Cable	196,23
MFMCB0100PJT	Brake Cable	196
MFMCB0100PKT	Brake Cable	196
MFMCB0100SJT	Brake Cable	196
MFMCB0100SKT	Brake Cable	196
MFMCB0200GET	Brake Cable	196,23
MFMCB0200PJT	Brake Cable	196
MFMCB0200PKT	Brake Cable	196
MFMCB0200SJT	Brake Cable	196
MFMCB0200SKT	Brake Cable	196

MFMCD		
Part No.	Title	Page
MFMCD0032ECD	Motor Cable (without Brake)	192
MFMCD0033ECT	Motor Cable (without Brake)	193
MFMCD0052ECD	Motor Cable (without Brake)	192
MFMCD0053ECT	Motor Cable (without Brake)	193
MFMCD0102ECD	Motor Cable (without Brake)	192
MFMCD0103ECT	Motor Cable (without Brake)	193
MFMCD0202ECD	Motor Cable (without Brake)	192
MFMCD0203ECT	Motor Cable (without Brake)	193

MFMCE		
Part No.	Title	Page
MFMCE0032ECD	Motor Cable (without Brake)	192
MFMCE0032FCD	Motor Cable (with Brake)	194
MFMCE0052ECD	Motor Cable (without Brake)	192
MFMCE0052FCD	Motor Cable (with Brake)	194
MFMCE0102ECD	Motor Cable (without Brake)	192
MFMCE0102FCD	Motor Cable (with Brake)	194
MFMCE0202ECD	Motor Cable (without Brake)	192
MFMCE0202FCD	Motor Cable (with Brake)	194

MFMCF		
Part No.	Title	Page
MFMCF0032ECD	Motor Cable (without Brake)	192
MFMCF0052ECD	Motor Cable (without Brake)	192
MFMCF0102ECD	Motor Cable (without Brake)	192
MFMCF0202ECD	Motor Cable (without Brake)	192

MFME (Middle in	nertia)	
Part No.	Title	Page
MFME152G1C	MFME 1.5 kW Incremental encoder	89
MFME152G1D	MFME 1.5 kW Incremental encoder	89
MFME152G1G	MFME 1.5 kW Incremental encoder	89
MFME152G1H	MFME 1.5 kW Incremental encoder	89
MFME152S1C	MFME 1.5 kW Absolute encoder	89
MFME152S1D	MFME 1.5 kW Absolute encoder	89
MFME152S1G	MFME 1.5 kW Absolute encoder	89
MFME152S1H	MFME 1.5 kW Absolute encoder	89
MFME154G1C	MFME 1.5 kW Incremental encoder	122
MFME154G1D	MFME 1.5 kW Incremental encoder	122
MFME154G1G	MFME 1.5 kW Incremental encoder	122
MFME154G1H	MFME 1.5 kW Incremental encoder	122
MFME154S1C	MFME 1.5 kW Absolute encoder	122
MFME154S1D	MFME 1.5 kW Absolute encoder	122
MFME154S1G	MFME 1.5 kW Absolute encoder	122
MFME154S1H	MFME 1.5 kW Absolute encoder	122
MFME252G1C	MFME 2.5 kW Incremental encoder	90
MFME252G1D	MFME 2.5 kW Incremental encoder	90
MFME252G1G	MFME 2.5 kW Incremental encoder	90
MFME252G1H	MFME 2.5 kW Incremental encoder	90
MFME252S1C	MFME 2.5 kW Absolute encoder	90
MFME252S1D	MFME 2.5 kW Absolute encoder	90
MFME252S1G	MFME 2.5 kW Absolute encoder	90
MFME252S1H	MFME 2.5 kW Absolute encoder	90
MFME254G1C	MFME 2.5 kW Incremental encoder	123
MFME254G1D	MFME 2.5 kW Incremental encoder	123
MFME254G1G	MFME 2.5 kW Incremental encoder	123
MFME254G1H	MFME 2.5 kW Incremental encoder	123
MFME254S1C	MFME 2.5 kW Absolute encoder	123

(Alphabetical Order)

MFME (Middle in	MFME (Middle inertia)		
Part No.	Title	Page	
MFME254S1D	MFME 2.5 kW Absolute encoder	123	
MFME254S1G	MFME 2.5 kW Absolute encoder	123	
MFME254S1H	MFME 2.5 kW Absolute encoder	123	
MFME452G1C	MFME 4.5 kW Incremental encoder	91	
MFME452G1D	MFME 4.5 kW Incremental encoder	91	
MFME452G1G	MFME 4.5 kW Incremental encoder	91	
MFME452G1H	MFME 4.5 kW Incremental encoder	91	
MFME452S1C	MFME 4.5 kW Absolute encoder	91	
MFME452S1D	MFME 4.5 kW Absolute encoder	91	
MFME452S1G	MFME 4.5 kW Absolute encoder	91	
MFME452S1H	MFME 4.5 kW Absolute encoder	91	
MFME454G1C	MFME 4.5 kW Incremental encoder	124	
MFME454G1D	MFME 4.5 kW Incremental encoder	124	
MFME454G1G	MFME 4.5 kW Incremental encoder	124	
MFME454G1H	MFME 4.5 kW Incremental encoder	124	
MFME454S1C	MFME 4.5 kW Absolute encoder	124	
MFME454S1D	MFME 4.5 kW Absolute encoder	124	
MFME454S1G	MFME 4.5 kW Absolute encoder	124	
MFME454S1H	MFME 4.5 kW Absolute encoder	124	

MGDHT		
Part No.	Title	Page
MGDHTB4A2	A5 series Driver: G-frame	29,46
MGDHTC3B4	A5 series Driver: G-frame	29,46

MGDKT		
Part No.	Title	Page
MGDKTB4A2	A5II series Driver: G-frame	29,46
MGDKTC3B4	A5 I series Driver: G-frame	29,46

Part No.	Title	Page
MGME092G1C	MGME 0.9 kW Incremental encoder	92
MGME092G1D	MGME 0.9 kW Incremental encoder	92
MGME092G1G	MGME 0.9 kW Incremental encoder	92
MGME092G1H	MGME 0.9 kW Incremental encoder	92
MGME092GCC	MGME 0.9 kW Incremental encoder	92
MGME092GCCM	MGME 0.9 kW Incremental encoder	170
MGME092GCD	MGME 0.9 kW Incremental encoder	92
MGME092GCDM	MGME 0.9 kW Incremental encoder	170
MGME092GCG	MGME 0.9 kW Incremental encoder	92
MGME092GCGM	MGME 0.9 kW Incremental encoder	170
MGME092GCH	MGME 0.9 kW Incremental encoder	92
MGME092GCHM	MGME 0.9 kW Incremental encoder	170
MGME092S1C	MGME 0.9 kW Absolute encoder	92
MGME092S1D	MGME 0.9 kW Absolute encoder	92
MGME092S1G	MGME 0.9 kW Absolute encoder	92
MGME092S1H	MGME 0.9 kW Absolute encoder	92
MGME092SCC	MGME 0.9 kW Absolute encoder	92
MGME092SCCM	MGME 0.9 kW Absolute encoder	170
MGME092SCD	MGME 0.9 kW Absolute encoder	92
MGME092SCDM	MGME 0.9 kW Absolute encoder	170
MGME092SCG	MGME 0.9 kW Absolute encoder	92
MGME092SCGM	MGME 0.9 kW Absolute encoder	170
MGME092SCH	MGME 0.9 kW Absolute encoder	92
MGME092SCHM	MGME 0.9 kW Absolute encoder	170
MGME094G1C	MGME 0.9 kW Incremental encoder	125
MGME094G1D	MGME 0.9 kW Incremental encoder	125
MGME094G1G	MGME 0.9 kW Incremental encoder	125
MGME094G1H	MGME 0.9 kW Incremental encoder	125
MGME094GCC	MGME 0.9 kW Incremental encoder	125
MGME094GCD	MGME 0.9 kW Incremental encoder	125
MGME094GCG	MGME 0.9 kW Incremental encoder	125
MGME094GCH	MGME 0.9 kW Incremental encoder	125
MGME094S1C	MGME 0.9 kW Absolute encoder	125
MGME094S1D	MGME 0.9 kW Absolute encoder	125
MGME094S1G	MGME 0.9 kW Absolute encoder	125
MGME094S1H	MGME 0.9 kW Absolute encoder	125
MGME094SCC	MGME 0.9 kW Absolute encoder	125
MGME094SCD	MGME 0.9 kW Absolute encoder	125
MGME094SCG	MGME 0.9 kW Absolute encoder	125
MGME094SCH	MGME 0.9 kW Absolute encoder	125

MGME (Middle in	nertia)	
Part No.	Title	Page
MGME202G1C	MGME 2.0 kW Incremental encoder	93
MGME202G1D	MGME 2.0 kW Incremental encoder	93
MGME202G1G	MGME 2.0 kW Incremental encoder	93
MGME202G1H	MGME 2.0 kW Incremental encoder	93
MGME202GCC	MGME 2.0 kW Incremental encoder	93
MGME202GCCM	MGME 2.0 kW Incremental encoder	171
MGME202GCD MGME202GCDM	MGME 2.0 kW Incremental encoder MGME 2.0 kW Incremental encoder	93
MGME202GCDM	MGME 2.0 kW Incremental encoder	93
MGME202GCGM	MGME 2.0 kW Incremental encoder	171
MGME202GCH	MGME 2.0 kW Incremental encoder	93
MGME202GCHM	MGME 2.0 kW Incremental encoder	171
MGME202S1C	MGME 2.0 kW Absolute encoder	93
MGME202S1D	MGME 2.0 kW Absolute encoder	93
MGME202S1G	MGME 2.0 kW Absolute encoder	93
MGME202S1H	MGME 2.0 kW Absolute encoder	93
MGME202SCC	MGME 2.0 kW Absolute encoder	93
MGME202SCCM MGME202SCD	MGME 2.0 kW Absolute encoder MGME 2.0 kW Absolute encoder	171 93
MGME202SCDM	MGME 2.0 kW Absolute encoder	171
MGME202SCDW	MGME 2.0 kW Absolute encoder	93
MGME202SCGM	MGME 2.0 kW Absolute encoder	171
MGME202SCH	MGME 2.0 kW Absolute encoder	93
MGME202SCHM	MGME 2.0 kW Absolute encoder	171
MGME204G1C	MGME 2.0 kW Incremental encoder	126
MGME204G1D	MGME 2.0 kW Incremental encoder	126
MGME204G1G	MGME 2.0 kW Incremental encoder	126
MGME204G1H	MGME 2.0 kW Incremental encoder	126
MGME204GCC MGME204GCD	MGME 2.0 kW Incremental encoder MGME 2.0 kW Incremental encoder	126 126
MGME204GCG	MGME 2.0 kW Incremental encoder	126
MGME204GCH	MGME 2.0 kW Incremental encoder	126
MGME204S1C	MGME 2.0 kW Absolute encoder	126
MGME204S1D	MGME 2.0 kW Absolute encoder	126
MGME204S1G	MGME 2.0 kW Absolute encoder	126
MGME204S1H	MGME 2.0 kW Absolute encoder	126
MGME204SCC	MGME 2.0 kW Absolute encoder	126
MGME204SCD MGME204SCG	MGME 2.0 kW Absolute encoder MGME 2.0 kW Absolute encoder	126 126
MGME204SCH	MGME 2.0 kW Absolute encoder	126
MGME302G1C	MGME 3.0 kW Incremental encoder	94
MGME302G1D	MGME 3.0 kW Incremental encoder	94
MGME302G1G	MGME 3.0 kW Incremental encoder	94
MGME302G1H	MGME 3.0 kW Incremental encoder	94
MGME302GCC	MGME 3.0 kW Incremental encoder	94
MGME302GCCM	MGME 3.0 kW Incremental encoder	172
MGME302GCD	MGME 3.0 kW Incremental encoder	94
MGME302GCDM MGME302GCG	MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder	172
MGME302GCG MGME302GCGM	MGME 3.0 kW Incremental encoder	94 172
MGME302GCH	MGME 3.0 kW Incremental encoder	94
MGME302GCHM	MGME 3.0 kW Incremental encoder	172
MGME302S1C	MGME 3.0 kW Absolute encoder	94
MGME302S1D	MGME 3.0 kW Absolute encoder	94
MGME302S1G	MGME 3.0 kW Absolute encoder	94
MGME302S1H	MGME 3.0 kW Absolute encoder	94
MGME302SCC	MGME 3.0 kW Absolute encoder	94
MGME302SCCM	MGME 3.0 kW Absolute encoder	172
MGME302SCDM	MGME 3.0 kW Absolute encoder MGME 3.0 kW Absolute encoder	94 172
MGME302SCDM	MGME 3.0 kW Absolute encoder	94
IVICALVII - DUZ-NI - LT	MGME 3.0 kW Absolute encoder	172
		94
MGME302SCGM	MGME 3.0 kW Absolute encoder	94
MGME302SCGM MGME302SCH	MGME 3.0 kW Absolute encoder MGME 3.0 kW Absolute encoder	172
MGME302SCGM MGME302SCH MGME302SCHM		
MGME302SCGM MGME302SCH MGME302SCHM MGME304G1C MGME304G1D	MGME 3.0 kW Absolute encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder	172
MGME302SCGM MGME302SCH MGME302SCHM MGME304G1C MGME304G1D MGME304G1G	MGME 3.0 kW Absolute encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder	172 127 127 127
MGME302SCGM MGME302SCH MGME302SCHM MGME304G1C MGME304G1D MGME304G1G MGME304G1H	MGME 3.0 kW Absolute encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder	172 127 127 127 127
MGME302SCGM MGME302SCH MGME302SCHM MGME304G1C MGME304G1D MGME304G1G MGME304G1H MGME304GCC	MGME 3.0 kW Absolute encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder	172 127 127 127 127 127
MGME302SCGM MGME302SCH MGME302SCHM MGME304G1C MGME304G1D MGME304G1G	MGME 3.0 kW Absolute encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder MGME 3.0 kW Incremental encoder	172 127 127 127 127

