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

Repair

Consult to the dealer from whom you have purchased this product for details of repair work.

When the product is incorporated to the machine you have purchased, consult to the machine manufacturer or its dealer.

URL

Technical information of this product (Operating Instructions, CAD data, Inquiries) can be downloaded from the following web site. http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

Contact to



ISO9001 Certificate division

Panasonic Corporation, Automotive & Industrial Systems Company, Electromechanical Control Business Division, **Motor Business Unit**

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

14001

ISO14001

Certificate

division

The contents of this catalog apply to the products as of October 2017.

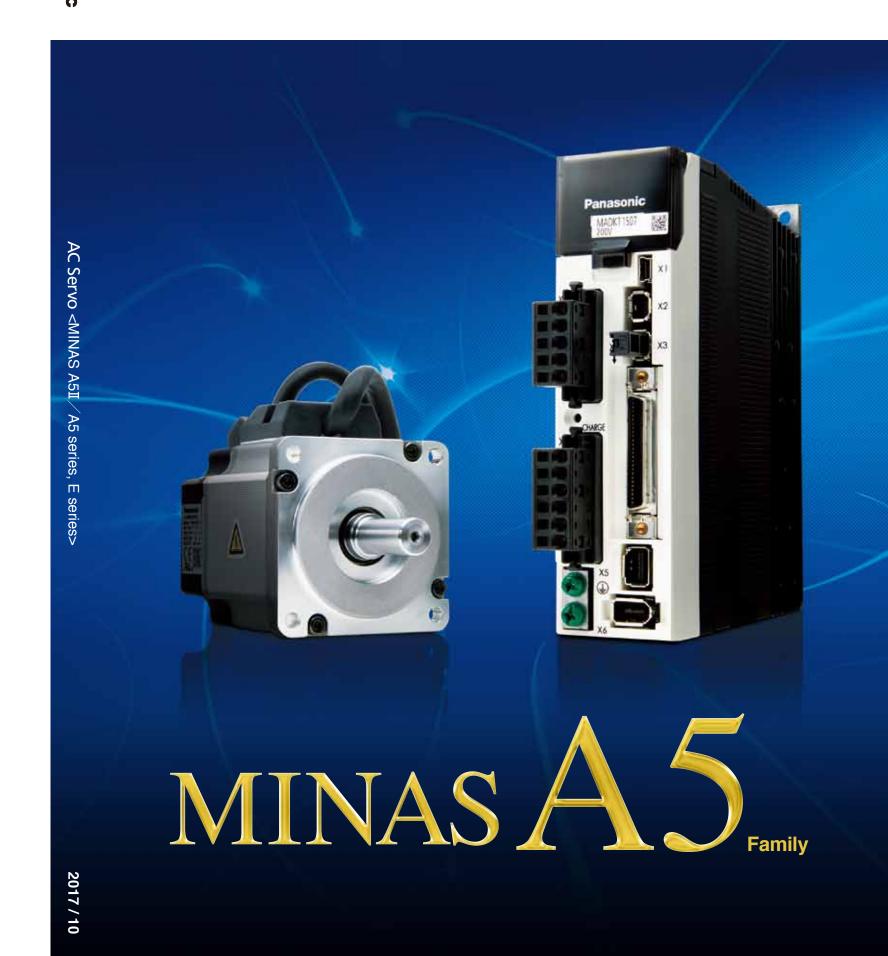
This product is for industrial equipment. Don't use this product at general household.

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

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

Panasonic

AC Servo
MINAS A5 I / A5 series



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





Two-degree-of-freedom control system

All-in-one type

Rated output: 50 W to 15.0 kW

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

Full-closed*1 control type

All-in-one type

Rated output: 50 W to 15.0 kW

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

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

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

Position control type

Rated output: 50 W to 5.0 kW

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

Slim design and position control type





Rated output: 50 W to 400 W

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

High-speed communication "Realtime Express" support model

Ultra high-speed Network type



Rated output:

50 W to 15.0 kW

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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

DC 24 V type



Rated output:

10 W. 20 W. 30 W

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

Linear motor control, DC 24 V type



Capacity of applying Linear motor:

Compatible with 30 W rotary AC servo motor

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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

EtherCAT communication driver type

D series Ether CAT.

Rated output:

50 W to 15.0 kW

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

Overall Wiring ·· **Driver and List of** Applicable Peripheral Equipments 19 Table of Part Numbers and Options 21

Contents

A5II. A5IIE. A5. A5E series

A5II Series Features -

A5 Family Features Motor Line-up · Model Designation-

> **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 Control Circuit Diagram

Wiring to the Connector X4 Wiring to the Connector X5 Wiring to the Connector X6

Dimensions of Driver Motor Specifications -Dimensions (IP67 motor)

Motors with Gear Reducer Special Order Product ·

Model Designation

Table of Part Numbers and Options 153 Motor Specifications -

Motor Specifications, Description Cable part No. Designation

Specifications of Motor connector -Encoder Cable 188

Motor Cable 191 Brake Cable-196 197

Interface Cable Connector Kit-198 Battery for Absolute Encoder -207 Mounting Bracket 208

-209

212

-213

Reactor External Regenerative Resister-Surge Absorber for Motor Brake List of Peripheral Equipments

-246

-288 Sales Office

General-purpose RS485 communication AE-LINK support type

series



Rated output:

50 W to 5.0 kW

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

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

Quicker, Wiser and Friendlier $\,A5I$ series

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

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







 The above is a measure based on our test environment





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

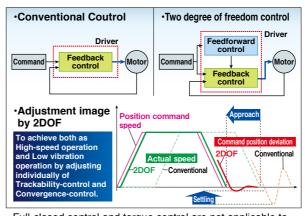


Realizes guick and accurate movement. Fast response & High-precision positioning

Adopted New Algorithm

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

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

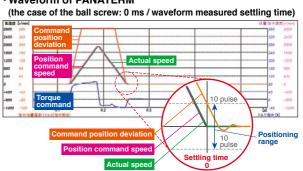


· Full-closed control and torque control are not applicable to 2DOF control system.

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

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

Waveform of PANATERM



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

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

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

· Adjustment is completed in only 3 processes

condition setting Load Stiffness Command response

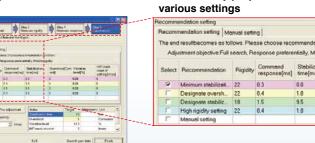
· Fit gain adjustment window



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

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

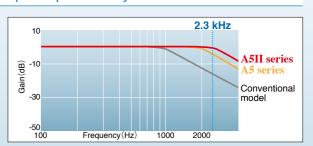
· Automatically proposes



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

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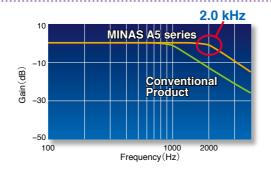


2.0 kHz Frequency Response

Example application Semiconductor production equipment, packaging, etc

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

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





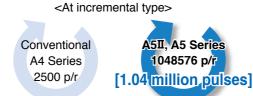
20 bits/revolution, 1.04 million pulses (At incremental ty

Example application Machine tools, textile machinery, etc.

Ensures smoother operation and reduced vibration at stopping.

Ensures accurate positioning in a short time.

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



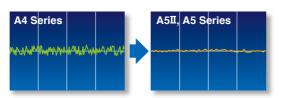


Low Cogging Torque (Excluding MSMD, MHMD, MDME 11.0 kW. 15.0 kW) A5II A5 A5IIE

Example application Semiconductor production equipment, textile machinery, etc.

For the industry's most stable speed and lowest cogging

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



Vibration reduced to only 1/8



The Input/Output Pulse 4 Mpps

Example application Semiconductor production equipment, machine tools, etc.

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

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





Smart

Auto tuning

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

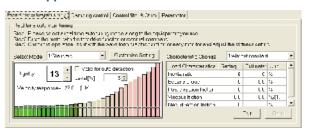
Example application Semiconductor production equipment, food processing machinery, etc.

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

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

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

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





Manual/Auto Notch Filters

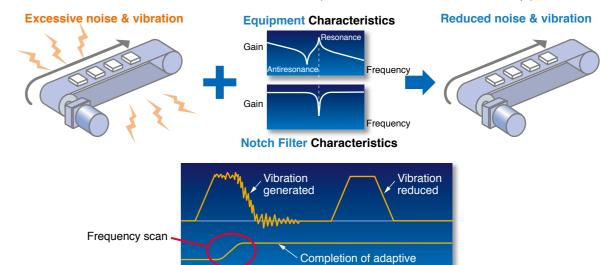
A5II

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

Equipped with auto-setting notch filters for greater convenience.

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

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



MINAS A 5 Family

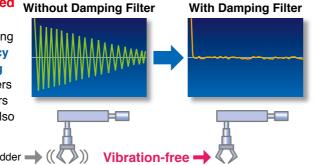
Damping filter

Manual/Auto Damping Filter

Chip mounters, food processing machinery, robots, **Example application** general production machinery, etc.

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

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



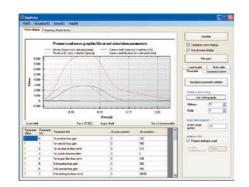
Simulation

Motion Simulation

Example application General production machinery, etc.

Equipped with a simplified machine simulation function.

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



Light



New Structure/ Innovative Core/ Innovative Encoder A5II A5

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



novative encode

Featuring significantly reduced weight and a more compact motor

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



[Examples for	or MSM	or MDN	M]
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



Complies with European Safety Standards.

Example application Semiconductor and LCD production equipment, etc.

Compliance with EU safety standards.

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

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



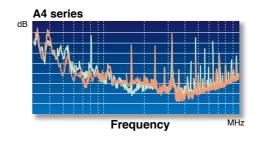
Low noise

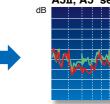
Example application

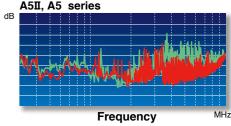
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

Complies with the European EMC Directive

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







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

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

IP67 enclosure rating for increased environmental resistance

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



IP67

- Protection against water Protection against

temporary immersion in water

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

MINAS A 5 Family









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.

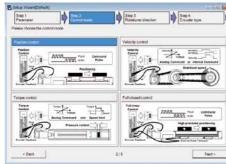
Localized in 4 languages

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

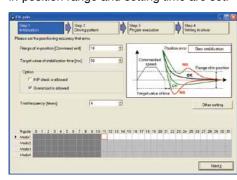
Setup Wizard

Fit gain

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.



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).

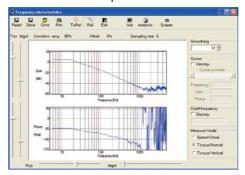
Other New Function

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.

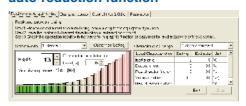
The process of the pr

Frequency characteristics measurement function

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

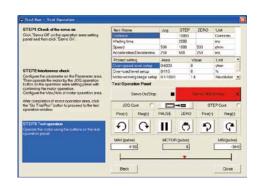


Added New screen for gain adjustment, equipped with stiffness oscillation auto-reduction function

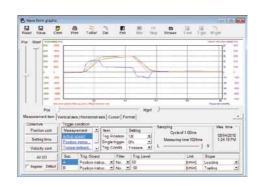


Trial run

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



Significant increase of measuring objects Multi-functional waveform graphic



<CAUTION>

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

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

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

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

Features



Command Control Mode A5II A5

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

Full-closed Control

A5II A5

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

SEMI F47



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

Inrush Current Preventive Function



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

Regenerative Energy Discharge



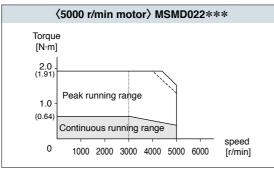
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not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

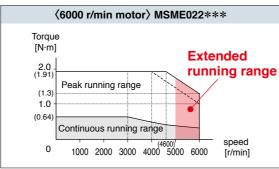
6000-rpm capability

A5II A5 A5IIE A5E

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

[Comparison of new and conventional 200 W]





Gear head

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

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

MSME → 6000 r/min

MSMD → 5000 r/min MHMD

Dynamic Braking A5II A5 A5IIE A5E

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

Parameter Initialization A5II A5 A5IIE



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

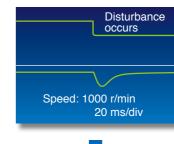
Disturbance Observer A5II A5 A5IIE A5E



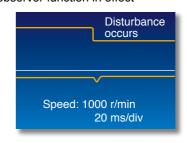


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect



Disturbance observer function in effect



Torque Feed Forward A5II A5 A5IIE

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

Friction Torque Compensation



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

3-Step Gain

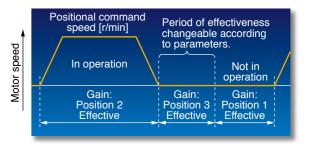


A 3-step gain switch is available in addition to the normal gain switch.

This chooses appropriate gain tunings at both stopping and running.

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

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





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

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

It ends up quicker response of your system.

Input/Output A5II A5 Signal Assignment

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

Torque Limiter Switching A5II A5 A5IIE A5E

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

Applicable international safety standards













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

IEC : International Electrotechnical Commission EN: Europaischen Normen

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

Panasonic Testing Centre

Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

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

A 급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A 급) 전자파적합기기로서 판매자

또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

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

Applicable External Scales

A5II A5

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

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

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

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

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

Motor Line-up

MINAS A 5 Family

Motor Line-up

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

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

Model Designation

* For combination of elements of model number, refer to Index. **Servo Motor** M S M E 5 A Z G 1 S ** Special specifications Symbol Type Motor specifications MSMD Low inertia (50 W to 750 W) MSME(50 W to 750 W [200 V]), MSMD, MHMD MSME Low inertia (50 W to 5.0 kW) Shaft Holding brake Oil seal MDME Middle inertia (400 W to 15.0 kW) Round D-cut Key-way, center tap without with without with Symbol 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) D • Motor rated output -Voltage specifications Symbol Rated output Symbol Rated output Q 5A 50 W 25 2.5 kW Symbol Specifications R 01 100 W 30 3.0 kW 100 V 02 200 W 40 4.0 kW 200 V 04 400 W 45 4.5 kW 4 400 V 100 V/200 V 06 600 W 50 5.0 kW Z common (50 W only) MSME(750 W [400 V], 1.0 kW to 15.0 kW), 08 750 W 60 6.0 kW 09 0.9 kW 75 7.5 kW MDME, MFME, MGME, MHME 10 1.0 kW C1 11.0 kW Holding brake Shaft Oil seal Symbol Round Key-way without with without with 15 1.5 kW C5 15.0 kW 20 2.0 kW Rotary encoder specifications Н Symbol Format Pulse counts Resolution Wires G Incremental 20-bit 1048576 **Design order** S Absolute 17-bit 131072 Symbol Specifications * S: can be used in incremental. C IP65 motor 1 IP67 motor (MSMD, MHMD: IP65)

Motor with reduction gear

A5I series

A5 series

A5**I**E series

A5E series

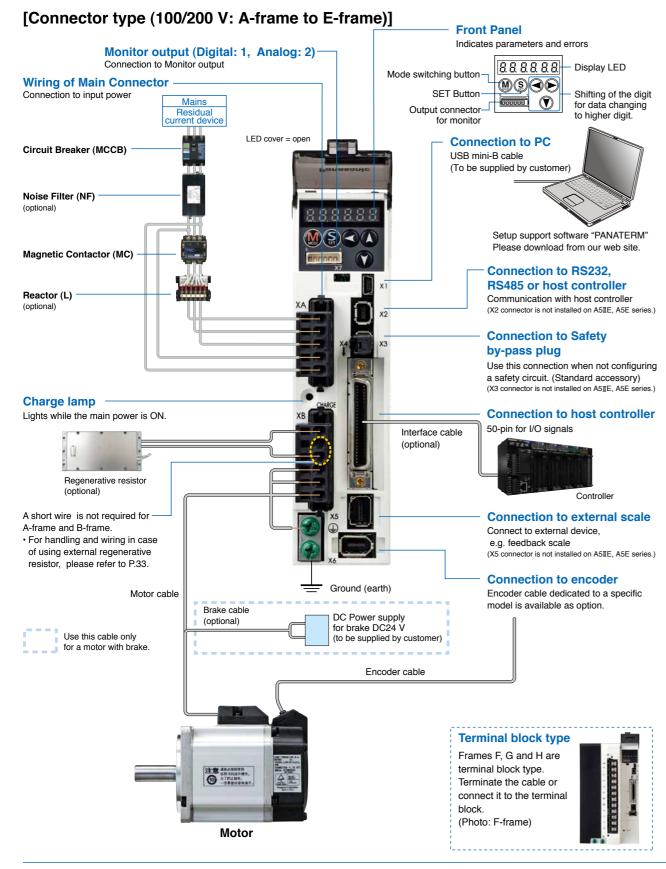
		M	S	M	Ε	0	1	1	1 (G	3	1	ı	N						
				Motor	rate	d out	put													
Symbol	Type			Symbo	Rate	d outpu	ıt							Gear ra	atio, gear type					
MSMD	Low inert (100 W to 75			01 02	_	00 W								Symbol	Gear	M	_	utput (Gear
MSME	Low inert	ia		04	40	00 W								Cyllibol	reduction ratio	100	200	400	750	type
IVIOIVIL	(100 W to 75	0 W)		08	75	0 W								1N	1/5	•	•	•	•	
MHMD	High inert		Ι,	V-4		- 161 -	_							2N	1/9	•	•	•	•	For high
1411 11412	(200 W to 75	0 W)		Voltag	e sp	ecitic	ation	15						3N	1/15	•	•	•	•	accuracy
				Symbo	Spe	cificat	ions							4N	1/25	•	•	•	•	
				1 2	_	100 V 200 V									D 100 W is not	prepa	red.			
Rotary en	coder specif	icati	ons											Motor	structure					
Symbol	Format P	ulse	count	ts Res	solutio	on	Wires	6						Symbol	Shaft Hold	ding br	ake			

Symbol	Format	: P	ulse	counts	Res	olutio	on	Wires	3				Sym	lode	Shait		ig brak			
G	Incremen	tal	20	-bit	104	1857	6	5					_		Key-way	withou	t with	l e		
S	Absolute	е	17	-bit	13	3107	2	7					3	_	•	•				
* S: car	n be used i	n incre	emer	ntal.									4	•	•		•			
Ser	vo Driv	er																		
	l, Position		ue,	М	Α	ח	Κ	Т	1	5	0	5	*	*	: * -		Sı	pecial spe	cification	nne
Full-cl	osed type	;		IVI	_		1	•	•	J	U	J	7	4	• •		٦	Jeciai spe	Cilicati	JIIS
Positio	on control	tvne		М	Α	D	Κ	Т	1	5	0	5	E	>	* * -		Sı	oecial spe	cification	ons
		7100			_			•			U	_	_							
Frame	symbol *-											1	∟ ر	Only	y positio	n cont	rol			
Symbol	Frame	Symbo	ol F	rame						Max							Curre	nt detecto	r currer	nt ra
MAD	Frame A	MED) Fr	ame E			cur	rent	rating	9							Symbo	Specifications	Symbol	Speci
MBD	Frame B	MFD) Fr	ame F			Symbol Current rating										05	5 A	40	4
MCD	Frame C	MGD) Fr	ame G	i		Т	1	1	0 A			y volta	_			07	7.5 A	64	6
		MHD	_		-		Т	2	1	5 A	S	pecif	ication	S			10	10 A	90	ç
	MDD Frame D MHD Frame H A5IE, A5E series is up to F-frame.						Т	3	3	0 A	9	Symbo	S	pec	ifications		12	12 A	A2	12
ADILE,	, ASE Serie	s is up	p to F	-ıramı	₽.		Т	4	3	5 A		1	Singl	e pl	nase, 100	V	20	20 A	B4	24
Series							Т	5	5	0 A	1 [3	3-pha	ase,	200 V		30	30 A		
	Velocity, Po	sition,	D-	-141			Т	7	7	5 A	1 [4	3-pha	ase,	400 V					
Symbol	Torque	э,	Pos	sition c type			Т	Ά	10	0 A	1	5	Singl	e/3-	phase, 2	V 00				
	Full-Closed	d type		type		4	Т	В		0 A	1									
V	ΛET co.	rioo		ETE OF	rioo	1	_				-									

TC 300 A

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

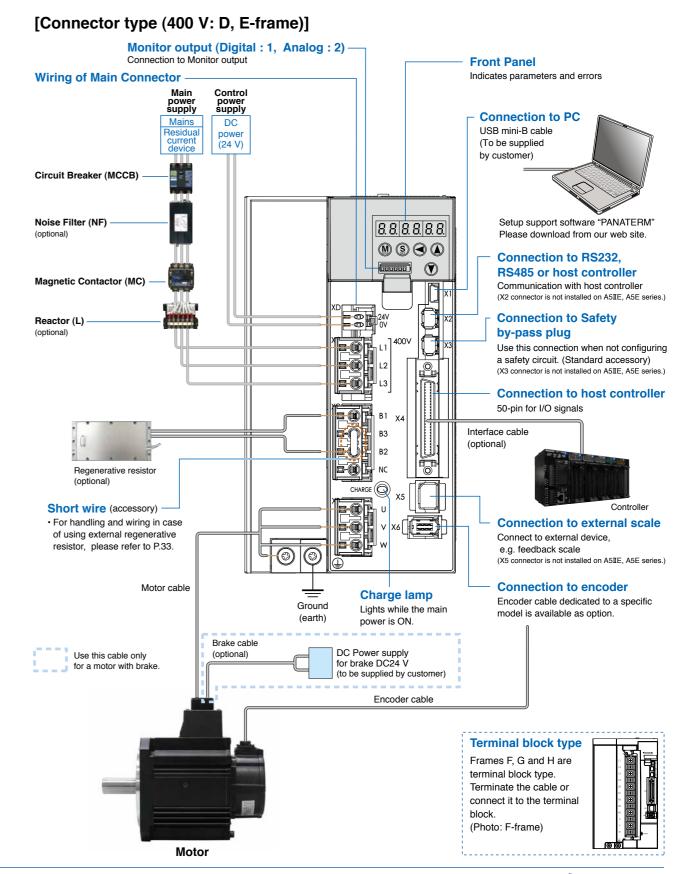
MINAS A 5 Family Overall Wiring



<Caution>

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

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



<Note:

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



Driver and List of Applicable Peripheral Equipments

MINAS A5 Family

Driver	Applicable motor	Voltage *1	Rated output	Required Power (at the (rated load)	Circuit breaker (rated (current)	Noise filter Single phase 3-phase	Surge absorber /Single phase 3-phase	Ferrite core	Rated operating current of magnetic contactor Contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *4	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *5	Diameter and withstand voltage of brake cable										
MADH	MSME	Single phase, 100 V	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190																		
MADK	MSMD MHMD	Single/ 3-phase, 200 V	50 W to 200 W	approx. 0.5 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450	-							0.28 mm² t										
MBDH	MSME	Single 100 V	200 W	approx. 0.5 kVA	10 A	DV0P4170	DV0P4190		20 A	0.75 mm²/ AWG18				0.75 mm²/ AWG18	0.75 mm ² / AWG22 to										
MBDK	MSMD MHMD	Single/ 3-phase, 200 V	400 W	approx. 0.9 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450		(3P+1a)	600 VAC or more				600 VAC or more	AWG18 100 VAC or more										
MCDH	MSME	Single 100 V	400 W	approx. 0.9 kVA			DV0P4190					0.75 mm²/ AWG18			01 111010										
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	a:	0.9 kW	approx. 1.8 kVA			DV0P4190	DV0P1460			S		δ												
	MSME	Single/ 3-phase,	1.0 kW	approx. 1.8 kVA		DV0P4220	DV0P1450	DV0P1460	30 A (3P+1a)		necti		necti												
	MHME MDME MFME	200 V	1.5 kW	approx. 2.3 kVA	20 A				(*7		Connection to exclusive connector		Connection to exclusive connector												
MDDH	MSME MDME		400 W	approx. 0.9 kVA				_		_	dusive		clusive												
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	2.0 mm²/											
	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		AWG14 600V VAC or more											
	MSME MDME MFME		1.5 kW	approx. 2.3 kVA																					
	MHME MDME MSME MHME	3-phase,	2.0 kW	approx. 3.3 kVA	30 A	DV0PM20043	DV0P1450	DV0P1460 RJ8035 (Recommended)	60 A	-		0.75 mm²/ AWG18													
MEDH	MFME	200 V	2.5 kW	approx. 3.8 kVA	0071	D VOI MEGOVO	5701 1400	component *6	(3P+1a)			600 VAC or more													
MEDK	MDME	3-phase,	2.0 kW	approx. 3.3 kVA	45.4	FN258L-16-07	DVODMOOOFO	DV0D4400	30 A			0.52 mm²/ AWG20													
	MHME	400 V	2.5 kW	approx.	15 A	(Recommended) component	DV0PM20050	DV0P1460	(3P+1a)			100 VAC or more													
	MGME		2.0 kW	3.8 kVA approx. 3.8 kVA																					
	MDME MHME MSME		3.0 kW	approx. 4.5 kVA					60 A (3P+1a)		11 mm or smaller		11 mm or smaller												
	MGME MDME MHME 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	(O) 		0.75 mm²/										
	MFME MGME		4.5 kW	approx. 6.8 kVA				*6	100 A (3P+1a)		block	or more	Terminal block M5		AWG18 100 VAC										
MEDH	MDME MHME MSME		5.0 kW	approx. 7.5 kVA						3.5 mm ² /				3.5 mm²/ AWG12	or more										
MFDK			2.0 kW	approx. 3.8 kVA						600 VAC				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, 400 V	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		(0)	0.75 mm ² / AWG18 100 VAC													
	MHME MFME		4.5 kW	approx. 6.8 kVA	-	\ component /			(01 114)		Terminal	or more	/ φ3.2 Terminal block												
	MGME MSME MDME		5.0 kW	approx. 7.5 kVA							M4		M3												
	MHME		7.5 kW	approx.								0.75 mm²/													
	MGME	3-phase, 200 V	6.0 kW	11 kVA approx. 9.0 kVA	60 A	FS5559-60-34 (Recommended)	DV0P1450		100 A (3P+1a)		11 mm or smaller	AWG18 600 VAC	10 mm or smaller												
MGDH	MHME	200 V	7.5 kW	approx. 11 kVA		\ component /			(SF+1a)	5.3 mm²/ AWG10		or more	(\circ)	13.3 mm ² /											
MGDK			7.5 kW	approx. 11 kVA		FN258-42-07		-		600 VAC	<u>φ5.3</u>	0.75 mm ² /	<u>φ5.3</u>	AWG6 600 VAC											
	MGME	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)	or more	Terminal block M5	AWG18 100 VAC or more	Terminal block M5	or more											
	MHME		7.5 kW 11 kW	11 kVA approx.	100 A	\ component /		(Recommended component			1410		1410	-											
		3-phase, 200 V		17 kVA approx.		FS5559-80-34 (Recommended)	DV0P1450	T400-61D (Recommended) component	150 A (3P+1a)		16 mm or smaller	0.75 mm ² / AWG18 600 VAC	10 mm or smaller	21.1 mm²/ AWG4											
MHDH	MDME		15 kW	22 kVA	125 A	\ component /		*6	(=/ . 14/	13.3 mm²/ AWG6		or more		600 VAC or more 13.3 mm²/											
MHDK	INIDIVIE	3-phase, 400 V	11 kW	approx. 17 kVA	50 A	FN258-42-07 or FN258-42-33	DV0PM20050		600 VAC or more 100 A *3	600 VAC or more 100 A *3	A 1a) 3.5 mm²/ AWG12 600 VAC or more A 1a) A 1block A 1a) A 1c) A	600 VAC or more *3	600 VAC or more *3	600 VAC or more *3	600 VAC or more Te	600 VAC or more	600 VAC or more 100 A *3	600 VAC or more	600 VAC / φ6.4 / σr more *3 block	00 VAC	VAC / \(\phi \) \(\phi \) (\phi \) (\	0.75 mm²/ AWG18 100 VAC	/ ф4.3 Terminal block M4	AWG6 600 VAC or more 21.1 mm ² /	
			15 kW	approx. 22 kVA	60 A	(Recommended component					IVIO	or more	IVI 4	AWG4 600 VAC or more											

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

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

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

About circuit breaker and magnetic contactor

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

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

<Remarks>

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

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

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

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

a second second contract contract				
	Gr	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				Driver		Power			Optional par	ts																				
	D	Outrut	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		capacity	Encode	er Cable	Motor (Cable	Brake Cable	External	Reactor	Noise Filter																
Motor series	Power supply	Output (W)	Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type Note) 2	Part No. (Position control) type Note) 3,4	Frame	rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase																
		50	MSMD5AZ□1 *	49	MAD \diamondsuit T1105	MAD \diamondsuit T1105E	Λ	Approx. 0.4						DV0P4280	DVADAAZ																	
	Single	100	MSMD011 □ 1 *	51	MAD \diamondsuit T1107	MAD ♦ T1107E	A-frame	Approx. 0.4						DV0F4280	DVUFZZI	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																
(Leadwire) type		50	MSMD5AZ□1 *	50	MAD ◇ T1505	MAD ◇ T1505E		Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFM 0 * * 0		MFMCB 0 * * 0GET	DV0P4281																		
3000 r/min	Single	100	MSMD012 ☐ 1 *	52	MAD \diamondsuit T1505	MAD ◇ T1505E	A-frame	Approx. 0.5		Note) 7				DV0F4261	DV0P227 DV0P220	DV0P4170																
	phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD ◇ T1507	MAD ◇ T1507E		Approx. 0.5							2 1 01 ==0	DV0PM2004																
	200 V	400	MSMD042 □ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9						DV0P4283	DV0P228																	
		750	MSMD082 □ 1 *	57	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx. 1.3							DV0P220	DV0PM2004																
ow input		50	MSME5AZ ☐ 1 *	65	MAD 🔷 T1105	MAD \diamondsuit T1105E	Λ.	Approx. 0.4	MFECA	MFECA	MFM		MFMCB	DV0D4000	DVODOOZ																	
	Single	100	MSME011 ☐ 1 *	67	MAD \diamondsuit T1107	MAD ◇ T1107E	A-frame	Approx. 0.4	0 * * 0MJD /For movable,\	0 * * 0MJE /For movable,\	0 * * 0 /For move direction	able, n of	0 * * 0PJT (For movable, direction of	DV0P4280	DVUPZZI	DV0P4170																
	phase 100 V	200	MSME021 □ 1 *	69	MBD ◇ T2110	MBD ◇ T2110E	B-frame	Approx. 0.5	direction of motor shaft /	direction of motor shaft /	\ motor s MFM 0 * * 0	CA	MFMCB	DV0P4283	DV0P228																	
MSME		400	MSME041 □ 1 *	71	MCD ♦ T3120	MCD <> T3120E	C-frame	Approx. 0.9	0 * * 0MKD / For movable, \	0 * * 0MKD 0 * * 0MKE For movable, \ / For movable, \	0 * * 0MKE / For movable, \	For mov opposite d	movable, ite direction otor shaft	0 * * 0PKT For movable, opposite direction of motor shaft	DV0P4282	D V 0 F 2 Z O	DV0PM2004															
(Connector) type		50	MSME5AZ ☐ 1 *	66	MAD \diamondsuit T1505	MAD ♦ T1505E		Approx. 0.5	opposite direction of motor shaft MFECA	opposite direction of motor shaft MFECA	MFM 0 * * 0	CA	MFMCB 0 * * 0SJT	DV0P4281																		
3000 r/min	Single	100	MSME012 □ 1 *	68	MAD ◇ T1505	MAD ◇ T1505E	A-frame	Approx. 0.5	0 * * 0TJD / For fixed, \	0 * * 0TJE / For fixed, \	For fix direction motors	ed, \ n of	For fixed, direction of motor shaft	DV0F 4201	DV0P227 DV0P220	DV0P4170																
	phase/ 3-phase	200	MSME022 □ 1 *	70	MAD ◇ T1507	MAD ◇ T1507E		Approx. 0.5	direction of motor shaft/	direction of motor shaft/	MFM 0 * * 0	CA	MFMCB 0 * * 0SKT			DV0PM2004																
	200 V	400	MSME042 □ 1 *	72	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9	0 * * 0TKD For fixed, opposite direction	0 * * 0TKE For fixed, opposite direction	For fix opposite do f motor	ed, irection	For fixed, opposite direction of motor shaft	DV0P4283	DV0P228																	
		750	MSME082 □ 1 *	73	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx. 1.3	of motor shaft	of motor shaft	Note		,		DV0P220	DV0PM2004																
	Single phase	200	MHMD021 □ 1 *	59	MBD ◇ T2110	MBD ♦ T2110E	B-frame	Approx. 0.5						DV0P4283	DV0P228	DV0P4170																
MHMD Leadwire	100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9						DV0P4282		DV0PM2004																
Leadwire type 3000 r/min	Single	200	MHMD022 □ 1 *	60	MAD \diamondsuit T1507	MAD ♦ T1507E	A-frame	Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFM 0 * * 0		MFMCB 0 * * 0GET		DV0P227 DV0P220	DV0P4170																
3000 r/min	phase/ 3-phase	400	MHMD042 □ 1 *	62	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx. 0.9	ox.	x. Note) 7	rox. Note) 7		U UEAW	U " " UEAM	U ~ UEAM	3 SEAW	O OLAW	U OLAW	-	-	_	x. 0 0 27 1111)X.	к.	-	к.				DVOD4000	DV0P228	DV0PM2004
	200 V	750	MHMD082 □ 1 *	63	MCD ♦ T3520	MCD ♦ T3520E	C-frame	Approx.							DV0P220	DV0PM2004																

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

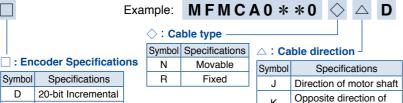
- Note) 2 \diamondsuit : Drivers series K: A5II series H: A5 series
- Note) 3 ♦: Drivers series K: A5IE series H: A5E series
- Note) 4 Because A5IE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.
- Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m) (Example. 3 m: MFECA0030EAM)
- Selection of cable for MSME motor (Movable: For application where the cable is movable.)



J Direction of motor shaft

Opposite direction of

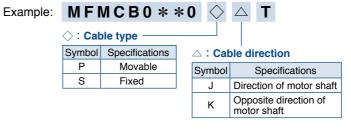
Motor cable



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

 Please buy the battery part number "DV0P2990" separately.