MGME (Middle i	nertia)	
Part No.	Title	Page
MGME304S1C	MGME 3.0 kW Absolute encoder	127
MGME304S1D	MGME 3.0 kW Absolute encoder	127
MGME304S1G	MGME 3.0 kW Absolute encoder	127
MGME304S1H	MGME 3.0 kW Absolute encoder	127
MGME304SCC	MGME 3.0 kW Absolute encoder	127
MGME304SCD	MGME 3.0 kW Absolute encoder	127
MGME304SCG	MGME 3.0 kW Absolute encoder	127
MGME304SCH	MGME 3.0 kW Absolute encoder	127
MGME452G1C	MGME 4.5 kW Incremental encoder	95
MGME452G1D	MGME 4.5 kW Incremental encoder	95
MGME452G1G	MGME 4.5 kW Incremental encoder	95
MGME452G1H	MGME 4.5 kW Incremental encoder	95
MGME452S1C	MGME 4.5 kW Absolute encoder	95
MGME452S1D	MGME 4.5 kW Absolute encoder	95
MGME452S1G	MGME 4.5 kW Absolute encoder	95
MGME452S1H	MGME 4.5 kW Absolute encoder	95
MGME454G1C	MGME 4.5 kW Incremental encoder	128
MGME454G1D	MGME 4.5 kW Incremental encoder	128
MGME454G1G	MGME 4.5 kW Incremental encoder	128
MGME454G1H	MGME 4.5 kW Incremental encoder	128
MGME454S1C	MGME 4.5 kW Absolute encoder	128
MGME454S1D	MGME 4.5 kW Absolute encoder	128
MGME454S1G	MGME 4.5 kW Absolute encoder	128
MGME454S1H	MGME 4.5 kW Absolute encoder	128
MGME602G1C	MGME 6.0 kW Incremental encoder	96
MGME602G1D	MGME 6.0 kW Incremental encoder	96
MGME602G1G	MGME 6.0 kW Incremental encoder	96
MGME602G1H	MGME 6.0 kW Incremental encoder	96
MGME602S1C	MGME 6.0 kW Absolute encoder	96
MGME602S1D	MGME 6.0 kW Absolute encoder	96
MGME602S1G	MGME 6.0 kW Absolute encoder	96
MGME602S1H	MGME 6.0 kW Absolute encoder	96
MGME604G1C	MGME 6.0 kW Incremental encoder	129
MGME604G1D	MGME 6.0 kW Incremental encoder	129
MGME604G1G	MGME 6.0 kW Incremental encoder	129
MGME604G1H	MGME 6.0 kW Incremental encoder	129
MGME604S1C	MGME 6.0 kW Absolute encoder	129
MGME604S1D	MGME 6.0 kW Absolute encoder	129
MGME604S1G	MGME 6.0 kW Absolute encoder	129
MGME604S1H	MGME 6.0 kW Absolute encoder	129

MHDHT		
Part No.	Title	Page
MHDHTB4A2	A5 series Driver: H-frame	29,47
MHDHTC3B4	A5 series Driver: H-frame	29.47

MHDKT		
Part No.	Title	Page
MHDKTB4A2	A5II series Driver: H-frame	29,47
MHDKTC3B4	A5 ■ series Driver: H-frame	29,47

MHMD (High iner	rtia)	
Part No.	Title	Page
MHMD021G1A	MHMD 200 W Incremental encoder	59
MHMD021G1B	MHMD 200 W Incremental encoder	59
MHMD021G1C	MHMD 200 W Incremental encoder	59
MHMD021G1D	MHMD 200 W Incremental encoder	59
MHMD021G1N	MHMD 200 W Incremental encoder	59
MHMD021G1P	MHMD 200 W Incremental encoder	59
MHMD021G1Q	MHMD 200 W Incremental encoder	59
MHMD021G1R	MHMD 200 W Incremental encoder	59
MHMD021G1S	MHMD 200 W Incremental encoder	59
MHMD021G1T	MHMD 200 W Incremental encoder	59
MHMD021G1U	MHMD 200 W Incremental encoder	59
MHMD021G1V	MHMD 200 W Incremental encoder	59
MHMD021S1A	MHMD 200 W Absolute encoder	59
MHMD021S1B	MHMD 200 W Absolute encoder	59
MHMD021S1C	MHMD 200 W Absolute encoder	59
MHMD021S1D	MHMD 200 W Absolute encoder	59
MHMD021S1N	MHMD 200 W Absolute encoder	59
MHMD021S1P	MHMD 200 W Absolute encoder	59
MHMD021S1Q	MHMD 200 W Absolute encoder	59

MHMD (High ine		Dogg
Part No. MHMD021S1R	Title MHMD 200 W Absolute encoder	Page 59
MHMD021S1R		
	MHMD 200 W Absolute encoder	59
MHMD021S1T MHMD021S1U	MHMD 200 W Absolute encoder MHMD 200 W Absolute encoder	59 59
MHMD021S1V	MHMD 200 W Absolute encoder	59
MHMD022G1A	MHMD 200 W Incremental encoder	60
MHMD022G1B	MHMD 200 W Incremental encoder	60
MHMD022G1C	MHMD 200 W Incremental encoder	60
MHMD022G1D	MHMD 200 W Incremental encoder	60
MHMD022G1N	MHMD 200 W Incremental encoder	60
MHMD022G1P	MHMD 200 W Incremental encoder	60
MHMD022G1Q	MHMD 200 W Incremental encoder	60
MHMD022G1R	MHMD 200 W Incremental encoder	60
MHMD022G1S	MHMD 200 W Incremental encoder	60
MHMD022G1T	MHMD 200 W Incremental encoder	60
MHMD022G1U	MHMD 200 W Incremental encoder	60
MHMD022G1V	MHMD 200 W Incremental encoder	60
MHMD022S1A	MHMD 200 W Absolute encoder	60
MHMD022S1B	MHMD 200 W Absolute encoder	60
MHMD022S1C	MHMD 200 W Absolute encoder	60
MHMD022S1D	MHMD 200 W Absolute encoder	60
MHMD022S1N	MHMD 200 W Absolute encoder	60
MHMD022S1P	MHMD 200 W Absolute encoder	60
MHMD022S1Q	MHMD 200 W Absolute encoder	60
MHMD022S1R	MHMD 200 W Absolute encoder	60
MHMD022S1S	MHMD 200 W Absolute encoder	60
MHMD022S1T	MHMD 200 W Absolute encoder	60
MHMD022S1U	MHMD 200 W Absolute encoder	60
MHMD022S1V	MHMD 200 W Absolute encoder	60
MHMD041G1A	MHMD 400 W Incremental encoder	61
MHMD041G1A	MHMD 400 W Incremental encoder	61
MHMD041G1C	MHMD 400 W Incremental encoder	61
MHMD041G1D	MHMD 400 W Incremental encoder	61
MHMD041G1N	MHMD 400 W Incremental encoder	61
MHMD041G1P	MHMD 400 W Incremental encoder	61
MHMD041G1Q	MHMD 400 W Incremental encoder	61
MHMD041G1R	MHMD 400 W Incremental encoder	61
MHMD041G1S	MHMD 400 W Incremental encoder	61
MHMD041G1T	MHMD 400 W Incremental encoder	61
MHMD041G1U	MHMD 400 W Incremental encoder	61
MHMD041G1V	MHMD 400 W Incremental encoder	61
MHMD041S1A	MHMD 400 W Absolute encoder	61
MHMD041S1B	MHMD 400 W Absolute encoder	61
MHMD041S1C	MHMD 400 W Absolute encoder	61
MHMD041S1D	MHMD 400 W Absolute encoder	61
MHMD041S1N	MHMD 400 W Absolute encoder	61
MHMD041S1P	MHMD 400 W Absolute encoder	61
MHMD041S1Q	MHMD 400 W Absolute encoder	61
MHMD041S1R	MHMD 400 W Absolute encoder	61
MHMD041S1S	MHMD 400 W Absolute encoder	61
MHMD041S1T	MHMD 400 W Absolute encoder	61
MHMD041S1U	MHMD 400 W Absolute encoder	61
MHMD041S1V	MHMD 400 W Absolute encoder	61
MHMD042G1A	MHMD 400 W Incremental encoder	62
MHMD042G1B	MHMD 400 W Incremental encoder	62
MHMD042G1C	MHMD 400 W Incremental encoder	62
MHMD042G1C MHMD042G1D	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62
MHMD042G1C MHMD042G1D MHMD042G1N	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1R	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1S MHMD042G1T	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T MHMD042G1U MHMD042G1U	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T MHMD042G1U MHMD042G1U	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1S MHMD042G1T	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T MHMD042G1U MHMD042G1U MHMD042G1U MHMD042G1V MHMD042S1A MHMD042S1B	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T MHMD042G1U MHMD042G1U MHMD042G1V MHMD042S1A	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62 62 62 62 62
MHMD042G1C MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T MHMD042G1U MHMD042G1U MHMD042G1U MHMD042G1V MHMD042S1A MHMD042S1B MHMD042S1C	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder MHMD 400 W Absolute encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62 62 62 62 62 62

(Alphabetical Order)

MHMD (High ine	rtia)	
Part No.	Title	Page
MHMD042S1R	MHMD 400 W Absolute encoder	62
MHMD042S1S	MHMD 400 W Absolute encoder	62
MHMD042S1T	MHMD 400 W Absolute encoder	62
MHMD042S1U	MHMD 400 W Absolute encoder	62
MHMD042S1V	MHMD 400 W Absolute encoder	62
MHMD082G1A	MHMD 750 W Incremental encoder	63
MHMD082G1B	MHMD 750 W Incremental encoder	63
MHMD082G1C	MHMD 750 W Incremental encoder	63
MHMD082G1D	MHMD 750 W Incremental encoder	63
MHMD082G1N	MHMD 750 W Incremental encoder	63
MHMD082G1P	MHMD 750 W Incremental encoder	63
MHMD082G1Q	MHMD 750 W Incremental encoder	63
MHMD082G1R	MHMD 750 W Incremental encoder	63
MHMD082G1S	MHMD 750 W Incremental encoder	63
MHMD082G1T	MHMD 750 W Incremental encoder	63
MHMD082G1U	MHMD 750 W Incremental encoder	63
MHMD082G1V	MHMD 750 W Incremental encoder	63
MHMD082S1A	MHMD 750 W Absolute encoder	63
MHMD082S1B	MHMD 750 W Absolute encoder	63
MHMD082S1C	MHMD 750 W Absolute encoder	63
MHMD082S1D	MHMD 750 W Absolute encoder	63
MHMD082S1N	MHMD 750 W Absolute encoder	63
MHMD082S1P	MHMD 750 W Absolute encoder	63
MHMD082S1Q	MHMD 750 W Absolute encoder	63
MHMD082S1R	MHMD 750 W Absolute encoder	63
MHMD082S1S	MHMD 750 W Absolute encoder	63
MHMD082S1T	MHMD 750 W Absolute encoder	63
MHMD082S1U	MHMD 750 W Absolute encoder	63
MHMD082S1V	MHMD 750 W Absolute encoder	63

MHMD with Gear	Reducer (High inertia)	
Part No.	Title	Page
MHMD021G31N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G32N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G33N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G34N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G41N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G42N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G43N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021G44N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD021S31N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S32N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S33N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S34N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S41N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S42N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S43N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD021S44N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022G31N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G32N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G33N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G34N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G41N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G42N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G43N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022G44N	MHMD with reduction gear 200 W Incremental encoder	141,149
MHMD022S31N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S32N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S33N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S34N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S41N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S42N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S43N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD022S44N	MHMD with reduction gear 200 W Absolute encoder	141,149
MHMD041G31N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G32N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G33N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G34N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G41N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G42N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G43N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD041G44N	MHMD with reduction gear 400 W Incremental encoder	141,149

MHMD041S31N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S32N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S33N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S34N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S41N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S42N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	Page 141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149
MHMD041S31N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S32N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S33N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S34N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S41N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S42N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149
MHMD041S32N MHMD with reduction gear 400 W Absolute encoder MHMD041S33N MHMD with reduction gear 400 W Absolute encoder MHMD041S34N MHMD with reduction gear 400 W Absolute encoder MHMD041S41N MHMD with reduction gear 400 W Absolute encoder MHMD041S42N MHMD with reduction gear 400 W Absolute encoder MHMD041S43N MHMD with reduction gear 400 W Absolute encoder	141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149
MHMD041S33N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S34N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S41N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S42N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149 141,149 141,149 141,149 141,149 141,149 141,149 141,149
MHMD041S34N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S41N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S42N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149 141,149 141,149 141,149 141,149 141,149
MHMD041S41N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S42N MHMD with reduction gear 400 W Absolute encoder 1 MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149 141,149 141,149 141,149 141,149 141,149
MHMD041S42N MHMD with reduction gear 400 W Absolute encoder MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149 141,149 141,149 141,149 141,149
MHMD041S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149 141,149 141,149 141,149
and the second s	141,149 141,149 141,149
	141,149 141,149
MHMD041S44N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042G31N MHMD with reduction gear 400 W Incremental encoder 1	
MHMD042G32N MHMD with reduction gear 400 W Incremental encoder 1	
MHMD042G33N MHMD with reduction gear 400 W Incremental encoder 1	141,149
MHMD042G34N MHMD with reduction gear 400 W Incremental encoder 1	141,149
MHMD042G41N MHMD with reduction gear 400 W Incremental encoder 1	141,149
MHMD042G42N MHMD with reduction gear 400 W Incremental encoder 1	141,149
MHMD042G43N MHMD with reduction gear 400 W Incremental encoder 1	141,149
MHMD042G44N MHMD with reduction gear 400 W Incremental encoder 1	141,149
MHMD042S31N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S32N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S33N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S34N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S41N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S42N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S43N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD042S44N MHMD with reduction gear 400 W Absolute encoder 1	141,149
MHMD082G31N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G32N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G33N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G34N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G41N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G42N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G43N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082G44N MHMD with reduction gear 750 W Incremental encoder 1	141,149
MHMD082S31N MHMD with reduction gear 750 W Absolute encoder 1	141,149
	141,149
Ţ.	141,149
	141,149
3	141,149
ÿ	141,149
Š.	
MHMD082S44N MHMD with reduction gear 750 W Absolute encoder 1	141,149

Part No.	Title	Page
MHME102G1C	MHME 1.0 kW Incremental encoder	97
MHME102G1D	MHME 1.0 kW Incremental encoder	97
MHME102G1G	MHME 1.0 kW Incremental encoder	97
MHME102G1H	MHME 1.0 kW Incremental encoder	97
MHME102GCC	MHME 1.0 kW Incremental encoder	97
MHME102GCCM	MHME 1.0 kW Incremental encoder	176
MHME102GCD	MHME 1.0 kW Incremental encoder	97
MHME102GCDM	MHME 1.0 kW Incremental encoder	176
MHME102GCG	MHME 1.0 kW Incremental encoder	97
MHME102GCGM	MHME 1.0 kW Incremental encoder	176
MHME102GCH	MHME 1.0 kW Incremental encoder	97
MHME102GCHM	MHME 1.0 kW Incremental encoder	176
MHME102S1C	MHME 1.0 kW Absolute encoder	97
MHME102S1D	MHME 1.0 kW Absolute encoder	97
MHME102S1G	MHME 1.0 kW Absolute encoder	97
MHME102S1H	MHME 1.0 kW Absolute encoder	97
MHME102SCC	MHME 1.0 kW Absolute encoder	97
MHME102SCCM	MHME 1.0 kW Absolute encoder	176
MHME102SCD	MHME 1.0 kW Absolute encoder	97
MHME102SCDM	MHME 1.0 kW Absolute encoder	176
MHME102SCG	MHME 1.0 kW Absolute encoder	97
MHME102SCGM	MHME 1.0 kW Absolute encoder	176
MHME102SCH	MHME 1.0 kW Absolute encoder	97
MHME102SCHM	MHME 1.0 kW Absolute encoder	176
MHME104G1C	MHME 1.0 kW Incremental encoder	130
MHME104G1D	MHME 1.0 kW Incremental encoder	130
MHME104G1G	MHME 1.0 kW Incremental encoder	130
MHME104G1H	MHME 1.0 kW Incremental encoder	130
MHME104GCC	MHME 1.0 kW Incremental encoder	130

MHME (High iner Part No.	Title	Dogg
MHME104GCD	MHME 1.0 kW Incremental encoder	Page 130
MHME104GCD	MHME 1.0 kW Incremental encoder	130
MHME104GCH	MHME 1.0 kW Incremental encoder	130
MHME104S1C	MHME 1.0 kW Absolute encoder	130
MHME104S1D	MHME 1.0 kW Absolute encoder	130
MHME104S1G	MHME 1.0 kW Absolute encoder	130
MHME104S1H	MHME 1.0 kW Absolute encoder	130
MHME104SCC	MHME 1.0 kW Absolute encoder	130
MHME104SCD	MHME 1.0 kW Absolute encoder	130
MHME104SCG	MHME 1.0 kW Absolute encoder	130
MHME104SCH	MHME 1.0 kW Absolute encoder	130
MHME152G1C	MHME 1.5 kW Incremental encoder	98
MHME152G1D	MHME 1.5 kW Incremental encoder	98
MHME152G1G	MHME 1.5 kW Incremental encoder	98
MHME152G1H	MHME 1.5 kW Incremental encoder	98
MHME152GCC	MHME 1.5 kW Incremental encoder	98
MHME152GCCM	MHME 1.5 kW Incremental encoder	177
MHME152GCD	MHME 1.5 kW Incremental encoder	98
MHME152GCDM	MHME 1.5 kW Incremental encoder	177
MHME152GCG	MHME 1.5 kW Incremental encoder	98
MHME152GCGM	MHME 1.5 kW Incremental encoder	177
MHME152GCH	MHME 1.5 kW Incremental encoder	98
MHME152GCHM	MHME 1.5 kW Incremental encoder	177
MHME152S1C	MHME 1.5 kW Absolute encoder	98
MHME152S1D	MHME 1.5 kW Absolute encoder	98
MHME152S1G	MHME 1.5 kW Absolute encoder	98
MHME152S1H	MHME 1.5 kW Absolute encoder	98
MHME152SCC	MHME 1.5 kW Absolute encoder	98
MHME152SCCM	MHME 1.5 kW Absolute encoder	177
MHME152SCD	MHME 1.5 kW Absolute encoder	98
MHME152SCDM	MHME 1.5 kW Absolute encoder	177
MHME152SCG	MHME 1.5 kW Absolute encoder	98
MHME152SCGM	MHME 1.5 kW Absolute encoder	177
MHME152SCH	MHME 1.5 kW Absolute encoder	98
MHME152SCHM	MHME 1.5 kW Absolute encoder	177
MHME154G1C	MHME 1.5 kW Incremental encoder	131
MHME154G1D	MHME 1.5 kW Incremental encoder	131
MHME154G1G	MHME 1.5 kW Incremental encoder	131
MHME154G1H	MHME 1.5 kW Incremental encoder	131
MHME154GCC	MHME 1.5 kW Incremental encoder	131
MHME154GCD	MHME 1.5 kW Incremental encoder	131
MHME154GCG	MHME 1.5 kW Incremental encoder	131
MHME154GCH	MHME 1.5 kW Incremental encoder	131
MHME154S1C	MHME 1.5 kW Absolute encoder	131
MHME154S1D	MHME 1.5 kW Absolute encoder	131
MHME154S1G	MHME 1.5 kW Absolute encoder	131
MHME154S1H	MHME 1.5 kW Absolute encoder	131
MHME154SCC	MHME 1.5 kW Absolute encoder	131
MHME154SCD	MHME 1.5 kW Absolute encoder	131
MHME154SCG	MHME 1.5 kW Absolute encoder	131
MHME154SCH	MHME 1.5 kW Absolute encoder	131
MHME202G1C	MHME 2.0 kW Incremental encoder	99
MHME202G1D	MHME 2.0 kW Incremental encoder	99
MHME202G1G	MHME 2.0 kW Incremental encoder	99
MHME202G1H MHME202GCC	MHME 2.0 kW Incremental encoder MHME 2.0 kW Incremental encoder	99
MHME202GCCM	MHME 2.0 kW Incremental encoder	178
MHME202GCCM	MHME 2.0 kW Incremental encoder	178
MHME202GCDM	MHME 2.0 kW Incremental encoder	178
MHME202GCDM	MHME 2.0 kW Incremental encoder	99
MHME202GCGM	MHME 2.0 kW Incremental encoder	178
MHME202GCGIM	MHME 2.0 kW Incremental encoder	99
MHME202GCHM	MHME 2.0 kW Incremental encoder	178
MHME202S1C	MHME 2.0 kW Absolute encoder	99
MHME202S1D	MHME 2.0 kW Absolute encoder	99
MHME202S1D MHME202S1G	MHME 2.0 kW Absolute encoder MHME 2.0 kW Absolute encoder	99
MHME202S1G MHME202S1H	MHME 2.0 kW Absolute encoder MHME 2.0 kW Absolute encoder	99
MHME202SCC	MHME 2.0 kW Absolute encoder	99
MHME202SCCM	MHME 2.0 kW Absolute encoder	178
	MHME 2.0 kW Absolute encoder MHME 2.0 kW Absolute encoder	
MHME202SCD	MHME 2.0 kW Absolute encoder MHME 2.0 kW Absolute encoder	99
MHME202SCDM		

MUME /Ulab inco	dia)	
MHME (High iner Part No.	Title	Page
MHME202SCGM	MHME 2.0 kW Absolute encoder	178
MHME202SCH	MHME 2.0 kW Absolute encoder	99
MHME202SCHM	MHME 2.0 kW Absolute encoder	178
MHME204G1C	MHME 2.0 kW Incremental encoder	132
MHME204G1D	MHME 2.0 kW Incremental encoder	132
MHME204G1G MHME204G1H	MHME 2.0 kW Incremental encoder MHME 2.0 kW Incremental encoder	132 132
MHME204GCC	MHME 2.0 kW Incremental encoder	132
MHME204GCD	MHME 2.0 kW Incremental encoder	132
MHME204GCG	MHME 2.0 kW Incremental encoder	132
MHME204GCH	MHME 2.0 kW Incremental encoder	132
MHME204S1C	MHME 2.0 kW Absolute encoder	132
MHME204S1D	MHME 2.0 kW Absolute encoder	132
MHME204S1G MHME204S1H	MHME 2.0 kW Absolute encoder MHME 2.0 kW Absolute encoder	132
MHME204SCC	MHME 2.0 kW Absolute encoder	132
MHME204SCD	MHME 2.0 kW Absolute encoder	132
MHME204SCG	MHME 2.0 kW Absolute encoder	132
MHME204SCH	MHME 2.0 kW Absolute encoder	132
MHME302G1C	MHME 3.0 kW Incremental encoder	100
MHME302G1D	MHME 3.0 kW Incremental encoder	100
MHME302G1G	MHME 3.0 kW Incremental encoder	100
MHME302G1H MHME302GCC	MHME 3.0 kW Incremental encoder MHME 3.0 kW Incremental encoder	100
MHME302GCCM	MHME 3.0 kW Incremental encoder	100
MHME302GCD	MHME 3.0 kW Incremental encoder	100
MHME302GCDM	MHME 3.0 kW Incremental encoder	179
MHME302GCG	MHME 3.0 kW Incremental encoder	100
MHME302GCGM	MHME 3.0 kW Incremental encoder	179
MHME302GCH	MHME 3.0 kW Incremental encoder	100
MHME302GCHM	MHME 3.0 kW Incremental encoder	179
MHME302S1C MHME302S1D	MHME 3.0 kW Absolute encoder MHME 3.0 kW Absolute encoder	100
MHME302S1G	MHME 3.0 kW Absolute encoder	100
MHME302S1H	MHME 3.0 kW Absolute encoder	100
MHME302SCC	MHME 3.0 kW Absolute encoder	100
MHME302SCCM	MHME 3.0 kW Absolute encoder	179
MHME302SCD	MHME 3.0 kW Absolute encoder	100
MHME302SCDM	MHME 3.0 kW Absolute encoder	179
MHME302SCG MHME302SCGM	MHME 3.0 kW Absolute encoder MHME 3.0 kW Absolute encoder	100
MHME302SCH	MHME 3.0 kW Absolute encoder	100
MHME302SCHM	MHME 3.0 kW Absolute encoder	179
MHME304G1C	MHME 3.0 kW Incremental encoder	133
MHME304G1D	MHME 3.0 kW Incremental encoder	133
MHME304G1G	MHME 3.0 kW Incremental encoder	133
MHME304G1H	MHME 3.0 kW Incremental encoder	133
MHME304GCC MHME304GCD	MHME 3.0 kW Incremental encoder MHME 3.0 kW Incremental encoder	133
MHME304GCD	MHME 3.0 kW Incremental encoder	133
MHME304GCH	MHME 3.0 kW Incremental encoder	133
MHME304S1C	MHME 3.0 kW Absolute encoder	133
MHME304S1D	MHME 3.0 kW Absolute encoder	133
MHME304S1G	MHME 3.0 kW Absolute encoder	133
MHME304S1H	MHME 3.0 kW Absolute encoder	133
MHME304SCC	MHME 3.0 kW Absolute encoder MHME 3.0 kW Absolute encoder	133
MHME304SCD MHME304SCG	MHME 3.0 kW Absolute encoder MHME 3.0 kW Absolute encoder	133
MHME304SCH	MHME 3.0 kW Absolute encoder	133
MHME402G1C	MHME 4.0 kW Incremental encoder	101
MHME402G1D	MHME 4.0 kW Incremental encoder	101
MHME402G1G	MHME 4.0 kW Incremental encoder	101
MHME402G1H	MHME 4.0 kW Incremental encoder	101
MHME402GCC	MHME 4.0 kW Incremental encoder	101
MHME402GCCM MHME402GCD	MHME 4.0 kW Incremental encoder MHME 4.0 kW Incremental encoder	180
MHME402GCDM	MHME 4.0 kW Incremental encoder	180
MHME402GCG	MHME 4.0 kW Incremental encoder	101
MHME402GCGM	MHME 4.0 kW Incremental encoder	180
MHME402GCH	MHME 4.0 kW Incremental encoder	101
MHME402GCHM	MHME 4.0 kW Incremental encoder	180
MHME402S1C	MHME 4.0 kW Absolute encoder	101

(Alphabetical Orde	er)