· Brake cable



	Title		Part No.		
Interface Cable			DV0P4360		
			DV0P4120		
			DV0P4121		
Interface Conve	ersion Cab	le	DV0P4130		
			DV0P4131		
			DV0P4132		
Connector Kit	A-frame	Single row type	DV0PM20032		
for Power Supply Input Connection	to D-frame	Double row type	DV0PM20033		
Connector Kit for Motor Connection	A-frame	to D-frame	DV0PM20034		
			DV0P4290		
Connector Kit fo Motor/Encoder		ın	DV0P4380		
WOOD / ENCOGO		""	DV0PM20035		
Connector Kit fo Motor/Brake Co			DV0PM20040		
	RS485, I	RS232	DV0PM20102		
	Safety		DV0PM20103		
Connector Kit	Interface		DV0P4350		
	External		DV0PM20026		
	Encoder		DV0PM20010		
Battery For Abs		lonitor Signal	DV0PM20031 DV0P2990		
Battery Box No		Juei	DV0P2990 DV0P4430		
battery box 140	A-frame		DV0P4430 DV0PM20027		
Mounting	B-frame		DV0PM20027		
Bracket	C-frame		DV0PM20029		
	ouo		MFECA0**0EAD		
			MFECA0**0EAM		
		5	MFECA0**0MJD		
	without E	Battery Box	MFECA0**0MKD		
			MFECA0**0TJD		
Encoder Cable			MFECA0**0TKD		
			MFECA0**0EAE		
	with Batt	ery Box	MFECA0**0MJE		
	Note) 8	-	MFECA0**0MKE		
			MFECA0**0TJE		
			MFECA0**0TKE		
			MFMCA0**0EED		
Motor Cable	without E	Proko	MFMCA0**0NJD MFMCA0**0NKD		
WIOLOI Cable	Without E	Diake	MFMCA0**0RJD		
			MFMCA0**0RKD		
			MFMCB0**0GET		
			MFMCB0**0PJT		
Brake Cable			MFMCB0**0PKT		
			MFMCB0**0SJT		
			MFMCB0**0SKT		
	50 Ω 25	W	DV0P4280		
Futame - I	100 Ω 25	5 W	DV0P4281		
External Regenerative	25 Ω 50	W	DV0P4282		
Resistor	50 Ω 50		DV0P4283		
	30 Ω 100		DV0P4284		
	20 Ω 130		DV0P4285		
Reactor	0, DV0P221 3, DV0P224 7, DV0P228				
		70, DV0PM2			
Noise Filter		20, DV0PM2	20043		
	DV0P3410		DV0D4400		
Surge Absorber	Single pl		DV0P4190		
MOULUEL	Lo-onase	(200 V)	DV0P1450		

21

E 17-bit Absolute

DV0P4130 DV0P4131 DV0P4132

DV0PM20032

DV0PM20033

DV0PM20044

DV0PM20051

DV0PM20052

DV0PM20053

DV0PM20034

DV0PM20046

DV0PM20054

DV0PM20045

DV0PM20055

DV0P4310 DV0P4320

DV0P4330 DV0P4340

DV0PM20102

DV0PM20103

DV0PM20026

DV0PM20010

DV0P2990

DV0P4430

DV0PM20030

Analog Monitor Signal DV0PM20031

DV0P4350

A-frame Single row type

D-frame Double row type

E-frame (200 V)

D-frame (400 V)

E-frame (400 V)

E-frame (400 V)

E-frame (200 V)

D-frame (400 V)

D-frame (400 V)

A-frame to D-frame

			Motor				Driver		Power			Optiona	l parts					· Options (IP6	35 motor)
						A5II series	A5IIE series		capacity	Encode	er Cable	Motor	Cable	Brake					Title
		Power	Output	Part No.	Rating/	A5 series Part No.	A5E series Part No.		/ at \			MIOTO	Oubic	Cable	LACITIO	Reactor		Interface Cable	1
	Notor series	supply	(W)	Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type Note) 2	(Position control type Note) 3,4	Frame	(kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conve	ersion Cable
		Single phase/	1000	MSME102 □ C *	74	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	- D-frame	Approx. 1.8			MEMOD	МЕМОА		DV0P4284	DV0P228 DV0P222	DV0P4220		Ci
		3-phase 200 V		MSME152 □ C *	75	MDD ◇ T5540	MDD \diamondsuit T5540E		Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD	MFMCA 0**2FCD	_	DV0P4285	DV0PM20047 DV0P222		Connector Kit	A-frame to Do by
		0 =====			76	, ,	MED ◇ T7364E	E-frame			0**0ESE				Note) 6		DV0PM20043	for Power Supply Input	E-frame (20
Low in	MSME	3-phase 200 V	4000	MSME302	78	MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	Connection	D-frame (40 E-frame (40
inertia	3000 r/min	3-phase	750 1000 1500	MSME502	105 106	MDD ♦ T2412 MDD ♦ T3420 MDD ♦ T3420	MDD ♦ T3420E MDD ♦ T3420E		Approx. 2.3	MEECA	MFECA	MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048	_	Recommended	Connector Kit for Control Power Supply Input Connection	D-frame and E-frame (40
		400 V	2000 3000 4000 5000	MSME204	108 109	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 4.5 Approx. 6 Approx. 7.5	00ESD	0**0ESE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 DV0PM20049 ×2 in parallel	Note) 7	components P.252	Connector Kit for Motor Connection	A-frame to I E-frame (20 D-frame (40
		Single phase/ 3-phase	1000	MDME102 □ C *	80	MDD \diamondsuit T3530	MDD ◇ T3530E	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Regenerative Resistor	E-frame
		200 V 3-phase	2000	MDME152 □ C * MDME202 □ C *	81	MED ◇ T7364	MDD ♦ T5540E MED ♦ T7364E	E-frame		MFECA 0**0ESD	MFECA 0**0ESE	0**2ECD	0**2FCD	_	DV0P4285 Note) 7		DV0PM20043	Connector Kit for Motor/Encoder	
	MDME 2000 r/min	200 V	3000 4000 5000	MDME302	84 85	MFD ♦ TB3A2 MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410		RS485, RS2 Safety
Middle ii	2000 1111111	3-phase 400 V	400 600 1000 1500 2000	MDME044	112 113 114	MDD ♦ T2407 MDD ♦ T2412 MDD ♦ T3420	MDD ♦ T2407E MDD ♦ T2412E MDD ♦ T3420E	D-frame	Approx. 0.9 Approx. 1.2 Approx. 1.8 Approx. 2.3 Approx. 3.3	MFECA	MFECA 0**0ESE	MFMCD 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048	_	Recommended components	Connector Kit Battery For Abs	External Sca Encoder Analog Mon
inertia			3000 4000 5000	MDME304	116 117	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD ♦ T5440E MFD ♦ TA464E		Approx. 4.5 Approx. 6 Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel		P.252	Battery Box No Mounting Bracket	
	MGME	Single phase/ 3-phase 200 V	900	MGME092 □ C *	92	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8	MFECA 0**0ESD		MFMCD 0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220	Encoder Cable	without Bat with Battery Note) 8
	Low speed/ High torque type	3-phase 200 V		MGME202 \square C * MGME302 \square C *				F-frame	Approx. 3.8 Approx. 4.5	-		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410		
	1000 r/min	3-phase 400 V		MGME094	126	MFD \diamondsuit T5440	MFD \diamondsuit T5440E	D-frame		0**0ESD	MFECA 0**0ESE	MFMCD 0**2ECD MFMCA 0**3ECT	MFMCE 0**2FCD MFMCA 0**3FCT	_	DV0PM20048 DV0PM20049 x2 in parallel	_	Recommended components P.252	Motor Cable	without Brak
		Single phase/ 3-phase 200 V		MHME102 □ C * MHME152 □ C *			MDD ♦ T3530E MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228/ DV0P222 DV0PM20047/ DV0P222	DV0P4220		with Brake
			2000	MHME202 □ C *	99	MED ♦ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 6	DV0P223	DV0PM20043		50 Ω 25 W 100 Ω 25 W
High ine	MHME 2000 r/min	3-phase 200 V	4000	MHME302	101	MFD 🔷 TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	External Regenerative Resistor	25 Ω 50 W 50 Ω 50 W 30 Ω 100 W
inertia	2000 1/111111	3-phood	1000 1500	MHME104	130 131	MDD ♦ T2412 MDD ♦ T3420	MDD ♦ T2412E MDD ♦ T3420E	D-frame	Approx. 1.8 Approx. 2.3		MFECA	MFMCD 0**2ECD MFMCE	MFMCE 0**2FCD MFMCE		DV0PM20048	-	Recommended		20 Ω 130 W 120 Ω 80 W 80 Ω 190 W
		3-phase 400 V	3000 4000	MHME304 □ C * MHME404 □ C *	133 134	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E		Approx. 4.5 Approx. 6	0**0ESD		0**2ECD MFMCA 0**3ECT	0**2FCD MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	Note) 7	components P.252	Reactor	DV0P220, [DV0P223, [DV0P227, [DV0P4170,
			5000	MHME504 ☐ C *	135	MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 7.5			0 0201	0 0 0		SE III parallel			Noise Filter	DV0P4170 DV0P4220

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

No

Note) 6	Oth	ner combinat	ions exi	st. an	d refer to	P.210 for deta	ils.
,		actor chould		,			

MFMCD	MFMCA			DV0P228			without Battery Box	MFECA0**0ESD	189
0**2ECD	**2FCD	_	DV0P4284	DV0P221	DV0P4220	Encoder Cable	with Battery Box Note) 8	MFECA0**0ESE	190
MFMCA	MFMCA		DV0P4285	DV0P223				MFMCA0**2ECD	191
0**3ECT	0**3FCT		×2 in parallel	DV0F224	DV0P3410			MFMCD0**2ECD	
MFMCD	MFMCE		'	D VOI EE I	D		without Brake	MFMCE0**2ECD	192
0**2ECD	0**2FCD		DV0PM20048	_	Recommended		WILLIOUI DIAKE	MFMCF0**2ECD	
MFMCA	MFMCA	_	DV0PM20049	Note) 7	components	Motor Cable		MFMCA0**3ECT	193
0**3ECT	0**3FCT		x2 in parallel		P.252			MFMCD0**3ECT	193
				DV0P228/				MFMCA0**2FCD	194
MFMCD	MFMCA		DV0P4284	DV0P222	DV0P4220		with Brake	MFMCE0**2FCD	194
0**2ECD	0**2FCD		2 701 1201	DV0PM20047/	2101 1220			MFMCA0**3FCT	195
1451405	1451405			DV0P222			50 Ω 25 W	DV0P4280	
MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 6	DV0P223	DV0PM20043		100 Ω 25 W	DV0P4281	
U ZEUD	U ZFCD		Note) 0	DV0P224			25 Ω 50 W	DV0P4282	
MFMCA	MFMCA		DV0P4285	D V 0 F 2 Z 4	DV0P3410	External Regenerative	50 Ω 50 W	DV0P4283	210
0**3ECT	0**3FCT		x2 in parallel	DV0P225	B V 01 0 4 10	Resistor	$30~\Omega~100~W$	DV0P4284	210
MFMCD	MFMCE					1.00.0.0	20 Ω 130 W	DV0P4285	
0**2ECD	0**2FCD		DV0PM20048				120 Ω 80 W	DV0PM20048	
MFMCE	MFMCE		DV0PM20049		Recommended		80 Ω 190 W	DV0PM20049	
0**2ECD MFMCA	0**2FCD MFMCA	_	DV0PM20049	Note) 7	components P.252	Reactor	DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228,	DV0P225,	209
0**3ECT	0**3FCT		×2 in parallel			Noise Filter	DV0P4170, DV0PM2 DV0P4220, DV0PM2	0042	250
lote) 6 Ot	her combinat	ions exi	ist, and refer to	P.210 for detail	ils.		DV0P3410		251
lote) 7 Re	eactor should	be prep	pared by the us	ser.			Single phase	DV0P4190	
,			•	upplied togeth	er with 17-bit	Surge Absorber	3-phase (200 V)	DV0P1450	253
			e (with battery I				3-phase (400 V)	DV0PM20050	
Ple	ease buy the	battery	part number "[DV0P2990" sep	arately.	Ferrite core		DV0P1460	254
					24				

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

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

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

No

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131 DV0P4132

DV0PM20032

DV0PM20033

DV0PM20044

DV0PM20051

DV0PM20052

DV0PM20053

DV0PM20034

DV0PM20046

DV0PM20054

DV0PM20045

DV0PM20055

DV0PM20036

DV0PM20037

DV0PM20038 DV0PM20039

DV0PM20102

DV0PM20103

DV0PM20026 DV0PM20010

DV0P4350

nal DV0PM20031

DV0P2990

DV0P4430

without Battery Box | MFECA0**0ETD

DV0PM20030

MFECA0**0ETE

MFMCF0**2ECD

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

MFMCE0**2FCD MFMCA0**3FCT 195 DV0P4280

DV0P4281 DV0P4282

DV0P4283

DV0P4284

250

251

253

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

A-frame Single row type

Double row

E-frame (200 V)

D-frame (400 V)

E-frame (400 V)

E-frame (400 V)

E-frame (200 V)

D-frame (400 V)

D-frame (400 V)

Analog Monitor Sign

with Battery Box

A-frame to D-frame

			Motor				Driver		Power			Optional	l parts					· Options (IP6	
						A5II series A5 series	A5IIE series		capacity	Encode	er Cable	Motor	Cable	Brake				Interior Control	Title
_		Power	Output	Part No.	Rating/	Part No.	A5E series Part No.	_	/ at \				<u> </u>	Cable	External	Reactor		Interface Cable	l
N	lotor series	supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	(rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conve	ersion Cable
		Single phase/	1000	MSME102 □ 1 *	74	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8						DV0P4284	DV0P228 DV0P222	DV0P4220		Sir
		3-phase 200 V	1500	MSME152 □ 1 *	75	MDD ◇ T5540	MDD \diamondsuit T5540E	D-liame	Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD	MFMCA 0**2FCD		D V 01 4204	DV0PM20047 DV0P222	D V 01 4220	Connector Kit for Power	A-frame to Do by
		2 phase		MSME202 □ 1 *	76	MED ◇ T7364	MED ◇ T7364E	E-frame		0**0ETD	0**0ETE			_	DV0P4285 Note) 7		DV0PM20043	Supply Input Connection	E-frame (20
Low	MSME	3-phase 200 V	3000 4000	MSME302 1 *		-	MFD ♦ TA390E MFD ♦ TB3A2E	F.framo	Approx. 4.5 Approx. 6			MFMCA	MFMCA		DV0P4285	DV0P224	DV0P3410		D-frame (40 E-frame (40
inertia	3000 r/min		5000 750	MSME502 1 *	79	MFD ♦ TB3A2	MFD \diamondsuit TB3A2E MDD \diamondsuit T2412E	1 -lianie	Approx. 7.5 Approx. 1.6			0**3ECT	0**3FCT		x2 in parallel	DV0P225	D V 01 0 4 10	Connector Kit for Control Power	D-frame and
			1000 1500	MSME104 ☐ 1 *			MDD ♦ T3420E MDD ♦ T3420E	D-frame			MEEOA	MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		Recommended	Supply Input Connection	E-frame (40 A-frame to E
		3-phase 400 V	2000 3000	MSME304 1 *	108	MFD \diamondsuit T5440	MED ◇ T4430E MFD ◇ T5440E		Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA	MFMCA	_	DV0PM20049 DV0PM20049	Note) 8	components P.252	Connector Kit for Motor Connection	E-frame (20 D-frame (40
			4000 5000	MSME404 1 * MSME504 1 *		-	MFD ♦ TA464E MFD ♦ TA464E	F-frame	Approx. 6 Approx. 7.5	_		0**3ECT	0**3FCT		×2 in parallel			Connector Kit for Regenerative Resistor	E-frame D-frame (40
		Single phase/ 3-phase		MDME102 □ 1 *	80		MDD ♦ T3530E	D-frame				MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Motor/Encoder	
		200 V	1500	MDME152 □ 1 * MDME202 □ 1 *	81	MDD ♦ T5540 MED ♦ T7364	MDD ♦ T5540E MED ♦ T7364E	F-frame	Approx. 2.3 Approx. 3.3			0**2ECD	0**2FCD		DV0P4285	DV0P222	DV0PM20043		RS485, RS2
			3000	MDME302 □ 1 *	83	-	MFD \diamondsuit TA390E	Litano	Approx. 4.5	MFECA	MFECA			 _	Note) 7	DV0P224	2 (0) MI200 10		Safety Interface
			4000	MDME402 □ 1 *	84	MFD ♦ TB3A2	MFD ♦ TB3A2E	4		0**0ETD	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	Connector Kit Exte	External Sca	
		3-phase 200 V	5000 7500	MDME502 □ 1 * MDME752 □ 1 *	85 86	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5 Approx. 11			0 0201	0 0.01	_	DV0P4285	D V 01 223	Recommended		Encoder Analog Moni
	MDME		11000	MDMEC12 \(\Boxed{1} \) \(*	87	MHD \diamondsuit TC3B4	_	H-frame	Approx. 17			Note) 6	Note) 6		x3 in parallel	Note) 8	components P.252	Battery For Abs Battery Box No	
	2000 r/min			MDMEC52	88 111 112	MHD ♦ TC3B4 MDD ♦ T2407	MDD \diamondsuit T2407E		Approx. 22 Approx. 0.9 Approx. 1.2									Mounting Bracket	D-frame without Batt
<u>≤</u>			1000		113	v	MDD ♦ T2412E MDD ♦ T3420E	D-frame	Approx. 1.8 Approx. 2.3	1		MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048			Encoder Cable	with Battery Note) 9
Middle in		3-phase	2000	MDME204	115	MED \diamondsuit T4430	MED <> T4430E	E-frame			MFECA				DV0PM20049	_	Recommended components		
inertia		400 V		MDME404			-	F-frame	Approx. 6 Approx. 7.5	0**0ETD	0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	Note) 8	P.252	Motor Cable	without Brak
				MDME754 □ 1 * MDMEC14 □ 1 *		MGD ♦ TB4A2	_	G-frame	Approx. 11 Approx. 17			 Note) 6	 Note) 6		DV0PM20049 ×3 in parallel				with Brake
				MDMEC54 \(\Boxed{1} \) 1 *		· ·	_	H-frame	Approx. 17 Approx. 22	_		Note) 6	Note) 6		DV0PM20059				WILLI DI AKE
		Single phase/ 3-phase	1500	MFME152 □ 1 *	89	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame				MFMCA 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220		50 Ω 25 W 100 Ω 25 W 25 Ω 50 W
	MFME	200 V	2500	MFME252 □ 1 *	90	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.8	MFECA 0**0ETD	MFECA 0**0ETE	MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 7		DV0PM20043	External Regenerative Resistor	50 Ω 50 W 30 Ω 100 W
	(Flat type) 2000 r/min	3-phase 200 V	4500	MFME452 □ 1 *	91	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6.8	-		MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	— Note) 8	DV0P3410		20 Ω 130 W 120 Ω 80 W 80 Ω 190 W
		3-phase				- v	MDD ◇ T3420E MED ◇ T4430E			MFECA	MFECA	MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048 DV0PM20049	_	Recommended components	Reactor	DV0P220, I DV0P223, I
		400 V	4500	MFME454 □ 1 *	124	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 6.8	0**0ETD	0**0ETE	MFMCD 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	Note) 8	P.252		DV0P227, I

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

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

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

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

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

Note) 8 Reactor should be prepared by the user.

absolute encoder cable (with battery box).

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

Note) 9 Please note that a battery is not supplied together with 17-bit

							Driver		Power			Optiona	l parts				
			Motor	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		capacity	Encode	er Cable	Motor	Cable	Brake Cable	External	Reactor	
	Motor series	Power supply	Output (W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	Part No. (Position control type) Note) 3,4	Frame	(rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter
		Single phase/ 3-phase 200 V	900	MGME092 □ 1 *	92	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220
			2000	MGME202 □ 1 *	93	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 3.8	MFECA	MFECA					DV0P223	
			3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5	0**0ETD	0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P224	DV0P3410
=	MGME	3-phase	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5			0 0201	0 0101		AZ III parailoi	DV0P225	
Middle mertia	Low speed/ High torque type	200 V	6000	MGME602 □ 1 *	96	MGD ♦ TC3B4	_	G-frame	Approx. 9.0			Note) 6	— Note) 6		DV0P4285 ×3 in parallel	Note) 7	Recommended components P.252
l a	1000 r/min		900	MGME094 □ 1 *	125	MDD \diamondsuit T3420	MDD \diamondsuit T3420E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		
			2000	MGME204 ☐ 1 *	126	MFD 🔷 T5440	MFD \diamondsuit T5440E		Approx. 3.8						D) (0D) 1000 (0		Recommended
		3-phase 400 V	3000	MGME304 □ 1 *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	Note) 7	components
			4500	MGME454 □ 1 *	128	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5	0 02.0	0 0212	0 0201	0 0.01		AZ III parailoi	. 1010, .	P.252
			6000	MGME604 □ 1 *	129	MGD \diamondsuit TB4A2	_	G-frame	Approx. 9.0			– Note) 6	– Note) 6		DV0PM20049 ×3 in parallel		
		Single phase/	1000	MHME102 □ 1 *	97	MDD ◇ T3530	MDD ◇ T3530E	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4220
		3-phase 200 V	1500	MHME152 ☐ 1 *	98	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 2.3			0**2ECD	0**2FCD		D VOI 4204	DV0PM20047 DV0P222	B V 01 4220
			2000	MHME202 □ 1 *	99	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA	MFECA	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 8	DV0P223	DV0PM20043
			3000	MHME302 ☐ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5	0**0ETD	0**0ETE	MFMCA	MFMCA		DV0P4285	DV0P224	
		3-phase	4000	MHME402 ☐ 1 *			MFD ♦ TB3A2E	F-frame	Approx. 6			0**3ECT	0**3FCT		×2 in parallel	DV0P225	DV0P3410
I⊒		200 V	5000	MHME502 ☐ 1 *	102	MFD \diamondsuit TB3A2	MFD ♦ TB3A2E		Approx. 7.5						•	D VOI 220	
ngn menia	MHME 2000 r/min		7500	MHME752 □ 1 *	103	MGD ♦ TC3B4	_	G-frame	Approx. 11			— Note) 6	— Note) 6		DV0P4285 x3 in parallel	Note) 7	Recommended components P.252
"			1000	MHME104 □ 1 *	130	MDD 🔷 T2412	MDD \diamondsuit T2412E	D-frame	Approx. 1.8			MFMCD			DV0PM20048		
			1500	MHME154 ☐ 1 *	131	MDD 🔷 T3420	MDD ♦ T3420E	D-iranie	Approx. 2.3			0**2ECD	MFMCE		D V OI 1VIZUU40		
		2 phase	2000	MHME204 □ 1 *	132	MED ◇ T4430	MED ◇ T4430E	E-frame	Approx. 3.3	MEECA	MFECA	MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommended
		3-phase 400 V	3000	MHME304 ☐ 1 *					Approx. 4.5	MFECA 0**0ETD	0**0ETE	MFMCA	MFMCA	_	DV0PM20049	Note) 7	components
			4000	MHME404 ☐ 1 *			MFD \diamondsuit TA464E	F-frame	Approx. 6			0**3ECT	0**3FCT		×2 in parallel	/	P.252
			5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5				J. J. J.				
			7500	MHME754 ☐ 1 *	136	MGD ♦ TB4A2	_	G-frame	Approx. 9.0			– Note) 6	— Note) 6		DV0PM20049 ×3 in parallel		

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

27

0.9 kW to 7.5 kW IP67 motor (MGME)

	Title		Part No.	ı		
Interface Cable			DV0P4360	Ī		
			DV0P4120	1		
			DV0P4121	l		
Interface Conve	rcion Cah	lo	DV0P4130	ł		
interiace Conve	ISIOII Cab	ie		ł		
			DV0P4131	ł		
			DV0P4132	ļ		
	A-frame	Single row type	DV0PM20032			
Connector Kit for Power	to D-frame	Double row	DV0PM20033	l		
Supply Input		type		ł		
Connection	E-frame	,	DV0PM20044	ļ		
	D-frame	(400 V)	DV0PM20051	Į		
	E-frame	(400 V)	DV0PM20052			
Connector Kit for Control Power Supply Input Connection	D-frame E-frame		DV0PM20053			
Connector Kit	A-frame	to D-frame	DV0PM20034	ļ		
for Motor	E-frame	(200 V)	DV0PM20046	1		
Connection	D-frame	,	DV0PM20054	1		
Connector Kit	E-frame	· ·/	DV0PM20045	1		
for Regenerative	D-frame	(400 V)	DV0FM20045	l		
Resistor	D-liame	(400 V)	DV0FM20035			
0 1 101						
Connector Kit fo Motor/Encoder (n	DV0PM20037			
MOIOI/ETICOGET	Jonnectio	11	DV0PM20038	ļ		
			DV0PM20039			
	RS485, I	RS232	DV0PM20102			
	Safety		DV0PM20103			
	Interface	1	DV0P4350			
Connector Kit	External	Scale	DV0PM20026	t		
	Encoder		DV0PM20010	ł		
		Ionitor Signal	DV0PM20031			
Battery For Abso						
		ouei	DV0P2990			
Battery Box Not	e) 9		DV0P4430			
Mounting Bracket	D-frame		DV0PM20030			
	without E	Battery Box	MFECA0**0ETD	İ		
	WILLIOUL					
Encoder Cable	with Batt	,	MFECA0**0ETE	1		
Encoder Cable		,	MFECA0**0ETE MFMCA0**2ECD			
Encoder Cable	with Batt	,				
Encoder Cable	with Batt	,	MFMCA0**2ECD MFMCD0**2ECD			
Encoder Cable	with Batt		MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD			
	with Batt Note) 9		MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD			
Encoder Cable Motor Cable	with Batt Note) 9		MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT			
	with Batt Note) 9		MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT			
	with Batt Note) 9 without E	Brake	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD			
	with Batt Note) 9	Brake	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT			
	with Batt Note) 9 without E	Brake	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD			
	with Batt Note) 9 without E	Brake Ke	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD			
	with Batt Note) 9 without E	3rake ke	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT			
	with Batt Note) 9 without E with Bral	3rake ke W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280			
	with Batt Note) 9 without E with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$	3rake Ke W 5 W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282			
Motor Cable External Regenerative	with Batt Note) 9 without E with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $50 \Omega 50$	Grake W S W W W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283			
Motor Cable	with Batt Note) 9 without E with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $50 \Omega 50$ $30 \Omega 100$	Srake W 5 W W W O W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284			
Motor Cable External Regenerative	with Batt Note) 9 without E with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $100 \Omega 25$	Srake W 5 W W W O W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285			
Motor Cable External Regenerative	with Batt Note) 9 without E with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $100 \Omega 20$ 100Ω	Srake W 5 W W W O W O W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048			
Motor Cable External Regenerative	with Batt Note) 9 without E with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $100 \Omega 20$ 100Ω	Srake W 5 W W W O W O W O W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049			
Motor Cable External Regenerative	with Batt Note) 9 without E with Bral 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P22	W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047			
Motor Cable External Regenerative Resistor	with Batt Note) 9 without E with Brail 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0P225, DV0PM20047			
Motor Cable External Regenerative Resistor	with Batt Note) 9 without E with Brail 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	W W W D W D W D W D W D W D W D W D W D	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0P225, DV0PM20047			
Motor Cable External Regenerative Resistor	with Batt Note) 9 without E with Brail 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42	W W W D W D W D W D W D W D W D W D W D	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0P225, DV0PM20047			
Motor Cable External Regenerative Resistor	with Batt Note) 9 without E with Bral 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42 DV0P34 Single pl	W W W D W D W D W D W D W D D D D D D D D D D D D D D D D D D D D	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043			
Motor Cable External Regenerative Resistor Reactor	with Batt Note) 9 without E with Bral 50 Ω 25 100 Ω 25 25 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42 DV0P34 Single pl	W W W D W D W D W D W D W D W D W D W D	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043			

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

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

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

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

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

Note) 7 Reactor should be prepared by the user.

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

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

					+10 %					
		100 V	Main	circuit	Single phase, 100 V to 120 V15 % 50 Hz/60 Hz					
			Contro	ol circuit	Single phase, 100 V to 120 V $^{+10}_{-15}\%$ 50 Hz/60 Hz					
			Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz					
	Input	200.14	circuit	E-frame to H-frame	3-phase, 200 V to 230 V +10 % 50 Hz/60 Hz					
	Input power	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz					
	`		circuit	E-frame to H-frame	Single phase, 200 V to 230 V +10 % 50 Hz/60 Hz					
			Main circuit	D-frame to H-frame	3-phase, 380 V to 480 V					
		400 V	Control circuit	D-frame to H-frame	DC 24 V ± 15 %					
			tempe	erature	Ambient temperature: 0 °C to 55 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)					
	Env	rironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation*1)					
			Alti	tude	Lower than 1000 m					
			Vibr	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)					
	Cor	ntrol meth	od		IGBT PWM Sinusoidal wave drive					
Ва	Enc	coder feed	dback		17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial					
sic Spe				A/B phase	A/B phase, initialization signal defferential input.					
Basic Specifications		edback so dback	ale	serial	Manufacturers that support serial communication scale: DR. JOHANNES HEIDENHAIN GmbH Fagor Automation S.Coop. Magnescale Co., Ltd. Mitutoyo Corporation Nidec Sankyo Corporation Renishaw plc					
	ס	_		Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.					
	Parallel I/O	Control	signal	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.					
				Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)					
	onn	Analog	signai	Output	2 outputs (Analog monitor: 2 output)					
	connector	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)					
		i disc si	griai	Output	4 outputs (Line driver: 3 output、 open collector: 1 output)					
				USB	Connection with PC etc.					
		mmunicat ction	ion	RS232	1 : 1 communication					
				RS485	1 : n communication up to 31 axes to a host.					
	Saf	ety functi	on		Used for functional safety.					
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))					
	Regeneration			A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C-frame to F-frame: Built-in regenerative resistor (external resistor is also enabled.)						
	Dynamic brake				A-frame to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only					
	Control mode				Switching among the following 7 mode is enabled, (1) Position control (2) Speed control (3) Toque control (4) Position/Speed control (5) Position/Torque control (6) Speed/Torque control (7) Full-closed control					

^{*1} Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.
*2 Not applicable to 2DOF control system.

	Control inpu		(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.				
	Control outp	out	Positioning complete (In-position) etc.				
		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps				
Positi	Pulse input	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command ardirection)				
Position control	при	Electronic gear (Division/Multiplication of command pulse)	1/1000 times to 1000 times				
의		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input				
	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.				
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.				
	Instantaneo	us Speed Observer	Available				
	Damping Co		Available				
	2DOF setting		Only available at A5II Series				
	ZDOI SCIIII	95	(1) Selection of internal velocity setup 1 (2) Selection of internal vel				
	Control inpu	ıt	 (1) Selection of internal velocity setup 1 (2) Selection of internal velocity setup 2 (3) Selection of internal velocity setup 3 (4) Speed zero clamp etc. 				
	Control outp	ut	Speed arrival etc.				
Speed	Analog	Velocity command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (6 V/Rated rotational speed Default)				
99	input	Torque limit command input	Individual torque limit for both positive and negative direction is enabled				
S S		Torque feed forward input	Analog voltage can be used as torque feed forward input.				
contro	Internal velo	ocity command	Switching the internal 8speed is enabled by command input.				
<u></u>			Individual setup of acceleration and deceleration is enabled, wit				
		own function	to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.				
	Zero-speed		Speed zero clamp input is enabled.				
		us Speed Observer	Available				
	Speed Cont	rol filter	Available				
	2DOF setting	gs	Only available at A5II Series				
占	Control inpu	ıt	Speed zero clamp, Torque command sign input etc.				
ą	Control outp	out	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)				
ง้	Speed limit	function	Speed limit value with parameter is enabled.				
	Control inpu		(1) Deviation counter clear (2) Command pulse inhibition(3) Command dividing gradual increase switching (4) Damping contrastiching etc.				
	Control outp		Full-closed positioning complete etc.				
Fu		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps				
승	Pulse	Input pulse signal format	Differential input				
Full-closed control *2	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 times to 1000 times				
<u>o</u>		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input				
N [*]	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.				
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.				
	Setup range feedback so	e of division/multiplication of	1/40 times to 160 times				
	Damping Co		Available				
0	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.				
ì	Division of e	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).				
Common		Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.				
ă	Protective function						

A5IIE, A5E series (Position control type)

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

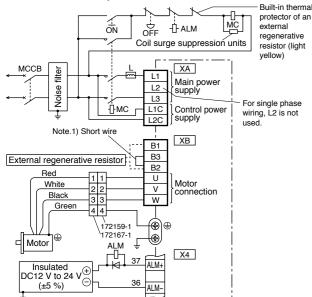
^{*1} Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

31

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

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

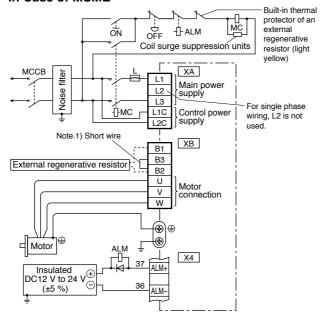




· In Case of MSME

and Terminal Block

Wiring to Connector, XA, XB, XC, XD



Note.1)

Built-in thermal

protector of an

regenerative

resistor (light

external

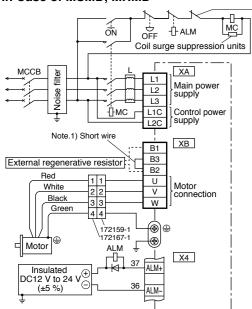
	rame Short wire Built-		Connection of the	ne connector XB
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between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

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

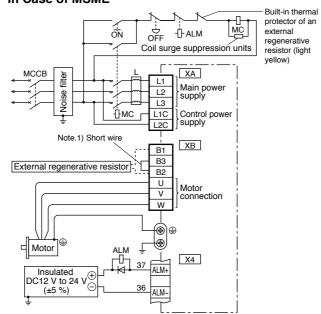
In Case of 3-phase, A-frame to D-frame, 200 V type

· In Case of MSMD. MHMD

Note.1)



· In Case of MSME



Note.1

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

Note.1)

33

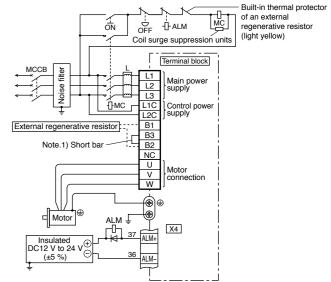
		Built-in regenerative resistor	Connection of the connector XB		
Frame No.	Short wire (Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between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

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

of an external OFF TALM МĊ regenerative resistor Coil surge suppression units XA XC Motor 37 ALM+ X4 DC12 V to 24 V (±5 %)

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

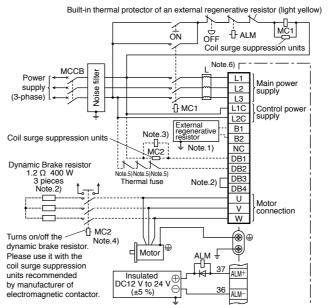
Note.	1)			
Frame	Short wire	Built-in regenerative resistor	Connection of the connector XC	
No.	(Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor
E-frame	with with from • Con	Remove the short wire accessory from between B2-B3. Connect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



Note.1)

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

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



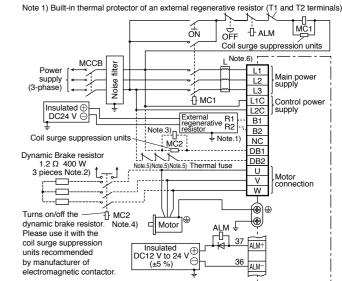
Note 1	About	regenerative	resistor
INOLE. I	<i>,</i> About	regenerative	16919101

	-	-				
Frame	e Short bar (Accessory) Built-in regenerative resistor	Built-in	Connection of terminal block			
No.		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			
Fidille	SHUILDE	dynamic brake	la constantina	In account and and and an		

Remove attached short bar

hetween DR3-DR4

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



Note.1) About regenerative resistor

No. (Accessory) regenerative In case of using In case of not using		Frame	Short bar	Built-in	Connection of terminal block		
H-frame without without without without without without without before 5 power supply of DC24 V. - Terminal T1, T2 connect to B1, B2 of the power supply of DC24 V. - Terminal 24 V, 0 V connect to DC power supply of DC24 V.	No.		(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resisto	
		H-frame	without	without	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.		

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

Note.2) About dynamic brake resistor

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

<common for G & H frame>

- Note.3) Magnetic contactor MC2 must be the same rating as the contactor MC1 in the main circuit.
- Note.4) Servo may be turned on in the external sequence if the contact deposits: to protect the system, provide the auxiliary contact.

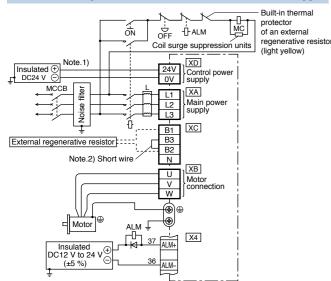
· Shorted with attached short has

between DB3-DB4

Open between DB1-DB2

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

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



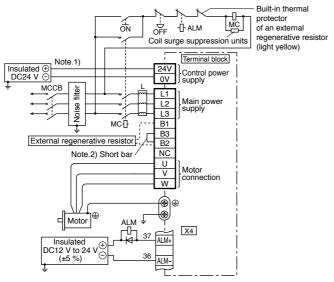
Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

Frame No.	F	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, 400 V type

Wiring to Connector, XA, XB, XC, XD

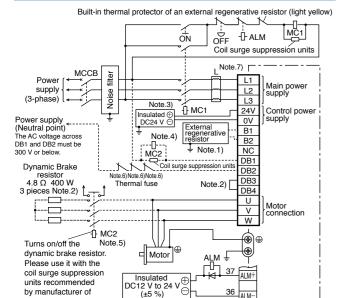
and Terminal Block



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

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

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



Note.1)	About	regenerative	resisto

namic brake

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						
		Duilt in	Connection of terminal block			

In case of using

Remove attached short bar

en DB3-DB4

		resisto
	00111	

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

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

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

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

In case of not using

Shorted with attached short bar

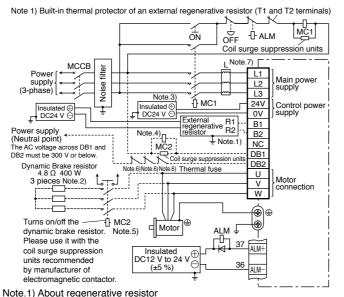
between DB3-DB4

Open between DB1-DB2

Note.7) Reactor should be prepared by the customer.

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

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



F	Short bar	Built-in	Connection of term	ninal block
Frame No.	(Accessory)	regenerative resistor	iii dadd di ddiiig	In case of not using an external regenerative resist
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

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

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

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

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

Outline Description of Safe Torque Off (STO)

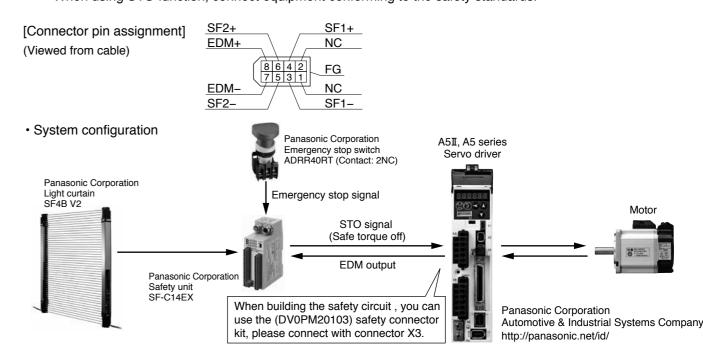
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

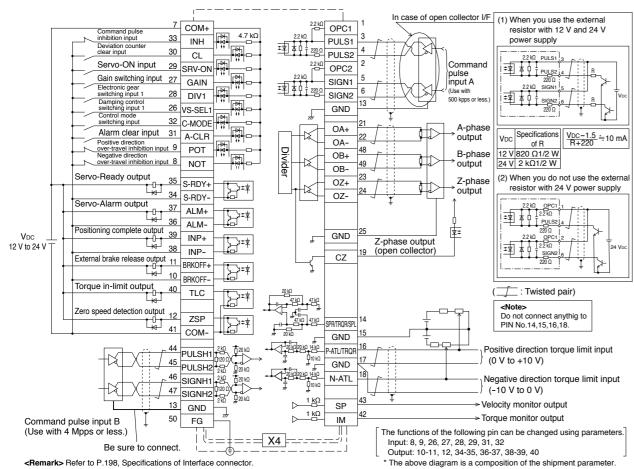
This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

Safety Precautions

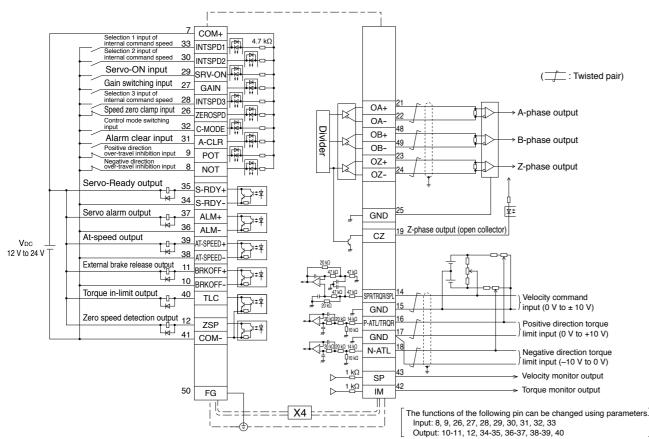
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external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



Wiring Example of Position Control Mode



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

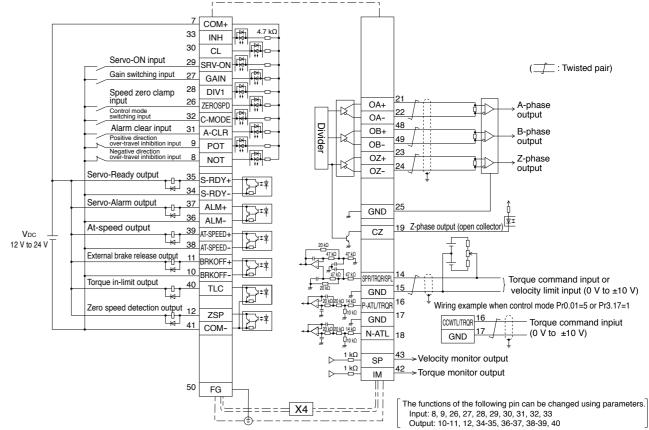


37

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

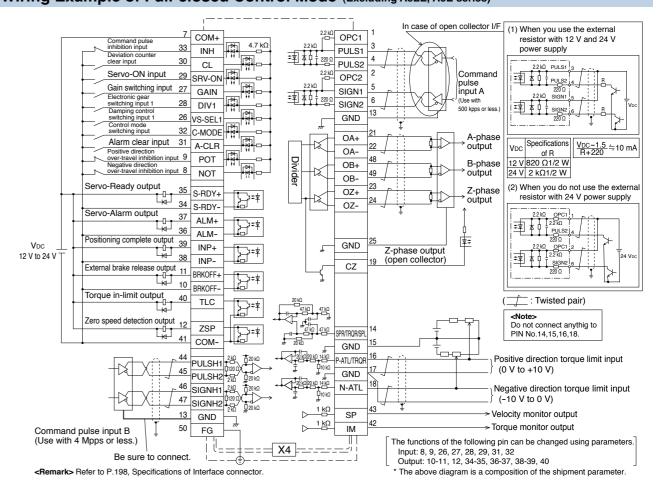
The above diagram is a composition of the shipment parameter.

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



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

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



A5 Family

Control on Cart Diag.

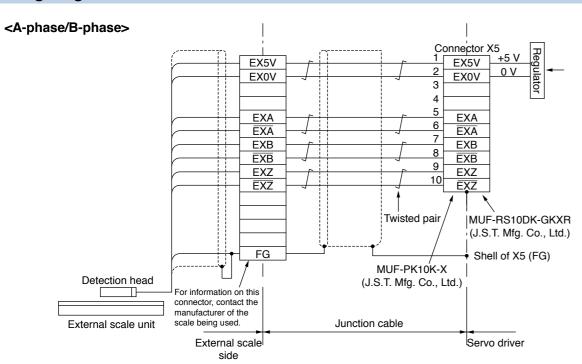
Applicable External Scale

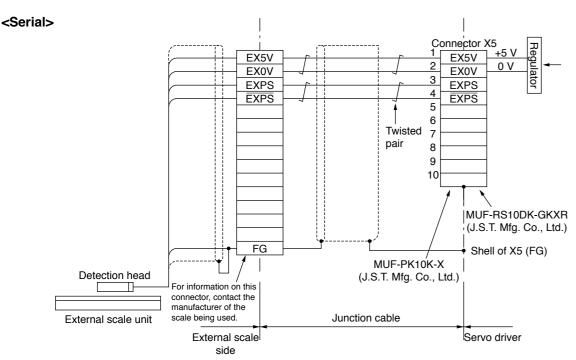
The manufacturers applicable external scales for this product are as follows.