Part No. Title Page MHME402S1D MHME 4.0 kW Absolute encoder 101 MHME402S1G MHME 4.0 kW Absolute encoder 101 MHME402SCC MHME 4.0 kW Absolute encoder 101 MHME402SCD MHME 4.0 kW Absolute encoder 180 MHME402SCD MHME 4.0 kW Absolute encoder 180 MHME402SCD MHME 4.0 kW Absolute encoder 180 MHME402SCGM MHME 4.0 kW Absolute encoder 191 MHME402SCHM MHME 4.0 kW Absolute encoder 190 MHME402SCHM MHME 4.0 kW Absolute encoder 190 MHME402SCHM MHME 4.0 kW Absolute encoder 190 MHME402SCHM MHME 4.0 kW brighter encoder 194 MHME402SCHM MHME 4.0 kW Incremental encoder 134 MHME404G1C MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Absolute encoder 134 MHME404GCG MHME 4.0 kW Absolute encoder 134 <th>MHME (High iner</th> <th>tia)</th> <th></th>	MHME (High iner	tia)	
MHME402S1G			Page
MHME402SCC MHME 4.0 kW Absolute encoder 101 MHME402SCC MHME 4.0 kW Absolute encoder 101 MHME402SCC MHME 4.0 kW Absolute encoder 101 MHME402SCC MHME 4.0 kW Absolute encoder 101 MHME402SCC MHME 4.0 kW Absolute encoder 101 MHME402SCG MHME 4.0 kW Absolute encoder 101 MHME402SCH MHME 4.0 kW Absolute encoder 101 MHME402SCH MHME 4.0 kW Absolute encoder 101 MHME403SCH MHME 4.0 kW Incremental encoder 134 MHME404GI MHME 4.0 kW Incremental encoder 134 MHME404GI MHME 4.0 kW Incremental encoder 134 MHME404GI MHME 4.0 kW Incremental encoder 134 MHME404GIC MHME 4.0 kW Absolute encoder 134 MHME404GIC MHME 4.0 kW Absolute encoder 134 MHME404GIC MHME 4.0 kW Absolute encoder 134 MHME404SIC MHME 5.0 kW Incremental encoder 102 MHME502GIC MHME 5.0 kW Absolute encoder 102 MHME502GIC MHME 5.0 kW Absolute encoder			
MHME402SCC		1 111 111 1111	_
MHME402SCCM MHME 4.0 kW Absolute encoder 180 MHME402SCDM MHME 4.0 kW Absolute encoder 180 MHME402SCGM MHME 4.0 kW Absolute encoder 101 MHME402SCGM MHME 4.0 kW Absolute encoder 101 MHME402SCGM MHME 4.0 kW Absolute encoder 101 MHME402SCHM MHME 4.0 kW hosolute encoder 180 MHME402SCHM MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Incremental encoder 134 MHME404GT MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Absolute encoder 134 MHME404STD MHME 4.0 kW Absolute encoder 134 MHME404STI MHME 4.0 kW Absolute encoder 134 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCC MHME 4.0 kW Absolute encoder			
MHME402SCD			_
MHME402SCG			-
MHME402SCGM MHME 4.0 kW Absolute encoder 180 MHME402SCHM MHME 4.0 kW Absolute encoder 101 MHME404GC MHME 4.0 kW Absolute encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404G1 MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Incremental encoder 134 MHME404CH MHME 4.0 kW Absolute encoder 134 MHME404CH MHME 4.0 kW Absolute encoder 134 MHME404SID MHME 5.0 kW Absolute encoder 134 MHME505C MHME 5.0 kW Absolute encoder <t< td=""><td>MHME402SCDM</td><td>MHME 4.0 kW Absolute encoder</td><td>180</td></t<>	MHME402SCDM	MHME 4.0 kW Absolute encoder	180
MHME402SCH MHME 4.0 kW Absolute encoder 101 MHME402SCHM MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1M MHME 4.0 kW Incremental encoder 134 MHME404G1M MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Absolute encoder 134 MHME404GC MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1H MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME502GC MHME 5.0 kW Absolute encoder 134 MHME502GC MHME 5.0 kW Absolute encoder	MHME402SCG	MHME 4.0 kW Absolute encoder	101
MHME402SCHM MHME 4.0 kW Absolute encoder 180 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Absolute encoder 134 MHME404GC MHME 4.0 kW Absolute encoder 134 MHME404SC MHME 4.0 kW Absolute encoder 134 MHME404SC MHME 4.0 kW Absolute encoder 134 MHME404STI MHME 4.0 kW Absolute encoder 134 MHME404SC MHME 4.0 kW Absolute encoder 134 MHME405CD MHME 4.0 kW Absolute encoder 134 MHME502CI MHME 5.0 kW Absolute encoder 132 MHME502CI MHME 5.0 kW Absolute encoder <td< td=""><td></td><td></td><td></td></td<>			
MHME404G1C MHME 4.0 kW Incremental encoder 134 MHME404G1B MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Incremental encoder 134 MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502C1 MHME 5.0 kW Incremental encoder 102 MHME502C2 MHME 5.0 kW Incremental encod			
MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCB MHME 4.0 kW Incremental encoder 134 MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404SC MHME 4.0 kW Absolute encoder 134 MHME404SC MHME 4.0 kW Absolute encoder 134 MHME405CD MHME 4.0 kW Absolute encoder 134 MHME405CD MHME 5.0 kW Nortemental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1M MHME 5.0 kW Incremental encoder <td></td> <td></td> <td></td>			
MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GC MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCB MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder			
MHME404GCC MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 5.0 kW Absolute encoder 134 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder </td <td></td> <td></td> <td></td>			
MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Incremental encoder 134 MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1H MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCW MHME 5.0 kW Incremental encode			_
MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Absolute encoder 134 MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1B MHME 4.0 kW Absolute encoder 134 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCB MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 5.0 kW Incremental encoder 102 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder <td></td> <td>MHME 4.0 kW Incremental encoder</td> <td>134</td>		MHME 4.0 kW Incremental encoder	134
MHME404GCH MHME 4.0 kW Absolute encoder 134 MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1H MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCB MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME502GT MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 181 MHME502GCDM MHME 5.0 kW Incremental encoder 181 MHME502GCM MHME 5.0 kW Incremental encoder 181 MHME502GCM MHME 5.0 kW Incremental encoder 181 MHME502GCW MHME 5.0 kW Incremental encoder <td>MHME404GCD</td> <td>MHME 4.0 kW Incremental encoder</td> <td>134</td>	MHME404GCD	MHME 4.0 kW Incremental encoder	134
MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1H MHME 4.0 kW Absolute encoder 134 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCB MHME 4.0 kW Absolute encoder 134 MHME404SCB MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Absolute encoder </td <td>MHME404GCG</td> <td>MHME 4.0 kW Incremental encoder</td> <td>134</td>	MHME404GCG	MHME 4.0 kW Incremental encoder	134
MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCB MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 5.0 kW Incremental encoder 102 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Absolute enc	MHME404GCH		134
MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404S1H MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCB MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 5.0 kW Incremental encoder 102 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502SC1 MHME 5.0 kW Absolute			_
MHME404S1H MHME 4.0 kW Absolute encoder 134 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 5.0 kW Incremental encoder 102 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502SCG MHME 5.0 kW Abso			
MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCCM MHME 5.0 kW Incremental encoder 102 MHME502GCDM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute e			_
MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 5.0 kW Incremental encoder 102 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Absolute encoder 102 MHME502BCH MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolut			
MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCM MHME 5.0 kW Absolute encoder 102 MHME502SCM MHME 5.0 kW Absolute			_
MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502SCID MHME 5.0 kW Absolute encoder 102 MHME502SCID MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute e			
MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCGM MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute en	MHME404SCH	MHME 4.0 kW Absolute encoder	134
MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCCM MHME 5.0 kW Incremental encoder 181 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encod	MHME502G1C	MHME 5.0 kW Incremental encoder	102
MHME502G1H MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCCM MHME 5.0 kW Incremental encoder 181 MHME502GCD MHME 5.0 kW Incremental encoder 182 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCD MHME 5.0 kW Absolute encoder 102 MHME502SCI MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute en	MHME502G1D	MHME 5.0 kW Incremental encoder	102
MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCCM MHME 5.0 kW Incremental encoder 181 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCDM MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder<			
MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCDM MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 181 MHME502GCGM MHME 5.0 kW Incremental encoder 181 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Absolute encoder 102 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1B MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME504GC MHME 5.0 kW Absolute encoder <td></td> <td></td> <td>_</td>			_
MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCDM MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 131 MHME502SCH MHME 5.0 kW Absolute encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder <td></td> <td></td> <td></td>			
MHME502GCDM MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental encoder 181 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1B MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCH MHME 5.0 kW Absolute encoder 131 MHME502SCH MHME 5.0 kW Absolute encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder <td></td> <td></td> <td>_</td>			_
MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Absolute encoder 181 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Incremental encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder			
MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 181 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCDM MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder		MHME 5.0 kW Incremental encoder	102
MHME502GCHM MHME 5.0 kW Incremental encoder 181 MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCH MHME 5.0 kW Absolute encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder	MHME502GCGM	MHME 5.0 kW Incremental encoder	181
MHME502S1C MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1B MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCB MHME 5.0 kW Absolute encoder	MHME502GCH	MHME 5.0 kW Incremental encoder	102
MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCH MHME 5.0 kW Absolute encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1B MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder			181
MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCH MHME 5.0 kW Absolute encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1B MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder			
MHME502S1H MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME502SCHM MHME 5.0 kW Absolute encoder 135 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCM MHME 5.0 kW Incremental encoder 135 MHME504GC MHME 5.0 kW Absolute encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder			
MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 181 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1B MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1 MHME 5.0 kW Absolute encoder			_
MHME502SCCM MHME 5.0 kW Absolute encoder 181 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder<			
MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 182 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder </td <td></td> <td></td> <td></td>			
MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Absolute encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1B MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder		MHME 5.0 kW Absolute encoder	102
MHME502SCGM MHME 5.0 kW Absolute encoder 181 MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1B MHME 5.0 kW Absolute encoder 135 MHME504SC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder <td>MHME502SCDM</td> <td>MHME 5.0 kW Absolute encoder</td> <td>181</td>	MHME502SCDM	MHME 5.0 kW Absolute encoder	181
MHME502SCH MHME 5.0 kW Absolute encoder 102 MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Absolute encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1B MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder	MHME502SCG	MHME 5.0 kW Absolute encoder	102
MHME502SCHM MHME 5.0 kW Absolute encoder 181 MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Absolute encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504SC MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder			
MHME504G1C MHME 5.0 kW Incremental encoder 135 MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Absolute encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder			
MHME504G1D MHME 5.0 kW Incremental encoder 135 MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder </td <td></td> <td></td> <td></td>			
MHME504G1G MHME 5.0 kW Incremental encoder 135 MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder </td <td></td> <td></td> <td></td>			
MHME504G1H MHME 5.0 kW Incremental encoder 135 MHME504GCC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			_
MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103	MHME504GCC	MHME 5.0 kW Incremental encoder	135
MHME504GCH MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103	MHME504GCD	MHME 5.0 kW Incremental encoder	135
MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME504S1D MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			_
MHME504SCD MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME752G1C MHME 7.5 kW Incremental encoder 103 MHME752G1D MHME 7.5 kW Incremental encoder 103 MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103			
MHME752G1DMHME 7.5 kW Incremental encoder103MHME752G1GMHME 7.5 kW Incremental encoder103MHME752G1HMHME 7.5 kW Incremental encoder103	MHME504SCH	MHME 5.0 kW Absolute encoder	_
MHME752G1G MHME 7.5 kW Incremental encoder 103 MHME752G1H MHME 7.5 kW Incremental encoder 103		MHME 7.5 kW Incremental encoder	103
MHME752G1H MHME 7.5 kW Incremental encoder 103			
			_
IVII IIVIL 732310 IVI⊓IVI⊏ 7.3 KVV ADSOIULE eficoder 103			<u> </u>
	IVII IIVIE/323 IU	INIT IN THE 1.3 KAN ADSOLUTE ELICORET	103

MHME (High inertia)		
Part No.	Title	Page
MHME752S1D	MHME 7.5 kW Absolute encoder	103
MHME752S1G	MHME 7.5 kW Absolute encoder	103
MHME752S1H	MHME 7.5 kW Absolute encoder	103
MHME754G1C	MHME 7.5 kW Incremental encoder	136
MHME754G1D	MHME 7.5 kW Incremental encoder	136
MHME754G1G	MHME 7.5 kW Incremental encoder	136
MHME754G1H	MHME 7.5 kW Incremental encoder	136
MHME754S1C	MHME 7.5 kW Absolute encoder	136
MHME754S1D	MHME 7.5 kW Absolute encoder	136
MHME754S1G	MHME 7.5 kW Absolute encoder	136
MHME754S1H	MHME 7.5 kW Absolute encoder	136

MHMJ (High ine Part No.	Title	Page
MHMJ022G1A	MHMJ 200 W Incremental encoder	173
MHMJ022G1B	MHMJ 200 W Incremental encoder	173
MHMJ022G1C	MHMJ 200 W Incremental encoder	173
MHMJ022G1D	MHMJ 200 W Incremental encoder	173
MHMJ022G1S	MHMJ 200 W Incremental encoder	173
MHMJ022G1T	MHMJ 200 W Incremental encoder	173
MHMJ022G1U	MHMJ 200 W Incremental encoder	173
MHMJ022G1V	MHMJ 200 W Incremental encoder	173
MHMJ022S1A	MHMJ 200 W Absolute encoder	173
MHMJ022S1B	MHMJ 200 W Absolute encoder	173
MHMJ022S1C	MHMJ 200 W Absolute encoder	173
MHMJ022S1D	MHMJ 200 W Absolute encoder	173
MHMJ022S1S	MHMJ 200 W Absolute encoder	173
MHMJ022S1T	MHMJ 200 W Absolute encoder	173
MHMJ022S1U	MHMJ 200 W Absolute encoder	173
MHMJ022S1V	MHMJ 200 W Absolute encoder	173
MHMJ042G1A	MHMJ 400 W Incremental encoder	174
MHMJ042G1B	MHMJ 400 W Incremental encoder	174
MHMJ042G1C	MHMJ 400 W Incremental encoder	174
MHMJ042G1D	MHMJ 400 W Incremental encoder	174
MHMJ042G1S	MHMJ 400 W Incremental encoder	174
MHMJ042G1T	MHMJ 400 W Incremental encoder	174
MHMJ042G1U	MHMJ 400 W Incremental encoder	174
MHMJ042G1V	MHMJ 400 W Incremental encoder	174
MHMJ042S1A	MHMJ 400 W Absolute encoder	174
MHMJ042S1B	MHMJ 400 W Absolute encoder	174
MHMJ042S1C	MHMJ 400 W Absolute encoder	174
MHMJ042S1D	MHMJ 400 W Absolute encoder	174
MHMJ042S1S	MHMJ 400 W Absolute encoder	174
MHMJ042S1T	MHMJ 400 W Absolute encoder	174
MHMJ042S1U	MHMJ 400 W Absolute encoder	174
MHMJ042S1V	MHMJ 400 W Absolute encoder	174
MHMJ082G1A	MHMJ 750 W Incremental encoder	175
MHMJ082G1B	MHMJ 750 W Incremental encoder	175
MHMJ082G1C	MHMJ 750 W Incremental encoder	175
MHMJ082G1D	MHMJ 750 W Incremental encoder	175
MHMJ082G1S	MHMJ 750 W Incremental encoder	175
MHMJ082G1T	MHMJ 750 W Incremental encoder	175
MHMJ082G1U	MHMJ 750 W Incremental encoder	175
MHMJ082G1V	MHMJ 750 W Incremental encoder	175
MHMJ082S1A	MHMJ 750 W Absolute encoder	175
MHMJ082S1B	MHMJ 750 W Absolute encoder	175
MHMJ082S1C	MHMJ 750 W Absolute encoder	175
MHMJ082S1D	MHMJ 750 W Absolute encoder	175
MHMJ082S1S	MHMJ 750 W Absolute encoder	175
MHMJ082S1T	MHMJ 750 W Absolute encoder	175
MHMJ082S1U	MHMJ 750 W Absolute encoder	175
MHMJ082S1V	MHMJ 750 W Absolute encoder	175

MKDET		
Part No.	Title	Page
MKDET1105P	E series Driver: K-frame	223,226
MKDET1110P	E series Driver: K-frame	223,226
MKDET1310P	E series Driver: K-frame	223,226
MKDET1505P	E series Driver: K-frame	223,226

MLDET		
Part No.	Title	Page
MLDET2110P	E series Driver: L-frame	223,226
MLDET2210P	E series Driver: L-frame	223,226
MLDET2310P	E series Driver: L-frame	223,226
MLDET2510P	E series Driver: L-frame	223,226

MSMD (Low ine Part No.	Title	Page
MSMD011G1A	MSMD 100 W Incremental encoder	
MSMD011G1A	MSMD 100 W Incremental encoder	51
		51
MSMD011G1C	MSMD 100 W Incremental encoder	51
MSMD011G1D	MSMD 100 W Incremental encoder	51
MSMD011G1N	MSMD 100 W Incremental encoder	51
MSMD011G1P	MSMD 100 W Incremental encoder	51
MSMD011G1Q	MSMD 100 W Incremental encoder	51
MSMD011G1R	MSMD 100 W Incremental encoder	51
MSMD011G1S	MSMD 100 W Incremental encoder	51
MSMD011G1T	MSMD 100 W Incremental encoder	51
MSMD011G1U	MSMD 100 W Incremental encoder	51
MSMD011G1V	MSMD 100 W Incremental encoder	51
MSMD011S1A	MSMD 100 W Absolute encoder	51
MSMD011S1B	MSMD 100 W Absolute encoder	51
MSMD011S1C	MSMD 100 W Absolute encoder	51
MSMD011S1D	MSMD 100 W Absolute encoder	51
MSMD011S1N	MSMD 100 W Absolute encoder	51
MSMD011S1P	MSMD 100 W Absolute encoder	51
MSMD011S1Q	MSMD 100 W Absolute encoder	51
MSMD011S1R	MSMD 100 W Absolute encoder	
	MSMD 100 W Absolute encoder MSMD 100 W Absolute encoder	51
MSMD011S1S		51
MSMD011S1T	MSMD 100 W Absolute encoder	51
MSMD011S1U	MSMD 100 W Absolute encoder	51
MSMD011S1V	MSMD 100 W Absolute encoder	51
MSMD012G1A	MSMD 100 W Incremental encoder	52
MSMD012G1B	MSMD 100 W Incremental encoder	52
MSMD012G1C	MSMD 100 W Incremental encoder	52
MSMD012G1D	MSMD 100 W Incremental encoder	52
MSMD012G1N	MSMD 100 W Incremental encoder	52
MSMD012G1P	MSMD 100 W Incremental encoder	52
MSMD012G1Q	MSMD 100 W Incremental encoder	52
MSMD012G1R	MSMD 100 W Incremental encoder	52
MSMD012G1S	MSMD 100 W Incremental encoder	52
MSMD012G1T	MSMD 100 W Incremental encoder	52
MSMD012G1U	MSMD 100 W Incremental encoder	52
MSMD012G1V	MSMD 100 W Incremental encoder	52
MSMD012S1A	MSMD 100 W Absolute encoder	52
MSMD012S1B	MSMD 100 W Absolute encoder	52
MSMD012S1C		
	MSMD 100 W Absolute encoder	52
MSMD012S1D	MSMD 100 W Absolute encoder	52
MSMD012S1N	MSMD 100 W Absolute encoder	52
MSMD012S1P	MSMD 100 W Absolute encoder	52
MSMD012S1Q	MSMD 100 W Absolute encoder	52
MSMD012S1R	MSMD 100 W Absolute encoder	52
MSMD012S1S	MSMD 100 W Absolute encoder	52
MSMD012S1T	MSMD 100 W Absolute encoder	52
MSMD012S1U	MSMD 100 W Absolute encoder	52
MSMD012S1V	MSMD 100 W Absolute encoder	52
MSMD021G1A	MSMD 200 W Incremental encoder	53
MSMD021G1B	MSMD 200 W Incremental encoder	53
MSMD021G1C	MSMD 200 W Incremental encoder	53
MSMD021G1D	MSMD 200 W Incremental encoder	53
MSMD021G1N	MSMD 200 W Incremental encoder	53
MSMD021G1P	MSMD 200 W Incremental encoder	53
MSMD021G1Q	MSMD 200 W Incremental encoder	53
MSMD021G1Q MSMD021G1R	MSMD 200 W Incremental encoder	
		53
MSMD021G1S	MSMD 200 W Incremental encoder	53
MSMD021G1T	MSMD 200 W Incremental encoder	53
MSMD021G1U	MSMD 200 W Incremental encoder	53
MSMD021G1V	MSMD 200 W Incremental encoder	53
MSMD021S1A	MSMD 200 W Absolute encoder	53
MSMD021S1B	MSMD 200 W Absolute encoder	53
MSMD021S1C	MSMD 200 W Absolute encoder	53
MSMD021S1D	MSMD 200 W Absolute encoder	53
MSMD021S1N	MSMD 200 W Absolute encoder	53

MSMD (Low ine Part No.	Title	Page
MSMD021S1P	MSMD 200 W Absolute encoder	53
MSMD021S1Q	MSMD 200 W Absolute encoder	53
MSMD021S1R	MSMD 200 W Absolute encoder	53
MSMD021S1S	MSMD 200 W Absolute encoder	53
MSMD021S1T	MSMD 200 W Absolute encoder	53
MSMD021S1U	MSMD 200 W Absolute encoder	53
MSMD021S1V	MSMD 200 W Absolute encoder	53
MSMD022G1A	MSMD 200 W Incremental encoder	54
MSMD022G1B	MSMD 200 W Incremental encoder	54
MSMD022G1C	MSMD 200 W Incremental encoder	54
MSMD022G1D	MSMD 200 W Incremental encoder	54
MSMD022G1N	MSMD 200 W Incremental encoder	54
MSMD022G1P MSMD022G1Q	MSMD 200 W Incremental encoder MSMD 200 W Incremental encoder	54 54
MSMD022G1Q MSMD022G1R	MSMD 200 W Incremental encoder	54
MSMD022G1S	MSMD 200 W Incremental encoder	54
MSMD022G1T	MSMD 200 W Incremental encoder	54
MSMD022G1U	MSMD 200 W Incremental encoder	54
MSMD022G1V	MSMD 200 W Incremental encoder	54
MSMD022S1A	MSMD 200 W Absolute encoder	54
MSMD022S1B	MSMD 200 W Absolute encoder	54
MSMD022S1C	MSMD 200 W Absolute encoder	54
MSMD022S1D	MSMD 200 W Absolute encoder	54
MSMD022S1N	MSMD 200 W Absolute encoder	54
MSMD022S1P	MSMD 200 W Absolute encoder	54
MSMD022S1Q	MSMD 200 W Absolute encoder	54
MSMD022S1R	MSMD 200 W Absolute encoder	54
MSMD022S1S	MSMD 200 W Absolute encoder	54
MSMD022S1T	MSMD 200 W Absolute encoder	54
MSMD022S1U	MSMD 200 W Absolute encoder	54
MSMD022S1V	MSMD 200 W Absolute encoder	54
MSMD041G1A	MSMD 400 W Incremental encoder	55
MSMD041G1B	MSMD 400 W Incremental encoder	55
MSMD041G1C	MSMD 400 W Incremental encoder	55
MSMD041G1D	MSMD 400 W Incremental encoder	55
MSMD041G1N	MSMD 400 W Incremental encoder	55
MSMD041G1P	MSMD 400 W Incremental encoder	55
MSMD041G1Q	MSMD 400 W Incremental encoder	55
MSMD041G1R	MSMD 400 W Incremental encoder	55
MSMD041G1S MSMD041G1T	MSMD 400 W Incremental encoder MSMD 400 W Incremental encoder	55 55
MSMD041G1U	MSMD 400 W Incremental encoder	55
MSMD041G1V	MSMD 400 W Incremental encoder	55
MSMD041G1V	MSMD 400 W Absolute encoder	55
MSMD041S1B	MSMD 400 W Absolute encoder	55
MSMD041S1C	MSMD 400 W Absolute encoder	55
MSMD041S1D	MSMD 400 W Absolute encoder	55
MSMD041S1N	MSMD 400 W Absolute encoder	55
MSMD041S1P	MSMD 400 W Absolute encoder	55
MSMD041S1Q	MSMD 400 W Absolute encoder	55
MSMD041S1R	MSMD 400 W Absolute encoder	55
MSMD041S1S	MSMD 400 W Absolute encoder	55
MSMD041S1T	MSMD 400 W Absolute encoder	55
MSMD041S1U	MSMD 400 W Absolute encoder	55
MSMD041S1V	MSMD 400 W Absolute encoder	55
MSMD042G1A	MSMD 400 W Incremental encoder	56
MSMD042G1B	MSMD 400 W Incremental encoder	56
MSMD042G1C	MSMD 400 W Incremental encoder	56
MSMD042G1D	MSMD 400 W Incremental encoder	56
MSMD042G1N	MSMD 400 W Incremental encoder	56
MSMD042G1P	MSMD 400 W Incremental encoder	56
MSMD042G1Q	MSMD 400 W Incremental encoder	56
MSMD042G1R	MSMD 400 W Incremental encoder	56
MSMD042G1S	MSMD 400 W Incremental encoder	56
MSMD042G1T	MSMD 400 W Incremental encoder	56
MSMD042G1U	MSMD 400 W Incremental encoder	56
MSMD042G1V	MSMD 400 W Incremental encoder MSMD 400 W Absolute encoder	56 56
MSMD042S1A MSMD042S1B	MSMD 400 W Absolute encoder MSMD 400 W Absolute encoder	56
MSMD042S1C	MSMD 400 W Absolute encoder MSMD 400 W Absolute encoder	56
MSMD042S1D	MSMD 400 W Absolute encoder	56
		- 100

(Alphabetical Order)

MSMD (Low ine	rtia)	
Part No.	Title	Page
MSMD042S1P	MSMD 400 W Absolute encoder	56
MSMD042S1Q	MSMD 400 W Absolute encoder	56
MSMD042S1R	MSMD 400 W Absolute encoder	56
MSMD042S1S	MSMD 400 W Absolute encoder	56
MSMD042S1T	MSMD 400 W Absolute encoder	56
MSMD042S1U	MSMD 400 W Absolute encoder	56
MSMD042S1V	MSMD 400 W Absolute encoder	56
MSMD082G1A	MSMD 750 W Incremental encoder	57
MSMD082G1B	MSMD 750 W Incremental encoder	57
MSMD082G1C	MSMD 750 W Incremental encoder	57
MSMD082G1D	MSMD 750 W Incremental encoder	57
MSMD082G1N	MSMD 750 W Incremental encoder	57
MSMD082G1R	MSMD 750 W Incremental encoder	57
MSMD082G1P	MSMD 750 W Incremental encoder	57
MSMD082G1R	MSMD 750 W Incremental encoder	57
MSMD082G1S	MSMD 750 W Incremental encoder	57
MSMD082G1T	MSMD 750 W Incremental encoder	57
MSMD082G1U	MSMD 750 W Incremental encoder	57
MSMD082G1V	MSMD 750 W Incremental encoder	57
MSMD082S1A	MSMD 750 W Absolute encoder	57
MSMD082S1B	MSMD 750 W Absolute encoder	57
MSMD082S1C	MSMD 750 W Absolute encoder	57
MSMD082S1D	MSMD 750 W Absolute encoder	57
MSMD082S1N	MSMD 750 W Absolute encoder	57
MSMD082S1P	MSMD 750 W Absolute encoder	57
MSMD082S1Q	MSMD 750 W Absolute encoder	57
MSMD082S1R	MSMD 750 W Absolute encoder	57
MSMD082S1S	MSMD 750 W Absolute encoder	57
MSMD082S1T	MSMD 750 W Absolute encoder	57
MSMD082S1U	MSMD 750 W Absolute encoder	57
MSMD082S1V	MSMD 750 W Absolute encoder	57
MSMD5AZG1A	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1B	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1C	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1D	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1N	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1P	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1Q	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1R	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1S	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1T	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1U	MSMD 50 W Incremental encoder	49,50
MSMD5AZG1V	MSMD 50 W Incremental encoder	49,50
MSMD5AZS1A	MSMD 50 W Absolute encoder MSMD 50 W Absolute encoder	49,50
MSMD5AZS1B		
MSMD5AZS1C	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1D	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1N	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1P	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1Q	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1R	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1S	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1T	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1U	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1V	MSMD 50 W Absolute encoder	49,50

MSMD with Gear	Reducer (Low inertia)	
Part No.	Title	Page
MSMD011G31N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G32N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G33N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G34N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G41N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G42N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G43N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011G44N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD011S31N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD011S32N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD011S33N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD011S34N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD011S41N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD011S42N	MSMD with reduction gear 100 W Absolute encoder	141 148

MSMD with Gear	Reducer (Low inertia)	
Part No.	Title	Page
MSMD011S43N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD011S44N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD012G31N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G32N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G33N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G34N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G41N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G42N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G43N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012G44N	MSMD with reduction gear 100 W Incremental encoder	141,148
MSMD012S31N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD012S32N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD012S33N MSMD012S34N	MSMD with reduction gear 100 W Absolute encoder	141,148
	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD012S41N	MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD012S42N	MSMD with reduction gear 100 W Absolute encoder MSMD with reduction gear 100 W Absolute encoder	141,148
MSMD012S43N MSMD012S44N	•	141,148
MSMD012344N MSMD021G31N	MSMD with reduction gear 100 W Absolute encoder MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD021G31N	Ü	141,148
MSMD021G32N MSMD021G33N	MSMD with reduction gear 200 W Incremental encoder MSMD with reduction gear 200 W Incremental encoder	141,148 141,148
MSMD021G33N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD021G34N MSMD021G41N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD021G41N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD021G42N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD021G44N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD021G44N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S31N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S32N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S33N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S41N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S42N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S43N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S44N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022G31N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022G32N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022G33N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022G34N	ŭ	141.148
MSMD022G41N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022G42N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022G43N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022G44N	MSMD with reduction gear 200 W Incremental encoder	141,148
MSMD022S31N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S32N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S33N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S34N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S41N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S42N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S43N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD022S44N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD041G31N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G32N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G33N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G34N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G41N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G42N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G43N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041G44N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD041S31N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S32N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S33N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S34N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S41N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S42N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S43N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD041S44N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042G31N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD042G32N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD042G33N	MSMD with reduction gear 400 W Incremental encoder MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD042G34N MSMD042G41N	MSMD with reduction gear 400 W Incremental encoder	141,148 141,148
MSMD042G41N	MSMD with reduction goar 400 W Incremental encoder	

MSMD042G42N MSMD with reduction gear 400 W Incremental encoder 141,148

Part No.	Title	Page
MSMD042G43N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD042G44N	MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD042S31N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S32N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S33N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S34N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S41N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S42N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S43N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD042S44N	MSMD with reduction gear 400 W Absolute encoder	141,148
MSMD082G31N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G32N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G33N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G34N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G41N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G42N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G43N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082G44N	MSMD with reduction gear 750 W Incremental encoder	141,148
MSMD082S31N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S32N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S33N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S34N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S41N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S42N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S43N	MSMD with reduction gear 750 W Absolute encoder	141,148
MSMD082S44N	MSMD with reduction gear 750 W Absolute encoder	141,148

Part No.	Title	Page
MSME011G1A	MSME 100 W Incremental encoder	67
MSME011G1B	MSME 100 W Incremental encoder	67
MSME011G1C	MSME 100 W Incremental encoder	67
MSME011G1D	MSME 100 W Incremental encoder	67
MSME011G1N	MSME 100 W Incremental encoder	67
MSME011G1P	MSME 100 W Incremental encoder	67
MSME011G1Q	MSME 100 W Incremental encoder	67
MSME011G1R	MSME 100 W Incremental encoder	67
MSME011G1S	MSME 100 W Incremental encoder	67
MSME011G1T	MSME 100 W Incremental encoder	67
MSME011G1U	MSME 100 W Incremental encoder	67
MSME011G1V	MSME 100 W Incremental encoder	67
MSME011S1A	MSME 100 W Absolute encoder	67
MSME011S1B	MSME 100 W Absolute encoder	67
MSME011S1C	MSME 100 W Absolute encoder	67
MSME011S1D	MSME 100 W Absolute encoder	67
MSME011S1N	MSME 100 W Absolute encoder	67
MSME011S1P	MSME 100 W Absolute encoder	67
MSME011S1Q	MSME 100 W Absolute encoder	67
MSME011S1R	MSME 100 W Absolute encoder	67
MSME011S1S	MSME 100 W Absolute encoder	67
MSME011S1T	MSME 100 W Absolute encoder	67
MSME011S1U	MSME 100 W Absolute encoder	67
MSME011S1V	MSME 100 W Absolute encoder	67
MSME012G1A	MSME 100 W Incremental encoder	68
MSME012G1B	MSME 100 W Incremental encoder	68
MSME012G1C	MSME 100 W Incremental encoder	68
MSME012G1D	MSME 100 W Incremental encoder	68
MSME012G1N	MSME 100 W Incremental encoder	68
MSME012G1P	MSME 100 W Incremental encoder	68
MSME012G1Q	MSME 100 W Incremental encoder	68
MSME012G1R	MSME 100 W Incremental encoder	68
MSME012G1S	MSME 100 W Incremental encoder	68
MSME012G1T	MSME 100 W Incremental encoder	68
MSME012G1U	MSME 100 W Incremental encoder	68
MSME012G1V	MSME 100 W Incremental encoder	68
MSME012S1A	MSME 100 W Absolute encoder	68
MSME012S1B	MSME 100 W Absolute encoder	68
MSME012S1C	MSME 100 W Absolute encoder	68
MSME012S1D	MSME 100 W Absolute encoder	68
MSME012S1N	MSME 100 W Absolute encoder	68
MSME012S1P	MSME 100 W Absolute encoder	68
MSME012S1Q	MSME 100 W Absolute encoder	68