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

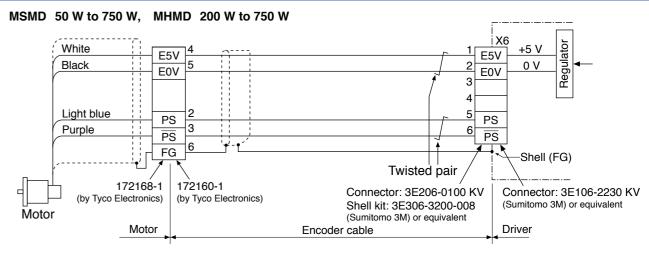
- DR. JOHANNES HEIDENHAIN GmbH
- Fagor Automation S.Coop.
- · Magnescale Co., Ltd.
- Mitutoyo Corporation
- · Nidec Sankyo Corporation
- Renishaw plc
- * For the details of the external scale product, contact each company.

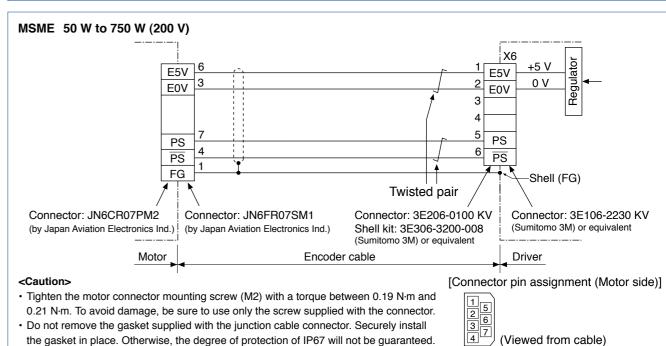
Wiring Diagram of X5

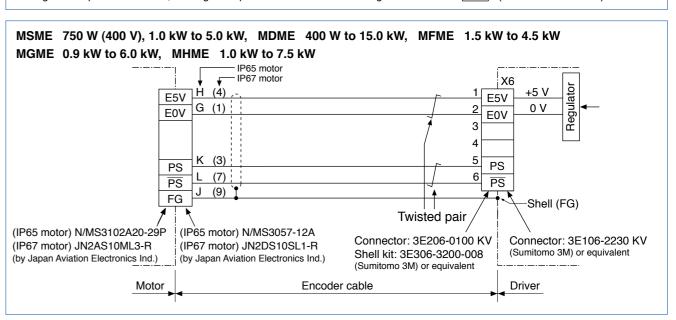




In Case of 20-bit Incremental Encoder







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

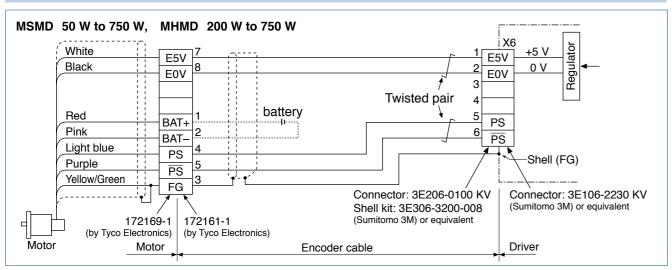
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

Japan Molex Inc.

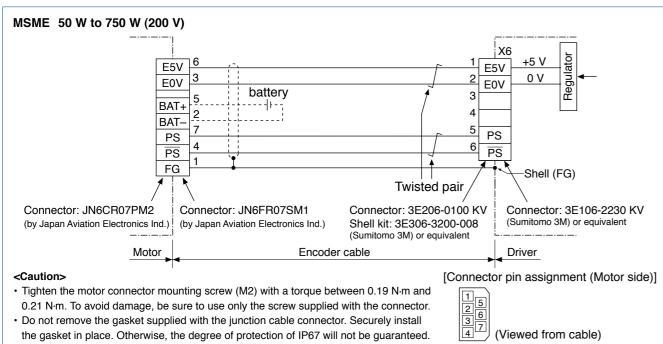
Connector XB 06JFAT-SAXGF J.S.T. Mfg. Co., Ltd.

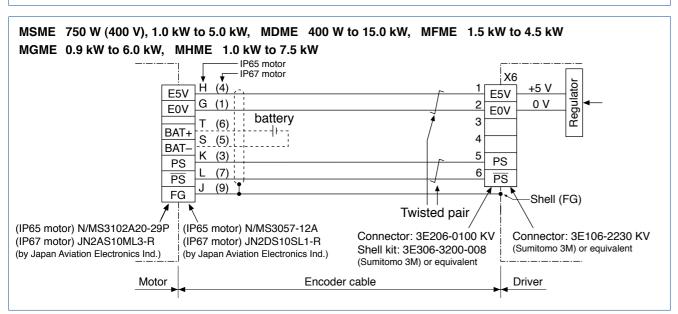
A5 Family

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



Wiring to the Connector, X6



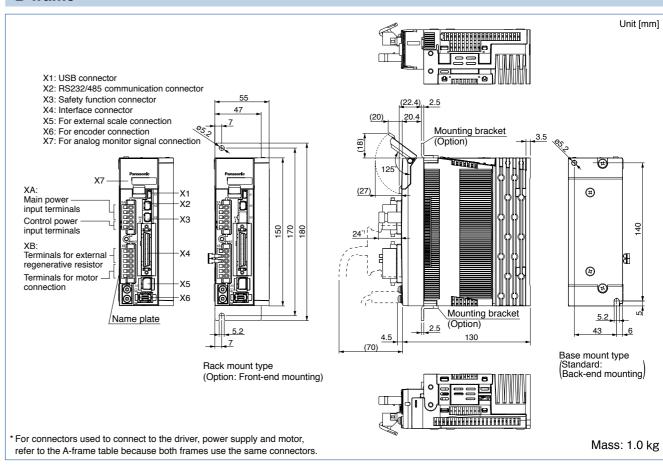


[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

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

B-frame

Connector X7 530140610 (or equivalent



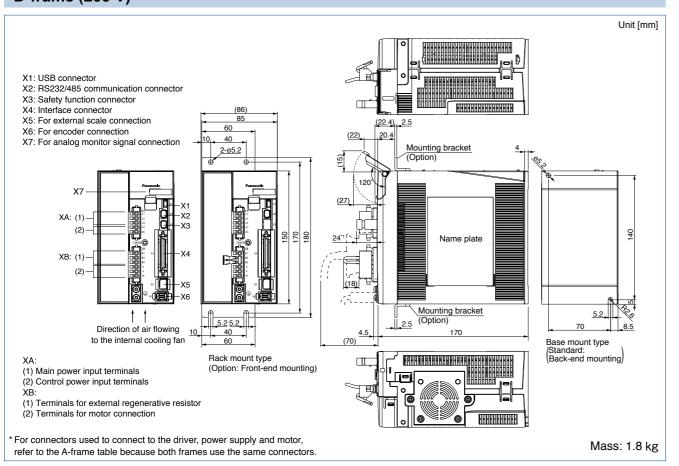
C-frame

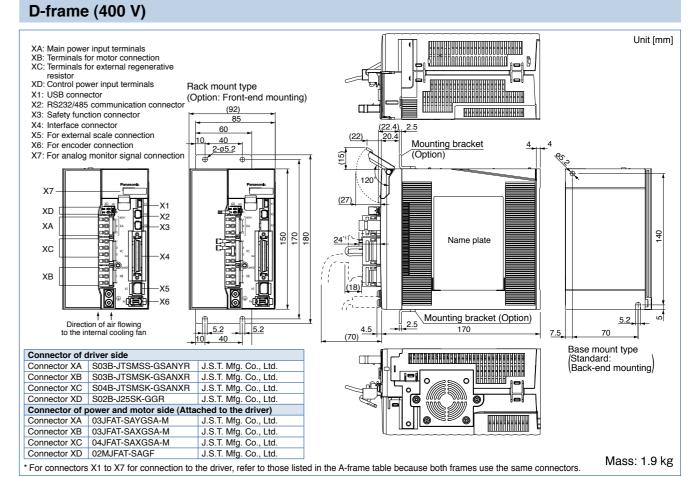
X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection (22.4) 2.5 X6: For encoder connection X7: For analog monitor signal connection ,20.4 Mounting bracket 120 (27) input terminals -X2 Control power -X3 input terminals Name plate external regenerative (18) -X5 Terminals for -X6 Mounting bracket 5.2 5.2 . 7.5 50 40 Base mount type (Standard: Back-end mounting) Rack mount type (Option: Front-end mounting) * For connectors used to connect to the driver, power supply and motor, Mass: 1.6 kg refer to the A-frame table because both frames use the same connectors.

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

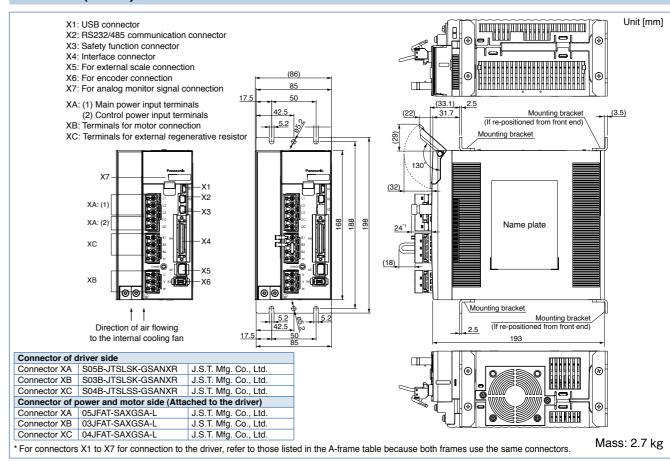
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

D-frame (200 V)



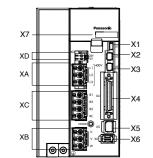


E-frame (200 V)

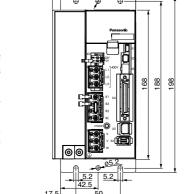


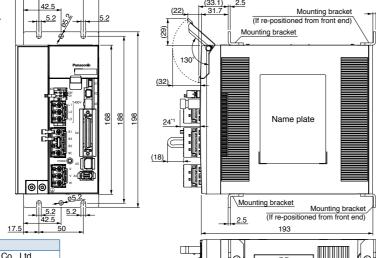
E-frame (400 V)

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



Direction of air flowing to the internal cooling fan





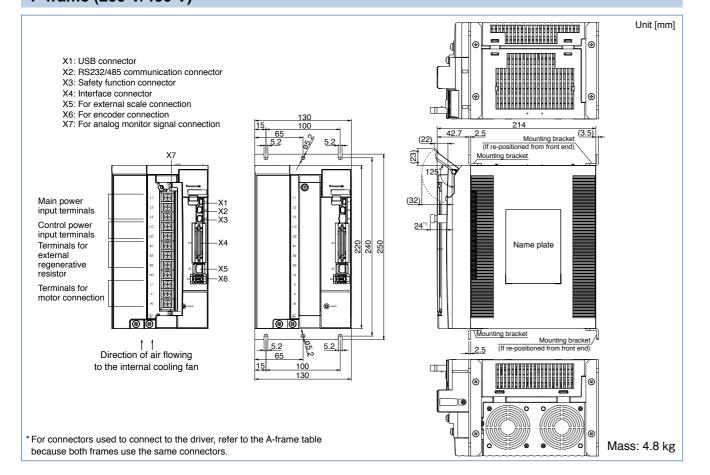
• The size of A5II, A5 series and A5IIE, A5E series is same.

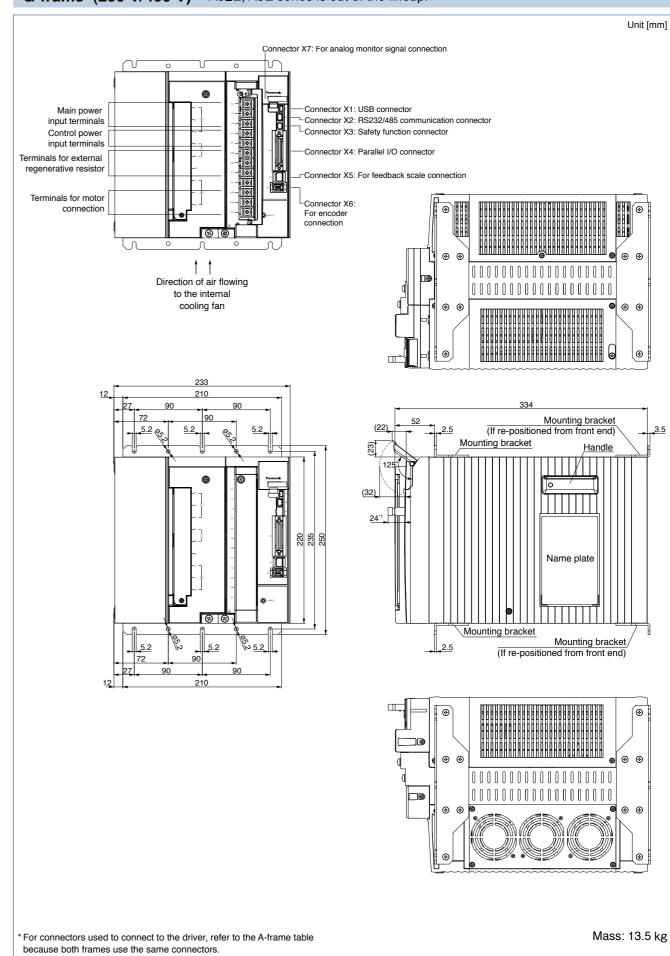
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

Connector of driver side						
Connector XA	S03B-JTSLSS-GSANYR	J.S.T. Mfg. Co., Ltd.				
Connector XB	S03B-JTSLSK-GSANXR	J.S.T. Mfg. Co., Ltd.				
Connector XC	S04B-JTSLSK-GSANXR	J.S.T. Mfg. Co., Ltd.				
Connector XD	S02B-J25SK-GGR	J.S.T. Mfg. Co., Ltd.				
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.				
Connector XD	02MJFAT-SAGF	J.S.T. Mfg. Co., Ltd.				
For connectors	X1 to X7 for connection to t	he driver, refer to those lis				

nection 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)





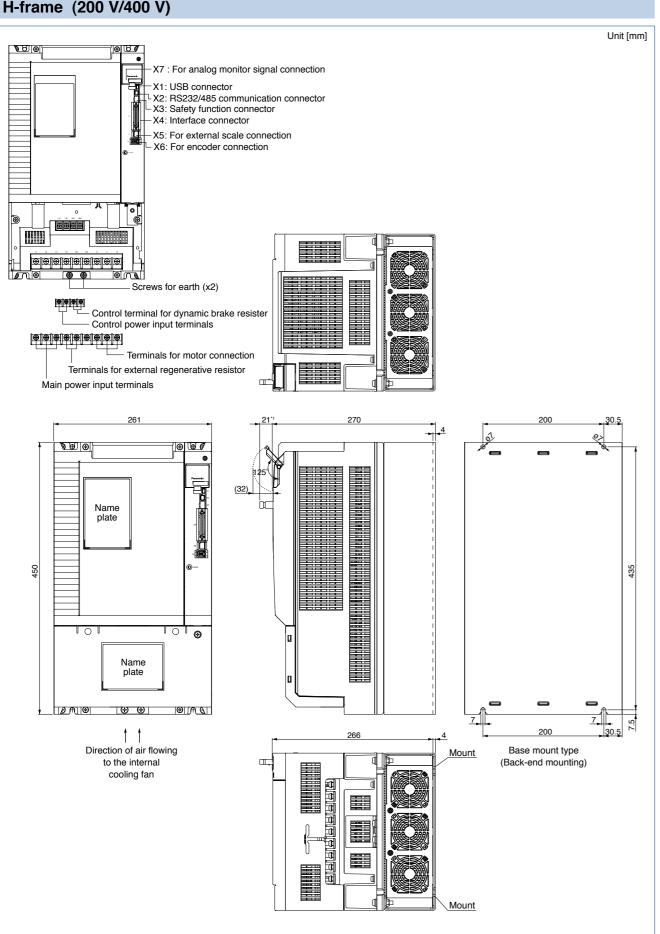
46

Mass: 2.7 kg

Features/Lineup

MHMD (100 V/200 V)

H-frame (200 V/400 V)



A5IE, A5E series is out of the lineup.

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

Features

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

Motor Lineup

Small capacity



MSME Low inertia

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

Enclosure: IP67



MSMD Low inertia Max. speed: 5000 r/min

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



MHMD High inertia

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



Low inertia

Max. speed: 5000r /min : 4500 r/min (from 4.0 kW) Rated speed: 3000 r/min

Rated output: 750 W(400 V), 1.0 kW to 5.0 kW Enclosure: IP65, IP67



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

Mass: 21.0 kg



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.

(IP65 type motor)

Compact

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

C: IP65 motor 1: IP67 motor MFME (200 V) 1.5 kW to 4.5 kW . P.89

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

MGME (200 V)

0.9 kW to 6.0 kW

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...

Type and Specifications...... P.141 Model No. designation...... P.142 The combination of the driver and the motor.....

Table of motor specifications... P.143

Motors with Gear Reducer

Torque Characteristics of Motor .P.144

Dimensions of Motor.....

Motor Specification Description

Built-in Holding Brake

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

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

because both frames use the same connectors

. P.92

			AC1	00 V	
Motor model	IP65		MSMD5AZG1□	MSMD5AZS1□	
*1		IP67	_	-	
Annliaghla	Model	A5II, A5 series	MAD	T1105	
Applicable driver *2	No.	A5IIE, A5E series	MAD ⊘T1105E	_	
divei	Fr	ame symbol	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	orake	Without 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)	5000		
Moment of ine	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 encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

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

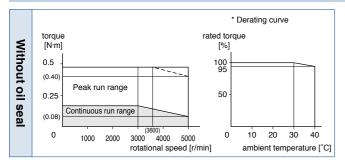
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

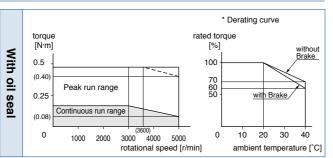
• Permissible load (For details, refer to P.183)

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

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

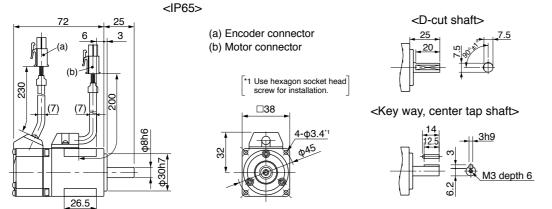
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Without Brake> Mass: 0.32 kg



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

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

[Unit: mm]

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

Specifications

				AC2	00 V
		IP65		MSMD5AZG1□	MSMD5AZS1
Motor mode	9I ∗1	IP67		-	-
	Mode	A5II, A5	series	MAD	T1505
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1505E	-
unven	F	rame sym	bol	A-fr	ame
Power supp	oly capaci	ty	(kVA)	0	.5
Rated outp	ut		(W)	5	0
Rated torqu	ıe		(N·m)	0.	16
Momentary	Max. pea	ık torque	(N·m)	0.48	
Rated curre	ent	(A(rms))	1.1	
Max. current (A(o-p		(A(o-p))	4.	.7	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (times/min) Note)1		DV0P	4281	1 No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	3000	
Max. rotation	onal speed	d	(r/min)	5000	
Moment of	inertia	Without	brake	0.025	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	orake	0.027	
Recomment ratio of the			tia Note)3	30 times	s or less
Rotary encoder specifications		Note)5	20-bit Incremental	17-bit Absolute	
	Resolution	Resolution per single turn		1048576	131072

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

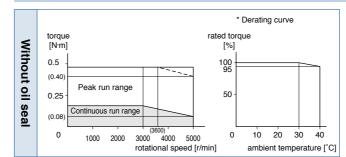
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

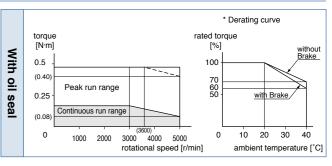
• Permissible load (For details, refer to P.183)

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

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

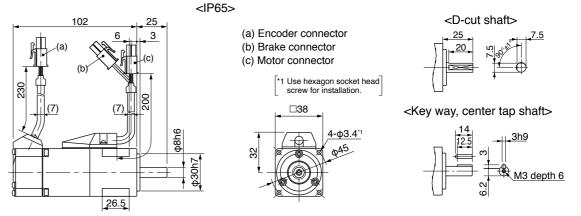
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<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]

Motor model

Applicable

Rated output Rated torque

Rated current

Max. current

Regenerative brake frequency (times/min) Note)1

Rated rotational speed

Max. rotational speed

of rotor (×10⁻⁴ kg·m²)

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Moment of inertia

driver

IP67 Model A5II, A5 series

Frame symbol

No.

Momentary Max. peak torque

Power supply capacity

A5 Family

Specifications

			AC1	00 V
		IP65	MSMD011G1□	MSMD011S1
Motor model		IP67	_	_
A E I-I -	Model	A5II, A5 series	MAD<	T1107
Applicable driver *2	No.	A5IE, A5E series	MAD ⊘T1107E	_
unven	Fr	ame symbol	A-fr	ame
Power supply	capacit	y (kVA)	0	.4
Rated output		(W)	1(00
Rated torque		(N·m)	0.	32
Momentary M	ax. peal	k torque (N·m)	0.95	
Rated current		(A(rms))	1.7	
Max. current		(A(o-p))	7.2	
Regenerative b	orake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4280	DV0P4280 No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	ıl speed	(r/min)	5000	
Moment of ine	ertia	Without brake	0.051	
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

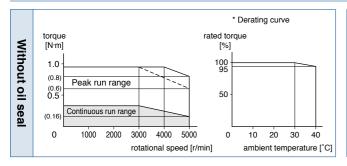
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

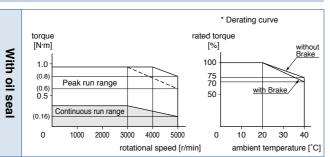
Permissible load (For details, refer to P.183)

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

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

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

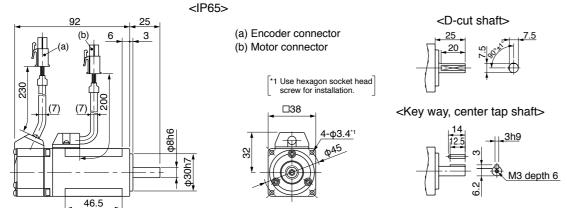




Dimensions

<Cautions>

Mass: 0.47 kg <Without Brake>



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

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

A5IIE, A5E series MAD T1505E

(kVA)

(N·m)

(N·m)

(A(rms))

(A(o-p)) Without option

(r/min)

(r/min)

Note)3

DV0P4281

Without brake

With brake

Resolution per single turn

(W)

Specifica	ations			
	• Brake specifications (For detail		Brake specifications (For details, refer to P.183)	
	IP65	MSMD012G1□	MSMD012S1	(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)

0.95

1.1

4.7

No limit Note)2

No limit Note)2

3000

5000

0.051

0.054

30 times or less

17-bit

Absolute

131072

20-bit

Incremental

1048576

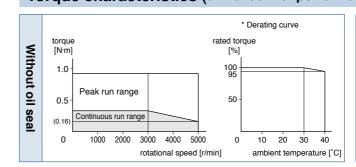
_	Static friction torque (N·m)	0.29 or more
MAD \diamondsuit T1505	Engaging time (ms)	35 or less
1505E –	Releasing time (ms) Note)4	20 or less
A-frame	Exciting current (DC) (A)	0.3
0.5	Releasing voltage (DC) (V)	1 or more
100	Exciting voltage (DC) (V)	24±1.2
0.32		
	— • • • • • • • • • • • • • • • • • • •	

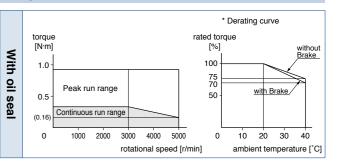
• Permissible load (For details, refer to P.183)

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

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

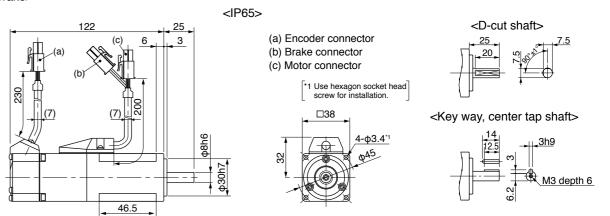
Torque characteristics (at AC200 V of power voltage)





Dimensions

Mass: 0.68 kg <With Brake>



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

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

			AC1	00 V	
Motor model		IP65		MSMD021G1□	MSMD021S1□
Wiotor model		IP67		-	_
A U la la	Model	A5II, A5	series	МВО	T2110
Applicable driver *2	No.	A5IIE, A	5E series	MBD ⊘T2110E	-
unver	Fr	ame sym	ıbol	B-fra	ame
Power supply	capacit	у	(kVA)	0.	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.0	64
Momentary Ma	Momentary Max. peak torque (N·m)		(N·m)	1.91	
Rated current	Rated current (A(rms))		2.5		
Max. current			(A(o-p))	10.6	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P	DV0P4283		t Note)2
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Withou	t brake	0.14	
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

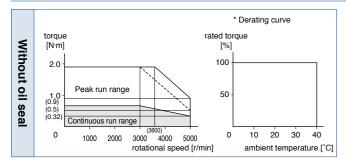
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

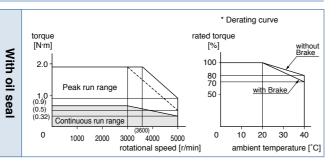
Permissible load (For details, refer to P.183)

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

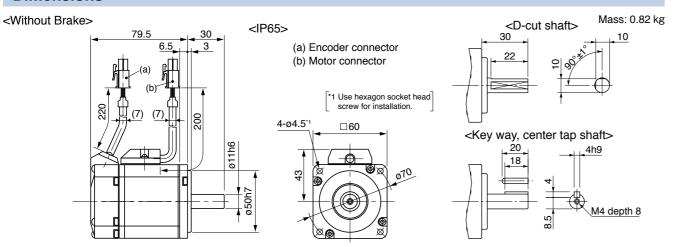
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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 mod	*1		IP67		-	-
A	М	lodel	A5 I I, A5	series	MAD	T1507
Applicable driver	*2 N	0.	A5IIE, A	5E series	MAD ⊘T1507E	_
unver		Fr	ame sym	bol	A-fr	ame
Power sup	ply ca	pacity	/	(kVA)	0	.5
Rated outp	ut			(W)	20	00
Rated torqu	ue			(N·m)	0.0	64
Momentary	/ Max.	peal	c torque	(N·m)	1.91	
Rated curre	ent		(.	A(rms))	1.6	
Max. curre	nt		((A(o-p))	6.9	
Regenerativ	ve bral	ke	Without	option	No limit Note)2	
frequency (ti	mes/min)	Note)1	DV0P4283		No limit Note)2	
Rated rotat	tional	spee	d	(r/min)	3000	
Max. rotation	onal s	peed		(r/min)	5000	
Moment of	inertia	a	Without	brake	0.14	
of rotor (×1	0 ⁻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 enc	oder s	specif	ications	Note)5	20-bit Incremental	17-bit Absolute
Resolutio		n per sina	le turn	1048576	131072	

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

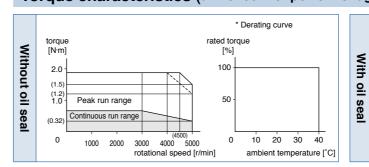
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

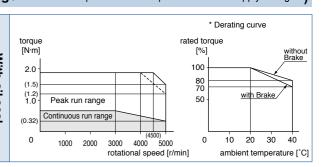
• Permissible load (For details, refer to P.183)

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

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

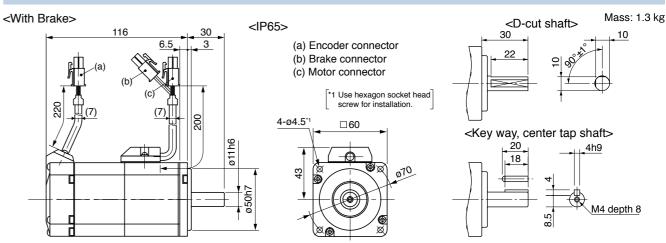
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<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]

				AC1	00 V
Motor model		IP65		MSMD041G1□	MSMD041S1
*1		IP67		-	_
A	Model	A5II, A5 series		MCD<	T3120
Applicable driver *2	No.	A5IIE, A5E s	eries	MCD ♦T3120E	-
unven	Fr	ame symbol		C-fr	ame
Power supply	capacit	y (k	VA)	0	.9
Rated output			(W)	40	00
Rated torque		(N	l·m)	1	.3
Momentary Max. peak torque (N·m)		3.8			
Rated current		(A(rn	ns))	4.6	
Max. current	Max. current (A(o-p))		19.5		
Regenerative I	orake	Without opti	on	No limit Note)2	
frequency (times	min) Note)1	DV0P4282	2	No limit Note)2	
Rated rotation	al spee	d (r/n	nin)	3000	
Max. rotationa	al speed	(r/n	nin)	5000	
Moment of ine	ertia	Without bra	ke	0.26	
of rotor (×10 ⁻²	kg·m²)	With brake	Э	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications No	ote)5	20-bit Incremental	17-bit Absolute
F	esolutio	n per single tu	rn	1048576	131072

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

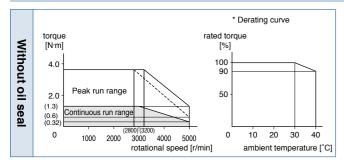
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

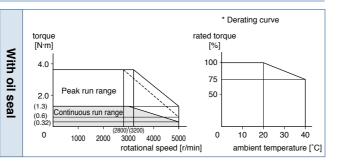
Permissible load (For details, refer to P.183)

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

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

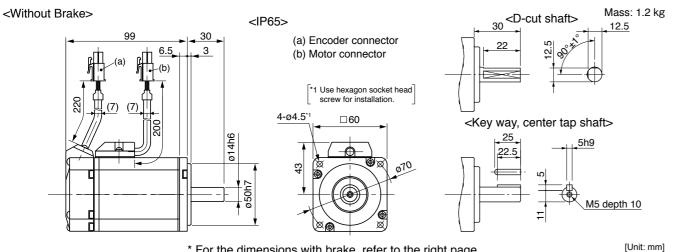
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

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

Specifications

			AC2	00 V
Motor model		MSMD042G1□	MSMD042S1□	
*1		IP67	-	-
Annliaghla	Model	A5II, A5 series	MBD ⊘T2510	
Applicable driver *2	No.	A5IIE, A5E series	MBD ⊘T2510E	_
divei	Fr	ame symbol	B-fra	ame
Power supply	capacit	y (kVA)	0.	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.	.3
Momentary Ma	ax. peal	k 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 DV0P4283		No limi	t Note)2	
Rated rotational speed (r/min)		d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	0.26	
of rotor (×10 ⁻⁴ kg·m²) With brake		0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		1048576	131072	

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

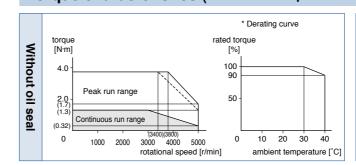
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

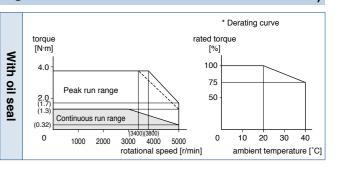
• Permissible load (For details, refer to P.183)

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

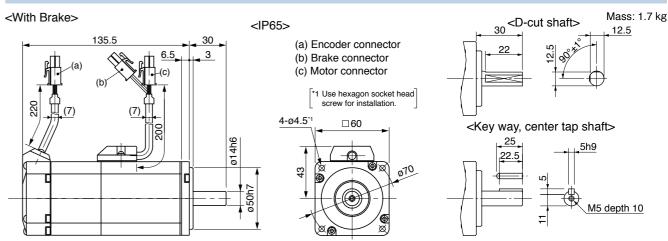
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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

			AC2	00 V
		IP65	MSMD082G1□	MSMD082S1□
Motor model *1		IP67	_	-
A	Model	A5II, A5 series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_
unver	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2	.4
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current	Rated current (A(rms))		4.0	
Max. current (A(o-p))		17.0		
Regenerative brake Without option		No limit Note)2		
frequency (times/min) Note)1 DV0P4283		DV0P4283	No limit Note)2	
Rated rotation	Rated rotational speed (r/min)		3000	
Max. rotationa	Max. rotational speed (r/min)		4500	
Moment of ine	rtia	Without brake	0.87	
of rotor (×10 ⁻⁴ kg·m²) With brake		0.97		
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		1048576	131072	

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

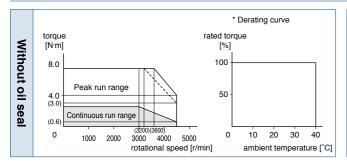
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

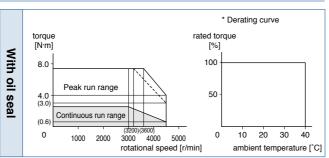
• Permissible load (For details, refer to P.183)

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

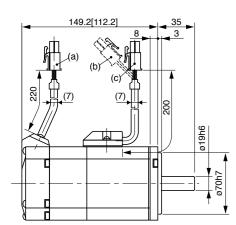
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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

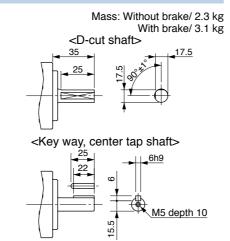




Dimensions



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



* 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.

<IP65>

MEMO

				AC100 V	
		IP65		MHMD021G1□	MHMD021S1
Motor model		IP67		-	-
Amaliaahla	Model	A5II, A5	series	MBD ◇T2110	
Applicable driver *2	No.	A5IIE, A5	E series	MBD ⊘T2110E	_
unver	Fr	ame sym	bol	B-fra	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.64	
Momentary M	lax. peal	k torque	(N·m)	1.91	
Rated current (A(rms))		2.5			
Max. current (A(o-p))		10.6			
Regenerative brake Without option		No limit Note)2			
frequency (times	/min) Note)1	DV0P	4283	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of inc	ertia	Without	brake	0.42	
of rotor (×10	4 kg·m²)	With b	rake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		le turn	1048576	131072	

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

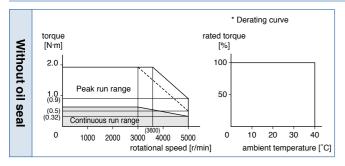
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

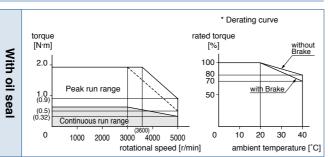
Permissible load (For details, refer to P.183)

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

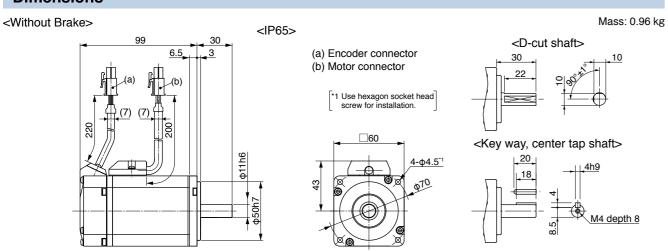
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

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

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

Specifications

			AC200 V		
		IP65		MHMD022G1□	MHMD022S1
Motor mode	ÐI ⊧1	IP67		-	_
A 1: 1- 1 -	Model	A5II, A5 series		MAD ◇ T1507	
Applicable driver	No.	A5IIE, A5E series		MAD ⊘T1507E	_
diivei	Fr	ame sym	bol	A-fra	ame
Power supp	oly capacit	y	(kVA)	0	.5
Rated outpo	ut		(W)	20	00
Rated torqu	ıe		(N·m)	0.0	64
Momentary	Max. peal	k torque	(N·m)	1.91	
Rated curre	ent	(A(rms))	1.6	
Max. current (A(o-p))			6	.9	
Regenerativ	e brake	Without	option	No 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	nal speed		(r/min)	5000	
Moment of	inertia	Without	brake	0.42	
of rotor (×10 ⁻⁴ kg·m ²) With b		rake	0.45		
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	1048576	131072	

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

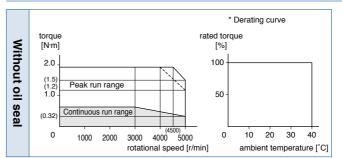
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

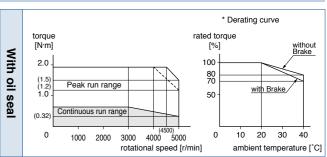
• Permissible load (For details, refer to P.183)

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

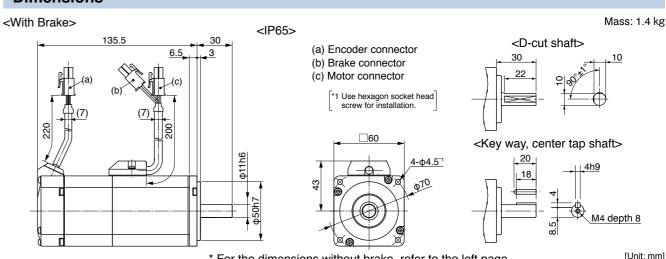
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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

			AC100 V		
IP65		MHMD041G1	MHMD041S1		
Motor model *1		IP67	-	-	
Amaliaalala	Model	A5II, A5 series	MCD	T3120	
Applicable driver *2	No.	A5IE, A5E series	MCD ⊘T3120E	_	
unvei	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 M	ax. peal	k torque (N·m)	3.8		
Rated current		(A(rms))	4.6		
Max. current		(A(o-p))	19).5	
Regenerative b	orake	Without option	No lim	t Note)2	
frequency (times/	min) Note)1	DV0P4282	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	ıl speed	(r/min)	5000		
Moment of ine	ertia	Without brake	0.67		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.70		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072	

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

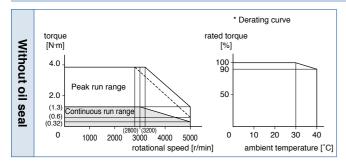
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

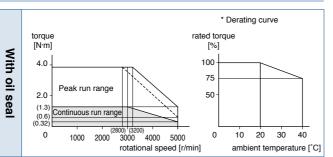
• Permissible load (For details, refer to P.183)

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

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

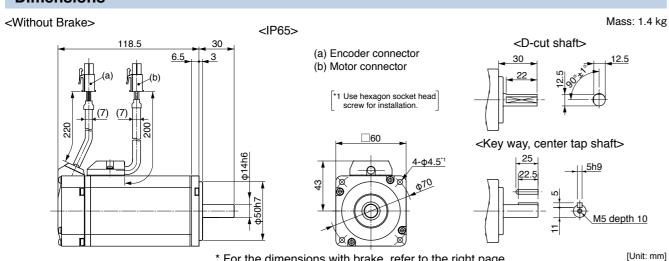
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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.