MSME (Low iner	Title	Page
MSME012S1R	MSME 100 W Absolute encoder	68
MSME012S1S	MSME 100 W Absolute encoder	68
MSME012S1T	MSME 100 W Absolute encoder	68
MSME012S1U	MSME 100 W Absolute encoder	68
MSME012S1V	MSME 100 W Absolute encoder	68
MSME021G1A	MSME 200 W Incremental encoder	69
MSME021G1A	MSME 200 W Incremental encoder	69
MSME021G1C	MSME 200 W Incremental encoder	69
MSME021G1D	MSME 200 W Incremental encoder	69
MSME021G1D	MSME 200 W Incremental encoder	69
MSME021G1P	MSME 200 W Incremental encoder	69
MSME021G1Q	MSME 200 W Incremental encoder	69
MSME021G1Q MSME021G1R	MSME 200 W Incremental encoder	69
MSME021G1S	MSME 200 W Incremental encoder	69
MSME021G15 MSME021G1T	MSME 200 W Incremental encoder	69
MSME021G1U	MSME 200 W Incremental encoder	69
MSME021G1V	MSME 200 W Incremental encoder	69
MSME021S1A	MSME 200 W Absolute encoder	69
MSME021S1B	MSME 200 W Absolute encoder	69
MSME021S1C	MSME 200 W Absolute encoder	69
MSME021S1D	MSME 200 W Absolute encoder	69
MSME021S1N	MSME 200 W Absolute encoder	69
MSME021S1P	MSME 200 W Absolute encoder	69
MSME021S1Q	MSME 200 W Absolute encoder	69
MSME021S1R	MSME 200 W Absolute encoder	69
MSME021S1S	MSME 200 W Absolute encoder	69
MSME021S1T	MSME 200 W Absolute encoder	69
MSME021S1U	MSME 200 W Absolute encoder	69
MSME021S1V	MSME 200 W Absolute encoder	69
MSME022G1A	MSME 200 W Incremental encoder	70
MSME022G1B	MSME 200 W Incremental encoder	70
MSME022G1C	MSME 200 W Incremental encoder	70
MSME022G1D	MSME 200 W Incremental encoder	70
MSME022G1N	MSME 200 W Incremental encoder	70
MSME022G1P	MSME 200 W Incremental encoder	70
MSME022G1Q	MSME 200 W Incremental encoder	70
MSME022G1R	MSME 200 W Incremental encoder	70
MSME022G1S	MSME 200 W Incremental encoder	70
MSME022G1T	MSME 200 W Incremental encoder	70
MSME022G1U	MSME 200 W Incremental encoder	70
MSME022G1V	MSME 200 W Incremental encoder	70
MSME022S1A	MSME 200 W Absolute encoder	70
MSME022S1B	MSME 200 W Absolute encoder	70
MSME022S1C	MSME 200 W Absolute encoder	70
MSME022S1D	MSME 200 W Absolute encoder	70
MSME022S1N	MSME 200 W Absolute encoder	70
MSME022S1P	MSME 200 W Absolute encoder	70
MSME022S1Q	MSME 200 W Absolute encoder	70
MSME022S1R	MSME 200 W Absolute encoder	70
MSME022S1S	MSME 200 W Absolute encoder	70
MSME022S1T	MSME 200 W Absolute encoder	70
MSME022S1U	MSME 200 W Absolute encoder	70
MSME022S1V	MSME 200 W Absolute encoder	70
MSME041G1A	MSME 400 W Incremental encoder	71
MSME041G1B	MSME 400 W Incremental encoder	71
MSME041G1C	MSME 400 W Incremental encoder	71
MSME041G1D	MSME 400 W Incremental encoder	71
MSME041G1N	MSME 400 W Incremental encoder	71
MSME041G1P	MSME 400 W Incremental encoder	71
MSME041G1Q	MSME 400 W Incremental encoder	71
MSME041G1R	MSME 400 W Incremental encoder	71
MSME041G1S	MSME 400 W Incremental encoder	71
MSME041G1T	MSME 400 W Incremental encoder	71
MSME041G1U	MSME 400 W Incremental encoder	71
MSME041G1V	MSME 400 W Incremental encoder	71
MSME041S1A	MSME 400 W Absolute encoder	71
MSME041S1B	MSME 400 W Absolute encoder	71
MSME041S1C	MSME 400 W Absolute encoder	71
MSME041S1D	MSME 400 W Absolute encoder	71
MSME041S1D	MSME 400 W Absolute encoder	71
MSME041S1N	MSME 400 W Absolute encoder	71
	MSME 400 W Absolute encoder	71

Index (Alphabetical Order)

MSME (Low iner		
Part No. MSME041S1R	Title MSME 400 W Absolute encoder	Page
MSME041S1S	MSME 400 W Absolute encoder	71
MSME041S1T	MSME 400 W Absolute encoder	71
MSME041S1U	MSME 400 W Absolute encoder	71
MSME041S1V	MSME 400 W Absolute encoder	71
MSME042G1A	MSME 400 W Incremental encoder	72
MSME042G1B	MSME 400 W Incremental encoder	72
MSME042G1C MSME042G1D	MSME 400 W Incremental encoder MSME 400 W Incremental encoder	72
MSME042G1D	MSME 400 W Incremental encoder	72 72
MSME042G1P	MSME 400 W Incremental encoder	72
MSME042G1Q	MSME 400 W Incremental encoder	72
MSME042G1R	MSME 400 W Incremental encoder	72
MSME042G1S	MSME 400 W Incremental encoder	72
MSME042G1T	MSME 400 W Incremental encoder	72
MSME042G1U	MSME 400 W Incremental encoder	72
MSME042G1V MSME042S1A	MSME 400 W Incremental encoder MSME 400 W Absolute encoder	72 72
MSME042S1B	MSME 400 W Absolute encoder	72
MSME042S1C	MSME 400 W Absolute encoder	72
MSME042S1D	MSME 400 W Absolute encoder	72
MSME042S1N	MSME 400 W Absolute encoder	72
MSME042S1P	MSME 400 W Absolute encoder	72
MSME042S1Q	MSME 400 W Absolute encoder	72
MSME042S1R	MSME 400 W Absolute encoder	72
MSME042S1S MSME042S1T	MSME 400 W Absolute encoder MSME 400 W Absolute encoder	72 72
MSME042S1U	MSME 400 W Absolute encoder	72
MSME042S1V	MSME 400 W Absolute encoder	72
MSME082G1A	MSME 750 W Incremental encoder	73
MSME082G1B	MSME 750 W Incremental encoder	73
MSME082G1C	MSME 750 W Incremental encoder	73
MSME082G1D	MSME 750 W Incremental encoder	73
MSME082G1N MSME082G1P	MSME 750 W Incremental encoder MSME 750 W Incremental encoder	73
MSME082G1Q	MSME 750 W Incremental encoder	73
MSME082G1R	MSME 750 W Incremental encoder	73
MSME082G1S	MSME 750 W Incremental encoder	73
MSME082G1T	MSME 750 W Incremental encoder	73
MSME082G1U	MSME 750 W Incremental encoder	73
MSME082G1V	MSME 750 W Incremental encoder	73
MSME082S1A MSME082S1B	MSME 750 W Absolute encoder MSME 750 W Absolute encoder	73
MSME082S1C	MSME 750 W Absolute encoder	73
MSME082S1D	MSME 750 W Absolute encoder	73
MSME082S1N	MSME 750 W Absolute encoder	73
MSME082S1P	MSME 750 W Absolute encoder	73
MSME082S1Q	MSME 750 W Absolute encoder	73
MSME082S1R	MSME 750 W Absolute encoder	73
MSME082S1S MSME082S1T	MSME 750 W Absolute encoder	73
MSME082S1U	MSME 750 W Absolute encoder MSME 750 W Absolute encoder	73
MSME082S1V	MSME 750 W Absolute encoder	73
MSME084G1C	MSME 750 W Incremental encoder	104
MSME084G1D	MSME 750 W Incremental encoder	104
MSME084G1G	MSME 750 W Incremental encoder	104
MSME084G1H	MSME 750 W Incremental encoder	104
MSME084GCC	MSME 750 W Incremental encoder	104
MSME084GCD MSME084GCG	MSME 750 W Incremental encoder MSME 750 W Incremental encoder	104
MSME084GCH	MSME 750 W Incremental encoder	104
MSME084S1C	MSME 750 W Absolute encoder	104
MSME084S1D	MSME 750 W Absolute encoder	104
MSME084S1G	MSME 750 W Absolute encoder	104
MSME084S1H	MSME 750 W Absolute encoder	104
MSME084SCC	MSME 750 W Absolute encoder	104
MSME084SCD	MSME 750 W Absolute encoder	104
MSME084SCG MSME084SCH	MSME 750 W Absolute encoder MSME 750 W Absolute encoder	104
MSME102G1C	MSME 1.0 kW Incremental encoder	74
MSME102G1D	MSME 1.0 kW Incremental encoder	74
MSME102G1G	MSME 1.0 kW Incremental encoder	74

MSME (Low iner		D
Part No. MSME102G1H	Title MSME 1.0 kW Incremental encoder	Page 74
MSME102GTTT	MSME 1.0 kW Incremental encoder	74
MSME102GCCM	MSME 1.0 kW Incremental encoder	158
MSME102GCD	MSME 1.0 kW Incremental encoder	74
MSME102GCDM	MSME 1.0 kW Incremental encoder	158
MSME102GCG	MSME 1.0 kW Incremental encoder	74
MSME102GCGM	MSME 1.0 kW Incremental encoder	158
MSME102GCH	MSME 1.0 kW Incremental encoder	74
MSME102GCHM	MSME 1.0 kW Incremental encoder MSME 1.0 kW Absolute encoder	158
MSME102S1C MSME102S1D	MSME 1.0 kW Absolute encoder MSME 1.0 kW Absolute encoder	74
MSME102S1G	MSME 1.0 kW Absolute encoder	74
MSME102S1H	MSME 1.0 kW Absolute encoder	74
MSME102SCC	MSME 1.0 kW Absolute encoder	74
MSME102SCCM	MSME 1.0 kW Absolute encoder	158
MSME102SCD	MSME 1.0 kW Absolute encoder	74
MSME102SCDM	MSME 1.0 kW Absolute encoder	158
MSME102SCG	MSME 1.0 kW Absolute encoder	74
MSME102SCGM	MSME 1.0 kW Absolute encoder	158
MSME102SCH	MSME 1.0 kW Absolute encoder	74
MSME102SCHM	MSME 1.0 kW Absolute encoder	158
MSME104G1C	MSME 1.0 kW Incremental encoder	105
MSME104G1D MSME104G1G	MSME 1.0 kW Incremental encoder MSME 1.0 kW Incremental encoder	105
MSME104G1H	MSME 1.0 kW Incremental encoder	105
MSME104GCC	MSME 1.0 kW Incremental encoder	105
MSME104GCD	MSME 1.0 kW Incremental encoder	105
MSME104GCG	MSME 1.0 kW Incremental encoder	105
MSME104GCH	MSME 1.0 kW Incremental encoder	105
MSME104S1C	MSME 1.0 kW Absolute encoder	105
MSME104S1D	MSME 1.0 kW Absolute encoder	105
MSME104S1G	MSME 1.0 kW Absolute encoder	105
MSME104S1H	MSME 1.0 kW Absolute encoder	105
MSME104SCC	MSME 1.0 kW Absolute encoder	105
MSME104SCD	MSME 1.0 kW Absolute encoder	105
MSME104SCG MSME104SCH	MSME 1.0 kW Absolute encoder MSME 1.0 kW Absolute encoder	105
MSME152G1C	MSME 1.5 kW Incremental encoder	105 75
MSME152G1D	MSME 1.5 kW Incremental encoder	75
MSME152G1G	MSME 1.5 kW Incremental encoder	75
MSME152G1H	MSME 1.5 kW Incremental encoder	75
MSME152GCC	MSME 1.5 kW Incremental encoder	75
MSME152GCCM	MSME 1.5 kW Incremental encoder	159
MSME152GCD	MSME 1.5 kW Incremental encoder	75
MSME152GCDM	MSME 1.5 kW Incremental encoder	159
MSME152GCG	MSME 1.5 kW Incremental encoder	75
MSME152GCGM	MSME 1.5 kW Incremental encoder	159
MSME152GCH	MSME 1.5 kW Incremental encoder	75
MSME152GCHM	MSME 1.5 kW Incremental encoder	159
MSME152S1C MSME152S1D	MSME 1.5 kW Absolute encoder MSME 1.5 kW Absolute encoder	75 75
MSME152S1G	MSME 1.5 kW Absolute encoder	75
MSME152S1H	MSME 1.5 kW Absolute encoder	75
MSME152SCC	MSME 1.5 kW Absolute encoder	75
MSME152SCCM	MSME 1.5 kW Absolute encoder	159
MSME152SCD	MSME 1.5 kW Absolute encoder	75
MSME152SCDM	MSME 1.5 kW Absolute encoder	159
MSME152SCG	MSME 1.5 kW Absolute encoder	75
MSME152SCGM	MSME 1.5 kW Absolute encoder	159
MSME152SCH	MSME 1.5 kW Absolute encoder	75
MSME152SCHM	MSME 1.5 kW Absolute encoder	159
MSME154G1C	MSME 1.5 kW Incremental encoder	106
MSME154G1D MSME154G1G	MSME 1.5 kW Incremental encoder MSME 1.5 kW Incremental encoder	106
MSME154G1G MSME154G1H	MSME 1.5 kW Incremental encoder MSME 1.5 kW Incremental encoder	106
MSME154GCC	MSME 1.5 kW Incremental encoder	106
MSME154GCD	MSME 1.5 kW Incremental encoder	106
MSME154GCG	MSME 1.5 kW Incremental encoder	106
MSME154GCH	MSME 1.5 kW Incremental encoder	106
MSME154S1C	MSME 1.5 kW Absolute encoder	106
MSME154S1D	MSME 1.5 kW Absolute encoder	106
	MSME 1.5 kW Absolute encoder	106