			AC200 V			
Motor made	al .	IP65		MHMD042G1	MHMD042S1	
Motor mode	ÐI ⊧1	IP67		-	_	
A I' l. l .	Model	A5II, A5	series	MBD<	MBD ⊘ T2510	
Applicable driver	No.	A5IIE, A	5E series	MBD ⊘T2510E	_	
unven	F	rame sym	bol	B-fra	ame	
Power supp	oly capacit	ty	(kVA)	0.	.9	
Rated outpo	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	1.	.3	
Momentary	Max. pea	k torque	(N·m)	3.8		
Rated curre	ent	(A(rms))	2.6		
Max. currer	nt		(A(o-p))	11	.0	
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tin	nes/min) Note)	DV0P4283		No limit Note)2		
Rated rotat	ional spee	ed	(r/min)	3000		
Max. rotation	nal speed	i	(r/min)	5000		
Moment of	inertia	Without	brake	0.67		
of rotor (×10 ⁻⁴ kg·m ²)		With brake		0.70		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sing	le turn	1048576	131072	

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

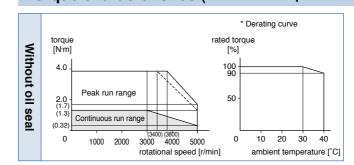
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

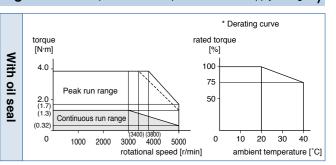
• Permissible load (For details, refer to P.183)

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)

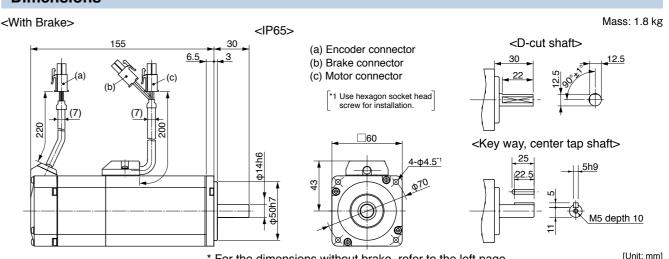
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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

			AC200 V		
IP65		MHMD082G1□	MHMD082S1		
Motor model *1		IP67	-	-	
Amaliaabla	Model		MCD ⊘ T3520		
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_	
unver	Fr	ame symbol	C-fr	ame	
Power supply	capacit	y (kVA)	1	.3	
Rated output		(W)	7	50	
Rated torque		(N·m)	2.4		
Momentary Ma	ax. peal	k torque (N·m)	7.1		
Rated current		(A(rms))	4.0		
Max. current (A(o-p))			17	17.0	
Regenerative b	rake	Without option	No lim	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	4500		
Moment of ine	rtia	Without brake	1.51		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	1.61		
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

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

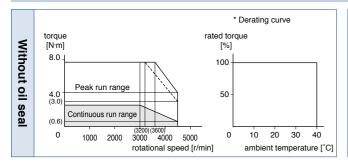
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

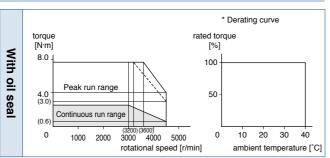
• Permissible load (For details, refer to P.183)

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

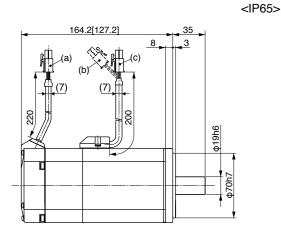
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



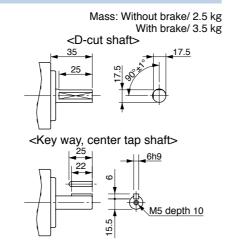


Dimensions



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

(a) Encoder connector



* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

MEMO

				AC100 V		
		IP65		-	-	
Motor model *1		IP67		MSME5AZG1	MSME5AZS1	
	Model	A5II, A5	series	MAD	T1105	
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1105E	_	
anver	Fr	ame sym	bol	A-fra	ame	
Power supply	capacit	y	(kVA)	0	.4	
Rated output			(W)	5	0	
Rated torque			(N·m)	0.	16	
Momentary Max. peak torque (N·m)			0.48			
Rated current		(.	A(rms))	1.1		
Max. current		((A(o-p))	4.7		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/r	min) Note)1	DV0P	4280	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	0.025		
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn		1048576	131072			

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

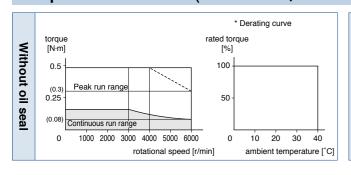
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

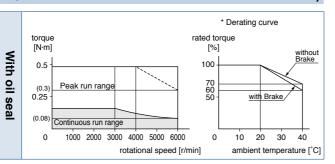
• Permissible load (For details, refer to P.183)

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

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

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



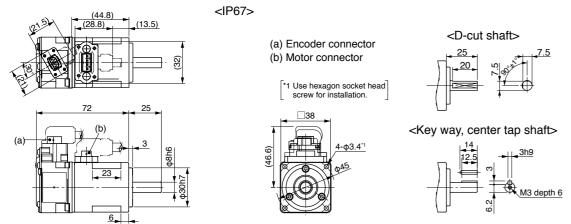


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.31 kg

[Unit: mm]



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

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

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

Specifications

			AC2	00 V		
		IP65		-	-	
Motor model		IP67		MSME5AZG1	MSME5AZS1	
Analiaahla	Model	A5II, A5 series		MAD	T1505	
Applicable driver *2	No.	A5IIE, A	5E series	MAD ◇T1505E	_	
dilvei	Fr	ame sym	bol	A-fra	ame	
Power supply	capacit	y	(kVA)	0.	5	
Rated output			(W)	5	0	
Rated torque			(N·m)	0.	16	
Momentary Ma	Momentary Max. peak torque (N·m)				0.48	
Rated current	Rated current (A(rms))			1.1		
Max. current (A(o-p))			(A(o-p))	4.	7	
Regenerative b	rake	Without	option	No limi	t Note)2	
frequency (times/r	min) Note)1	DV0P	4280	No limit Note)2		
Rated rotation	al spee	d	(r/min)	30	3000	
Max. rotationa	l speed		(r/min)	6000		
Moment of ine	rtia	Without	brake	0.025		
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	Resolution per single turn			1048576	131072	

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

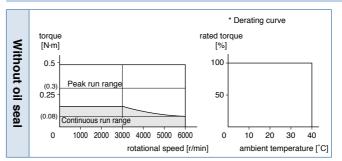
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

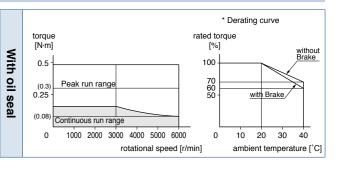
• Permissible load (For details, refer to P.183)

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

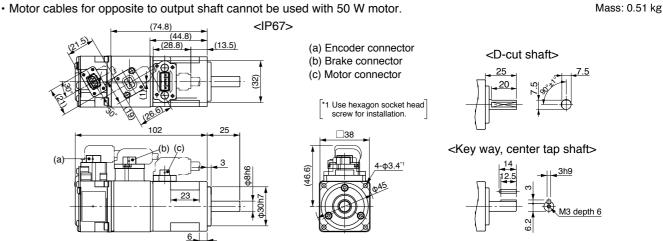
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

Torque characteristics (at AC200V of power voltage)





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



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

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

[Unit: mm]

				AC100 V		
		IP65		-	-	
Motor model *1		IP67		MSME011G1	MSME011S1	
Mo	Model	A5II, A5 series		MAD	T1107	
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1107E	_	
unver	Fr	ame symb	ool	A-fra	ame	
Power supply	capacit	y	(kVA)	0.	.4	
Rated output			(W)	10	00	
Rated torque			(N·m)	0.0	32	
Momentary Max. peak torque (N·m)			0.95			
Rated current		(A	A(rms))	1.6		
Max. current		(,	A(o-p))	6.9		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/r	min) Note)1	DV0P4	1280	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	rake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			e turn	1048576	131072	

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

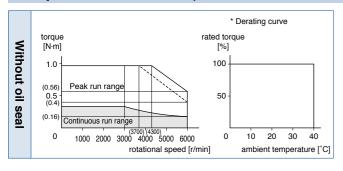
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

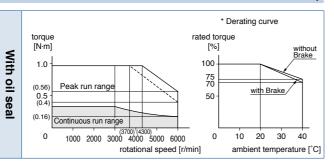
Permissible load (For details, refer to P.183)

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

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

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



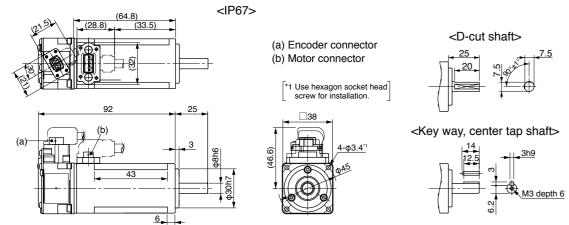


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.46 kg

[Unit: mm]



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

Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSME 100 W [Low inertia, Small capacity]

Specifications

				AC2	00 V
Motor mode	al	IP65		-	-
Motor mode	ÐΙ ∗1	IP67		MSME012G1	MSME012S1
Annlinable	Model	A5II, A5	series	MAD	T1505
Applicable driver	No.	A5IIE, A	5E series	MAD ◇T1505E	_
diivei	Fi	rame sym	ıbol	A-fr	ame
Power supp	oly capacit	у	(kVA)	0.	.5
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	0.:	32
Momentary	Max. pea	k torque	(N·m)	0.9	95
Rated curre	ent	((A(rms))	1.1	
Max. currer	nt		(A(o-p))	4.7	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tin	equency (times/min) Note)1		4280	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed	ĺ	(r/min)	6000	
Moment of	inertia	Without brake		0.051	
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	0.0)54
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			1048576	131072

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

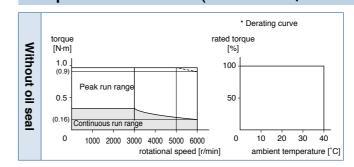
nore
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SS
re
2

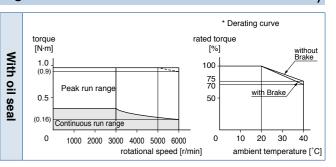
• Permissible load (For details, refer to P.183)

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

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

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

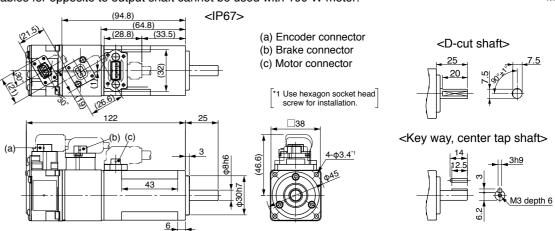




Dimensions < In Case of With Brake, Cable direction to output shaft.>

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

Mass: 0.66 kg



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

[Unit: mm]

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

			AC100 V		
Motor model		IP65		-	-
		IP67		MSME021G1□	MSME021S1
Applicable	Model	A5II, A5 series		MBD ⊘ T2110	
	No.	A5IIE, A5E series		MBD⇔T2110E	-
dilvei	Fr	ame syn	nbol	B-frame	
Power supply capacity (kVA)			0.5		
Rated output (W)			200		
Rated torque (N·m)			0.64		
Momentary Max. peak torque (N·m)			1.91		
Rated current (A(rms))			2.5		
Max. current (A(o-p))			10.6		
'ingonorativo braito		Without option		No limit Note)2	
		DV0P4283		No limit Note)2	
Rated rotational speed (r/min)		3000			
Max. rotational speed (r/min)		6000			
Moment of inertia of rotor (×10 ⁻⁴ kg·m²)		Without brake		0.14	
		With brake		0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

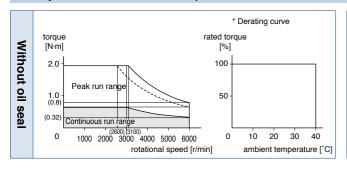
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

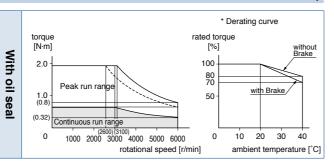
Permissible load (For details, refer to P.183)

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

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

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

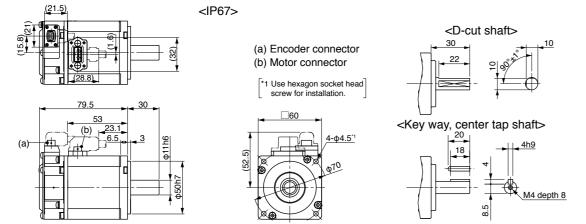




Dimensions < In Case of Without Brake, Cable direction to output shaft.>



[Unit: mm]



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

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

Specifications

			AC200 V		
Motor model	IP65		-	-	
wotor model *1		IP67		MSME022G1□	MSME022S1
	Model	A5II, A5 series		MAD ⊘ T1507	
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1507E	_
divei	Fr	Frame symbol		A-frame	
Power supply capacity (kVA)			0.5		
Rated output (W)			200		
Rated torque (N·m)			0.64		
Momentary Max. peak torque (N·m)			1.91		
Rated current (A(rms))			1.5		
Max. current	Max. current (A(o-p))			6.5	
Regenerative b	orake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4283		No limit Note)2	
Rated rotational speed (r/min)			3000		
Max. rotationa	Max. rotational speed (r/min)			6000	
Moment of ine	Moment of inertia of rotor (×10 ⁻⁴ kg·m²)		t brake	0.14	
of rotor (×10 ⁻⁴			orake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

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

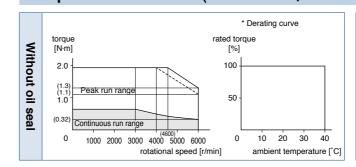
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

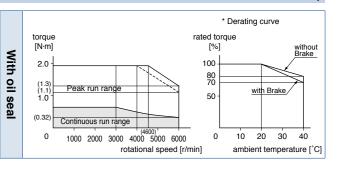
• Permissible load (For details, refer to P.183)

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

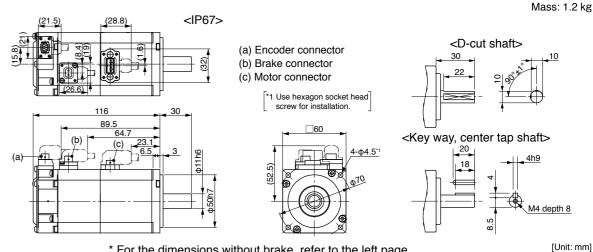
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





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



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

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

				AC100 V		
Motor model	IP65		-	-		
*1		IP67		MSME041G1□	MSME041S1	
Annliachla	Model	A5II, A5 series		MCD ⊘ T3120		
Applicable driver *2	No.	A5IIE, A5	E series	MCD ⊘T3120E	-	
divei	Fr	ame symb	ool	C-fr	ame	
Power supply	capacit	y	(kVA)	0	.9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1.3		
Momentary Ma	ax. peal	k torque	(N·m)	3.8		
Rated current		(/	A(rms))	4.6		
Max. current (A(o-p))				19.5		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/r	min) Note)1	DV0P4	1282	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 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			Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per singl	e turn	1048576	131072	

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

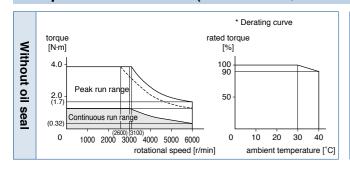
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

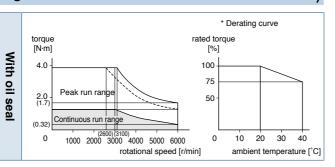
Permissible load (For details, refer to P.183)

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

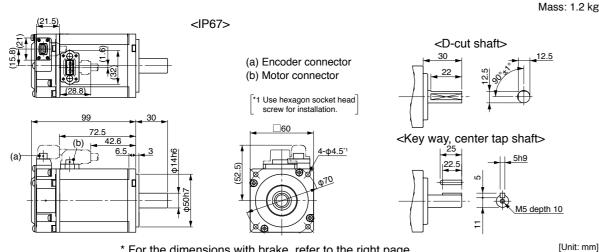
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\rightarrow \) in number of applicable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

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





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



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

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

Specifications

			AC200 V			
Motor mode		IP65		-	-	
*	.	IP67		MSME042G1□	MSME042S1	
Annlinable	Model	A5 I I, A5	series	MBD<	T2510	
Applicable driver *	No.	A5IIE, A	5E series	MBD ⊘T2510E	-	
divoi	Fr	ame sym	bol	B-fra	ame	
Power supp	ly capacit	y	(kVA)	0.	.9	
Rated output	ıt		(W)	40	00	
Rated torque	е		(N·m)	1.	.3	
Momentary	Max. peal	k torque	(N·m)	3.8		
Rated curre	nt	(A(rms))	2.4		
Max. curren	t	((A(o-p))	10.2		
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	3000		
Max. rotatio	nal speed		(r/min)	6000		
Moment of i	nertia	Without	brake	0.26		
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less		
Rotary enco	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Resolution per single turn				131072	

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

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

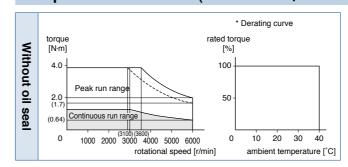
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

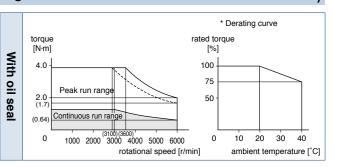
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
docombry	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

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

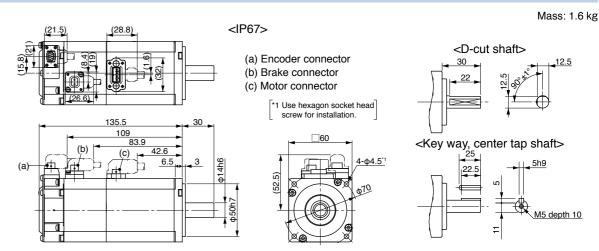
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

				AC200 V		
		IP65		-	-	
Motor model *1		IP67		MSME082G1□	MSME082S1	
Ammliaabla	Model	A5II, A5 series		MCD ⊘ T3520		
Applicable *2	No.	A5IIE, A	5E series	MCD ⊘T3520E	_	
anver	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 Ma	ax. peal	k torque	(N·m)	7.1		
Rated current		(A(rms))	4.1		
Max. current		((A(o-p))	17.4		
Regenerative b	rake	Without	option	No limit Note)2		
frequency (times/r	min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	6000		
Moment of ine	rtia	Without	brake	0.87		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	0.97		
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

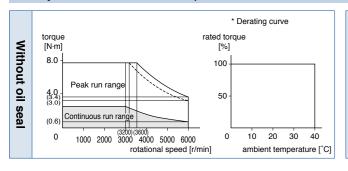
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

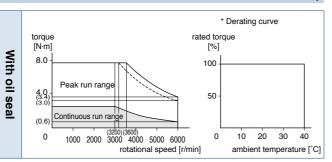
• Permissible load (For details, refer to P.183)

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

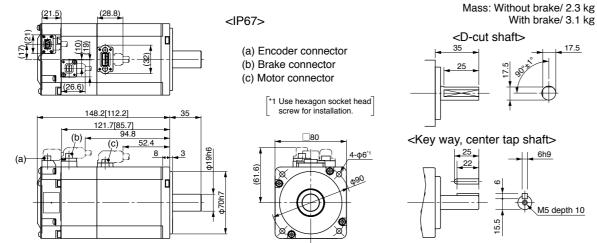
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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





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



* Figures in [] represent the dimensions without brake.

73

[Unit: mm]

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

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

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

Specifications

					AC200 V		
		IP65			MSME102GC□	MSME102SC	
Motor mode	€I ∗1		IP67		MSME102G1□	MSME102S1	
A		Model	A5 I I, A5	series	MDD<	T5540	
Applicable driver	*2	No.	A5IIE, A5E series		MDD ⊘T5540E	-	
unven		Fr	ame sym	bol	D-fr	ame	
Power supp	oly (capacity	y	(kVA)	1.	.8	
Rated outp	ut			(W)	10	00	
Rated torqu	ıe			(N·m)	3.	18	
Momentary	Ма	ıx. peal	k torque	(N·m)	9.55		
Rated curre	ent		(A(rms))	6.6		
Max. currer	nt			(A(o-p))	28		
Regenerativ	/e b	rake	Without option		No limi	t Note)2	
frequency (tin	nes/n	nin) Note)1	DV0P4284		No limit Note)2		
Rated rotat	iona	al spee	d	(r/min)	3000		
Max. rotation	onal	speed		(r/min)	5000		
Moment of	ine	rtia	Without brake		2.03		
of rotor (×1	0-4	kg·m²)	With b	orake	2.:	35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less				
Rotary enco	Rotary encoder specifications		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072		

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

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

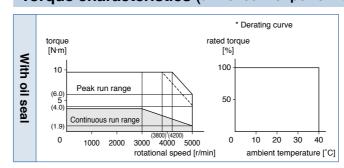
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

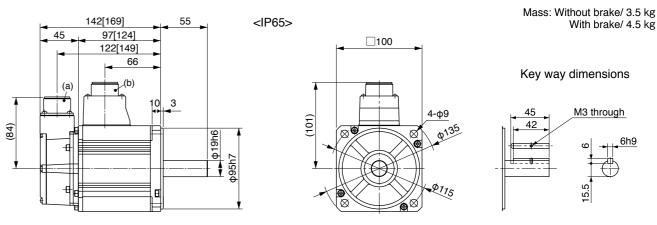
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

74

[Unit: mm]

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

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

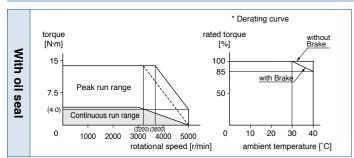
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

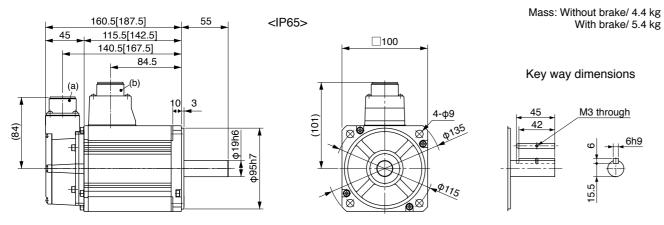
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

Specifications

				AC2	00 V	
N4 - 4		IP65		MSME202GC□	MSME202SC	
Motor mode	ÐI ⊧1	IP67		MSME202G1□	MSME202S1	
	Model	Model A5II, A5 series		MED◇	MED ◇T736 4	
Applicable driver	No.	A5IIE, A5E series		MED ⊘T7364E	-	
unven	F	rame sym	bol	E-fra	ame	
Power supp	oly capacit	у	(kVA)	3.	.3	
Rated outpo	ut		(W)	20	00	
Rated torqu	ie		(N·m)	6.5	37	
Momentary	Max. pea	k torque	(N·m)	19.1		
Rated curre	ent	(A(rms))	11.3		
Max. current (A(o-p))			4	8		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tin	nes/min) Note)1	DV0P4285		No limit Note)2		
Rated rotat	ional spee	d	(r/min)	3000		
Max. rotation	nal speed	l	(r/min)	5000		
Moment of	inertia	Without brake		3.68		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		4.01		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		n per sing	le turn	1048576	131072	

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

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

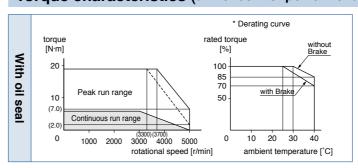
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

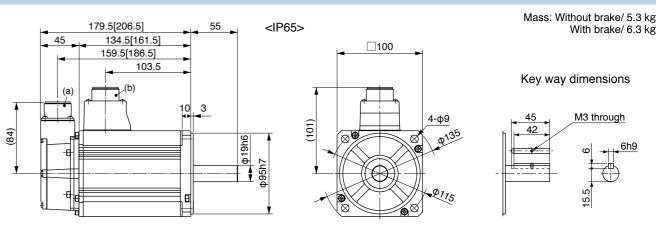
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC2	00 V	
Matauraadal		IP65		MSME302GC□	MSME302SC□
Motor model *1		IP67		MSME302G1□	MSME302S1
Ammliaalala	Model	A5II, A5 series		MFD ⊘TA390	
Applicable driver *2	No.	A5IIE, A5	E series	MFD ⊘TA390E	_
divei	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	y	(kVA)	4	.5
Rated output			(W)	30	00
Rated torque			(N·m)	9.	55
Momentary Ma	ax. peal	k torque	(N·m)	28.6	
Rated current		(A	(rms))	18.1	
Max. current		(/	۹(o-p))	77	
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without I	brake	6.50	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			e turn	1048576	131072

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

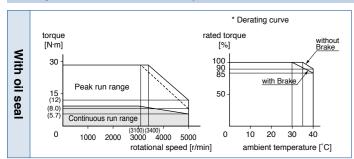
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

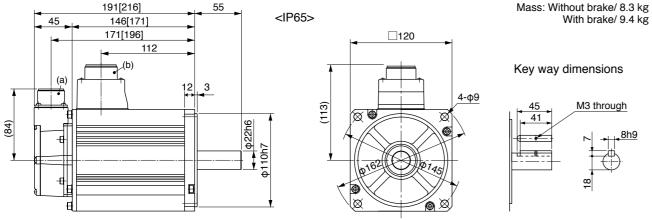
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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-4		IP65		MSME402GC□	MSME402SC
Motor mode	ÐI ⊧1	IP67		MSME402G1□	MSME402S1
	Model	A5 I I, A5	series	MFD♦	TB3A2
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
unven	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	6	.0
Rated outp	ut		(W)	40	00
Rated torqu	ie		(N·m)	12	2.7
Momentary	Max. pea	k torque	(N·m)	38.2	
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 (tin	nes/min) Note)	DV0P4285×2		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	nal speed	I	(r/min)	4500	
Moment of	inertia	Without	brake	12.9	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolutio		n per sina	le turn	1048576	131072

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

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

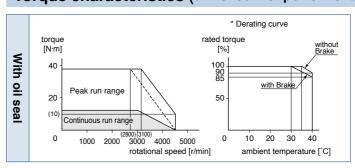
,	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

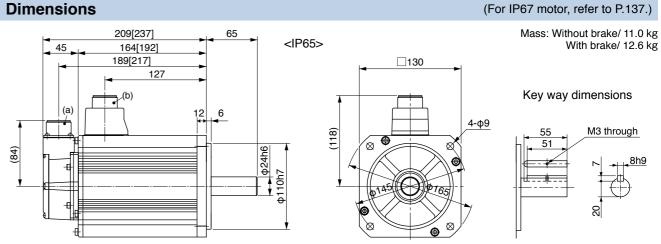
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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

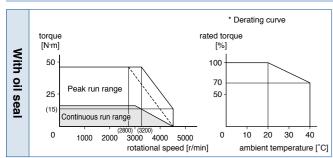
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

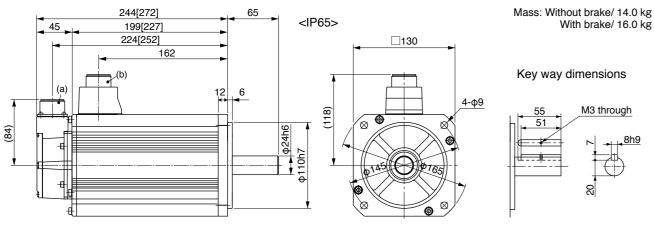
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

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

Motor Specifications

Specifications

				AC2	00 V		
			IP65		MDME102GC□	MDME102SC	
Motor mod	el *1		IP67		MDME102G1□	MDME102S1	
		Model	A5II, A5	series	MDD<	T3530	
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T3530E	_	
uriver		Fr	ame sym	bol	D-fra	ame	
Power sup	ply c	apacit	/	(kVA)	1.	.8	
Rated outp	ut			(W)	10	00	
Rated torqu	ue			(N·m)	4.	77	
Momentary	/ Ma	x. peal	c torque	(N·m)	14.3		
Rated curre	ent		(A(rms))	5.7		
Max. current (A(o-p))				24			
Regenerativ	ve bi	rake	Without option		No limit Note)2		
frequency (ti	mes/m	in) Note)1	DV0P4284		No limit Note)2		
Rated rotal	tiona	al spee	d	(r/min)	2000		
Max. rotation	onal	speed		(r/min)	3000		
Moment of	iner	tia	Without	brake	4.60		
of rotor (×1	0 ⁻⁴ l	kg·m²)	With b	rake	5.90		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute				
Resolution per single turn			le turn	1048576	131072		

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

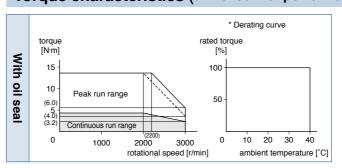
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

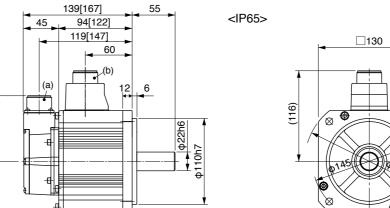
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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

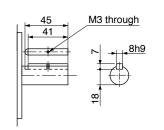


Dimensions (For IP67 motor, refer to P.138.)



Mass: Without brake/ 5.2 kg With brake/ 6.7 kg

Key way dimensions



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

[Unit: mm]

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

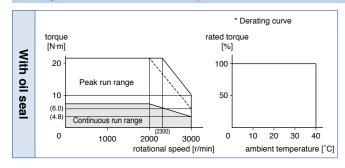
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

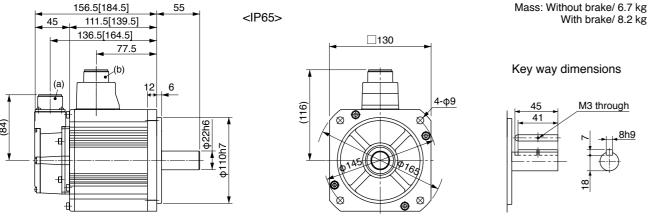
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

81

[Unit: mm]

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

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

Specifications

				AC2	00 V		
		IP65			MDME202GC□	MDME202SC	
Motor mod	1 e l *1		IP67		MDME202G1□	MDME202S1	
		Model	A5II, A5	series	MED<	T7364	
Applicable driver	*2	No.	A5IIE, A	5E series	MED ⊘T7364E	-	
unver	Ì	Fr	ame sym	bol	E-fra	ame	
Power sup	ply o	capacity	/	(kVA)	3	.3	
Rated outp	out			(W)	20	00	
Rated torq	ue			(N·m)	9.	55	
Momentary	у Ма	x. peal	c torque	(N·m)	28.6		
Rated current (A(rms))					11.5		
Max. current (A(o-p))					49		
Regenerati	ve b	rake	Without	option	No limit Note)2		
frequency (ti	imes/m	nin) Note)1	DV0P4285		No limit Note)2		
Rated rota	tiona	al spee	d	(r/min)	2000		
Max. rotati	onal	speed		(r/min)	3000		
Moment of	iner	tia	Without brake		8.72		
of rotor (x1	10-4	kg·m²)	With b	rake	10.0		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute			
Resolution per single turn				le turn	1048576	131072	

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

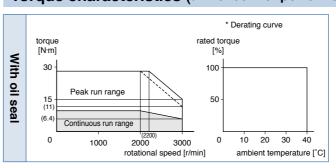
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

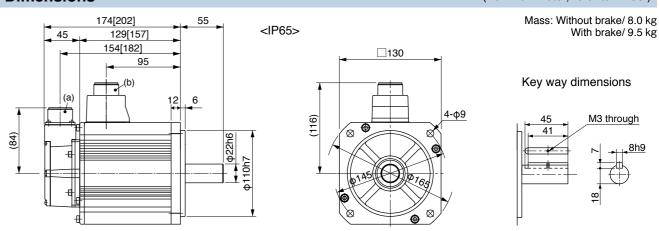
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

ies

				AC2	00 V	
		IP65		MDME302GC	MDME302SC	
Motor model		IP67		MDME302G1□	MDME302S1	
A II In I .	Model	A5II, A5	series	MFD◇	TA390	
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TA390E	-	
unven	Fı	ame sym	bol	F-fra	ame	
Power supply	capacit	y	(kVA)	4.	.5	
Rated output			(W)	30	00	
Rated torque			(N·m)	14	1.3	
Momentary M	ax. pea	k torque	(N·m)	43.0		
Rated current		(.	A(rms))	17.4		
Max. current	current (A(o-p))			74		
Regenerative	brake	Without option		No limit Note)2		
frequency (times	/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotation	al speed		(r/min)	3000		
Moment of inc	ertia	Without	brake	12.9		
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072	

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

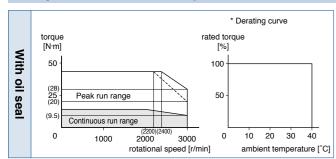
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

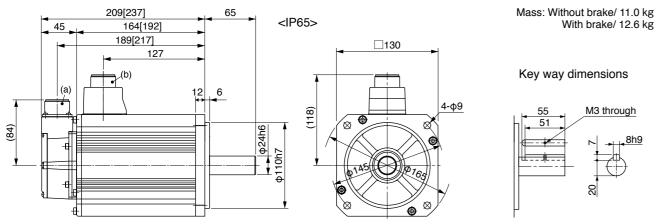
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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		
M-4	-1	IP65		MDME402GC	MDME402SC	
Motor mode	*1	IP67		MDME402G1□	MDME402S1	
	Model	A5Ⅱ, A5	series	MFD♦	TB3A2	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-	
unver	F	rame sym	bol	F-fra	ame	
Power supp	oly capacit	у	(kVA)	6.	0	
Rated outp	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	19	.1	
Momentary	Max. pea	k torque	(N·m)	57.3		
Rated current (A(rms))			21.0			
Max. current (A(o-p))			8	9		
Regenerativ	e brake	Without	option	No limi	No limit Note)2	
frequency (tir	mes/min) Note)1	DV0P4285×2 N		No limi	t Note)2	
Rated rotat	ional spee	d	(r/min)	2000		
Max. rotation	onal speed	l	(r/min)	3000		
Moment of	inertia	Without	brake	37.6		
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	42.9		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolutio		n per sing	le turn	1048576	131072	

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

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

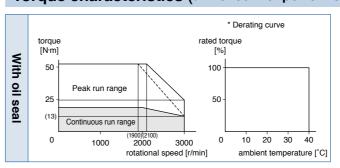
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

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

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



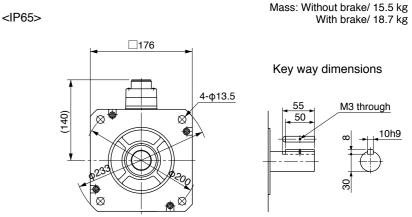
Dimensions

178[207]

133[162]

158[187]

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



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

[Unit: mm]

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

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

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

83

			AC2	00 V
55		IP65	MDME502GC	MDME502SC
Motor model *1		IP67	MDME502G1	MDME502S1
	Model	A5II, A5 series	MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
anver	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	7	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23	3.9
Momentary Ma	ax. peal	k torque (N·m)	71.6	
Rated current (A(rms))			25.9	
Max. current (A(o-p))			110	
Regenerative brake Without option		120		
		DV0P4285×2	No lim	t Note)2
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

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

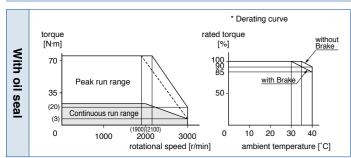
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

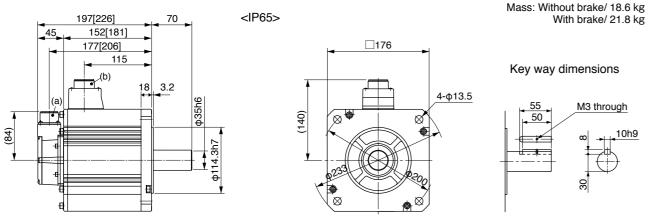
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

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

Specifications

			AC2	00 V		
M-4		IP65		-	-	
Motor model		IP67		MDME752G1□	MDME752S1	
	Model	A5II, A5	series	MGD♦TC3B4		
Applicable driver *2	No.	A5IIE, A	5E series	-	_	
unver	Fr	ame sym	bol	G-fr	ame	
Power supply	y capacit	у	(kVA)	1	1	
Rated output			(W)	75	00	
Rated torque	;		(N·m)	47	'.8	
Momentary N	/lax. peal	k torque	(N·m)	119		
Rated current (A(rms))		44.0				
Max. current (A(o-p))			16	35		
Regenerative	brake	Without	option	No limi	No limit Note)2	
frequency (time	s/min) Note)1	DV0P4285×3		No limit Note)2		
Rated rotatio	nal spee	d	(r/min)	1500		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Without	brake	101		
of rotor (×10	⁻⁴ kg·m²)	With b	orake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn		le turn	1048576	131072		

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

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

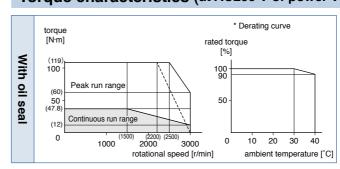
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

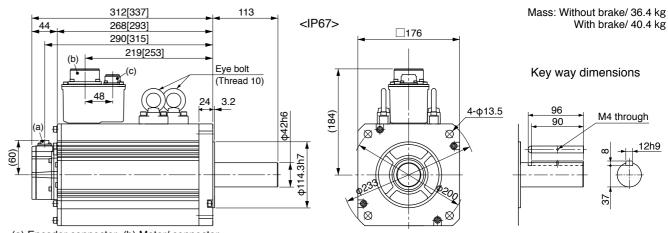
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

			AC2	00 V
		IP65	-	-
Motor model *1		IP67	MDMEC12G1	MDMEC12S1
Ammliaalala	Model	A5II, A5 series	MHD♦TC3B4	
Applicable driver *2	No.	A5IIE, A5E series	_	_
anver	Fr	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	1	7
Rated output		(W)	110	000
Rated torque		(N·m)	70.0	
Momentary Ma	ax. peal	k torque (N·m)	175	
Rated current (A(rms))			54.2	
Max. current (A(o-p))			20	03
Regenerative brake Without option		No limit Note)2		
		DV0PM20058	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	212	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	220	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

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

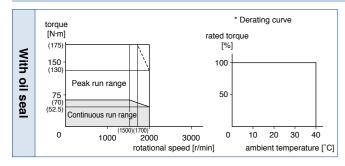
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

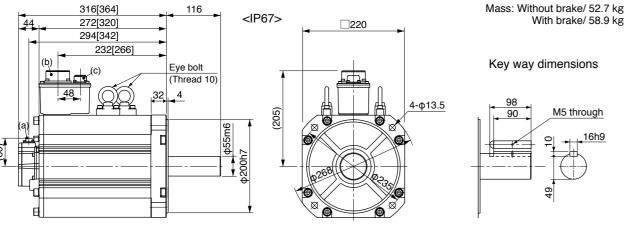
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
assembly	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



- (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.

87

Specifications

				AC2	00 V
M - t - · · · · · · · · · · · · · · · · · ·		IP65		-	-
Motor mode	ÐI ⊧1	IP67		MDMEC52G1□	MDMEC52S1
A 1: 1- 1	Model	A5 I I, A5	series	МНО◇	ТСЗВ4
Applicable driver	No.	A5IIE, A	5E series	-	-
unven	Fr	ame sym	bol	H-fra	ame
Power supp	oly capacit	y	(kVA)	2	2
Rated outp	ut		(W)	150	000
Rated torqu	ie		(N·m)	95	5.5
Momentary	Max. peal	k torque	(N·m)	224	
Rated curre	ent	(A(rms))	66.1	
Max. current (A(o-p))			23	36	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0PM20058		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	2000	
Moment of	inertia	Without brake		302	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	3-	11
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			le turn	1048576	131072

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

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

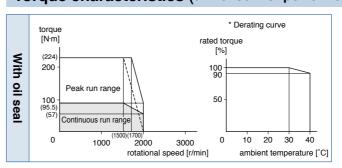
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

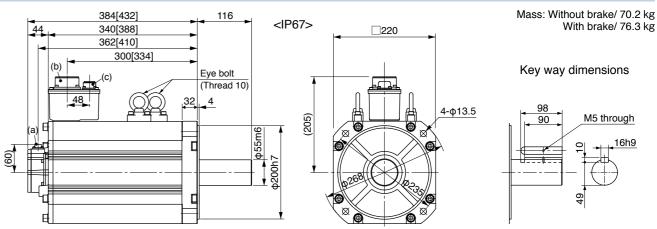
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
accombiy	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



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

[Unit: mm]

				AC2	00 V
		IP65		-	-
Motor model *1		IP67		MFME152G1	MFME152S1
Annlinable	Model	A5II, A5 series	;	MDD<	T5540
Applicable driver *2	No.	A5IIE, A5E se	ries	MDD ⊘T5540E	_
unver	Fr	ame symbol		D-fr	ame
Power supply	capacit	y (k\	/A)	2	.3
Rated output		(W)	15	00
Rated torque		(N·	m)	7.	16
Momentary Ma	ax. peal	k torque (N	m)	21.5	
Rated current (A(rms))		7.5			
Max. current (A(o-p))		32			
Regenerative b	rake	Without option	on	100	
frequency (times/r	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	al spee	d (r/m	in)	2000	
Max. rotationa	l speed	(r/m	in)	3000	
Moment of ine	rtia	Without brak	е	18.2	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	;	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	er speci	fications No	te)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single tur	'n	1048576	131072

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

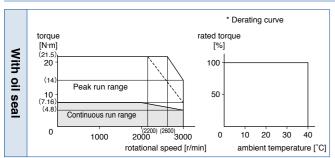
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

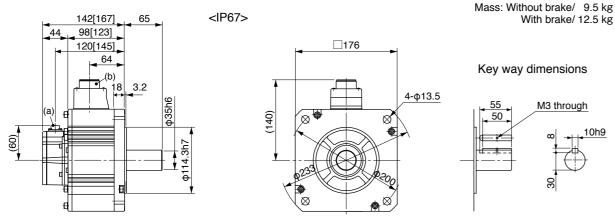
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions



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

[Unit: mm]

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

Specifications

				AC2	00 V
Motor mod	-1	IP65		-	-
	*1	IP67		MFME252G1	MFME252S1
A	Mode	A5II, A5	series	MED<	T7364
Applicable driver	*2 No.	A5IIE, A	5E series	MED ⊘T7364E	_
unven	F	rame sym	bol	E-fra	ame
Power sup	ply capac	ty	(kVA)	3	.8
Rated outp	ut		(W)	25	00
Rated torqu	ue		(N·m)	11	.9
Momentary	Max. pea	ak torque	(N·m)	30.4	
Rated current (A(rms))			13.4		
Max. current (A(o-p))			5	7	
Regenerativ	ve brake	Without	option	75	
frequency (ti	mes/min) Note	DV0P4285		No limit Note)2	
Rated rotal	tional spe	ed	(r/min)	2000	
Max. rotation	onal spee	d	(r/min)	3000	
Moment of	inertia	Without	brake	35.8	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	45	5.2
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary enc	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
	Resolution per single turn			1048576	131072

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

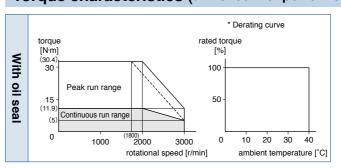
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

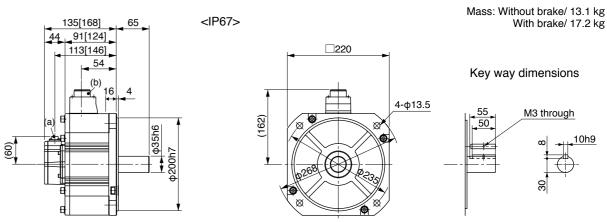
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
accombly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

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

			AC200 V		
IP65		-	-		
Motor model		IP67		MFME452G1□	MFME452S1
A 12 11	Model	A5II, A5	series	MFD⇔	TB3A2
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unven	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	6.	8
Rated output			(W)	45	00
Rated torque			(N·m)	21	.5
Momentary M	ax. peal	k torque	(N·m)	54.9	
Rated current		(A(rms))	24.7	
Max. current (A(o-p))		105			
Regenerative b	orake	Without	option	67	
frequency (times/	min) Note)1	DV0P4	0P4285×2 375		75
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	ıl speed		(r/min)	3000	
Moment of ine	ertia	Without	brake	63.1	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

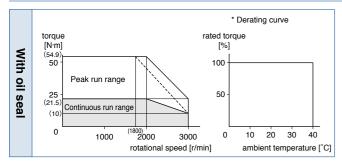
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

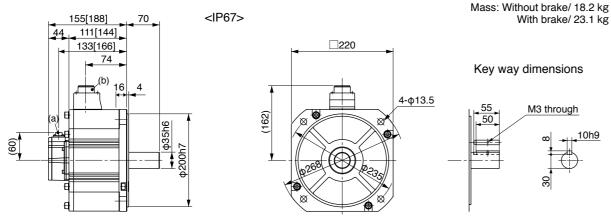
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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	
N4 - 4		IP65		MGME092GC□	MGME092SC
Motor mod	el *1	IP67		MGME092G1□	MGME092S1
A 1: 1- 1	Mode	A5II, A5	series	MDD<	T5540
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ⊘T5540E	-
unver	F	rame sym	bol	D-fr	ame
Power supp	oly capaci	ty	(kVA)	1.	.8
Rated outp	ut		(W)	90	00
Rated torqu	ıe		(N·m)	8.	59
Momentary	Max. pea	ak torque	(N·m)	19.3	
Rated current (A(rms))			7.6		
Max. current (A(o-p))			2	4	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tir	mes/min) Note	DV0P4284		No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	1000	
Max. rotation	onal spee	d	(r/min)	2000	
Moment of	inertia	Without	brake	6.70	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	orake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resoluti	on per sing	le turn	1048576	131072

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

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

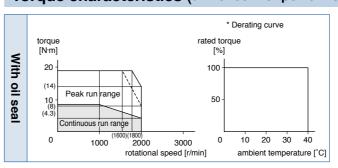
•
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

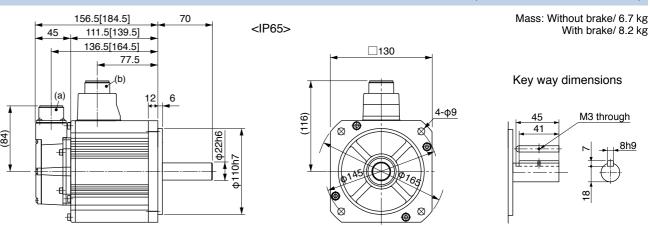
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

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

			AC200 V		
		IP65	MGME202GC□	MGME202SC□	
Motor model *1		IP67	MGME202G1□	MGME202S1□	
A so selle a selelle	Model	A5II, A5 series	MFD<	TA390	
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_	
anver	Fr	ame symbol	F-fr	ame	
Power supply	capacit	y (kVA)	3	.8	
Rated output		(W)	20	00	
Rated torque		(N·m)	19).1	
Momentary Ma	ax. peal	k torque (N·m)	47.7		
Rated current		(A(rms))	17.0		
Max. current		(A(o-p))	60		
Regenerative b	orake	Without option	No lim	t Note)2	
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	1000		
Max. rotationa	ıl speed	(r/min)	2000		
Moment of ine	ertia	Without brake	30.3		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	35.6		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	Resolution per single turn			131072	

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

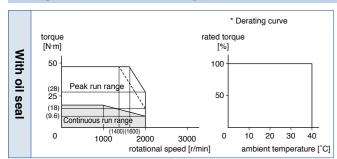
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

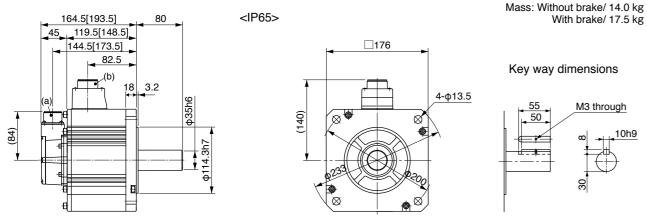
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3
 in number of applicable driver 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
Matauaraadal		IP65			MGME302GC□	MGME302SC
Motor mode	€I ∗1		IP67		MGME302G1□	MGME302S1
Amaliaabla		Model	A5II, A5	series	MFD♦	TB3A2
Applicable driver '	*2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
211401		Fr	ame sym	bol	F-fra	ame
Power supp	oly c	apacit	y	(kVA)	4.	5
Rated outp	ut			(W)	30	00
Rated torqu	ıe			(N·m)	28	5.7
Momentary	Ma	x. peal	k torque	(N·m)	71.7	
Rated curre	ent		(A(rms))	22.6	
Max. currer	nt		((A(o-p))	8	0
Regenerativ	/e br	ake	Without option		No limi	t Note)2
frequency (tin	nes/mi	in) Note)1	DV0P4285×2		No limit Note)2	
Rated rotat	iona	l spee	d	(r/min)	1000	
Max. rotation	onal	speed		(r/min)	2000	
Moment of	iner	tia	Without brake		48.4	
of rotor (×1	0 ⁻⁴ k	(g·m²)	With brake		53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			le turn	1048576	131072	

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

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

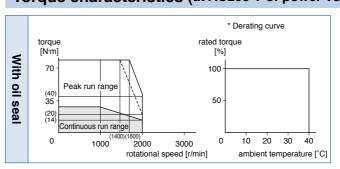
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

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

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



Dimensions

210.5[239.5]

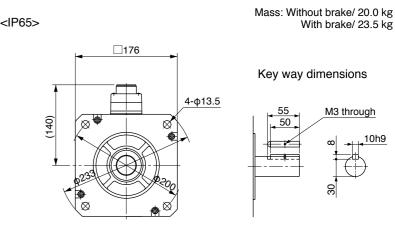
165.5[194.5]

128.5

3.2

190.5[219.5]

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



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

[Unit: mm]

				AC2	00 V
		IP65		-	-
Motor model *1		IP67		MGME452G1□	MGME452S1
	Model	A5I , A 5 s	eries	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
unver	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	у	(kVA)	7.	.5
Rated output			(W)	45	00
Rated torque			(N·m)	43.0	
Momentary Ma	ax. peal	k torque	(N·m)	107	
Rated current (A(rms))			29.7		
Max. current (A(o-p))			110		
Regenerative brake Without option		option	No limi	t Note)2	
frequency (times/r	nin) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without I	brake	79.1	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	84.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Re	esolutio	n per single	e turn	1048576	131072

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

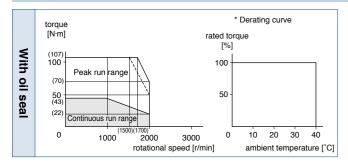
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

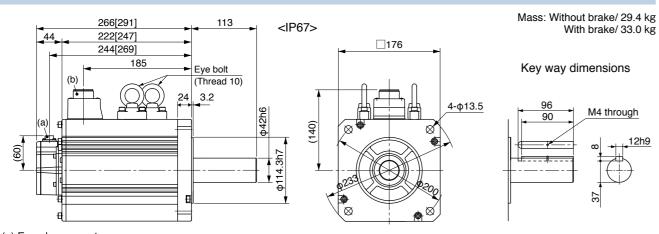
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

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

Specifications

			AC2	00 V	
Motor mod	-1	IP65		-	_
	*1	IP67		MGME602G1□	MGME602S1
	Model	A5II, A5	series	MGD◇	тсзв4
Applicable driver	*2 No.	A5IIE, A	5E series	_	_
anvoi	F	rame sym	bol	G-fr	ame
Power sup	ply capacit	у	(kVA)	9.	.0
Rated outp	ut		(W)	60	00
Rated torqu	ue		(N·m)	57	7.3
Momentary	Max. pea	k torque	(N·m)	143	
Rated current (A(rms))			38.8		
Max. current (A(o-p))			14	19	
Regenerativ	ve brake	Without	option	No limi	t Note)2
frequency (ti	mes/min) Note)1	DV0P4285×4		No limit Note)2	
Rated rotat	tional spee	d	(r/min)	1000	
Max. rotation	onal speed	l	(r/min)	2000	
Moment of	inertia	Without brake		101	
of rotor (x1	0 ⁻⁴ kg·m ²)	With b	rake	10	07
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution	n per sing	le turn	1048576	131072

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.

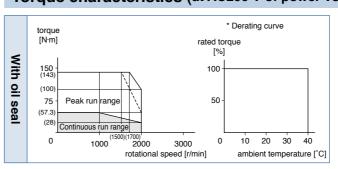
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

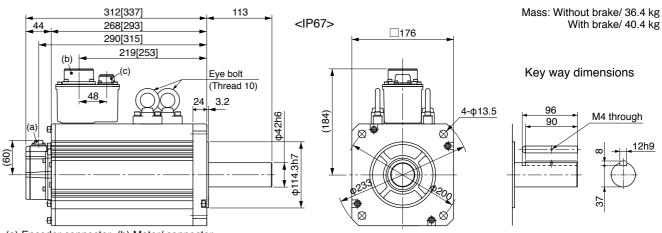
	During assembly	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
	During	Radial load P-direction (N)	1764
	operation	Thrust load A, B-direction (N)	588

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

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



Dimensions



(a) Encoder connector (b) Motor/ connector

(c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC2	00 V
Motor model		IP65		MHME102GC□	MHME102SC
*1		IP67		MHME102G1□	MHME102S1
Mo	del	A5II, A5 series		MDD<	T3530
Applicable No		A5IIE, A	5E series	MDD ⊘T3530E	_
unvei	Fr	ame sym	bol	D-fra	ame
Power supply cap	acity	/	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	4.	77
Momentary Max. p	peak	torque	(N·m)	14.3	
Rated current		(A(rms))	5.7	
Max. current (A(o-p))			2	4	
Regenerative brake	е	Without option		83	
frequency (times/min) N	lote)1	DV0P4284		No limit Note)2	
Rated rotational sp	pee	d	(r/min)	2000	
Max. rotational sp	eed		(r/min)	3000	
Moment of inertia		Without	brake	24.7	
of rotor ($\times 10^{-4}$ kg·r	m²)	With b	orake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3				5 times or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resol	Resolution per single turn			1048576	131072

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

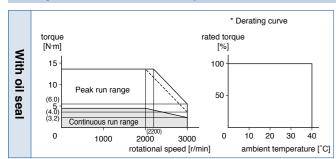
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

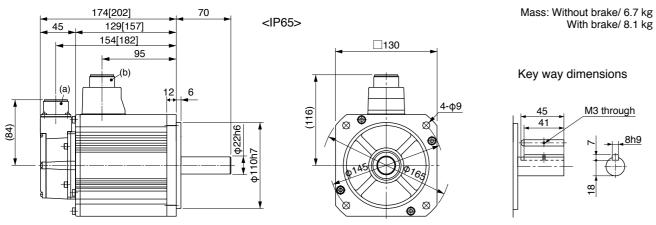
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V		
M-4		IP65		MHME152GC	MHME152SC	
Motor mode *		IP67		MHME152G1□	MHME152S1	
A II In I .	Model	A5 I I, A5	series	MDD<	T5540	
Applicable driver **	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	_	
unver	Fr	ame sym	bol	D-fra	ame	
Power suppl	y capacit	y	(kVA)	2.	.3	
Rated outpu	t		(W)	15	00	
Rated torque	Э		(N·m)	7.	16	
Momentary I	Max. peal	k torque	(N·m)	21.5		
Rated currer	nt	(A(rms))	9.4		
Max. current (A(o-p))			4	0		
Regenerative	e brake	Without	thout option 22		2	
frequency (time	es/min) Note)1	DV0P4284		130		
Rated rotation	onal spee	d	(r/min)	20	2000	
Max. rotation	nal speed		(r/min)	3000		
Moment of in	nertia	Without	brake	37.1		
of rotor (×10	⁻⁴ kg·m²)	With brake		38.4		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072	

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

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

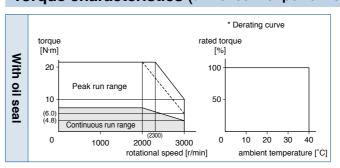
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

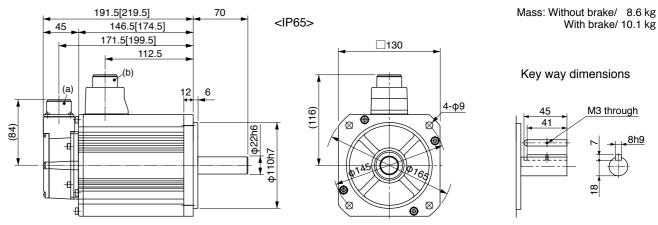
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



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



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

[Unit: mm]

				AC2	00 V
Motor model	IP65		MHME202GC	MHME202SC	
*1		IP67		MHME202G1□	MHME202S1
Amaliaabla	Model	A5II, A5	series	MED<	T7364
Applicable driver *2	No.	A5IIE, A	5E series	MED ⊘T7364E	-
unver	Fr	ame sym	bol	E-fra	ame
Power supply	capacit	y	(kVA)	3	.3
Rated output			(W)	20	00
Rated torque			(N·m)	9.	55
Momentary Ma	ax. peal	k torque	(N·m)	28.6	
Rated current (A(rms))		11.1			
Max. current (A(o-p))		47			
Regenerative brake Without option		option	4	5	
frequency (times/r	min) Note)1	DV0P	4285	14	12
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	57.8	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	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		Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

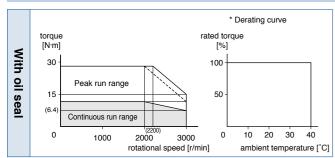
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

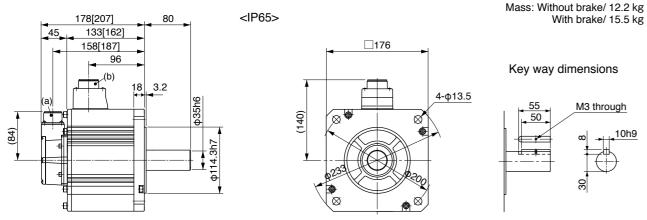
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
M-4		IP65		MHME302GC□	MHME302SC
Motor mode	ÐI ⊧1	IP67		MHME302G1□	MHME302S1
	Mode	A5II, A5	series	MFD◇	TA390
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TA390E	_
unven	F	rame sym	ıbol	F-fra	ame
Power supp	oly capac	ity	(kVA)	4.	.5
Rated outpo	ut		(W)	30	00
Rated torqu	ıe		(N·m)	14	.3
Momentary	Max. pe	ak torque	(N·m)	43.0	
Rated curre	ent	(A(rms))	16.0	
Max. current (A(o-p))		68			
Regenerativ	e brake	Without	option	n 19	
frequency (tin	nes/min) Note	DV0P4	285×2	142	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	nal spee	d	(r/min)	3000	
Moment of	inertia	Withou	t brake	90.5	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With I	orake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Not		Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		on per sind	ale turn	1048576	131072

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

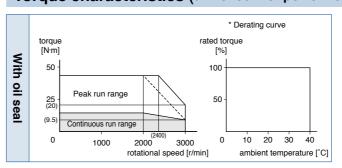
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

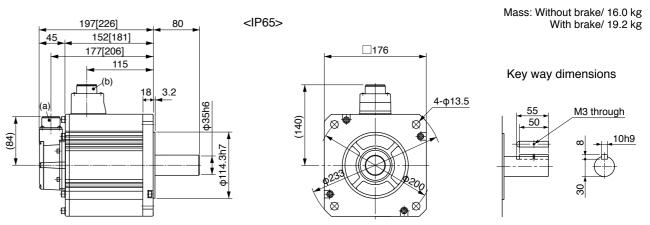
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

			AC2	00 V
Matanasadal		IP65	MHME402GC□	MHME402SC□
Motor model *1		IP67	MHME402G1□	MHME402S1
Amaliaabla	Model	A5II, A5 series	MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6.	.0
Rated output		(W)	40	00
Rated torque		(N·m)	19).1
Momentary Ma	ax. peal	k torque (N·m)	57.3	
Rated current		(A(rms))	21.0	
Max. current (A(o-p))		8	9	
Regenerative brake Without option		Without option	1	7
frequency (times/r	nin) Note)1	DV0P4285×2	125	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	112	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

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

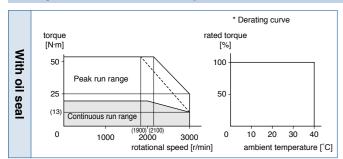
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

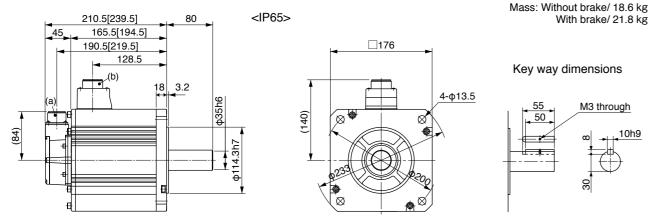
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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		MHME502GC□	MHME502SC
Motor mod	ei *1	IP67		MHME502G1□	MHME502S1
	Mode	A5II, A5	series	MFD ⊘TB3A2	
Applicable driver	*2 No.	A5IE, A	5E series	MFD ⊘TB3A2E	-
unvei		Frame sym	ibol	F-fra	ame
Power sup	ply capac	ity	(kVA)	7.	.5
Rated outp	ut		(W)	50	00
Rated torqu	ue		(N·m)	23	3.9
Momentary	/ Мах. ре	ak torque	(N·m)	71.6	
Rated curre	ent	(A(rms))	25.9	
Max. current (A(o-p))		110			
Regenerativ	ve brake	Without	option	10	
frequency (tir	mes/min) Note	DV0P4	DV0P4285×2 76		6
Rated rotat	tional spe	ed	(r/min)	2000	
Max. rotation	onal spec	d	(r/min)	3000	
Moment of	inertia	Withou	t brake	162	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)) With I	orake	164	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution		ion per sind	ıle turn	1048576	131072

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

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

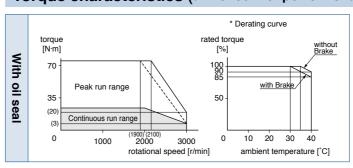
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

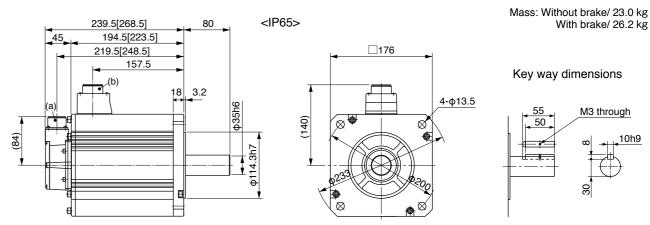
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

Torque characteristics (at 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.

			AC2	00 V
		IP65	-	-
Motor model *1		IP67	MHME752G1□	MHME752S1
	Model	A5II, A5 series	MGD ⊘TC3B 4	
Applicable 42	No.	A5IIE, A5E series	_	_
divei	Fr	ame symbol	G-fr	ame
Power supply	capacit	y (kVA)	1	1
Rated output		(W)	75	00
Rated torque		(N·m)	47	7.8
Momentary Ma	ax. peal	k torque (N·m)	119	
Rated current (A(rms))		44.0		
Max. current (A(o-p))		165		
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/		DV0P4285×4	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	273	
of rotor (×10 ⁻⁴ kg·m ²) With b		With brake	279	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

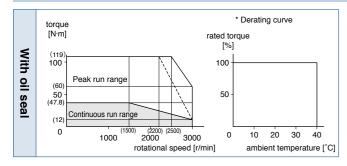
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

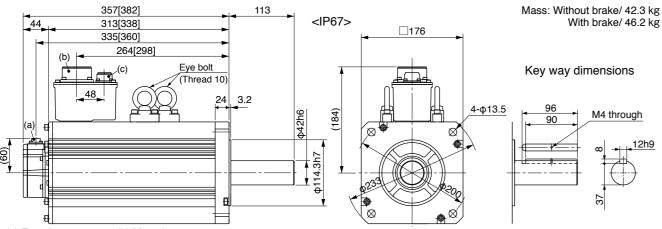
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

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

Specifications

				AC4	00 V
		IP65		MSME084GC	MSME084SC
Motor model *1		IP67		MSME084G1□	MSME084S1
A 11 11	Model	A5II, A5	series	MDD<	T2412
Applicable driver *2	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
unver	Fr	ame sym	ibol	D-fr	ame
Power supply of	capacity	y	(kVA)	1.	.6
Rated output			(W)	75	50
Rated torque			(N·m)	2.5	39
Momentary Ma	ax. peal	torque	(N·m)	7.16	
Rated current		((A(rms))	2.4	
Max. current (A(o-p))		10			
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/m	nin) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotational	speed		(r/min)	5000	
Moment of ine	rtia	Withou	t brake	1.61	
of rotor (×10 ⁻⁴	kg·m²)	With I	orake	1.93	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Re	esolutio	n per sing	gle turn	1048576	131072

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

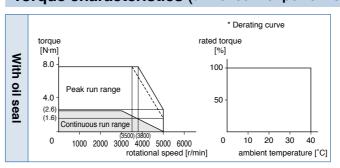
,
2.5 or more
50 or less
15 or less
0.70±10 %
2 or more
24±2.4

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

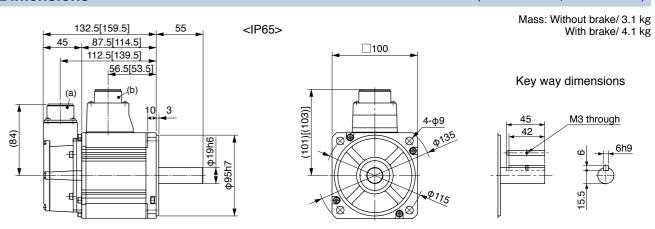
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



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



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

[Unit: mm]

				AC4	00 V
IP65		MSME104GC□	MSME104SC		
Motor model *1		IP67		MSME104G1□	MSME104S1
	Model	A5II, A5 series		MDD<	T3420
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T3420E	_
unver	Fr	ame sym	bol	D-fr	ame
Power supply	capacit	у	(kVA)	1	.8
Rated output			(W)	10	00
Rated torque			(N·m)	3.18	
Momentary Ma	ax. peal	k torque	(N·m)	9.55	
Rated current (A(rms))		3.3			
Max. current (A(o-p))			14		
Regenerative brake Without option		option	No limi	t Note)2	
, •		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	2.03	
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

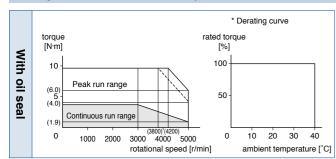
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

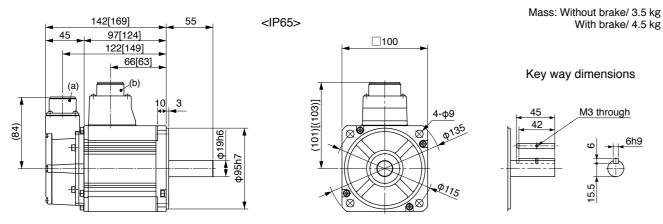
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

					AC4	00 V
		IP65			MSME154GC□	MSME154SC
Motor mod	1 e l *1		IP67		MSME154G1□	MSME154S1
		Model	A5II, A5	series	MDD<	T3420
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T3420E	_
unver	Ì	Fr	ame sym	bol	D-fr	ame
Power sup	ply o	capacity	/	(kVA)	2	.3
Rated outp	out			(W)	15	00
Rated torq	ue			(N·m)	4.	77
Momentary	у Ма	x. peal	torque	(N·m)	14.3	
Rated current (A(rms))				4.2		
Max. current (A(o-p))				18		
Regenerati	ve b	rake	Without	option	No limi	t Note)2
frequency (ti	imes/m	nin) Note)1	DV0PM20048		No limit Note)2	
Rated rota	tiona	al spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	iner	tia	Without brake		2.84	
of rotor (x1	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		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

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

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

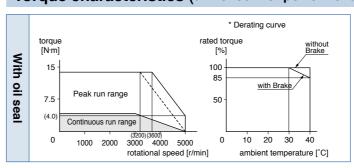
1	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

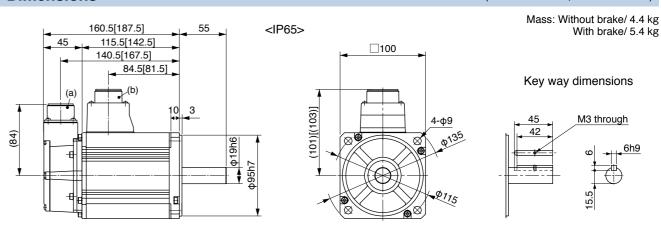
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

A5 Family

Specifications

			AC4	00 V	
Matanasadal		IP65	MSME204GC□	MSME204SC□	
Motor model *1		IP67	MSME204G1□	MSME204S1□	
A mustice a late	Model	A5II, A5 series	MED<	MED ⊘ T4430	
Applicable *2	No.	A5IE, A5E series	MED ⊘T4430E	_	
divoi	Fr	ame symbol	E-fr	ame	
Power supply	capacit	y (kVA)	3	.3	
Rated output		(W)	20	00	
Rated torque		(N·m)	6.	6.37	
Momentary Ma	ax. peal	k torque (N·m)	19.1		
Rated current		(A(rms))	5.7		
Max. current		(A(o-p))	2	24	
Regenerative brake Without option		Without option	No lim	t Note)2	
frequency (times/r	min) Note)1	DV0PM20049	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	3.68		
of rotor (×10 ⁻⁴	kg·m²)	With brake	4.01		
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	1048576	131072	

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

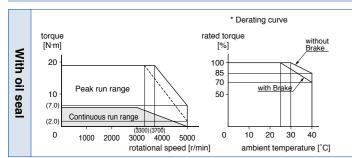
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

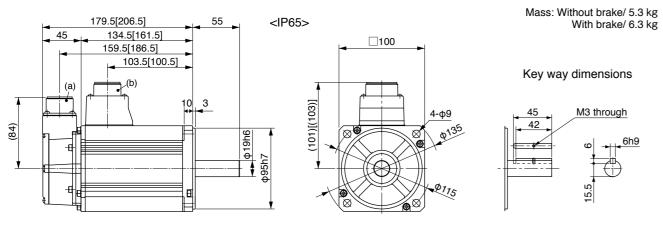
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

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

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

Specifications

			AC4	00 V	
M-4		IP65		MSME304GC□	MSME304SC
Motor mode	?I ⊧1	IP67		MSME304G1□	MSME304S1
A I' l. l .	Model	A5 I I, A5	series	MFD◇	T5440
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unven	F	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	4.	.5
Rated outpu	ut		(W)	30	00
Rated torqu	ie		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	9.2	
Max. current (A(o-p))			3	9	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	inertia	Without brake		6.50	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary enco	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

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

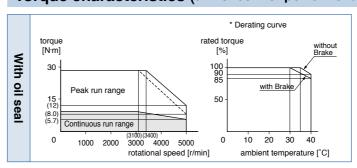
,	,
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

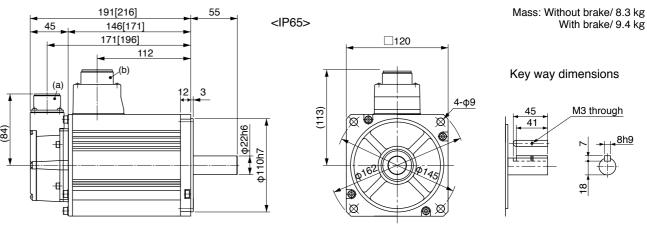
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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
Makananalal		IP65	MSME404GC□	MSME404SC
Motor model *1		IP67	MSME404G1□	MSME404S1
	Model	A5II, A5 series	MFD◇	TA464
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.8
Rated output		(W)	40	00
Rated torque		(N·m)	12.7	
Momentary Ma	ax. peal	k torque (N·m)	38.2	
Rated current (A(rms))		9.9		
Max. current (A(o-p))		42		
Regenerative brake Without option		Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM20049×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	12.9	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

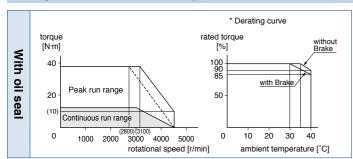
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

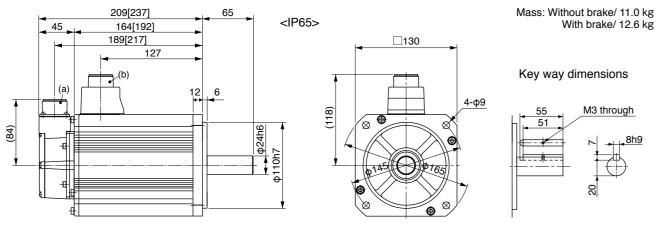
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

Specifications

			AC4	00 V	
N 4 - 4		IP65		MSME504GC□	MSME504SC
Motor mode	:1	IP67		MSME504G1□	MSME504S1
A	Model	A5 I I, A5	series	MFD◇	TA464
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unvoi	Fi	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	7.	.5
Rated outpu	ut		(W)	50	00
Rated torqu	е		(N·m)	15	5.9
Momentary	Max. pea	k torque	(N·m)	47.7	
Rated curre	nt	(A(rms))	12.0	
Max. current (A(o-p))			5	1	
Regenerativ	e brake	Without	option	35	57
frequency (tim	nes/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	4500	
Moment of i	inertia	Without	brake	17.4	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary enco	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

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

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

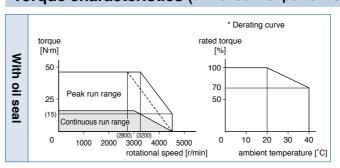
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

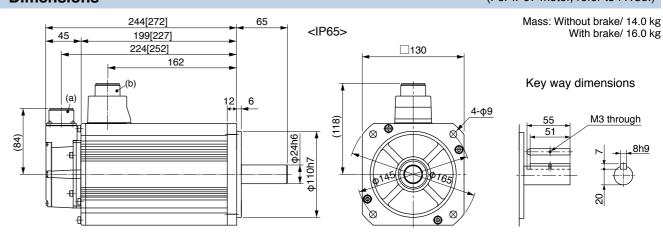
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

				AC4	00 V
		IP65		MDME044GC	MDME044SC
Motor model *1		IP67		MDME044G1	MDME044S1
	Model	A5II, A5	series	MDD<	T2407
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T2407E	_
unvei	Fr	ame sym	ıbol	D-fra	ame
Power supply	capacit	y	(kVA)	0.	9
Rated output			(W)	40	00
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 b	rake	Without	option	No limi	t 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	Withou	t brake	1.61	
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	1.93	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

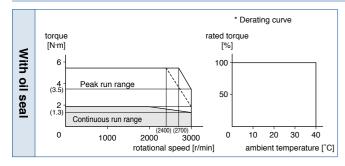
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

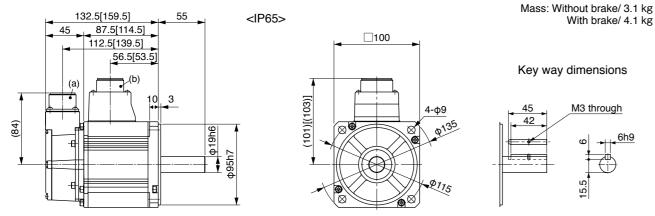
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V	
		IP65		MDME064GC MDME064S	
Motor mode *	•	IP67		MDME064G1	MDME064S1
A	Model	A5II, A5	series	MDD<	T2407
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T2407E	-
unven	Fi	rame sym	bol	D-fr	ame
Power supp	ly capacit	у	(kVA)	1.	.2
Rated outpu	ıt		(W)	60	00
Rated torqu	е		(N·m)	2.	86
Momentary	Max. pea	k torque	(N·m)	8.	59
Rated curre	nt	(A(rms))	1.5	
Max. curren	t		(A(o-p))	6.5	
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)	20	00
Max. rotatio	nal speed		(r/min)	30	00
Moment of i	nertia	Without	brake	2.03	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072

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

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

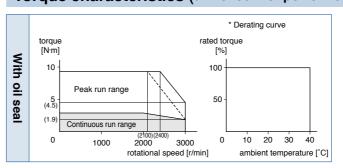
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Exoluing voltage (BC) (V)	2-1-2

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

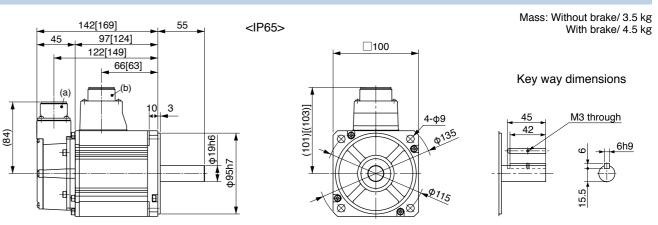
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC4	00 V	
		IP65		MDME104GC	MDME104SC
Motor model *1		IP67		MDME104G1	MDME104S1
Ammliaalala	Model	A5II, A5	series	MDD ◇T2412	
Applicable driver *2	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
anver	Fı	ame sym	bol	D-fra	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	4.	77
Momentary Ma	ax. pea	k torque	(N·m)	14.3	
Rated current		(A(rms))	2.8	
Max. current (A(o-p))			1	2	
Regenerative brake Without option		option	No limit Note)2		
frequency (times/	min) Note)1	DV0PM	20048	No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	4.60	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

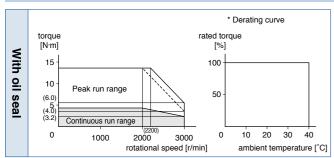
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

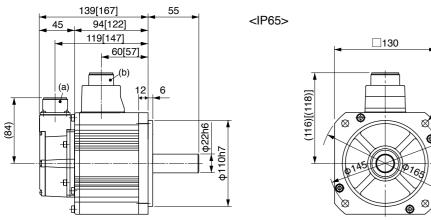
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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



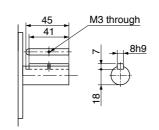
Dimensions



Mass: Without brake/ 5.2 kg With brake/ 6.7 kg

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

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.

Specifications

					AC4	00 V	
		IP65		MDME154GC	MDME154SC		
Motor mode	€I ∗1		IP67		MDME154G1□	MDME154S1	
Annlinable		Model	A5II, A5	series	MDD<	T3420	
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-	
unven		Fr	ame sym	bol	D-fra	ame	
Power supp	oly c	apacit	y	(kVA)	2.	.3	
Rated outp	ut			(W)	15	00	
Rated torqu	ıe			(N·m)	7.	16	
Momentary	Ма	x. peal	k torque	(N·m)	21	.5	
Rated curre	ent		(A(rms))	4.7		
Max. currer	nt		((A(o-p))	20		
Regenerativ	/e br	ake	Without	option	tion No limit Note)2		
frequency (tir	nes/m	in) Note)1	DV0PM	0PM20048 No limit Note)2		t Note)2	
Rated rotat	iona	l spee	d	(r/min)	2000		
Max. rotation	onal	speed		(r/min)	3000		
Moment of	iner	tia	Without	brake	6.1	70	
of rotor (×1	0 ⁻⁴ k	(g·m²)	With b	rake	7.99		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute		
Resolution per sing				le turn	1048576	131072	

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

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

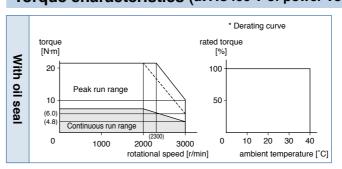
1	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

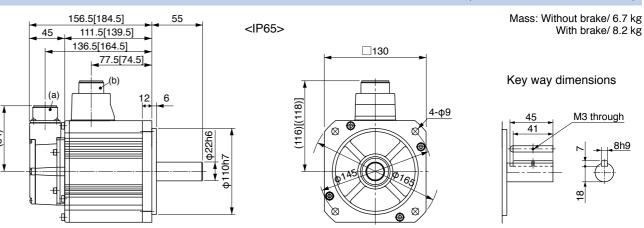
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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	
Motor model			MDME204GC□	MDME204SC		
*1		IP67		MDME204G1□	MDME204S1	
Amaliaahla	Model	A5II, A5	series	MED<	T4430	
Applicable driver *2	No.	A5IIE, A	5E series	MED ⊘T4430E	_	
anver	Fr	ame sym	ıbol	E-fra	ame	
Power supply	capacit	у	(kVA)	3	.3	
Rated output			(W)	20	00	
Rated torque			(N·m)	9.	55	
Momentary Ma	ax. peal	k torque	(N·m)	28.6		
Rated current		((A(rms))	5.9		
Max. current (A(o-p))			25			
Regenerative b	rake	Without	option	No limi	t Note)2	
frequency (times/r	min) Note)1	DV0PN	120049	No limit Note)2		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia	Withou	t brake	8.72		
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	10.0		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

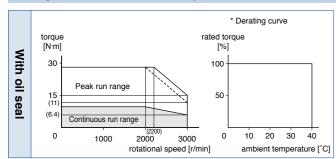
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

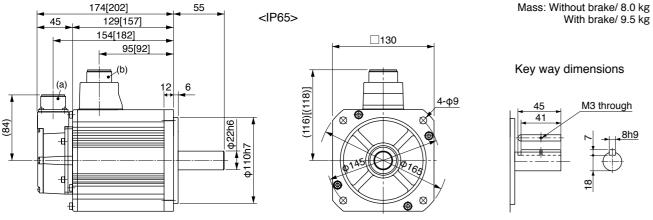
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Dimensions are subject to change without notice. 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 mod	el *1	IP67		MDME304G1	MDME304S1
	Model	A5II, 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 capaci	ty	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ıe		(N·m)	14	.3
Momentary	Max. pea	k torque	(N·m)	43.0	
Rated curre	ent	(A(rms))	8.7	
Max. current (A(o-p))			3	7	
Regenerativ	/e brake	Without	option	No limi	t Note)2
frequency (tir	mes/min) Note)	DV0PM20049×2		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	t	(r/min)	3000	
Moment of	inertia	Without brake		12.9	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	orake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolutio		on per sing	le turn	1048576	131072

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

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

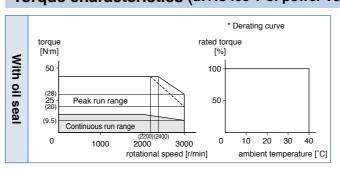
,	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

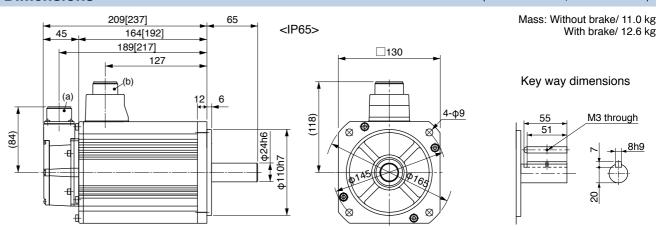
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



Dimensions (For IP67 motor, refer to P.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.