MSME154S1G MSME 1.5 kW Absolute encoder

MSME (Low iner Part No.	Title	Page
MSME154S1H	MSME 1.5 kW Absolute encoder	106
MSME154SCC	MSME 1.5 kW Absolute encoder	106
MSME154SCD	MSME 1.5 kW Absolute encoder	106
MSME154SCG	MSME 1.5 kW Absolute encoder	106
MSME154SCH	MSME 1.5 kW Absolute encoder	106
MSME202G1C	MSME 2.0 kW Incremental encoder	76
MSME202G1D	MSME 2.0 kW Incremental encoder	76
MSME202G1G	MSME 2.0 kW Incremental encoder	76
MSME202G1H	MSME 2.0 kW Incremental encoder	76
MSME202GTTT	MSME 2.0 kW Incremental encoder	76
MSME202GCCM	MSME 2.0 kW Incremental encoder	160
	MSME 2.0 kW Incremental encoder	
MSME202GCD		76
MSME202GCDM	MSME 2.0 kW Incremental encoder	160
MSME202GCG	MSME 2.0 kW Incremental encoder	76
MSME202GCGM	MSME 2.0 kW Incremental encoder	160
MSME202GCH	MSME 2.0 kW Incremental encoder	76
MSME202GCHM	MSME 2.0 kW Incremental encoder	160
MSME202S1C	MSME 2.0 kW Absolute encoder	76
MSME202S1D	MSME 2.0 kW Absolute encoder	76
MSME202S1G	MSME 2.0 kW Absolute encoder	76
MSME202S1H	MSME 2.0 kW Absolute encoder	76
MSME202SCC	MSME 2.0 kW Absolute encoder	76
MSME202SCCM	MSME 2.0 kW Absolute encoder	160
MSME202SCD	MSME 2.0 kW Absolute encoder	76
MSME202SCDM	MSME 2.0 kW Absolute encoder	160
MSME202SCG	MSME 2.0 kW Absolute encoder	76
MSME202SCGM	MSME 2.0 kW Absolute encoder	160
MSME202SCH	MSME 2.0 kW Absolute encoder	76
MSME202SCHM	MSME 2.0 kW Absolute encoder	160
MSME204G1C	MSME 2.0 kW Incremental encoder	107
MSME204G1D	MSME 2.0 kW Incremental encoder	107
MSME204G1G	MSME 2.0 kW Incremental encoder	107
MSME204G1H	MSME 2.0 kW Incremental encoder	107
MSME204GCC	MSME 2.0 kW Incremental encoder	107
MSME204GCD	MSME 2.0 kW Incremental encoder	107
MSME204GCD	MSME 2.0 kW Incremental encoder	
		107
MSME204GCH	MSME 2.0 kW Incremental encoder	107
MSME204S1C	MSME 2.0 kW Absolute encoder	107
MSME204S1D	MSME 2.0 kW Absolute encoder	107
MSME204S1G	MSME 2.0 kW Absolute encoder	107
MSME204S1H	MSME 2.0 kW Absolute encoder	107
MSME204SCC	MSME 2.0 kW Absolute encoder	107
MSME204SCD	MSME 2.0 kW Absolute encoder	107
MSME204SCG	MSME 2.0 kW Absolute encoder	107
MSME204SCH	MSME 2.0 kW Absolute encoder	107
MSME302G1C	MSME 3.0 kW Incremental encoder	77
MSME302G1D	MSME 3.0 kW Incremental encoder	77
MSME302G1G	MSME 3.0 kW Incremental encoder	77
MSME302G1H	MSME 3.0 kW Incremental encoder	77
MSME302GCC	MSME 3.0 kW Incremental encoder	77
MSME302GCCM	MSME 3.0 kW Incremental encoder	161
MSME302GCD	MSME 3.0 kW Incremental encoder	77
MSME302GCDM	MSME 3.0 kW Incremental encoder	161
MSME302GCG	MSME 3.0 kW Incremental encoder	77
MSME302GCGM	MSME 3.0 kW Incremental encoder	161
MSME302GCH	MSME 3.0 kW Incremental encoder	77
MSME302GCHM	MSME 3.0 kW Incremental encoder	161
MSME302S1C	MSME 3.0 kW Absolute encoder	77
MSME302S1D	MSME 3.0 kW Absolute encoder	77
MSME302S1G	MSME 3.0 kW Absolute encoder	77
	MSME 3.0 kW Absolute encoder	
MSME302S1H	MSME 3.0 kW Absolute encoder MSME 3.0 kW Absolute encoder	77
MSME302SCC		161
MSME302SCCM	MSME 3.0 kW Absolute encoder	161
MSME302SCD	MSME 3.0 kW Absolute encoder	77
MSME302SCDM	MSME 3.0 kW Absolute encoder	161
MSME302SCG	MSME 3.0 kW Absolute encoder	77
MSME302SCGM	MSME 3.0 kW Absolute encoder	161
MSME302SCH	MSME 3.0 kW Absolute encoder	77
MSME302SCHM	MSME 3.0 kW Absolute encoder	161
MSME304G1C	MSME 3.0 kW Incremental encoder	108
MSME304G1D	MSME 3.0 kW Incremental encoder	108
MSME304G1G		

MSME (Low inertine Part No. MSME304G1H MSME304GCC MSME304GCD MSME304GCD MSME304GCG	Title MSME 3.0 kW Incremental encoder MSME 3.0 kW Incremental encoder	Page 108
MSME304GCC MSME304GCD MSME304GCG		
MSME304GCD MSME304GCG	MSME 3.0 kW Incremental ancodor	1
MSME304GCG		108
	MSME 3.0 kW Incremental encoder	108
	MSME 3.0 kW Incremental encoder	108
MSME304GCH	MSME 3.0 kW Incremental encoder MSME 3.0 kW Absolute encoder	108
MSME304S1C MSME304S1D	MSME 3.0 kW Absolute encoder	108
MSME304S1G	MSME 3.0 kW Absolute encoder	108
MSME304S1H	MSME 3.0 kW Absolute encoder	108
MSME304SCC	MSME 3.0 kW Absolute encoder	108
MSME304SCD	MSME 3.0 kW Absolute encoder	108
MSME304SCG	MSME 3.0 kW Absolute encoder	108
MSME304SCH	MSME 3.0 kW Absolute encoder	108
MSME402G1C MSME402G1D	MSME 4.0 kW Incremental encoder MSME 4.0 kW Incremental encoder	78 78
MSME402G1G	MSME 4.0 kW Incremental encoder	78
MSME402G1H	MSME 4.0 kW Incremental encoder	78
MSME402GCC	MSME 4.0 kW Incremental encoder	78
MSME402GCCM	MSME 4.0 kW Incremental encoder	162
MSME402GCD	MSME 4.0 kW Incremental encoder	78
MSME402GCDM	MSME 4.0 kW Incremental encoder	162
MSME402GCG	MSME 4.0 kW Incremental encoder	78
MSME402GCGM MSME402GCH	MSME 4.0 kW Incremental encoder MSME 4.0 kW Incremental encoder	162
MSME402GCHM	MSME 4.0 kW Incremental encoder	78 162
MSME402S1C	MSME 4.0 kW Absolute encoder	78
MSME402S1D	MSME 4.0 kW Absolute encoder	78
MSME402S1G	MSME 4.0 kW Absolute encoder	78
MSME402S1H	MSME 4.0 kW Absolute encoder	78
MSME402SCC	MSME 4.0 kW Absolute encoder	78
MSME402SCCM	MSME 4.0 kW Absolute encoder	162
MSME402SCD MSME402SCDM	MSME 4.0 kW Absolute encoder MSME 4.0 kW Absolute encoder	78 162
MSME402SCDM	MSME 4.0 kW Absolute encoder	78
MSME402SCGM	MSME 4.0 kW Absolute encoder	162
MSME402SCH	MSME 4.0 kW Absolute encoder	78
MSME402SCHM	MSME 4.0 kW Absolute encoder	162
MSME404G1C	MSME 4.0 kW Incremental encoder	109
MSME404G1D	MSME 4.0 kW Incremental encoder	109
MSME404G1G MSME404G1H	MSME 4.0 kW Incremental encoder MSME 4.0 kW Incremental encoder	109
MSME404GTH	MSME 4.0 kW Incremental encoder	109
MSME404GCD	MSME 4.0 kW Incremental encoder	109
MSME404GCG	MSME 4.0 kW Incremental encoder	109
MSME404GCH	MSME 4.0 kW Incremental encoder	109
MSME404S1C	MSME 4.0 kW Absolute encoder	109
MSME404S1D	MSME 4.0 kW Absolute encoder	109
MSME404S1G	MSME 4.0 kW Absolute encoder	109
MSME404S1H MSME404SCC	MSME 4.0 kW Absolute encoder MSME 4.0 kW Absolute encoder	109
MSME404SCD	MSME 4.0 kW Absolute encoder	109
MSME404SCG	MSME 4.0 kW Absolute encoder	109
MSME404SCH	MSME 4.0 kW Absolute encoder	109
MSME502G1C	MSME 5.0 kW Incremental encoder	79
MSME502G1D	MSME 5.0 kW Incremental encoder	79
MSME502G1G	MSME 5.0 kW Incremental encoder	79
MSME502G1H	MSME 5.0 kW Incremental encoder	79
MSME502GCC MSME502GCCM	MSME 5.0 kW Incremental encoder MSME 5.0 kW Incremental encoder	79 163
MSME502GCD	MSME 5.0 kW Incremental encoder	79
MSME502GCDM	MSME 5.0 kW Incremental encoder	163
MSME502GCG	MSME 5.0 kW Incremental encoder	79
MSME502GCGM	MSME 5.0 kW Incremental encoder	163
MSME502GCH	MSME 5.0 kW Incremental encoder	79
MSME502GCHM	MSME 5.0 kW Incremental encoder	163
MSME502S1C	MSME 5.0 kW Absolute encoder	79
MSME502S1D MSME502S1G	MSME 5.0 kW Absolute encoder MSME 5.0 kW Absolute encoder	79 79
MSME502S1H	MSME 5.0 kW Absolute encoder	79
MSME502SCC	MSME 5.0 kW Absolute encoder	79
MSME502SCCM	MSME 5.0 kW Absolute encoder	163
MSME502SCD	MSME 5.0 kW Absolute encoder	79

301

mac	_
(Alphabetical	Order)

MSME (Low inertia)					
Part No.	Title	Page			
MSME502SCDM	MSME 5.0 kW Absolute encoder	163			
MSME502SCG	MSME 5.0 kW Absolute encoder	79			
MSME502SCGM	MSME 5.0 kW Absolute encoder	163			
MSME502SCH	MSME 5.0 kW Absolute encoder	79			
MSME502SCHM	MSME 5.0 kW Absolute encoder	163			
MSME504G1C	MSME 5.0 kW Incremental encoder	110			
MSME504G1D	MSME 5.0 kW Incremental encoder	110			
MSME504G1G	MSME 5.0 kW Incremental encoder	110			
MSME504G1H	MSME 5.0 kW Incremental encoder	110			
MSME504GCC	MSME 5.0 kW Incremental encoder	110			
MSME504GCD	MSME 5.0 kW Incremental encoder	110			
MSME504GCG	MSME 5.0 kW Incremental encoder	110			
MSME504GCH	MSME 5.0 kW Incremental encoder	110			
MSME504S1C	MSME 5.0 kW Absolute encoder	110			
MSME504S1D	MSME 5.0 kW Absolute encoder	110			
MSME504S1G	MSME 5.0 kW Absolute encoder	110			
MSME504S1H	MSME 5.0 kW Absolute encoder	110			
MSME504SCC	MSME 5.0 kW Absolute encoder	110			
MSME504SCD	MSME 5.0 kW Absolute encoder	110			
MSME504SCG	MSME 5.0 kW Absolute encoder	110			
MSME504SCH	MSME 5.0 kW Absolute encoder	110			
MSME5AZG1A	MSME 50 W Incremental encoder	65,66			
MSME5AZG1B	MSME 50 W Incremental encoder	65,66			
MSME5AZG1C	MSME 50 W Incremental encoder	65,66			
MSME5AZG1D	MSME 50 W Incremental encoder	65,66			
MSME5AZG1N	MSME 50 W Incremental encoder	65,66			
MSME5AZG1P	MSME 50 W Incremental encoder	65,66			
MSME5AZG1Q	MSME 50 W Incremental encoder	65,66			
MSME5AZG1R	MSME 50 W Incremental encoder	65,66			
MSME5AZG1S	MSME 50 W Incremental encoder	65,66			
MSME5AZG1T	MSME 50 W Incremental encoder	65,66			
MSME5AZG1U	MSME 50 W Incremental encoder	65,66			
MSME5AZG1V	MSME 50 W Incremental encoder	65,66			
MSME5AZS1A	MSME 50 W Absolute encoder	65,66			
MSME5AZS1B	MSME 50 W Absolute encoder	65,66			
MSME5AZS1C	MSME 50 W Absolute encoder	65,66			
MSME5AZS1D	MSME 50 W Absolute encoder	65,66			
MSME5AZS1N	MSME 50 W Absolute encoder	65,66			
MSME5AZS1P	MSME 50 W Absolute encoder	65,66			
MSME5AZS1Q	MSME 50 W Absolute encoder	65,66			
MSME5AZS1R	MSME 50 W Absolute encoder	65,66			
MSME5AZS1S	MSME 50 W Absolute encoder	65,66			
MSME5AZS1T	MSME 50 W Absolute encoder	65,66			
MSME5AZS1U	MSME 50 W Absolute encoder	65,66			
MSME5AZS1V	MSME 50 W Absolute encoder	65,66			

MSME with Gear	Reducer (Low inertia)	
Part No.	Title	Page
MSME011G31N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G32N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G33N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G34N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G41N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G42N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G43N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011G44N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME011S31N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S32N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S33N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S34N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S41N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S42N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S43N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME011S44N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME012G31N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G32N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G33N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G34N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G41N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G42N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G43N	MSME with reduction gear 100 W Incremental encoder	141,147
MSME012G44N	MSME with reduction gear 100 W Incremental encoder	141,147

	Reducer (Low inertia)	D-
Part No.	Title	Page
MSME012S31N	MSME with reduction gear 100 W Absolute encoder	141,14
MSME012S32N	MSME with reduction gear 100 W Absolute encoder	141,14
MSME012S33N	MSME with reduction gear 100 W Absolute encoder	141,14
MSME012S34N	MSME with reduction gear 100 W Absolute encoder	141,14
MSME012S41N	MSME with reduction gear 100 W Absolute encoder	141,14
MSME012S42N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME012S43N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME012S44N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME021G31N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G32N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G33N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G34N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G41N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G42N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G43N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021G44N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME021S31N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME021S32N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME021S33N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME021S34N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME021S41N	MSME with reduction gear 200 W Absolute encoder	141,14
MSME021S41N	MSME with reduction gear 200 W Absolute encoder	141,14
MSME021S43N	MSME with reduction gear 200 W Absolute encoder	141,14
MSME021S44N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022G31N	MSME with reduction gear 200 W Incremental encoder	141,14
	, and the second	
MSME022G32N	MSME with reduction gear 200 W Incremental encoder	141,14
MSME022G33N	MSME with reduction gear 200 W Incremental encoder	141,14
MSME022G34N	MSME with reduction gear 200 W Incremental encoder	141,14
MSME022G41N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME022G42N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME022G43N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME022G44N	MSME with reduction gear 200 W Incremental encoder	141,147
MSME022S31N	MSME with reduction gear 200 W Absolute encoder	141,14
MSME022S32N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022S33N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022S34N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022S41N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022S42N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022S43N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME022S44N	MSME with reduction gear 200 W Absolute encoder	141,147
MSME041G31N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME041G32N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME041G33N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME041G34N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME041G41N	MSME with reduction gear 400 W Incremental encoder	141,14
	ŭ .	
MSME041G42N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME041G43N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME041G44N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME041S31N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S32N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S33N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S34N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S41N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S42N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S43N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME041S44N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME042G31N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME042G32N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME042G33N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME042G34N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G41N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G42N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G43N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G44N	MSME with reduction gear 400 W Incremental encoder	141,14
MSME042S31N	MSME with reduction gear 400 W Absolute encoder	141,147
MSME042S32N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME042S33N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME042S34N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME042S41N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME042S42N	MSME with reduction gear 400 W Absolute encoder	141,14
MSME042S43N	MSME with reduction gear 400 W Absolute encoder	141,147