115

			AC4	00 V
IP65		IP65	MDME404GC□	MDME404SC
Motor model		IP67	MDME404G1□	MDME404S1
Annlinahla	Model	A5II, A5 series	MFD◇	TA464
Applicable *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
unver	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	6	.8
Rated output		(W)	40	00
Rated torque		(N·m)	19.1	
Momentary Ma	ax. peal	k torque (N·m)	57.3	
Rated current (A(rms))		10.6		
Max. current (A(o-p))		4	5	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0PM20049×2	No limit Note)2	
Rated rotations	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.6	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	42.9	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072

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

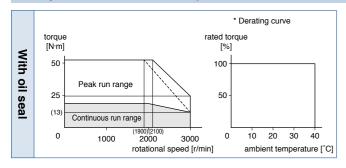
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

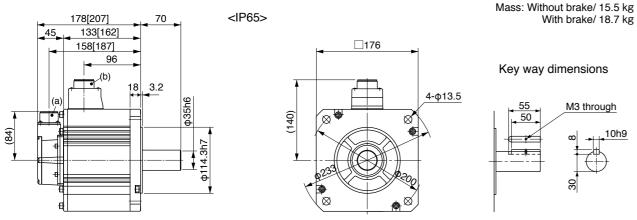
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V	
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MDME504GC□	MDME504SC
Motor mode	:1	IP67		MDME504G1□	MDME504S1
A I' l. I .	Model	A5II, A5 series		MFD♦	TA464
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unver	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	7.	5
Rated outpu	ut		(W)	50	00
Rated torqu	е		(N·m)	23	.9
Momentary	Max. peal	k torque	(N·m)	71.6	
Rated curre	nt	(.	A(rms))	13.0	
Max. current (A(o-p))			5	5	
Regenerativ	e brake	Without	option	120	
frequency (tim	nes/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	inertia	Without brake		48.0	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per sin			le turn	1048576	131072

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

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

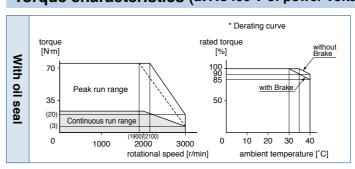
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

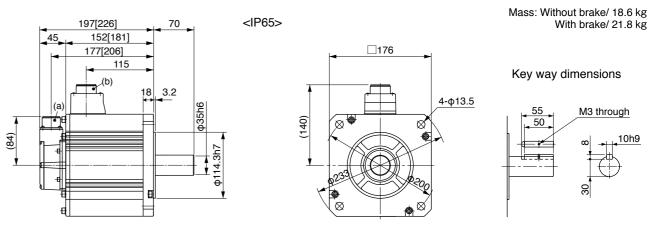
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

				AC4	00 V	
Motor model		-	_			
*1		IP67		MDME754G1□	MDME754S1	
Annlinable	Model	A5II, A5 series		MGD◇	TB4A2	
Applicable driver *2	No.	A5IIE, A5E se	ries	_	_	
anver	Fr	ame symbol		G-fr	ame	
Power supply	capacit	y (k\	/A)	1	1	
Rated output		(W)	75	00	
Rated torque		(N·	m)	47.8		
Momentary Ma	ax. peal	k torque (N-	m)	119		
Rated current (A(rms))		22				
Max. current (A(o-p))		83				
Regenerative b	rake	Without option	n	No limi	No limit Note)2	
frequency (times/i	min) Note)1	DV0PM20049)×3	No limit Note)2		
Rated rotation	al spee	d (r/m	in)	1500		
Max. rotationa	l speed	(r/m	in)	3000		
Moment of ine	rtia	Without brak	е	101		
of rotor ($\times 10^{-4}$	kg·m²)	With brake		107		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encode	er speci	fications Not	e)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single tur	'n	1048576	131072	

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

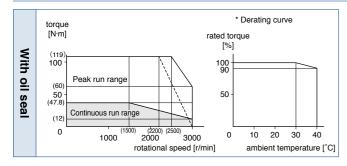
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

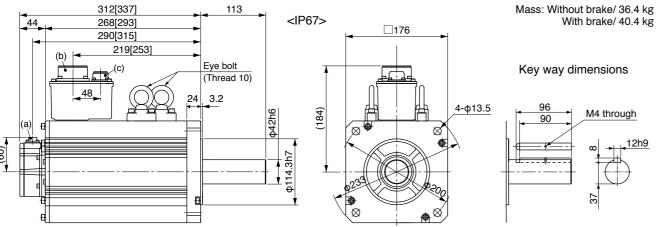
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

Specifications

			AC4	00 V	
M -4		IP65		-	-
Motor mode	ÐI ⊧1	IP67		MDMEC14G1□	MDMEC14S1
A 1: 1- 1	Model	A5 I I, A5	series	MHD \diamondsuit TB4A2	
Applicable driver	No.	A5IIE, A	5E series	-	-
unven	Fi	ame sym	bol	H-fr	ame
Power supp	oly capacit	y	(kVA)	1	7
Rated outp	ut		(W)	110	000
Rated torqu	ie		(N·m)	7	0
Momentary	Max. pea	k torque	(N·m)	175	
Rated curre	ent	(A(rms))	27.1	
Max. currer	nt		(A(o-p))	10)1
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0PM20059 No limit		t Note)2	
Rated rotat	ional spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	2000	
Moment of	inertia	Without	brake	2-	12
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	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		
		n per sina	le turn	1048576	131072

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

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

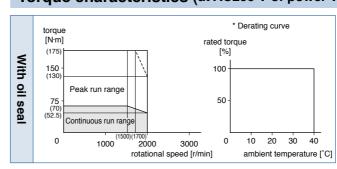
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

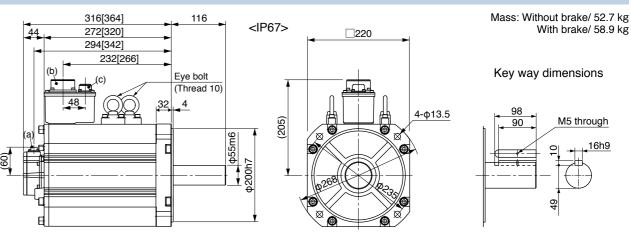
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
docombry	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



(a) Encoder connector (b) Motor/ connector

(c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

[Unit: mm]

		AC4	00 V	
Matar madal	IP65		-	-
Motor model *1		IP67	MDMEC54G1	MDMEC54S1
Amuliaahla	Model	A5II, A5 series	MHD \bigcirc TB4A2	
Applicable 42	No.	A5IIE, A5E series	_	_
dilvei	Fı	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	2	2
Rated output		(W)	150	000
Rated torque		(N·m)	95	5.5
Momentary Ma	ax. pea	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 ($\times 10^{-4}$	kg·m²)	With brake	211	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

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

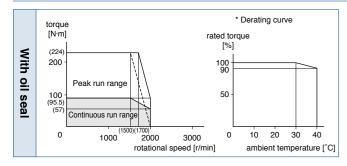
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

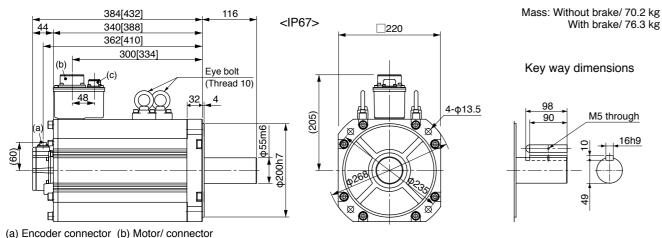
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
document	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

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

Specifications

				AC4	00 V
Matanaaala		IP65		-	-
Motor mode	*	IP67		MFME154G1□	MFME154S1
	Model	A5 I I, A5	series	MDD ⊘ T3420	
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unver	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	2	.4
Rated outpu	ıt		(W)	15	00
Rated torqu	е		(N·m)	7.	16
Momentary	Max. peal	k torque	(N·m)	21.5	
Rated current (A(rms))		3.8			
Max. current (A(o-p))		16			
Regenerative	e brake	Without	option	100	
frequency (tim	es/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	18.2	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution		n per sino	le turn	1048576	131072

400 V MFME 1.5 kW Middle inertia, Middle capacity

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

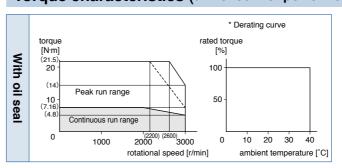
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

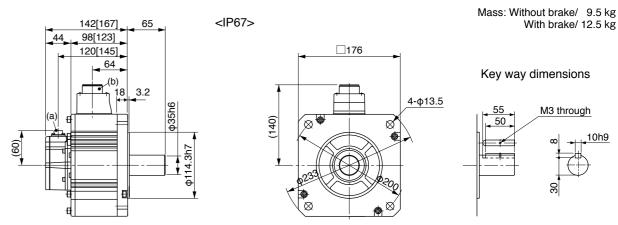
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions



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

[Unit: mm]

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

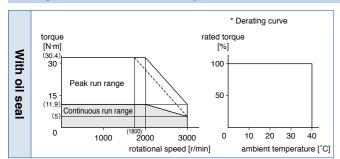
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

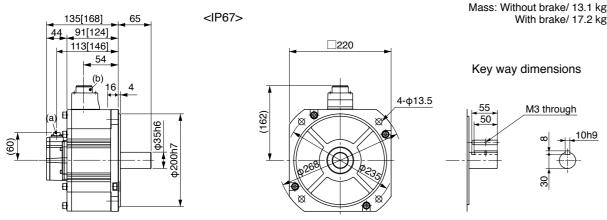
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

400 V MFME 4.5 kW [Middle inertia, Middle capacity]

Motor Specifications

Specifications

			AC4	00 V	
M-4		IP65		-	-
Motor mode	ÐI ⊭1	IP67		MFME454G1□	MFME454S1
	Model	A5II, A5 series		MFD♦	TA464
Applicable driver	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unven	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	6.	.9
Rated outp	ut		(W)	45	00
Rated torqu	ie		(N·m)	21	.5
Momentary	Max. pea	k torque	(N·m)	54.9	
Rated curre	ent	(.	A(rms))	12.4	
Max. currer	nt	((A(o-p))	5	3
Regenerativ	e brake	Without	option	67	
frequency (tin	nes/min) Note)1	DV0PM20049×2		375	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	63.1	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		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 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1048576	131072

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

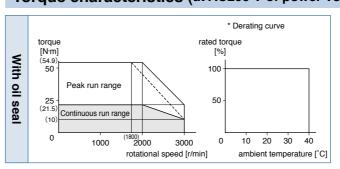
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

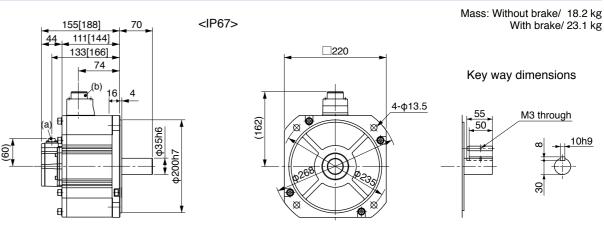
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
document	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

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 refer to P.16.

			AC4	AC400 V	
Motor model		IP65	MGME094GC□	MGME094SC□	
*1		IP67	MGME094G1□	MGME094S1□	
Amaliaabla	Model	A5II, A5 series	MDD<	T3420	
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T3420E	_	
unver	Fr	ame symbol	D-fr	ame	
Power supply of	capacity	y (kVA)	1.	.8	
Rated output		(W)	90	00	
Rated torque		(N·m)	8.59		
Momentary Ma	x. 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/m	nin) Note)1	DV0PM20048	No limit Note)2		
Rated rotationa	al spee	d (r/min)	1000		
Max. rotational	speed	(r/min)	2000		
Moment of iner	tia	Without brake	6.70		
of rotor ($\times 10^{-4}$ l	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		
Resolution per single turn			1048576	131072	

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

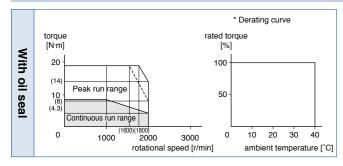
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

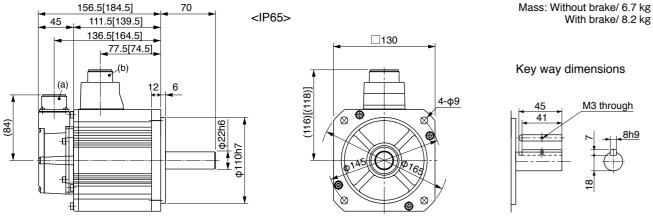
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V		
Motor model		IP65		MGME204GC□	MGME204SC	
		IP67			MGME204G1□	MGME204S1
A I' In I .	М	odel	el A5II, A5 series		MFD ◇ T5440	
Applicable driver *	k2 N	0.	A5IIE, A5E series		MFD ◇T5440E	-
diivei		Fr	ame sym	bol	F-fra	ame
Power supp	oly ca	pacit	y	(kVA)	3	.8
Rated outpo	ut			(W)	20	00
Rated torqu	ıe			(N·m)	19).1
Momentary	Мах.	peal	k torque	(N·m)	47.7	
Rated curre	ent		(A(rms))	8.5	
Max. currer	nt			(A(o-p))	30	
Regenerativ	e bral	ке	Without option		No limit Note)2	
frequency (tim	nes/min)	Note)1	DV0PM20049×2		No limit Note)2	
Rated rotati	ional	spee	d	(r/min)	1000	
Max. rotation	nal s	peed		(r/min)	2000	
Moment of	inertia	ì	Without	brake	30.3	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		35.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn		le turn	1048576	131072		

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

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

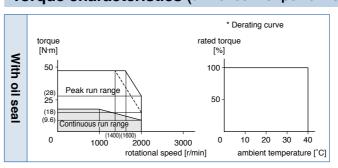
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

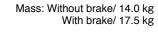
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

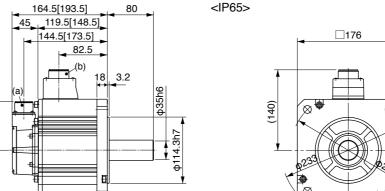
Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

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





50

Key way dimensions

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

[Unit: mm]

Motor model			AC400 V		
		IP65	MGME304GC□	MGME304SC□	
		IP67	MGME304G1□	MGME304S1□	
Amaliaahla	Model	A5II, A5 series	MFD ◇TA464		
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_	
dilvei	Fr	ame symbol	F-fra	ame	
Power supply of	capacity	y (kVA)	4.	.5	
Rated output		(W)	30	00	
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 b	rake	Without option	No limit Note)2		
frequency (times/m	nin) Note)1	DV0PM20049×2	No limit Note)2		
Rated rotations	al spee	d (r/min)	1000		
Max. rotational	speed	(r/min)	2000		
Moment of iner	rtia	Without brake	48.4		
of rotor ($\times 10^{-4}$ l	kg·m²)	With brake	53.7		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

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

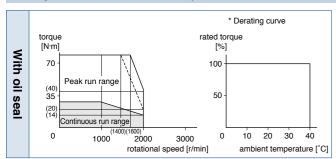
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

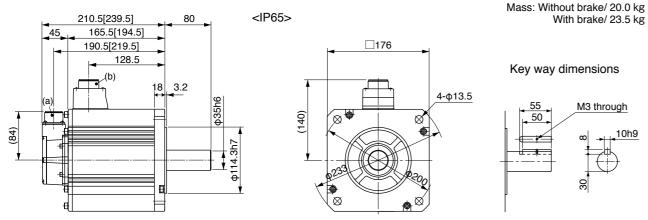
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

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

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

400 V MGME 4.5 kW [Middle inertia, Middle capacity]

				AC4	00 V
		IP65		-	-
Motor mode	el ⊧1	IP67		MGME454G1□	MGME454S1
	Model	A5II, A5	series	MFD \diamondsuit TA464	
Applicable driver	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
ariver		rame sym	bol	F-fra	ame
Power supp	oly capaci	ty	(kVA)	7.	5
Rated outpo	ut		(W)	45	00
Rated torqu	ie		(N·m)	43	.0
Momentary	Max. pea	k torque	(N·m)	107	
Rated curre	ent	(A(rms))	14.8	
Max. currer	nt		(A(o-p))	55	
Regenerativ	e brake	Without	option	No limit Note)2	
		DV0PM2)V0PM20049×2		t Note)2
Rated rotati	ional spec	ed	(r/min)	1000	
Max. rotation	nal speed	t	(r/min)	2000	
Moment of	inertia	Without	brake	79	.1
of rotor (×10	0 ⁻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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per s			le turn	1048576	131072

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

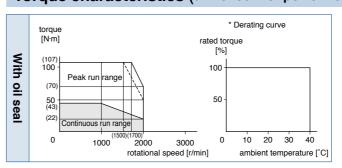
,	,
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

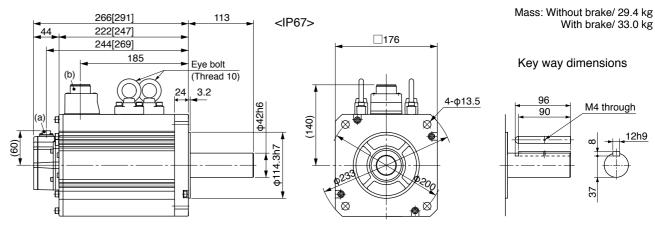
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

Specifications



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

A5 Family

				AC400 V	
Motor model		IP65		-	-
*1		IP67		MGME604G1□	MGME604S1
	Model	A5II, A5 series		MGD ⊘TB4A2	
Applicable driver *2	No.	A5IIE, A5E series		-	-
dilvei	Fr	ame sym	bol	G-fr	ame
Power supply	capacit	y	(kVA)	9	.0
Rated output			(W)	60	00
Rated torque			(N·m)	57.3	
Momentary Ma	ax. peal	k torque	(N·m)	143	
Rated current		(.	A(rms))	19.4	
Max. current		((A(o-p))	74	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM2	0049×3	No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without	brake	101	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	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			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

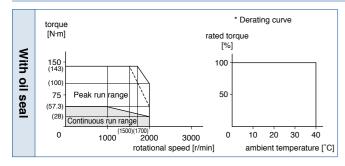
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

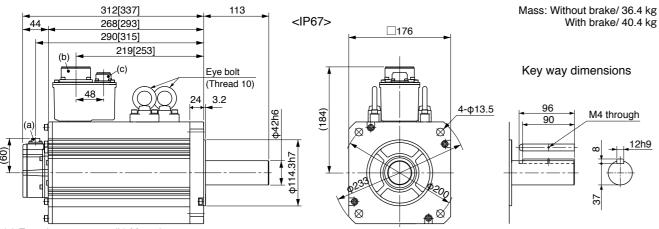
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1764
	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
		IP65		MHME104GC	MHME104SC
Motor mode	:1	IP67		MHME104G1□	MHME104S1
	Model	A5II, A5 series		MDD ◇T2412	
Applicable driver *	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	_
unver	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	ıt		(W)	10	00
Rated torqu	е		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated curre	nt	(A(rms))	2.9	
Max. curren	t	((A(o-p))	12	
Regenerativ	e brake	Without option		83	
frequency (tim		DV0PM20048		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without brake		24.7	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

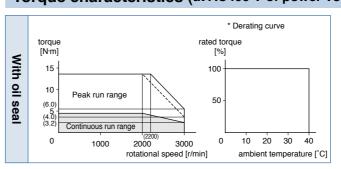
,	,
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

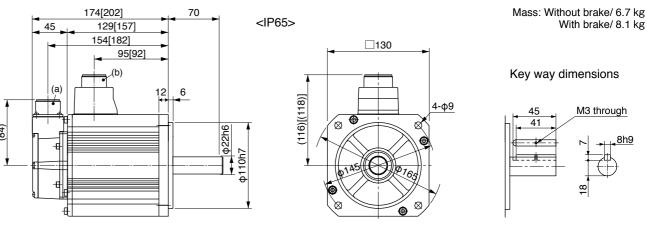
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.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]

			AC400 V	
		IP65	MHME154GC	MHME154SC
Motor model *1		IP67	MHME154G1□	MHME154S1
Amalianda	Model	A5II, A5 series	MDD<	T3420
Applicable 42	No.	A5IIE, A5E series	MDD ⊘T3420E	_
divei	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	2	.3
Rated output		(W)	15	00
Rated torque		(N·m)	7.16	
Momentary Ma	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	4.7	
Max. current		(A(o-p))	20	
Regenerative b	rake	Without option	22	
frequency (times/r	min) Note)1	DV0PM20048	130	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.1	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

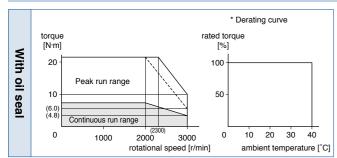
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

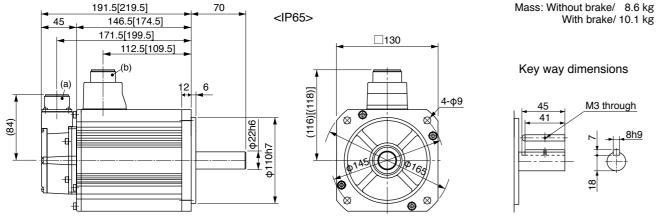
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions>
Reduce the moment of inertia ratio if high speed response operation is required.
Dimensions are subject to change without notice. Contact us or a dealer for the latest information.
Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V		
		IP65			MHME204GC	MHME204SC
Motor mod	1 e i *1		IP67		MHME204G1□	MHME204S1
	N	Model	A5II, A5 series		MED<	T4430
Applicable driver	*2 N	No.	A5IIE, A5E series		MED⇔T4430E	-
unver		Fr	ame sym	bol	E-fra	ame
Power sup	ply ca	apacity	/	(kVA)	3	.3
Rated outp	out			(W)	20	00
Rated torq	ue			(N·m)	9.	55
Momentary	у Мах	. peal	torque	(N·m)	28.6	
Rated current (A(rms))			5.5			
Max. curre	nt		((A(o-p))	24	
Regenerati	ve bra	ake	Without	option	45	
frequency (ti	imes/min) Note)1	DV0PM20048		142	
Rated rota	tional	spee	d	(r/min)	2000	
Max. rotati	onal s	speed		(r/min)	3000	
Moment of	inerti	ia	Without	brake	57.8	
of rotor (x1	10 ⁻⁴ kį	g·m²)	With b	rake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

400 V MHME 2.0 kW [High inertia, Middle capacity]

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

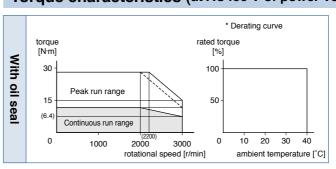
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

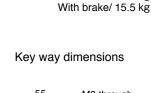
- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

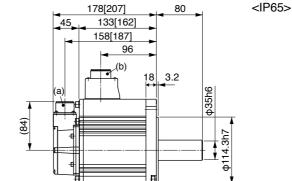


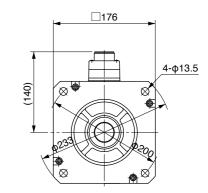
Dimensions

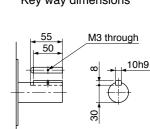
(For IP67 motor, refer to P.140.)



Mass: Without brake/ 12.2 kg







- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC400 V		
		IP65		MHME304GC	MHME304SC
Motor model *1		IP67		MHME304G1□	MHME304S1
	Model	A5II, A5 series A5IIE, A5E series		MFD ◇ T5440	
Applicable driver *2	No.			MFD \diamondsuit T5440E	-
unver	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	y	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	14	.3
Momentary Ma	ax. peal	k torque	(N·m)	43.0	
Rated current		(A	(rms))	8.0	
Max. current		(/	۹(o-p))	34	
Regenerative b	rake	Without o	option	19	
frequency (times/i	min) Note)1	DV0PM20	049×2	142	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without I	brake	90.5	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3				5 times or less	
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	e turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

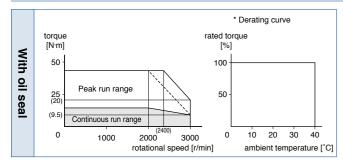
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

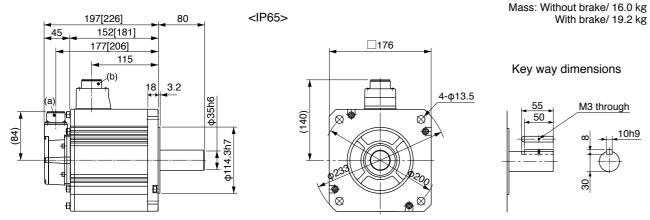
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.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 - t - · · · · · · · · · · · · · · · · · ·		IP65		MHME404GC	MHME404SC
Motor mode	:1	IP67		MHME404G1	MHME404S1
	Model	A5II, A5 series		MFD⇔TA464	
Applicable driver *	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-
unven	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	8
Rated outpu	ıt		(W)	40	00
Rated torqu	е		(N·m)	19	.1
Momentary	Max. peal	k torque	(N·m)	57.3	
Rated curre	nt	(A(rms))	10.5	
Max. curren	t	((A(o-p))	45	
Regenerativ	e brake	Without	option	17	
frequency (tim	es/min) Note)1	DV0PM20049×2		125	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without brake		112	
of rotor (×10	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	
			le turn	1048576	131072

400 V MHME 4.0 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

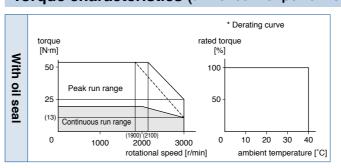
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



3.2

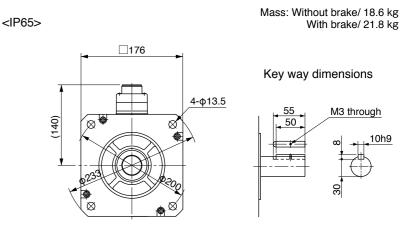
Dimensions

210.5[239.5]

190.5[219.5]

165.5[194.5]

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC400 V		
		IP65		MHME504GC	MHME504SC
Motor model *1		IP67		MHME504G1	MHME504S1
Ammliaabla	Model	A5II, A5 series A5IIE, A5E series		MFD \diamondsuit TA464	
Applicable driver *2	No.			MFD \diamondsuit TA464E	_
divei	Fı	ame symbol		F-fr	ame
Power supply	capacit	y (k	VA)	7	.5
Rated output			(W)	50	00
Rated torque		(N	·m)	23	3.9
Momentary Ma	ax. pea	k torque (N	·m)	71.6	
Rated current		(A(rn	າຣ))	13.0	
Max. current		(A(o	-p))	55	
Regenerative b	rake	Without opti	on	1	0
frequency (times/r	min) Note)1	DV0PM2004	9×2	76	
Rated rotation	al spee	d (r/n	nin)	2000	
Max. rotationa	l speed	(r/n	nin)	3000	
Moment of ine	rtia	Without bra	ke	162	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	Э	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			rn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

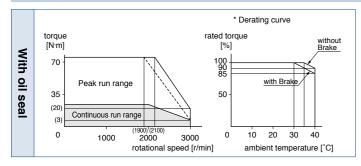
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

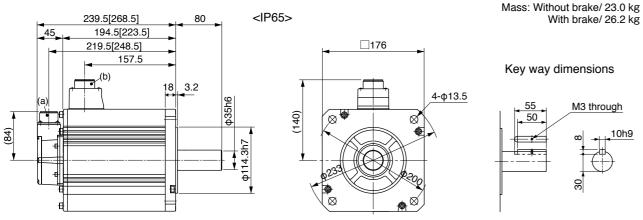
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
Mataumaada		IP65		-	-
Motor mode *	.	IP67		MHME754G1	MHME754S1
A	Model	A5 I I, A5	series	MGD♦	TB4A2
Applicable driver *	No.	A5IIE, A	5E series	_	_
diivoi	Fr	ame sym	bol	G-fr	ame
Power supp	ly capacit	y	(kVA)	9	.0
Rated outpu	t		(W)	75	00
Rated torque	е		(N·m)	47	'.8
Momentary	Max. peal	k torque	(N·m)	119	
Rated curre	nt	(A(rms))	22.0	
Max. current (A(o-p))		83			
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	Jency (times/min) Note)1 DV0PM20049×3		No limi	t 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	orake	27	79
Recommend ratio of the le			tia Note)3	5 times	or less
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolutio	n per sing	le turn	1048576	131072

400 V MHME 7.5 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

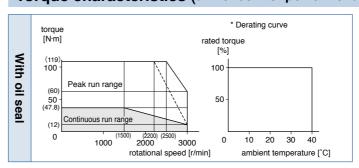
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

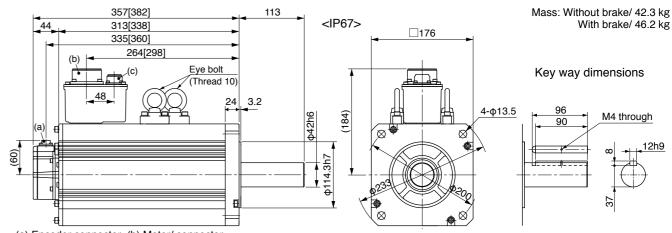
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



(a) Encoder connector (b) Motor/ connector

(c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

[Unit: mm]

• MDME044 □ 1 *

(a) Encoder connector

MDME10□□1*

(b) Motor/Brake connector

131.5[158.5]

87.5[114.5]

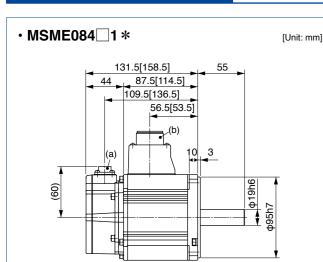
56.5[53.5]

109.5[136.5]

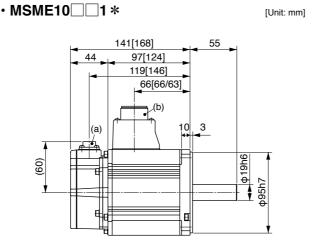
A5 Family

[Unit: mm]

[Unit: mm]

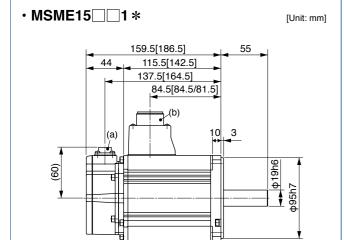


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

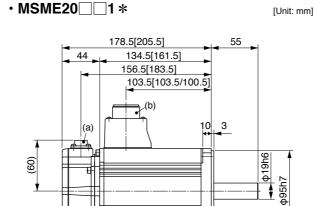


IP67 motor (MSME 200 V/ 400 V type)

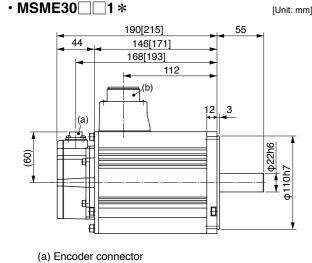
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.



- (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.



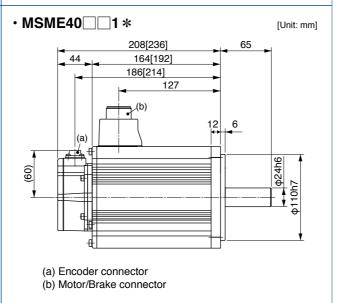
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



- (b) Motor/Brake connector

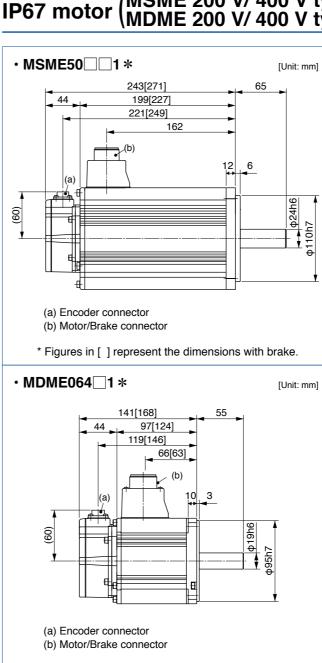
* For motor specifications, refer to IP65 motor page.

* Figures in [] represent the dimensions with brake.

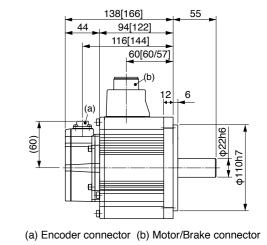


* Figures in [] represent the dimensions with brake.

137

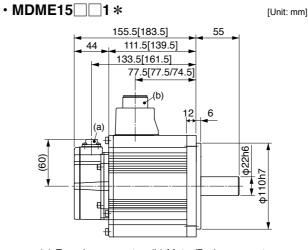


* Figures in [] represent the dimensions with brake.

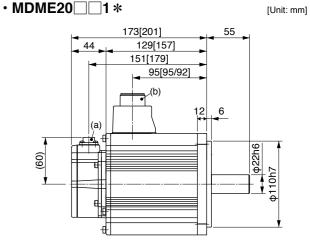


* Figures in [] represent the dimensions with brake.

* Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

^{*} For motor specifications, refer to IP65 motor page.

173[201]

177[206]

133[162]

96

3.2

155[184]

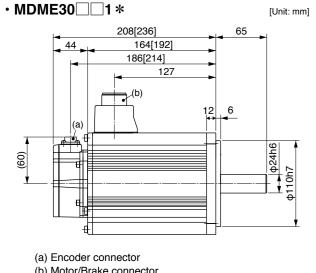
129[157]

95[95/92]

151[179]

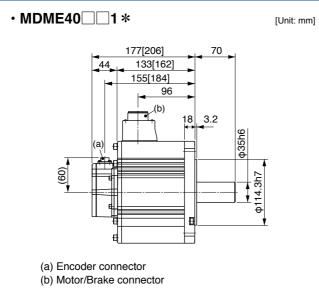
[Unit: mm]

[Unit: mm]

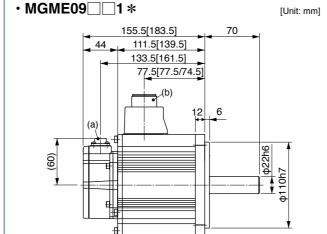


(b) Motor/Brake connector * Figures in [] represent the dimensions with brake. MDME50□□1 * [Unit: mm] 196[225] 152[181] 174[203] 115

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake

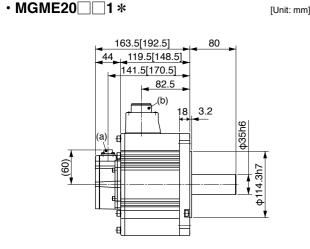


IP67 motor (MDME 200 V/ 400 V type) MGME 200 V/ 400 V type)



* Figures in [] represent the dimensions with brake.

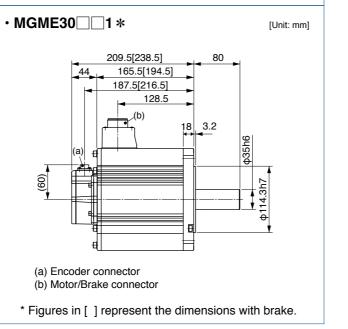
- (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake.
- If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



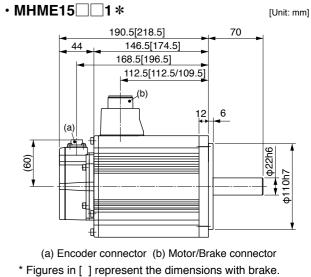
- (a) Encoder connector
- (b) Motor/Brake connector

* For motor specifications, refer to IP65 motor page.

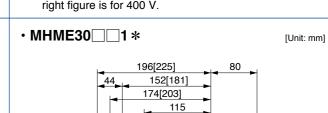
* Figures in [] represent the dimensions with brake.

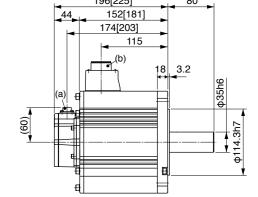


• MHME10□□1 * 00 (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V. MHME20□□1* (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. MHME40 □ □ 1 *



If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

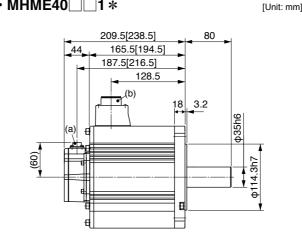




- (a) Encoder connector
 - (b) Motor/Brake connector

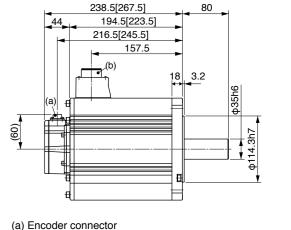
(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

• MHME50 □ □ 1 * [Unit: mm]



* Figures in [] represent the dimensions with brake.

- * For motor specifications, refer to IP65 motor page

Motor Types with Gear Reducer

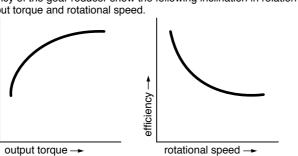


Type and Specifications

Reduction		Motor ou	tput (W)		Type of
ratio	100	200	400	750	reducer
1/5	•	•	•	•	
1/9	•	•	•	•	For high
1/15	•	•	•	•	precision
1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Efficiency of the gear reducer show the following 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 %	
Caarraduaar	Lubrication	Grease lubrication	
Gear reducer	Rotational direction at output shaft	Same direction as the motor output shaft	
	Mounting method	Flange mounting	
Per	Permissible moment of inertia of the load (conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor	
	Protective structure	IP44 (at gear reducer)	
	Ambient temperature	0 °C to 40 °C (free from condensation)	
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 rated output Type 100 W Low inertia

MSMD 100 W to 750 W Low inertia MSME 100 W to 750 W High inertia MHMD 200 W to 750 W

Model Designation

Symbol Specifications 02 200 W 04 400 W 08 750 W

Voltage specifications

Symbol	Rated output
1	100 V
2	200 V

oder specifica	tions ———		
odor opcomod	10110		
Format	Pulse counts	Resolution	Wire
	2011		_

Rotary encoder specifications ————————————————————————————————————						
Symbol	Format	Pulse counts	Resolution	Wire		
G	Incremental	20-bit	1048576	5		
S	Absolute	17-bit	131072	7		

^{*} S: can be used in incremental.

Motor types with gear reducer

· ·						
Symbol	Reduction	Motor output (W)				Type of
	ratio	100	200	400	750	reducer
1N	1/5	•	•	•	•	For high precision
2N	1/9	•	•	•	•	
3N	1/15	•	•	•	•	
4N	1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Motor structure

Symbol	Shaft	Holding	Holding brake	
Symbol	Key way	without	with	
3	•	•		
4	•		•	

The Combination of the Driver and the Motor with gear reducer

	100	v	200 V		
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	Single/3-phase, 200 V	
	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	
100 W	MSME011□□□N	MADHT1107 MADKT1107	MSME012□□□N	MADHT1505 MADKT1505	
100 W	MSMD011□□□N	MADHT1107E MADKT1107E	MSMD012□□□N	MADHT1505E MADKT1505E	
000 W	MSME021 ON	MBDHT2110 MBDKT2110	MSME022 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	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	MBDHT2510E MBDKT2510E	
750 W			MSME082 N MSMD082 N MHMD082 N	MCDHT3520 MCDKT3520	
750 44				MCDHT3520E MCDKT3520E	

^{*} Motor specifications enter to $\square \square \square$ of the motor model number. Refer to "Model designation".

Torque Characteristics of Motor

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor + conv to moto	of inertia reducer/ erted or shaft)		ISS	Permissible radial load	Permissible thrust load
		(W)		(W)	(r/min)	(r/min)	(N·m)	(Nam)	J(×10 ⁻⁴		w/o brake (k		(N)	(N)
	MSME01	(W)	1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 2N		1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N	100	1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01 4N		1/25	80	120	240	6.27	19.0	0.0885	0.003	2.15	2.35	1670	833
	MSME02 1N		1/5	170	600	1200	2.65	8.04	0.258	0.0313	1.5	1.92	490	245
_	MSME02 2N		1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
MSME	MSME02 3N	200	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
	MSME02		1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
MO	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		1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
rtia	MSME04 3N	400	1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04 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		1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N	750	1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082 4N		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01		1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 2N		1/9	80	333	555	2.25	6.86	0.0853	0.0883	1.02	1.23	588	294
	MSMD01 3N	100	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
	MSMD02		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
3	MSMD02 2N		1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 3N	200	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02 4N		1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
.ow	MSMD04		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
Low iner	MSMD04 🗆 🗆 2N		1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
rtia	MSMD04 🗆 🗆 3N	400	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082 □□ 1N		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082 □□ 2N		1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082 □□ 3N	750	1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082 □□ 4N		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02 🗆 🗆 1N		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02 🗆 🗆 2N	000	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02 🗆 🗆 3N	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
록	MHMD02 🗆 🗆 4N		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
¥	MHMD04 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
H	MHMD04 🗆 🗆 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
igh	MHMD04 🗆 🗆 3N	400	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
MHMD High inertia	MHMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
tia	MHMD082 □□ 1N		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082 □□ 3N	750	1/15	635	200	300	30.4	91.2	2.21	2.31	6.3	7.1	1760	882
	MHMD082 □□ 4N		1/25	635	120	180	50.7	152	2.16	2.26	6.3	7.1	2650	1320

Table of Motor Specifications

MSM	E series	(100 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	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 0 200 rotational speed [r/min]
100 V	200 W	MSME021 1N torque [N·m] 8.0 Peak run range 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 tange 20 Continuous run range 0 200 rotational speed [r/min]
	400 W	MSME041 1N torque [N·m] 20 Peak rur range Continuous run range 0 500 1000 rotational speed [r/min]	MSME041 2N torque [N·m] 40 Peak run range 0 400 800 rotational speed [r/min]	MSME041 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME041 4N torque [N·m] 80 Peak rur range 40 Continuous 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 run 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 W	MSMEO22 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSME022 2N torque [N·m] 16.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak rur range 10 Continuous run range 0 200 400 rotational speed [r/min]	MSME022 4N torque [N-m] Peak run range Continuous fun range Continuous fun range o 100 200 rotational speed [r/min]
200 V	400 W	MSME042 1N torque [N·m] 20 Peak run range Continuous run range o 500 1000 rotational speed [r/min]	MSME042 2N torque [N-m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME042 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME042 4N torque [N-m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MSME082 1N torque [N·m] 40 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MSME082 2N torque [N-m] 80 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME082 3N torque [N·m] 120 Peak run tange Continuous run range 0 200 400 rotational speed [r/min]	MSME082 4N torque [N·m] 160 Peak run range Continuous run range 0 100 200 rotational speed [r/min]

Dotted line represents the torque at 10 % less supply voltage.

^{*} Motor specifications enter to $\square \square \square$ 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

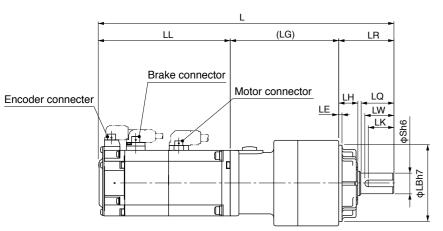
145

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 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run tange Continuous run tange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [N·m] 20 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD021 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
100 V	400 W	MHMD041 1N torque [N·m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD041 2N torque [N·m] 40 Peak Continuous run range 0 400 800 rotational speed [r/min]	MHMD041 3N torque [N-m] 60 Peak run range Continuous run range 200 400 rotational speed [r/min]	MHMD041 4N torque [N·m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	200 W	MHMD022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MHMD022 2N torque [N·m] 16.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N-m] 20 Peak run tange Contifuous run range 0 200 400 rotational speed [r/min]	MHMD022 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MHMD042 1N torque [N·m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD042 2N torque [N·m] 40 Peak 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 Pelak 1 run range 1	MHMD082 3N torque [N·m] 120 60 Peak run range Continuous run range	MHMD082 4N torque [N·m] 160 Peak run range Continuous run range

Dotted line represents the torque at 10 % less supply voltage.

[Unit: mm]



 $\ensuremath{^{\star}}$ The figure represents the dimensions with brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т			
MSME01		1 /E	191.5	92																
		1/5	221.5	122										67.5						
MSME01		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.5		4×4×16	2.5			
MONEOTZIV	100	175	221.5	122	02	20	32	30	00	12	10	12	10			727210	2.5			
MSME01 3N	100	1/15	202	92										78						
MOMEOT BOOK		1,10	232	122										, 0						
MSME01 4N		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5			
		.,_0	264	122			. 0					20				ONON	0.0			
MSME02 1N		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5			
			220.5	116			-0-					12								
MSME02 2N		1/9	219	79.5										89.5	3					
	200	-	255.5	116																
MSME02 3N		1/15	229.5	79.5																
			266	116										100						
MSME02□□□4N			1/25	229.5	79.5								M6							
			266	116	50	30	78	70	70 90	90	19	17	Depth	26			6×6×22	3.5		
MSME04					1/5	238.5 99 275 135.5									20				0.00.22	
			275	99										89.5						
MSME04□□□2N		1/9	275	135.5																
	400	400																		
MSME04□□□3N		1/15	249 99 285.5 135.5										100							
			264	99								M8								
MSME04□□□4N		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4			
			255.7	112.2								M6								
MSME082□□1N		1/5	291.7	148.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5			
			270.7	112.2																
MSME082□□2N		1/9	306.7	148.2										97.5						
	750		283.2	112.2								M8			_) 4			
MSME082□□3N		1/15	319.2	148.2	61	1 40	98	90	115	24	18	Depth 20	35	440	5	8×7×30				
MONTOOO TO		1/25	283.2	112.2											110					
MSME082□□4N			319.2	148.2																

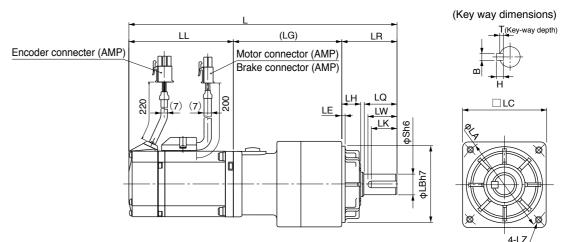
Upper column: without brake [Lower column: with brake [

MSMD series

[Unit: mm]

(Key way dimensions)

□LC



Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	Т				
MSMD01		1/5	191.5	92																	
MICHIDOT		1/3	221.5	122										67.5							
MSMD01□□□2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.0		4×4×16	2.5				
	100		221.5	122	02		52					12					0				
MSMD01□□□3N		1/15	202	92										78							
			232	122								M6									
MSMD01□□□4N		1/25	234	92	50	30	78	70	90	19	17	Depth	26	92		6×6×22	3.5				
			264	122								20 M5									
MSMD02□□□1N		1/5	184 220.5	79.5 116	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5				
			219	79.5								12									
MSMD02□□□2N		1/9	255.5	116										89.5	3						
	200		229.5	79.5																	
MSMD02 3N		1/15	266	116																	
			229.5	79.5					70 90					100							
MSMD02		1/25	266	116			70	70		90 19	4-7	M6					0.5				
MCMD04DDJ1N					4/5	238.5	99	50	30	78	70	90	19	17	Depth 20	26			6×6×22	3.5	
MSMD04		1/5	275	135.5										89.5							
MSMD04□□□2N		1/0	238.5	99										69.5							
WISWIDU4ZIV	400	1/9	275	135.5																	
MSMD04□□□3N	400	1/15	249	99										100							
			285.5	135.5																	
MSMD04		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4				
			300.5	135.5								20		-							
MSMD082□□1N		1/5	255.7	112.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5				
			292.7	149.2								20									
MSMD082□□2N		1/9	270.7	112.2										97.5							
	750		307.7	149.2								M8									
MSMD082□□3N		1/15	283.2	112.2	61	40	98	90	115	24	18	Depth	35		5	8×7×30	0 4				
			320.2	149.2	61	1 40		90 115	113 24	. 7 10	20		110			7					
MSMD082□□4N		1/25	283.2	112.2 149.2																	
	:MD082□□4N	1/25	320.2	149.2																	

Upper column: without brake

Lower column: with brake

MHMD series

Encoder connecter (AMP)

Brake connector (AMP)

Brake connector (AMP)

Brake connector (AMP)

(Key way dimensions)

T(Key-way depth)

H

LC

[Unit: mm]

^{*} The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т			
			203.5	99								M5								
MHMD02 1N		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5			
MUMDOOFFON		1/9	238.5	99										89.5						
MHMD02 D2N	200	1/9	275	135.5										89.5						
MHMD02 3N	200	1/15	249	99																
WITHINDU2SN		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	/0	30	13	''	20	20			UNUNZZ	0.0			
		.,,0	294.5	155										89.5						
MHMD04 2N	400	400	1/9	258	118.5										00.0					
			400	400		294.5	155													
MHMD04					400	1/15	268.5	118.5										100		
		1/15	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 /0	285.7	127.2																
MHMD082□□2N	750	1/9	322.7	164.2										97.5						
MUMDOOOTTON	750 □	4/45	298.2	127.2		40	00	00	445	04	10	M8	0.5		_	0700	,			
MHMD082 3N		1/15	335.2	164.2	61	40	98	90	115	115 24	24 18	Depth 20	35	110	5	8×7×30	4			
MUMDOOOTTAN		2	298.2	127.2												110				
MHMD082□□4N		1/25	335.2	164.2																

Upper column: without brake	
Lower column: with broke	

MEMO

Features

- Line-up IP65 motor: 200 W to 5.0 kW
- Max speed: 5000 r/min (MSMJ, MHMJ)
- · Low inertia (MSME) to High inertia (MHME)
- 20-bit incremental encoder (1048576 pulse)
- 17-bit absolute encoder (131072 pulse).

[Please note]

Motors displayed at P.151 to P.181 are Special Order Product. Please contact us for more information.

Motor Lineup



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min

Rated output: 200 W to 750 W Enclosure : IP65



High inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W)

Rated speed: 3000 r/min Rated output: 200 W to 750 W Enclosure : IP65



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (from 4.0 kW)

Rated speed: 3000 r/min Rated output: 1.0 kW to 5.0 kW

Enclosure : IP65

Middle capacity



MGMF (Low speed/ High torque type) High inertia

Max. speed : 2000 r/min Rated speed: 1000 r/min

Rated output: IP65 0.9 kW to 3.0 kW

Enclosure : IP65



Middle inertia

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.... . P.155

1.0 kW to 5.0 kW P.158

MGME (200 V)

MHMJ (200 V)

200 W to 750 W

1.0 kW to 5.0 kW P.176

MSME (200 V)

MDME (200 V)

1.0 kW to 5.0 kW P.164

0.9 kW to 3.0 kW P.170

.. P.173

MHME (200 V)

Symbol

* S: can be used in incremental.

Model Designation

Type

Low inertia (200 W to 750 W)

Low inertia (1.0 kW to 5.0 kW)

High inertia (0.9 kW to 3.0 kW)

High inertia (200 W to 750 W)

MHME High inertia (1.0 kW to 5.0 kW)

200 W

400 W

750 W

0.9 kW

1.0 kW

1.5 kW

2.0 kW

3.0 kW

4.0 kW

5.0 kW

Rotary encoder specifications

Format

Incremental

Absolute

Middle inertia (1.0 kW to 5.0 kW)

Voltage specifications

2: 200 V

Pulse counts Resolution Wires

1048576

131072

5

7

M A D K T 1 5 0 5

M A D K T 1 5 0 5 E **

Servo Motor

Symbol

MSMJ

MSMF

MDMF

MGMF

MHMJ

02

04

08

09

10

15

20

30

40

50

G

S

Motor rated output Symbol Rated output

<Cautions>

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

20-bit

17-bit

* For combination of elements of model number, refer to Index.

M S M E 5 0 2 G C C M * Special specifications

MSMJ, MHMJ **Special specifications** MSME, MDME, MGME, MHME

M: Special Order Product

Motor specifications MSMJ, MHMJ

	Sh	aft	Holding	g brake	Oil seal		
Symbol	Round	Key-way, center tap	without	with	without	with	
Α	•		•		•		
В	•			•	•		
С	•		•			•	
D	•			•		•	
S		•	•		•		
T		•		•	•		
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					

001.00		
Symbol	Velocity, Position, Torque, Full-Closed type	Position control type
K	A5 II series	A5 II E series

Specifications Symbol 3-phase, 200 V Single/3-phase, 200 V

Power device Max. current rating

Symbol	Current rating
T1	10 A
T2	15 A
T3	30 A
T5	50 A
T7	75 A
TA	100 A
TB	150 A

Symbol Specifications Supply voltage specifications

07 7.5 A 10 10 A 20 20 A 30 30 A 40 40 A 64 64 A 90 90 A A2 120 A

Special specifications

Special specifications

Current detector current rating

<Cautions> Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Part No.

DV0P4360 DV0P4120

Table of Part Numbers and Options: Special Order Product 0.2 kW to 5.0 kW

		Motor				Driver		Power			Option	nal parts					· Options	
					A5II series	A5IIE series		capacity	Encode	er Cable	Motor	Cable	Brake					
otor series			Part No.	Rating/ Spec.	Part No. Speed, Position,	Part No. /Position control\	Frame	rated	20-hit	17-hit	without	with	Cable		Reactor	Noise Filter	Interface Cable	
	supply	(W)	Note) 1	(page)	Torque, Full-Closed type	(type) Note) 2		\ load / (kVA)	kVA) Incremental Absolut		Brake Note) 3	Brake Note) 3	Note) 3	Resistor		3-phase	Interface Conve	
MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MEECA	MEECA	ME	MCA	MEMCR		DV0P227 DV0P220	DV0P4170		
type /	Single	400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9		0**0EAE			0**0GET	DV0P4283	DV0P228	DV0PM20042	Connector Kit	
3000 r/min	phase/	750	MSMJ082 □ 1 *	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042	for Power Supply Input	
	200 V			158	MDDKT5540	MDDKT5540E	D-frame		_		MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Motor	
MSME		1500	WSWL132 C * W	159		WIDDK 13340L		Approx. 2.3	-		0**2ECD	0**2FCD		DV0P4285	DV0P222		Connection Connector Kit	
3000 r/min		2000	MSME202 ☐ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	-				-	Note) 5	DV0P223	DV0PM20043	for Regenerative Resistor	
	3-phase	3000	MSME302 ☐ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5	-		MEMCA	MEMCA		DV/0D4295	DV0P224	-		
	200 V	4000	MSME402 ☐ C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6	-		0**3ECT	0**3FCT		x2 in parallel	DV0P225	DV0P3410	Connector Kit f	
		5000	MSME502 ☐ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5	-						DV0D229		Motor/Encoder	
	Single phase/ 3-phase	1000	MDME102 □ C * M	164	MDDKT3530	MDDKT3530E	D-frame	Approx. 1.8	MFECA	MFECA 0**0ESD 0**0	MEECA	MFMCD	MFMCA		DV0P4284	DV0P222	DV0P4220	
	200 V	1500	MDME152 □ C * M	165	MDDKT5540	MDDKT5540E	А	Approx. 2.3			0 0230	0**0ESE	0**2ECD	0**2FCD			DV0P222	
		2000	$MDME202 \square C * M$	166	MEDKT7364	MEDKT7364E	E-frame /	Approx. 3.3	rame Approx. 3.3							DV0P4285 Note) 5	DV0P223	DV0PM20043
2000 17111111	3-nhasa	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	DV0D005	DV0P3410	Battery For Abs	
		5000	MDME502 □ C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5						·	DVOFZZS		Battery Box No	
MGME /Low speed/\	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA **2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220	Mounting Bracket	
type	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	F.	Approx. 3.8			MFMCA	MFMCA		DV0P4285	DV0P223	D\/0D0440		
1000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 4.5			0**3ECT	0**3FCT		x2 in parallel	DV0P224	DV0P3410		
MHMJ		200	MHMJ022 □ 1 *	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MEECA	MEECA	ME	MCA	MEMCR		DV0P227 DV0P220	DV0P4170	Encoder Cable	
type /	Single	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	0**0EAE			0**0GET	DV0P4283	DV0P228	DV0PIVI20042		
3000 r/min	phase/	750	MHMJ082 □ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042		
	200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E	D-frame	Approx. 1.8	3		MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4220	Motor Cable	
		1500	MHME152 \square C * M	177	MDDKT5540	MDDKT5540E		Approx. 2.3			UZECD	UZFCD					Brake Cable	
MHME		2000	MHME202 □ C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMCE 0**2FCD	MFMCE 0**2FCD	_	DV0P4285 Note) 5	DV0P223	DV0PM20043	Brane Gabie	
2000 I/IIIIII	0 nh	3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5	0 0200	U ULUL	0 2200	2.05		, •	DV0P224		External	
	3-phase 200 V	4000	MHME402 □ C * M	180	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6	1		MFMCA 0**3FCT	MFMCA 0**3FCT		DV0P4285 x2 in parallel	D) (oD co-	DV0P3410	Regenerative Resistor	
		5000	MHME502 □ C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5			0 SLOT	0 0 0		III paranol	DV0P225			
	MSME 3000 r/min MSME 3000 r/min MDME 2000 r/min MGME Low speed/ High torque type 1000 r/min MHMJ (Leadwire type) 3000 r/min	MSMJ (Leadwire type) 3000 r/min MSME 3000 r/min 3-phase 200 V MDME 2000 r/min 3-phase 200 V MGME Low speed/High torque type 1000 r/min (Leadwire type 1000 r/min MHMJ (Leadwire type 3-phase 200 V MSMJ Leadwire type 3000 r/min 3-phase 200 V 4000 5000 MGME Low speed/High torque type 1000 r/min 1000 r/min 200 V 3-phase 200 V 5000 MGME Low speed/High torque type 1000 r/min 1000 r/min 200 V 3-phase 200 V 3-phase 200 V 5000 MHMJ Leadwire type 1000 r/min 200 V 3-phase 200 V	Note Power supply Note Note 1	Note Supply Note Note 1 Note 1	MSMJ Leadwire Single phase 200 MSME102 C * M 165 MDDKT5540	Note Power supply Note Part No. Note 1 Note 1 Note 1 Note 2 No	Name	Note Power supply Output Part No. Note 1 Rating Speed, Power part No. Note 2 Capacity Full-Closed type Part No. Note Part No	Note Power Capacity Part No. Note 1 Rating Spec (page) Fauthon Page Capacity P	Power supply Output Part No. Note) 1 Part No. Note) 2 Part N	Power Color Power Power Color Power Powe				Part Part	Part Part		

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.

A5 Family

Please buy the battery part number "DV0P2990" separately.

			DV0P4120		
			DV0P4121	407	
Interface Conve	rsion Cabl	le	DV0P4130	197	
			DV0P4131		
			DV0P4132		
Connector Kit	A-frame	Single row type	DV0PM20032		
for Power Supply Input Connection	to D-frame	Double row type	DV0PM20033	200	
Connection	E-frame		DV0PM20044		
Connector Kit	A-frame	to D-frame	DV0PM20034		
for Motor Connection	E-frame		DV0PM20046		
Connector Kit for Regenerative Resistor	E-frame		DV0PM20045	201	
			DV0P4290	202	
			DV0P4310	00.4	
Connector Kit fo	r		DV0P4320	204	
Motor/Encoder (n	DV0P4330		
			DV0P4340	205	
			DV0P4380	202	
	RS485, F	26030	DV0PM20102	202	
		10202		400	
	Safety		DV0PM20103	198	
Connector Kit	Interface		DV0P4350		
	External	Scale	DV0PM20026		
	Encoder		DV0PM20010	199	
	Analog M	Ionitor Signal	DV0PM20031		
Battery For Abso	olute Enco	der	DV0P2990	207	
Battery Box No	te) 7		DV0P4430	201	
	A-frame		DV0PM20027		
Mounting	B-frame		DV0PM20028		
Bracket	C-frame		DV0PM20029	208	
	D-frame		DV0PM20030	1	
	B mamo		MFECA0**0EAD		
	without B	Battery Box	MFECA0**0EAM	188	
Encoder Cable	Williout L	allery DOX	MFECA0**0ESD	189	
Elicouel Cable		_		188	
	with Batte Note) 7	•	MFECA0**0EAE		
	Note) 1		MFECA0**0ESE	190	
			MFMCA0**0EED	191	
	without E	Brake	MFMCD0**2ECD	192	
Motor Cable			MFMCE0**2ECD		
violor Gabio			MFMCA0**3ECT	193	
	with Brak	10	MFMCA0**2FCD	194	
	With Dian	NO.	MFMCA0**3FCT	195	
Brake Cable			MFMCB0**0GET	196	
	A-frame				
	B-frame		DV0P4283		
External	C-frame				
Regenerative	D-frame		DV0P4284	210	
Resistor	E-frame				
	F-frame		DV0P4285		
Reactor	DV0P223	0, DV0P221, 3, DV0P224, 7, DV0P228,		209	
		70, DV0PM2	0042	250	
Noise Filter		20, DV0PM2			
Noise Filter		· ·		251	
Noise Filter	DV0P422	10	DV0P4190		
	DV0P422 DV0P34 ⁻ Single ph	10	DV0P4190 DV0P1450	251 253	
Noise Filter Surge Absorber Ferrite core	DV0P422 DV0P34	10	DV0P4190 DV0P1450 DV0P1460		

Note) 3 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m), (Example. 3 m: MFECA0030EAM)

Note) 4 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.

Note) 5 Other combinations exist, and refer to P.210 for details.

absolute encoder cable (with battery box).

 Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC2	00 V	
Motor model		IP65		MSMJ022G1□	MSMJ022S1□	
*1		IP67		-	-	
A !! - -	Model	A5II series	S	MADK	T1507	
Applicable driver *2	No.	A5IIE seri	ies	MADKT1507E	-	
anver	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 limi	t Note)2	
frequency (times/r	nin) Note)1	DV0P	4283	No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	rtia	Without	brake	0.14		
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Re	esolutio	n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

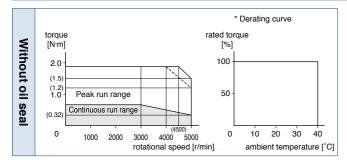
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

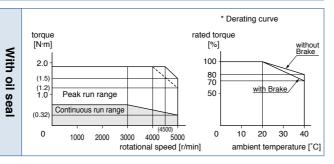
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MSMJ 200 W [Low inertia, Small capacity]

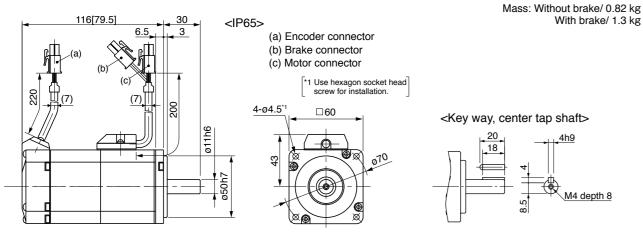
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

Special Order Product

			AC200 V			
Mata:		IP65		MSMJ042G1□	MSMJ042S1	
Motor mode *	.	IP67		-	-	
Annlinable	Model	A5II serie	s	MBDK	T2510	
Applicable driver *	No.	A5IIE ser	ies	MBDKT2510E	_	
unver	Fi	rame sym	bol	B-fra	ame	
Power supp	ly capacit	у	(kVA)	0	.9	
Rated outpu	it		(W)	40	00	
Rated torqu	е		(N·m)	1.	3	
Momentary	Max. pea	k torque	(N·m)	3.8		
Rated curre	nt	(A(rms))	2.6		
Max. curren	t		(A(o-p))	11.0		
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0P	4283	No limit Note)2		
Rated rotation	onal spee	d	(r/min)	3000		
Max. rotatio	nal speed		(r/min)	5000		
Moment of i	nertia	Without brake		0.26		
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

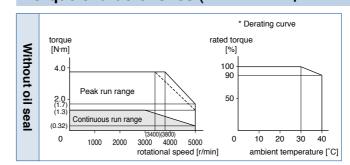
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

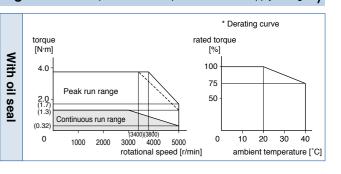
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
assembly	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

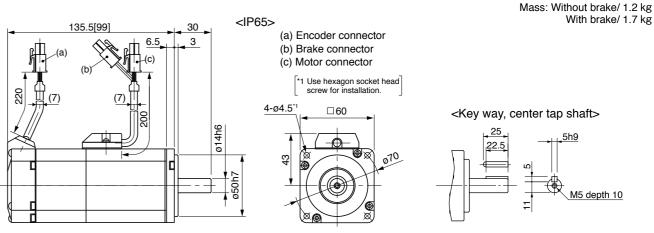
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC2	00 V
IP65		IP65		MSMJ082G1□	MSMJ082S1□
Motor model		IP67		-	-
Amaliaalala	Model	A5II series		MCDK	T3520
Applicable driver *2	No.	A5IIE serie	s	MCDKT3520E	_
divoi	Fr	ame symb	ol	C-fr	ame
Power supply	capacit	y	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2.4	
Momentary Max. peak torque (N·m)				7.1	
Rated current		(A	(rms))	4.0	
Max. current		(A	(o-p))	17.0	
Regenerative I	orake	Without o	ption	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4	V0P4283 No limit Note)2		t Note)2
Rated rotation	Rated rotational speed (r/min)		d (r/min) 3000		00
Max. rotationa	al speed	(r/min)	4500	
Moment of ine	ertia	Without b	orake	0.87	
of rotor (×10 ⁻⁴	kg·m²)	With bra	ake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per single	turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

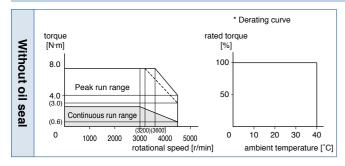
During assembly	Radial load P-direction (N)	686
	Thrust load A-direction (N)	294
	Thrust load B-direction (N)	392
During operation	Radial load P-direction (N)	392
	Thrust load A, B-direction (N)	147

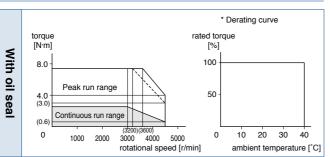
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MSMJ 750 W [Low inertia, Small capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

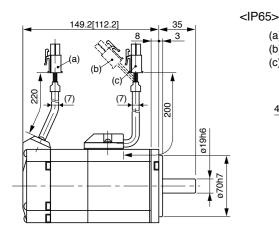
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



(a) Encoder connector

- (b) Brake connector (c) Motor connector

4-ø6*

1 Use hexagon socket head

<Key way, center tap shaft>

Mass: Without brake/ 2.3 kg

With brake/ 3.1 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

200 V MSME 1.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V	
M-4		IP65		MSME102GC□M	MSME102SC□N	
Motor mode	€I ∗1		IP67		-	-
Annlinabla		Model	A5II serie	s	MDDK	T5540
Applicable driver	*2	No.	A5IIE ser	ies	MDDKT5540E	-
anvoi		Fr	ame sym	bol	D-fr	ame
Power supp	oly o	capacity	y	(kVA)	1.	.8
Rated outp	ut			(W)	10	00
Rated torqu	ıe			(N·m)	3.	18
Momentary	Ма	x. peal	k torque	(N·m)	9.55	
Rated curre	ent		(A(rms))	6.6	
Max. currer	nt		((A(o-p))	28	
Regenerativ	/e b	rake	Without option		No limit Note)2	
frequency (tin	nes/m	nin) Note)1	DV0P	4284	No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	5000	
Moment of	iner	tia	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				20-bit Incremental	17-bit Absolute	
Resolution per single turn				le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

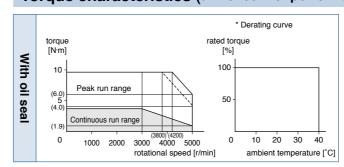
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

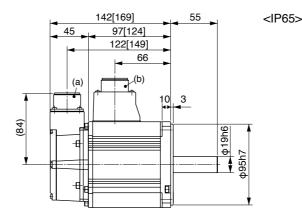
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
aooon	ibiy	Thrust load B-direction (N)	686
During	During operation	Radial load P-direction (N)	490
operat		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



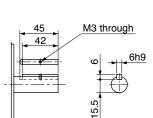
Dimensions



100

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.

			AC2	00 V	
Motor model		IP65	MSME152GC□M	MSME152SC□M	
*1		IP67	_	_	
A U a a la la	Model	A5II series	MDDK	T5540	
Applicable driver *2	No.	A5IIE series	MDDKT5540E	_	
unven	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA	2	.3	
Rated output		(W	15	600	
Rated torque		(N·m	4.	4.77	
Momentary M	ax. peal	k torque (N·m	14.3		
Rated current		(A(rms)	8.2		
Max. current		(A(o-p)	3	35	
Regenerative I	orake	Without option	No lim	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 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	
F	Resolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

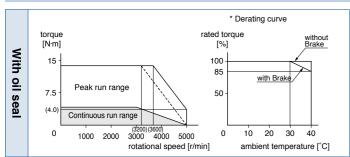
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

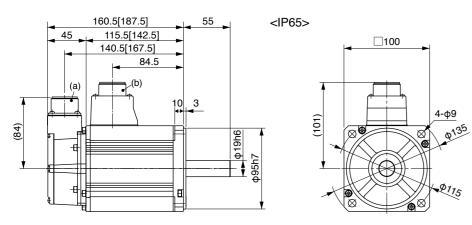
200 V MSME 1.5 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

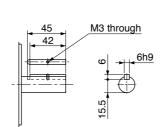


Dimensions



Mass: Without brake/ 4.4 kg With brake/ 5.4 kg

Key way dimensions



[Unit: mm]

(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MSME 2.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V	
		IP65			MSME202GC□M	MSME202SC□
Motor mod	1 C I *1		IP67		-	-
	N	Model	A5II serie	s	MEDK	T7364
Applicable driver	*2	No.	A5IIE series		MEDKT7364E	_
unven		Fr	ame sym	bol	E-fr	ame
Power sup	ply ca	apacity	y	(kVA)	3	.3
Rated outp	out			(W)	20	00
Rated torq	ue			(N·m)	6.:	37
Momentary	у Мах	. peal	c torque	(N·m)	19.1	
Rated curr	ent		(A(rms))	11.3	
Max. curre	nt			(A(o-p))	48	
Regenerati	ve bra	ake	Without	option	No limit Note)2	
frequency (ti	imes/mir	n) Note)1	DV0P4285 No limit No		Note)2	
Rated rota	tional	spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	inert	ia	Without brake		3.68	
of rotor (x1	10 ⁻⁴ k	g·m²)	With b	orake	4.0	01
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	Res	solutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

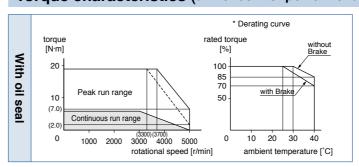
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

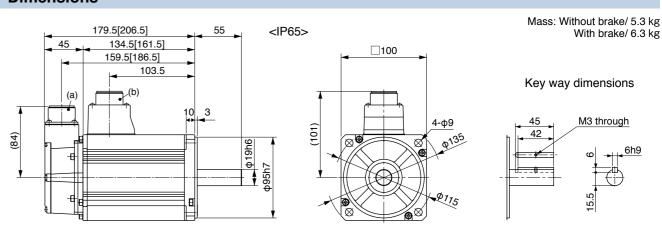
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.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.

160

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	
Matarasasas		IP65	MSME302GC□M	MSME302SC□M	
Motor model *1		IP67	_	-	
A	Model	A5II series	MFDK	TA390	
Applicable *2	No.	A5IIE series	MFDKTA390E	-	
unvei	Fı	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	4.	.5	
Rated output		(W)	30	00	
Rated torque		(N·m)	9.	9.55	
Momentary Ma	ax. pea	k torque (N·m)	28.6		
Rated current		(A(rms))	18.1		
Max. current (A(o-p))			7	7	
Regenerative b	rake	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)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	6.50		
of rotor (×10 ⁻⁴	kg·m²)	With brake	6.85		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

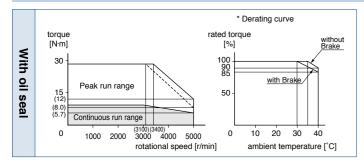
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

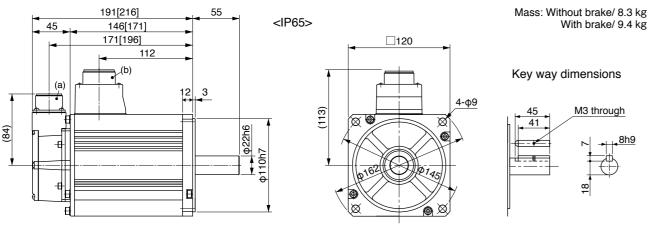
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MSME 4.0 kW [Low inertia, Middle capacity]

A5 Family

Motor Specifications

Please contact us for more information

Specifications

				AC2	00 V	
M -t		IP65		MSME402GC□M	MSME402SC□N	
Motor mode	el *1	IP67	7	-	-	
A I' l. l .	Мо	del A5II se	eries	MFDK	TB3A2	
Applicable driver	*2 No.	A5IIE	series	MFDKTB3A2E	_	
anvoi		Frame sy	ymbol	F-fr	ame	
Power supp	oly capa	acity	(kVA)	6	.0	
Rated outp	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	12	2.7	
Momentary	Мах. р	eak torque	e (N·m)	38	38.2	
Rated curre	ent		(A(rms))	19.6		
Max. currer	nt		(A(o-p))	8	3	
Regenerativ	e brake	Witho	out option	No limit Note)2		
frequency (tin			P4285×2	No limit Note)2		
Rated rotat	ional sp	eed	(r/min)	3000		
Max. rotation	onal spe	eed	(r/min)	4500		
Moment of	inertia	Witho	out brake	12.9		
of rotor (×1	0 ⁻⁴ kg·n	n²) Wit	h 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			
Resolution per single			inale turn	1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

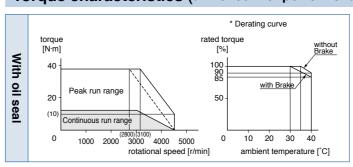
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

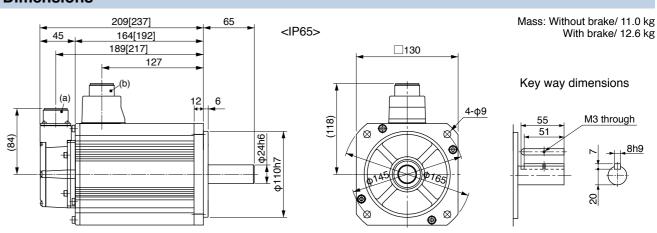
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V
Motor model		IP65	MSME502GC□M	MSME502SC□M
*1		IP67	-	-
A 11 11	Model	A5I series	MFDK	TB3A2
Applicable 42	No.	A5IE series	MFDKTB3A2E	-
divei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	15	5.9
Momentary M	ax. peal	k torque (N·m)	47.7	
Rated current		(A(rms))	24.0	
Max. current		(A(o-p))	102	
Regenerative b	rake	Without option	35	57
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	17.4	
of rotor (×10 ⁻⁴	kg·m²)	With brake	18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

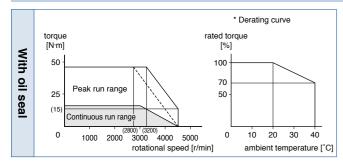
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

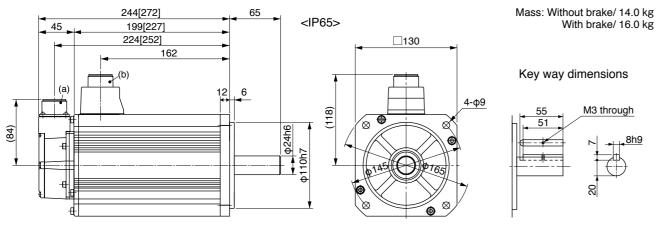
200 V MSME 5.0 kW [Low inertia, Middle capacity]

*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.