Part No.	Title	Page
MSME082G31N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G32N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G33N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G34N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G41N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G42N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G43N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082G44N	MSME with reduction gear 750 W Incremental encoder	141,147
MSME082S31N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S32N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S33N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S34N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S41N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S42N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S43N	MSME with reduction gear 750 W Absolute encoder	141,147
MSME082S44N	MSME with reduction gear 750 W Absolute encoder	141,147

Part No.	Title	Page
MSMJ022G1A	MSMJ 200 W Incremental encoder	155
MSMJ022G1B	MSMJ 200 W Incremental encoder	155
MSMJ022G1C	MSMJ 200 W Incremental encoder	155
MSMJ022G1D	MSMJ 200 W Incremental encoder	155
MSMJ022G1S	MSMJ 200 W Incremental encoder	155
MSMJ022G1T	MSMJ 200 W Incremental encoder	155
MSMJ022G1U	MSMJ 200 W Incremental encoder	155
MSMJ022G1V	MSMJ 200 W Incremental encoder	155
MSMJ022S1A	MSMJ 200 W Absolute encoder	155
MSMJ022S1B	MSMJ 200 W Absolute encoder	155
MSMJ022S1C	MSMJ 200 W Absolute encoder	155
MSMJ022S1D	MSMJ 200 W Absolute encoder	155
MSMJ022S1S	MSMJ 200 W Absolute encoder	155
MSMJ022S1T	MSMJ 200 W Absolute encoder	155
MSMJ022S1U	MSMJ 200 W Absolute encoder	155
MSMJ022S1V	MSMJ 200 W Absolute encoder	155
MSMJ042G1A	MSMJ 400 W Incremental encoder	156
MSMJ042G1B	MSMJ 400 W Incremental encoder	156
		_
MSMJ042G1C	MSMJ 400 W Incremental encoder	156
MSMJ042G1D	MSMJ 400 W Incremental encoder	156
MSMJ042G1S	MSMJ 400 W Incremental encoder	156
MSMJ042G1T	MSMJ 400 W Incremental encoder	156
MSMJ042G1U	MSMJ 400 W Incremental encoder	156
MSMJ042G1V	MSMJ 400 W Incremental encoder	156
MSMJ042S1A	MSMJ 400 W Absolute encoder	156
MSMJ042S1B	MSMJ 400 W Absolute encoder	156
MSMJ042S1C	MSMJ 400 W Absolute encoder	156
MSMJ042S1D	MSMJ 400 W Absolute encoder	156
MSMJ042S1S	MSMJ 400 W Absolute encoder	156
MSMJ042S1T	MSMJ 400 W Absolute encoder	156
MSMJ042S1U	MSMJ 400 W Absolute encoder	156
MSMJ042S1V	MSMJ 400 W Absolute encoder	156
MSMJ082G1A	MSMJ 750 W Incremental encoder	157
MSMJ082G1B	MSMJ 750 W Incremental encoder	157
MSMJ082G1C	MSMJ 750 W Incremental encoder	157
MSMJ082G1D	MSMJ 750 W Incremental encoder	157
MSMJ082G1S	MSMJ 750 W Incremental encoder	157
MSMJ082G1T	MSMJ 750 W Incremental encoder	157
MSMJ082G1U	MSMJ 750 W Incremental encoder	157
MSMJ082G1V	MSMJ 750 W Incremental encoder	157
MSMJ082S1A	MSMJ 750 W Absolute encoder	157
MSMJ082S1B	MSMJ 750 W Absolute encoder	157
MSMJ082S1C	MSMJ 750 W Absolute encoder	157
MSMJ082S1D	MSMJ 750 W Absolute encoder	157
MSMJ082S1S	MSMJ 750 W Absolute encoder	157
MSMJ082S1T	MSMJ 750 W Absolute encoder	157
MSMJ082S1U	MSMJ 750 W Absolute encoder	157
MSMJ082S1V	MSMJ 750 W Absolute encoder	157

MUMA (Low inertia)				
Part No.	Title	Page		
MUMA011P1S	MUMA 100 W Incremental encoder	227,231		
MUMA011P1T	MUMA 100 W Incremental encoder	227,231		

MUMA (Low inertia)				
Part No.	Title	Page		
MUMA012P1S	MUMA 100 W Incremental encoder	229,231		
MUMA012P1T	MUMA 100 W Incremental encoder	229,231		
MUMA021P1S	MUMA 200 W Incremental encoder	227,231		
MUMA021P1T	MUMA 200 W Incremental encoder	227,231		
MUMA022P1S	MUMA 200 W Incremental encoder	229,231		
MUMA022P1T	MUMA 200 W Incremental encoder	229,231		
MUMA042P1S	MUMA 400 W Incremental encoder	229,231		
MUMA042P1T	MUMA 400 W Incremental encoder	229,231		
MUMA5AZP1S	MUMA 50 W Incremental encoder	227,229,231		
MUMA5AZP1T	MUMA 50 W Incremental encoder	227,229,231		

MUMA with Gear Part No.	Title	Page
MUMA011P31N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA011P32N	MUMA with reduction gear 100 W Incremental encoder	
MUMA011P34N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA011P41N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA011P42N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA011P44N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA012P31N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA012P32N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA012P34N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA012P41N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA012P42N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA012P44N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA021P31N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA021P32N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA021P34N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA021P41N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA021P42N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA021P44N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA022P31N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA022P32N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA022P34N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA022P41N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA022P42N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA022P44N	MUMA with reduction gear 200 W Incremental encoder	232,235
MUMA042P31N	MUMA with reduction gear 400 W Incremental encoder	232,235
MUMA042P32N	MUMA with reduction gear 400 W Incremental encoder	232,235
MUMA042P34N	MUMA with reduction gear 400 W Incremental encoder	232,235
MUMA042P41N	MUMA with reduction gear 400 W Incremental encoder	232,235
MUMA042P42N	MUMA with reduction gear 400 W Incremental encoder	232,235
MUMA042P44N	MUMA with reduction gear 400 W Incremental encoder	232,235

[Panasonic Sales Office of Motors]

(June.01.2013)

			TEL	
Country	Company Name	City	Address	FAX
	Panasonic Industrial Devices Sales	New Jersey	Three Panasonic Way, 7E-2 Secaucus, NJ 07094 U.S.A.	+1-201-348-5356
	Company of America (PIDSA)			+1-201-392-4315
North America	Panasonic Electric Works Corporation of America (PEWA)	New Jersey	629 Central Avenue New Providence, NJ 07974 U.S.A.	+1-908-464-3550 Technical Support: +1-877-624-7872
				+1-908-771-5655
Brazil	Panasonic Electric Works Corporation of America Brazil Rep.	On a Books	Rua Cubatao, 320-8 andar-Paraiso, CEP	+55-11-3889-4006
DIAZII	Office	Sao Paulo	04013-001 Sao Paulo-SP	+55-11-3889-4103
Spain	Panasonic Electric Works Espana	Madrid	Barajas Park, San Severo 20, 28042	+34-91-329-3875
Эраш	S.A.	Iviauriu	Madrid, Spain	+34-91-329-2976
Germany	Panasonic Industrial Devices Sales	Munich	Hans-Pinsel-Strasse 2 · D - 85540 Haar ·	+49-89-46-159-0
Germany	Europe GmbH	Widilicii	Germany	+49-89-46-159-212
Italy	Panasonic Electric Works Italia srl	Verona	Via del Commercio 3-5 (Z.I.Ferlina),	+39-045-6752711
- Italy	T dilaconio Licolio VVolko italia cii	Voiona	37012 Bussolengo (VR), Italy	+39-045-6700444
			Office 316, litera 43, Polustrovskiy	+ 7-812-703-09-81
Russia	Electroprivod Ltd. (*Distributors)	St.Petersburg	avenue, Saint-Petersburg, Russia.	+ 7-812-493-27-26
			Website: http://www.electroprivod.ru	
	Panasonic Shun Hing Industrial Devices Sales (Hong Kong) Co.,Ltd. (PSIDSHK)	Hong kong	Level 33, Office Tower, Langham Place, 8 Argyle Street, Mongkok, Kin.,Hong Kong	+852-2529-7322
		Hong kong		+852-2598-9743
China	Panasonic Industrial Devices Sales (China) Co.,Ltd. (PIDSCN)	Shanghai	Floor 7, China Insurance Building, 166 East Road LuJiaZui PuDong New District, Shanghai, China	+86-21-3855-2442
China				+86-21-3855-2375
	Panasonic SH Industrial Devices		8/F, Tower Three, Kerry Plaza, 1-1	+86-755-8255-8551
	Sales (Shenzhen) Co.,Ltd. (PSIDSSZN)	Shenzhen	Zhongxinsi Road, Futian District, Shenzhen, China	+86-755-8255-8668
	Panasonic Industrial Devices Sales		7th Floor, ABW Tower, IFFCO Chowk,	+91-124-4596600
	India (PIDSIN) (A division company of Panasonic India Pvt Ltd.)	Haryana	MG Road, Sector 25, Gurgaon-122 001, Haryana, India	+91-124-4596625
	Lubi Electronics (*Distributors)	Gandhinagar/ Ahmedabad	Sardar Patel Ring Road, Nr. Bright School, Nana Chiloda. Dist.: Gandhinagar - 382 325. Gujarat, India	+91-79-39845300
				+91-79-39845599
			http://www.lubielectronics.com	
India	Luna Bearings, Automation & Power Transmission (*Distributors)		59, Bibijan Street, 2nd Floor,	+91-22-40786110 +91-22-23455052
		Mumbai	Mumbai- 400 003, India	+91-22-23427773
			http://www.lunabearings.com	
		Mumbai	A/6, Plot No.74, Shree Ganesh Complex, Behind Gupta Compound, Dapode Road, Mankoli Naka, Tal: Bhiwandi- 421305, Mah - India	+91-2522-661600
	Vashi Electricals Pvt. Ltd. (*Distributors)			+91-2522-661620 +91-2522-661634 +91-2522-661669
			http://www.vashielectricals.com	
Korea	Panasonic Industrial Devices Sales	Seoul	14F, West-gate Bldg, 332 Migeun-dong, Seodaemun-gu, Seoul, 120-020, Korea	+82-2-795-9600
Korea	Korea Co., Ltd. (PIDSKR)			+82-2-795-1542

Country	Company Name	City	Address	
			Address	FAX
Toissen	Panasonic Industrial Devices Sales	Taipei	12F, No.9, SongGao Rd., Taipei 110,	+886-2-2757-1900
Taiwan	Taiwan Co.,Ltd.		Taiwan, R.O.C.	+886-2-2757-1977
	Panasonic Industrial Devices Sales	Singapore	300 Beach Road #16-01	+65-6390-3718
	Asia Pte. Ltd.		The Concourse Singapore 199555	+65-6390-3801
Singapore			2 Woodlands Sector 1 #03-25, Woodlands Spectrum 1 Singapore 738068	+65-6751-5088
	Intermech Machinery Pte Ltd. (*Distributors)	Singapore		+65-6759-2122
	(= 1.0.11.0.01.0.7)		Website: http://www.intermech.com.sg	
	Panasonic Industrial Devices Sales	0:	300 Beach Road #16-01 The Concourse	+65-6390-3718
	Asia Pte. Ltd.	Singapore	Singapore 199555	+65-6390-3801
			No.14, Lorong Sanggul 1C, Bandar	+60-3-5161-7876
	Panamech Machinery Sdn Bhd (*Distributors)	Kuala Lumpur	Puteri, 41200 Klang, Selangor Darul Ehsan	+60-3-5161-7136
Malaysia	(Distributors)	Lumpui	Website: http://www.panamech.com.my	
			Sri Relau Komplex, Unit 1-3-11, Persiaran	+60-4-643-8266
	Panamech (PG) Sdn Bhd (*Distributors)	Penang	Bukit Jambul 1, 11900 Penang	+60-4-645-1639
	(Distributors)		Website: http://www.panamech.com.my	
	Panasonic Industrial Devices Sales		300 Beach Road #16-01 The Concourse Singapore 199555	+65-6390-3718
	Asia Pte. Ltd.	Singapore		+65-6390-3801
	Premier Automation Center Co.,Ltd. (*Distributors)	Bangkok	73 Soi Ladkrabang 30 Ladkrabang Ladkrabang Bangkok 10520	+66-2181-2299
I				+66-2181-2288
			Website: http://www.premier-ac.co.th	
Thailand			3 Soi Charoenrat 10, Charoenrat Road., Bangkhlo, Bangkhorlaem, Bangkok 10120	+66-2291-9933
	Plenty Island (Thai) Co.,Ltd. (*Distributors)	Bangkok		+66-2291-2065
	(Distributors)		Website: http://www.plenty.co.th	
			12/349 Moo 15, Bangkaew, Bangplee,	+66-2397-9577
	Seng Charoen Muang Co.,Ltd. (*Distributors)	Bangkok	Samutprakam 10540	+66-2361-8207
	(Distributors)		Website: http://www.sengscm.com	
	Panasonic Industrial Devices Sales	Oin no	300 Beach Road #16-01 The Concourse	+65-6390-3718
	Asia Pte. Ltd.	Singapore	Singapore 199555	+65-6390-3801
			II Book Katharitat a	+62-31-843-8844
	PT. Handal Yesindo Sejahtera (*Distributors)	Surabaya	Jl. Raya Kutisari 8A, Surabaya, Indonesia	+62-31-841-4333
Indonesia	(=:0:::::::::::::::::::::::::::::::::::		Website: http://www.handalyesindo.com	
		Jakarta	Jl. Prof. Dr. Latumenten Grogol Permai	+62-21-564-9178
	PT.Riasarana Electrindo		blok D No. 8-15 Jakarta 11460, Indonesia	+62-21-566-7405
	(*Distributors)	Jakaila		