Special Order Product

200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

			AC2	00 V	
		IP65		MDME102GC□M	MDME102SC
Motor mode	el *1	IP67		-	-
A I' l. I .	Mode	A5II serie	s	MDDKT3530	
Applicable driver	*2 No.	A5IIE ser	ries	MDDKT3530E	-
unvei	ı	rame sym	ibol	D-fr	ame
Power supp	oly capac	ity	(kVA)	1.	.8
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	4.	77
Momentary	Max. pe	ak torque	(N·m)	14.3	
Rated curre	ent	(A(rms))	5.7	
Max. current (A(o-p))			2	4	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tir	nes/min) Note	DV0P	4284	No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	onal spee	d	(r/min)	3000	
Moment of	inertia	Without	t brake	4.60	
of rotor (×1	0 ⁻⁴ kg·m ²	With b	orake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		on per sind	ıle turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

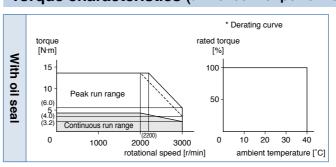
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

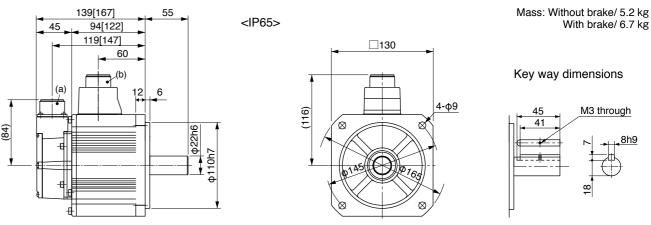
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.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				MDME152GC□M	MDME152SC□M
Wiotor model		IP67		-	_
Ammliaalala	Model	A5II series	i	MDDK	T5540
Applicable driver *2	No.	A5IIE seri	es	MDDKT5540E	_
divei	Fr	ame syml	ool	D-fr	ame
Power supply	capacit	y	(kVA)	2	.3
Rated output			(W)	15	00
Rated torque			(N·m)	7.16	
Momentary Ma	ax. peal	k torque	(N·m)	21.5	
Rated current		(/	A(rms))	9.4	
Max. current (A(o-p))			40		
Regenerative brake Without option		option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4	1284	No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	ıl speed		(r/min)	3000	
Moment of ine	rtia	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		20-bit Incremental	17-bit Absolute		
Resolution per single turn			e turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

Permissible load (For details, refer to P.183)

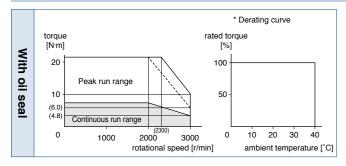
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

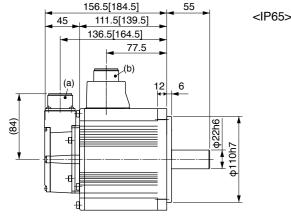
200 V MDME 1.5 kW [Middle inertia, Middle capacity]

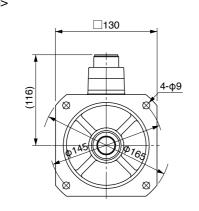
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



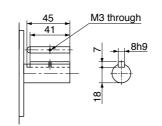
Dimensions





Mass: Without brake/ 6.7 kg With brake/ 8.2 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MDME 2.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

			AC2	00 V		
Matanasalal		IP65		MDME202GC□M	MDME202SC□N	
Motor mode	€I ∗1		IP67		-	-
		Model	A5II serie	S	MEDK	T7364
Applicable driver	*2	No.	A5IIE series		MEDKT7364E	_
unven		Fr	ame sym	bol	E-fra	ame
Power supp	oly c	apacit	y	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ıe			(N·m)	9.	55
Momentary	Ма	x. peal	k torque	(N·m)	28.6	
Rated curre	ent		(A(rms))	11.5	
Max. currer	nt		((A(o-p))	4	9
Regenerativ	/e br	ake	Without option		No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0P4285		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without brake		8.72	
of rotor (×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		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

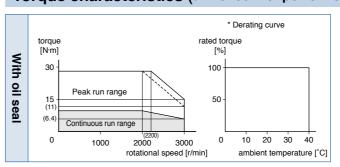
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

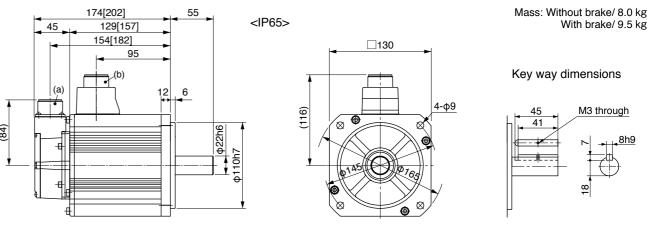
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC200 V		
		IP65		MDME302GC□M	MDME302SC□M	
Motor model		IP67		-	_	
A so so librar la La	Model	A5II series		MFDKTA390		
Applicable driver *2	No.	A5IE series	s	MFDKTA390E	_	
unven	Fr	ame symbo	ol	F-fra	ame	
Power supply	capacit	y	(kVA)	4	.5	
Rated output			(W)	30	00	
Rated torque			(N·m)	14	l.3	
Momentary M	ax. peal	k torque	(N·m)	43.0		
Rated current		(A	(rms))	17.4		
Max. current		(A	(o-p))	74		
Regenerative b	orake	Without o	ption	No limit Note)2		
frequency (times/	min) Note)1	DV0P428	85×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	ıl speed	(r/min)	3000		
Moment of ine	ertia	Without b	orake	12.9		
of rotor (×10 ⁻⁴	kg·m²)	With bra	ake	14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
R	Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

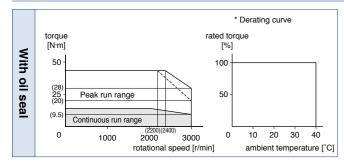
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

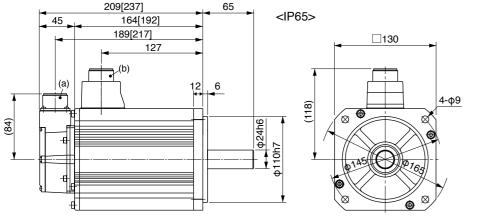
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

*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.>)

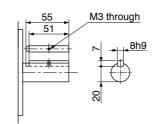


Dimensions



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.

167

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

				AC2	00 V
Matanaaala		IP65		MDME402GC□M	MDME402SC N
Motor mode	•	IP67		-	-
A	Model	Model A5II series		MFDK	ТВЗА2
Applicable driver *	No.	A5IE series		MFDKTB3A2E	-
unvoi	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	.0
Rated outpu	ıt		(W)	40	00
Rated torqu	е		(N·m)	19).1
Momentary	Max. peal	k torque	(N·m)	57.3	
Rated current (A(rms))			21.0		
Max. current (A(o-p))			89		
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	37	'.6
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	42.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

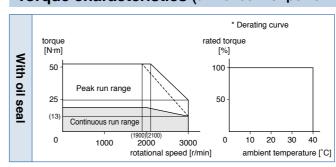
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

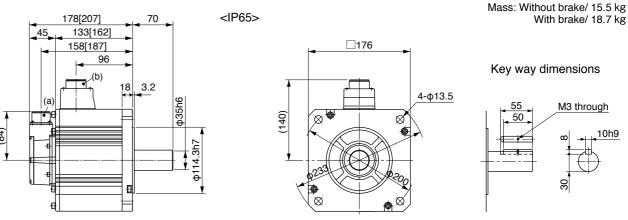
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC2	AC200 V		
		IP65		MDME502GC□M	MDME502SC□M		
Motor model		IP67		-	_		
Ammliaalala	Model	A5II series		MFDKTB3A2			
Applicable driver *2	No.	A5IE series		MFDKTB3A2E	_		
unvoi	Fr	ame symbol		F-fra	ame		
Power supply	capacit	y (kVA	۱)	7.	.5		
Rated output		(V)	/)	50	00		
Rated torque		(N·m	1)	23.9			
Momentary M	ax. peal	k torque (N⋅m	1)	71.6			
Rated current		(A(rms))	25.9			
Max. current		(A(o-p))	110			
Regenerative b	orake	Without option	ı	120			
frequency (times/	min) Note)1			t Note)2			
Rated rotation	al spee	d (r/mir	1)	2000			
Max. rotationa	ıl speed	(r/mir	1)	3000			
Moment of ine	ertia	Without brake	,	48.0			
of rotor (×10 ⁻⁴	kg·m²)	With brake		53.3			
Recommended moment of inertia ratio of the load and the rotor Note)3			13	10 times or less			
Rotary encoder specifications Note)5)5	20-bit Incremental	17-bit Absolute			
R	esolutio	n per single turn		1048576	131072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

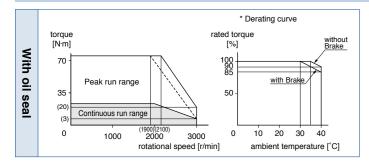
During assembly During operation	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

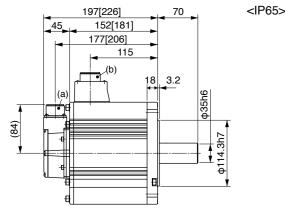
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

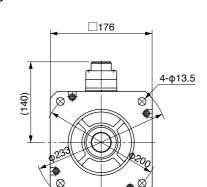
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

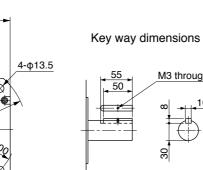
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions







Mass: Without brake/ 18.6 kg

With brake/ 21.8 kg

(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 0.9 kW [Middle inertia, Middle capacity] **Motor Specifications**

Please contact us for more information

Specifications

				AC2	00 V
N4 - 4	-1	IP65		MGME092GC□M	MGME092SC
Motor mod	el *1	IP67		-	-
A 1: 1.1	Model	A5II serie	S	MDDK	T5540
Applicable driver	*2 No.	A5IIE ser	ies	MDDKT5540E	_
ulivei	Fi	ame sym	bol	D-fr	ame
Power sup	ply capacit	у	(kVA)	1.	.8
Rated outp	ut		(W)	90	00
Rated torqu	ne		(N·m)	8.	59
Momentary	Max. pea	k torque	(N·m)	19.3	
Rated current (A(rms))			7.6		
Max. current (A(o-p))		24			
Regenerativ	ve brake	Without option		No limit Note)2	
frequency (times/min) Note)1		DV0P4284		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1000	
Max. rotation	onal speed		(r/min)	2000	
Moment of	inertia	Without brake		6.70	
of rotor (×1	0 ⁻⁴ kg·m ²)	With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

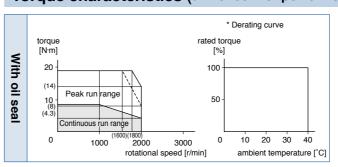
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

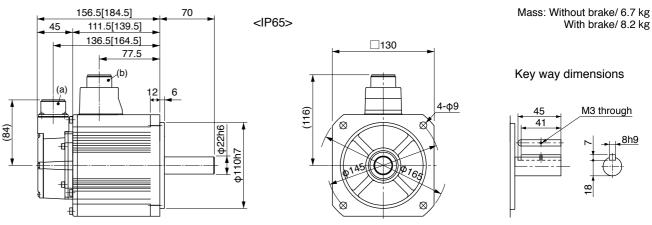
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	686
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V	
Motor model		IP65	MGME202GC□M	MGME202SC□M	
*1		IP67	-	-	
A munica de la	Model	A5I series	MFDK	TA390	
Applicable *2	No.	A5IE series	MFDKTA390E	_	
unver	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	3	.8	
Rated output		(W)	20	00	
Rated torque		(N·m)	19	19.1	
Momentary Ma	ax. peal	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 limit Note)2		
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	1000		
Max. rotationa	l speed	(r/min)	2000		
Moment of ine	rtia	Without brake	30.3		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	35.6		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

Permissible load (For details, refer to P.183)

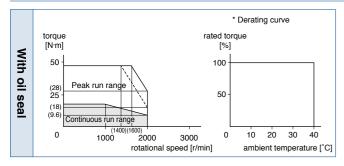
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

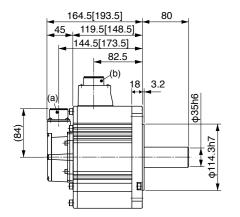
200 V MGME 2.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

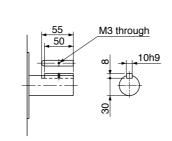


Dimensions



4-φ13.5

Mass: Without brake/ 14.0 kg With brake/ 17.5 kg Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

<IP65>

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

171

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	
Mataumaadal		IP65		MGME302GC□M	MGME302SC□N	
Motor mode	€I ∗1		IP67		-	-
Amaliaabla		Model	A5II serie	s	MFDK	ТВЗА2
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	-
arrer		Fr	ame sym	bol	F-fra	ame
Power supp	ply c	capacity	y	(kVA)	4.	.5
Rated outp	ut			(W)	30	00
Rated torqu	ле			(N·m)	28	3.7
Momentary	м а	x. peal	k torque	(N·m)	71.7	
Rated curre	ent		(A(rms))	22.6	
Max. currer	nt		((A(o-p))	80	
Regenerativ	ve bi	rake	Without option		No limit Note)2	
frequency (tir	nes/m	nin) Note)1	DV0P4285×2		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	1000	
Max. rotation	onal	speed		(r/min)	2000	
Moment of	iner	tia	Without	brake	48.4	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		53.7		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single			le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

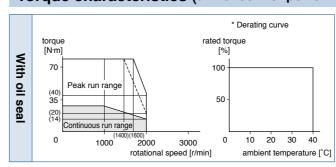
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

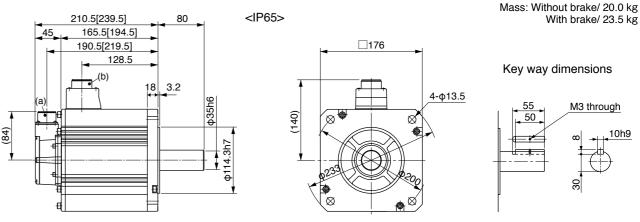
	During assembly During operation	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
		Radial load P-direction (N)	1470
(Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MHMJ 400 W [High inertia, Small capacity]

Specifications

				AC2	00 V
Matanasalal		IP65		MHMJ022G1□	MHMJ022S1□
Motor model *1		IP67		-	-
	Model	A5II series	;	MADKT1507	
Applicable driver *2	No.	A5IIE seri	es	MADKT1507E	_
unvoi	Fr	ame symb	ool	A-fr	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.64	
Momentary M	ax. peal	k torque	(N·m)	1.91	
Rated current		(/	A(rms))	1.6	
Max. current		(A(o-p))	6.9	
Regenerative I	orake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4	1283	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of ine	ertia	Without	brake	0.42	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		e turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

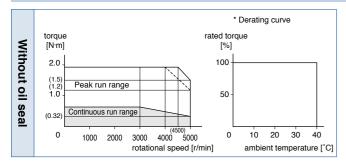
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
accombiy	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

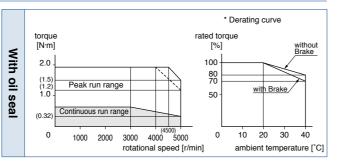
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MHMJ 200 W [High inertia, Small capacity]

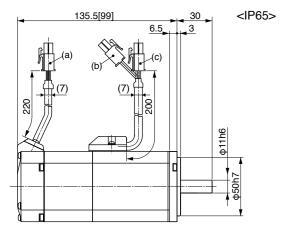
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector

<Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

[Unit: mm]

Mass: Without brake/ 0.96 kg

With brake/ 1.4 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

Please contact us for more information

Specifications

				AC2	00 V
Matanaaa		IP65		MHMJ042G1□	MHMJ042S1
Motor mode	el *1	IP67		-	-
	Mod	Model A5II series		MBDK	T2510
Applicable driver	*2 No.	A5IIE se	ries	MBDKT2510E	_
unven		Frame sym	ibol	B-fra	ame
Power supp	oly capa	city	(kVA)	0	.9
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	1.	.3
Momentary	Max. pe	ak 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 (tir	nes/min) Not	DV0P	4283	No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	30	00
Max. rotation	onal spe	ed	(r/min)	50	00
Moment of	inertia	Withou	t brake	0.67	
of rotor (×1	0 ⁻⁴ kg·m	With b	orake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
		ion per sinc	ale turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

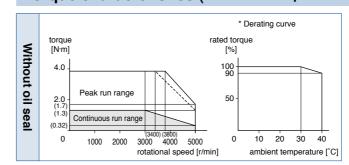
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2
3 3 3 3 5 5 6 7 7	

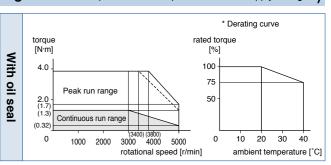
• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
doscinory	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

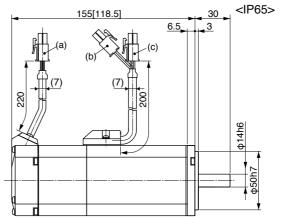
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





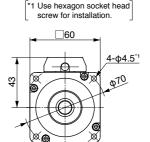
Dimensions



(a) Encoder connector

(b) Brake connector

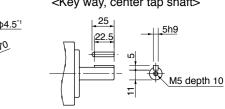
(c) Motor connector



<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]

Please contact us for more information

Specifications

				AC2	00 V
Matanasalal		IP65		MHMJ082G1□	MHMJ082S1□
Motor model *1		IP67		-	-
	Model	A5II series	S	MCDK	T3520
Applicable driver *2	No.	A5IIE seri	ies	MCDKT3520E	_
unven	Fr	ame sym	bol	C-fr	ame
Power supply	capacit	y	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2.4	
Momentary 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		00
Max. rotationa	al speed		(r/min)	4500	
Moment of ine	ertia	Without	brake	1.51	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

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)

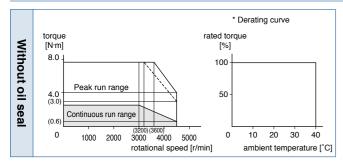
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
documbry	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

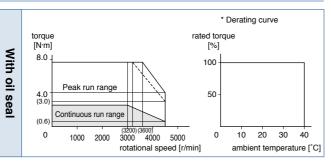
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MHMJ 750 W [High inertia, Small capacity]

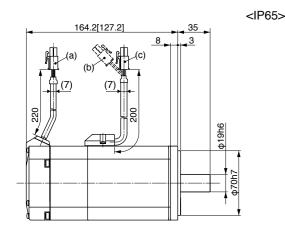
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





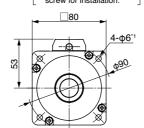
Dimensions

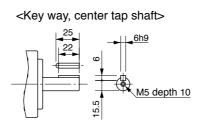


(a) Encoder connector

- (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**

Specifications

				AC2	00 V	
Motor mode	, I	IP65		MHME102GC□M	MHME102SC□M	
	:1	IP67		-	_	
A 1: 1-1 -	Model	A5II serie	s	MDDKT3530		
Applicable driver *	No.	A5IE series		MDDKT3530E	-	
divoi	Fi	rame sym	bol	D-fr	ame	
Power supp	ly capacit	у	(kVA)	1.	.8	
Rated outpu	ut		(W)	10	00	
Rated torqu	е		(N·m)	4.	77	
Momentary	Max. pea	k torque	(N·m)	14.3		
Rated curre	nt	(A(rms))	5.7		
Max. curren	nt		(A(o-p))	2	4	
Regenerativ	e brake	Without	option	8	3	
frequency (tim	nes/min) Note)1	DV0P	4284	No limi	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	20	00	
Max. rotatio	otational speed (r/min) 3000		00			
Moment of i	inertia	Without brake		24.7		
of rotor (×10 ⁻⁴ kg·m ²) With brak		orake	26.0			
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
	Resolutio	n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

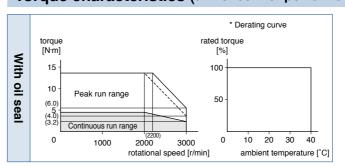
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

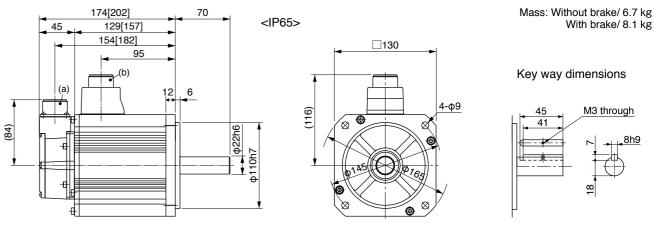
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. 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		
Motor model		IP65		MHME152GC□M	MHME152SC□M	
*1		IP67		-	_	
	Model	A5II series		MDDKT5540		
Applicable driver *2	No.	A5IIE series		MDDKT5540E	_	
unvoi	Fr	ame symbol		D-fr	ame	
Power supply	capacit	y (kVA	١)	2	.3	
Rated output		(V)	/)	15	00	
Rated torque		(N·m	1)	7.16		
Momentary Max. peak torque (N·m)			1)	21.5		
Rated current (A(rms))))	9.4		
Max. current		(A(o-p))	40		
Regenerative b	orake	Without option	ı	22		
frequency (times/	min) Note)1	DV0P4284		130		
Rated rotation	al spee	d (r/mir	1)	2000		
Max. rotationa	al speed	(r/mir	1)	3000		
Moment of ine	ertia	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			3	5 times or less		
Rotary encoder specifications Note)5		5	20-bit Incremental	17-bit Absolute		
Resolution per single turn				1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

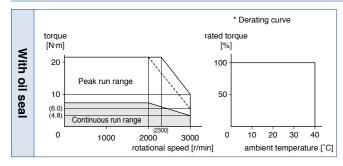
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

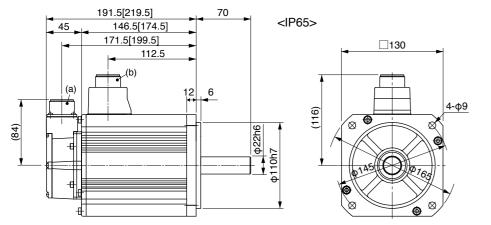
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

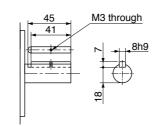


Dimensions



Mass: Without brake/ 8.6 kg With brake/ 10.1 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

Specifications

				AC2	00 V
Mataumanda		IP65		MHME202GC□M	MHME202SC M
Motor mode		IP67		-	-
	Model	A5II series	S	MEDKT7364	
Applicable driver *	No.	A5IIE series		MEDKT7364E	_
diivei	Fr	ame sym	bol	E-fra	ame
Power supp	ly capacit	y	(kVA)	3	.3
Rated outpu	ıt		(W)	20	00
Rated torqu	е		(N·m)	9.	55
Momentary	Max. peal	k torque	(N·m)	28.6	
Rated current (A(rms))		11.1			
Max. current (A(o-p))			4	47	
Regenerative	e brake	Without	option	45	
frequency (tim	es/min) Note)1	DV0P	4285	142	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	57.8	
of rotor (×10) ⁻⁴ kg·m²)	With brake		59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

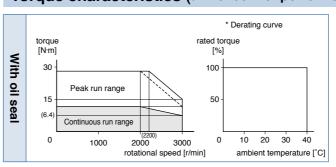
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

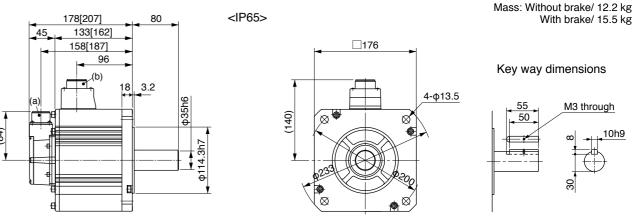
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

motor specifications

Specifications

			AC2	00 V
Mataumandal		IP65	MHME302GC□M	MHME302SC□M
Motor model *1		IP67	-	-
	Model	A5I series	MFDK	TA390
Applicable driver *2	No.	A5IE series	MFDKTA390E	_
dilvei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	16.0	
Max. current		(A(o-p))	6	8
Regenerative b	rake	Without option	19	
frequency (times/r	min) Note)1	DV0P4285×2	142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	90.5	
of rotor (×10 ⁻⁴	kg·m²)	With brake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

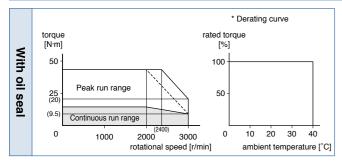
During assembly During operation	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

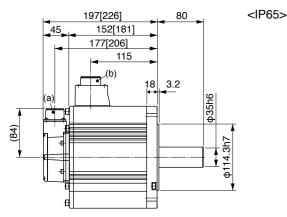
200 V MHME 3.0 kW [High inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

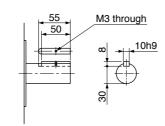


Dimensions



Mass: Without brake/ 16.0 kg With brake/ 19.2 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MHME 4.0 kW [High inertia, Middle capacity]

Specifications

				AC2	00 V
Matauranal	-1	IP65		MHME402GC□M	MHME402SC M
Motor mode	2 I ⊧1	IP67		-	-
	Model	A5II series		MFDKTB3A2	
Applicable driver	No.	A5IIE series		MFDKTB3A2E	_
dilvoi	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	6	.0
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	57.3	
Rated current (A(rms))			21.0		
Max. current (A(o-p))			8	9	
Regenerativ	e brake	Without	option	17	
frequency (tin	nes/min) Note)1	DV0P4	285×2	125	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed	l	(r/min)	3000	
Moment of	inertia	Without	brake	112	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution	Resolution per single turn			131072

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

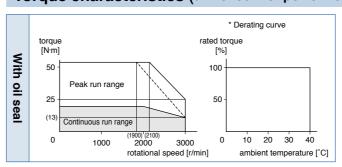
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

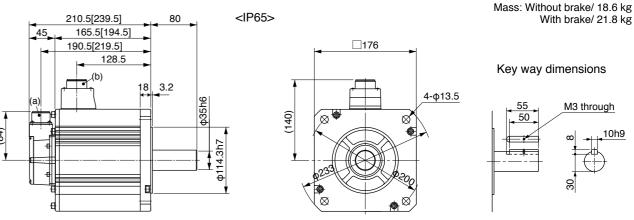
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<a>Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

ne motor, or equipment containing the motor to be distributed to Japan, or other regions t

A5 Family

200 V MHME 5.0 kW [High inertia, Middle capacity]

Specifications

			AC200 V			
Motor model		IP65	MHME502GC□M	MHME502SC□M		
*1		IP67	_	-		
Amuliaahla	Model	A5I series	MFDK	TB3A2		
Applicable *2	No.	A5IIE series	MFDKTB3A2E	_		
dilvei	Fr	ame symbol	F-fra	ame		
Power supply	capacit	y (kVA)	7.	.5		
Rated output		(W)	50	00		
Rated torque		(N·m)	23	3.9		
Momentary Ma	ax. peal	k torque (N·m)	71.6			
Rated current		(A(rms))	25.9			
Max. current		(A(o-p))	110			
Regenerative b	rake	Without option	10			
frequency (times/	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 ($\times 10^{-4}$	kg·m²)	With brake	16	164		
Recommende ratio of the loa			5 times	or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072		

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

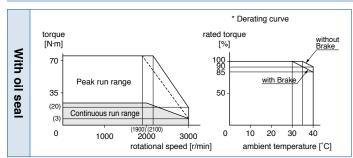
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

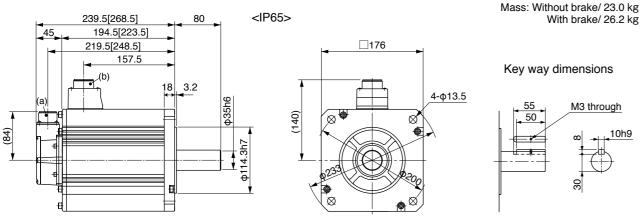
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

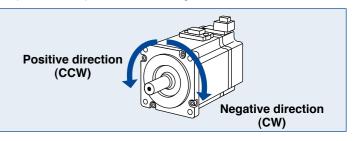
Environmental Conditions

Item		Conditions			
Ambient temperature *1		0 °C to 40 °C (free from freezing)			
Ambient hu	midity	20 % to 85 % RH (free from condensation)			
Storage ten	nperature *2	-20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation '5)			
Storage hu	midity	20 % to 85 % RH (free from condensation ^{*5})			
Vibration	Motor only	5.0 kW or less, MGME 3.0 kW or less: Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW or more, MGME 4.5 kW or more: Lower than 24.5 m/s² (2.5 G) at running, 24.5 m/s² (2.5 G) at stall			
Impact	Motor only	Lower than 98 m/s ² (10 G)			
	9	MSMD, MHMD, MSMJ, MHMJ (except rotating portion of output shaft and readwire end.)			
Enclosure rating (Motor		M * ME (IP65 motor: 0.9 kW or more) (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)			
only)	IP67 *3*4	M * ME IP67 motor (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)			
Altitude		Lower than 1000 m			

- *1 Ambient temperature to be measured at 5 cm away from the motor.
- *2 Permissible temperature for short duration such as transportation.
- *3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in application where water proof performance is required such as continuous wash-down operation.
- *4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.
- *5 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

<Note>

Initial setup of rotational direction: positive = CCW and negative = CW. Pay an extra attention.



Notes on [Motor specification] page

Note) 1. [At AC100 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC115 V (at 100 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

[At AC200 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC230 V (at 200 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

A5 Family Motor Specification

Description

[At AC400 V of power voltage]

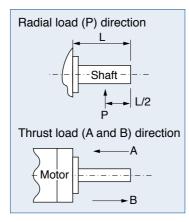
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC460 V (at 400 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

-Notos

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

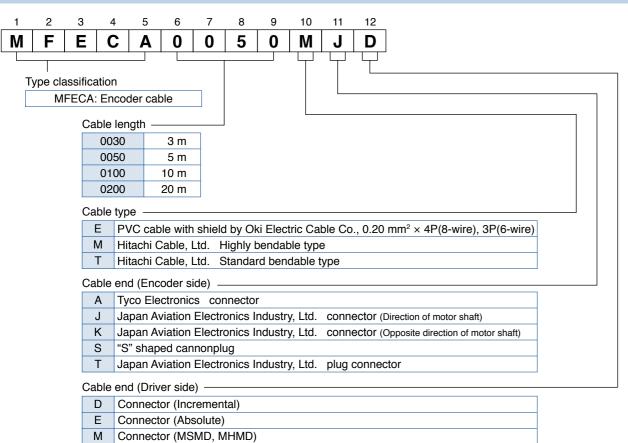
183

· Specifications of Built-in Holding Brake

Motor series	Motor output	Static friction torque N·m	Rotor inertia × 10 ⁻⁴ kg·m²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage DC V Exciting voltage DC V	Permissible work (J) per one braking		Permissible angular acceleration rad/s²
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
MSMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	750 W(400 V)	2.5 or more				0.7				
MSME	1.0 kW, 1.5 kW, 2.0 kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	2 V or more	392	490	10000
	3.0 kW	11.8 or more		80 or less			24 ±2.4			10000
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200	
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7		392	490	
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000
MDME	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less 0.79	2 V or more	1176	1500		
MDME	3.0 kW	16.2 or more		110 or less	(130)	0.9	24 ±2.4	1470	2200	
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83	2 V or more	1372	2900	
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75	24 ±2.4 1470	1470	1500	10000
	4.5 kW	31.4 or more	0.70	100 01 1000	100 01 1000	0.70		1470	2200	
	0.9 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79		1176	1500	10000
MGME	2.0 kW	24.5 or more		80 or less	25 or less (200)	1.3	2 V or more			5440
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372	2900	
	4.5 kW, 6.0 kW				50 or less					5000
MHMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	1 V or more	137	44.1	00000
MSMJ MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	30000
	1.0 kW	4.9 or more	1 05	80 or less	70 or less (200)	0.59		588	780	10000
МНМЕ	1.5 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79	2 V or more	1176	1500	10000
	2.0 kW~5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3	24 ±2.4	1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4		1012	2900	5000

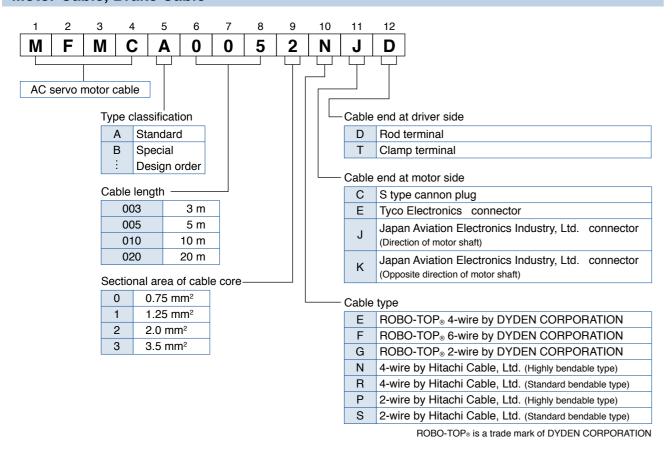
- Releasing time values represent the ones with DC-cutoff using a varistor.
 Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)
- · Above values (except static friction torque, releasing voltage and excitation current) represent typical values.
- Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.
- Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

Encoder Cable



Cable part No. Designation

Motor Cable, Brake Cable

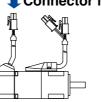


Specifications of Motor connector

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.)

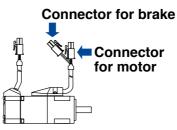
Connector for encoder

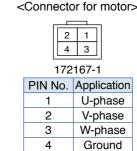


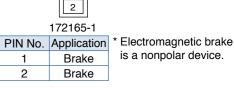
			,		PIN No.	Application
	3	2	1]	1	NC
	6	5	4		2	PS
172168-1					3	PS
					4	E5V
20-bit Incremental				ital	5	E0V
					6	FG(SHIELD

		_	,		PIN No.	Application		
	3	2	1]	1	BAT+		
	6	5	4		2	BAT-		
	9	8	7		3	FG(SHIELD)		
470400.4					4	PS		
172169-1 17-bit Absolute				_	5	PS		
ı	7-DIL	ADS	SOIUL	е	6	NC		
					7	E5V		
					8	E0V		
ng to NC.				9	NC			
_								

<Remarks> Do not connect anything to I





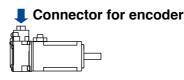


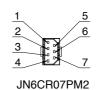
<Connector for brake>

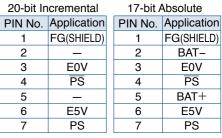
When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

* Do not remove the gasket supplied with the junction cable connector. Securely install the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.

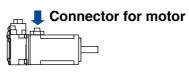


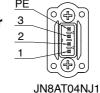




Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.



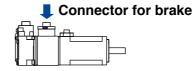


PIN No. Application U-phase V-phase 2 3 W-phase Ground

Tightening torque of the screw (M2) 0.085 N·m to 0.095 N·m (screwed to plastic)

* Be sure to use only the screw supplied with the connector, to avoid damage.

[Motor with brake]





186

PIN No.	Application	
1	Brake	* Electromagnetic brake is
2	Brake	a nonpolar device.

to avoid damage.

ar 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,

Encoder Cable

* It doesn't correspond to IP65 and IP67.

(14)

Cable

Options

A5 Family

Part No.	MFECA0 * * 0EAM	Compatible motor output	l	50 W to 750 W, 200 W to 750 W,			
Specifications	For 20-bit incremental encoder (Without battery box)						

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	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 x3P (6-wire)	Oki Flectric Cable Co. Ltd.		

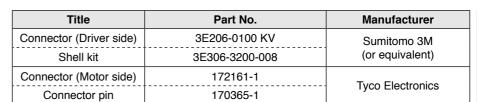
Part No.	MFECA0 * * 0EAE	Compatible motor output		50 W to 750 W, 200 W to 750 W,			
Specifications	For 17-bit absolute encoder (With battery box) *						

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

I	<u></u>	L		ا۔	
	I-	110	-1-	300	
		<u>-n</u>		(88)	

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAE
Connector (Motor side)	172161-1	Tyco Electronics	10	MFECA0100EAE
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAE
Cable	0.20 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAD	Compatible motor output		•		200 W to 750 W 200 W to 750 W
Specifications	For 17-bit incremental encoder (Without battery box)					



0.20 mm²×3P (6-wire)

MFECA0030EAD 3 5 MFECA0050EAD MFECA0100EAD 10 20 MFECA0200EAD Oki Electric Cable Co., Ltd.

Part No.

L (m)

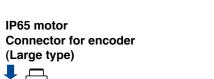
Specifications of Motor connector

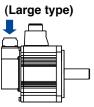
• When the motors of <MSME (750 W(400 V), 1.0 kW to 5.0 kW), MDME, MGME, MHME> are used, they are connected as shown below.

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

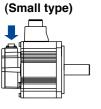
· Connector for encoder

<Encoder connector for IP65 motor>





IP67 motor Connector for encoder



N/MC2102420 20D	

N/MS3102A20-29I

14/11/00/102/120 20/					
20-bit Incremental			17-bit A	Absolute	
PIN No.	Application		PIN No.	Application	
Α	NC		Α	NC	
В	NC		В	NC	
С	NC		С	NC	
D	NC		D	NC	
Е	NC		Е	NC	
F	NC		F	NC	
G	E0V		G	E0V	
Н	E5V		Н	E5V	
J	FG(SHIELD)		J	FG(SHIELD)	
K	PS		K	PS	
L	PS		L	PS	
M	NC		М	NC	
N	NC		N	NC	
Р	NC		Р	NC	
R	NC		R	NC	
0	NC		0	DAT	

JN2AS10ML3-R

<Encoder connector for IP67 motor>

20-bi	20-bit Incremental			17-bit <i>l</i>	Absolute
PIN N	0.	Application		PIN No.	Application
1		E0V		1	E0V
2		NC		2	NC
3		PS		3	PS
4		E5V		4	E5V
5		NC		5	BAT-
6		NC		6	BAT+
7		PS		7	PS
8		NC		8	NC
9		FG(SHIELD)		9	FG(SHIELD)
10		NC		10	NC

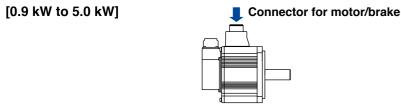
<Remarks>

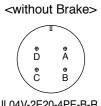
BAT+

JL04V-2E24-11PE-B-R

Do not connect anything to NC.

Connector for motor/brake



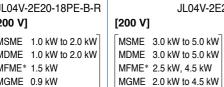


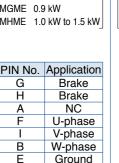
	e e B	
JL04V-	2E20-4PE-B-R	JL04
MSME	750 W(400 V),	[200
	1.0 kW to 2.0 kW	MSM
MDME	400 W (400 V),	MDN
	COO W (400 V)	

MSME	750 W(400 V),	L
	1.0 kW to 2.0 kW	М
MDME	400 W (400 V),	M
	600 W (400 V),	M
	1.0 kW to 2.0 kW	M
MGME	0.9 kW	M
MHME	1.0 kW to 1.5 kW	-
JL04HV	-2E22-22PE-B-R	

L04HV-2E	22-22PE-B-R	ł		
MSME 3.0	kW to 5.0 kW		PIN No.	Application
MDME 3.0) kW to 5.0 kW		G	Brake
MGME 2.0) kW to 4.5 kW		Н	Brake
) kW to 5.0 kW		Α	NC
	7 KTT 10 0.0 KTT		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







* 1.5 E 0.9 E 1.0		MFME* 2.5 kV MGME 2.0 kV MHME 2.0 kV	V to 4.5 kW		MFME* 1 MGME 0	00 W, 600 W, .0 kW to 5.0 kW .5 kW to 4.5 kW .9 kW to 4.5 kW .0 kW to 5.0 kW	
No.	Application		PIN No.	Αŗ	plication	n	
	Brake		Α		Brake		
	Brake		В		Brake		
	NC		С		NC		
	U-phase		D	ι	J-phase		
	V-phase		Е	١	/-phase		
	W-phase		F	٧	V-phase		
	Ground		G	(Ground		
	Ground		Н	(Ground		

<with Brake>

* MF	ME is cor	mmon to	with o	or wit	thout b	orake.
-Da						

<Remarks> Do not connect anything to NC.

or/brake	[6.0 kW or more] Connector for motor for brake
* Electromagnetic brake is a nonpolar device.	
	<motor> Output D A C B</motor>
E24-11PE-B-R [400 V]	JL04V-2E32-17PE-B-R MDME 7.5 kW to 15.0 kW MGME 6.0 kW
MSME 750 W,	MHME 7.5 kW
1.0 kW to 5.0 kW MDME 400 W, 600 W, 1.0 kW to 5.0 kW MFME* 1.5 kW to 4.5 kW MGME 0.9 kW to 4.5 kW MHME 1.0 kW to 5.0 kW	PIN No. Application A U-phase B V-phase C W-phase D Ground
. Application	<brake></brake>
Brake Brake NC	(
U-phase	N/MS3102A 14S-2P
V-phase W-phase	MDME 7.5 kW to 15.0 kW
Ground	MGME 6.0 kW MHME 7.5 kW
Ground NC	PIN No. Application
110	A Brake
	B Brake
	C NC
	D NC
	* Electromagnetic brake
	is a nonpolar device.

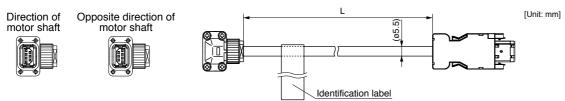
187

[Unit: mm]

[Unit: mm]

Encoder Cable

* It doesn't correspond to IP65 and IP67.

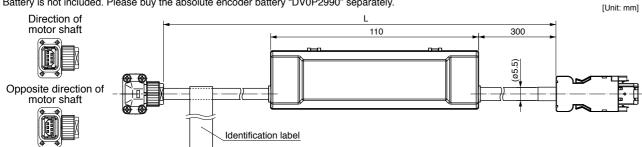


Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

	L (m)	Part No.(ex.)
	3	MFECA0030MJD
	5	MFECA0050MJD
	10	MFECA0100MJD
	20	MFECA0200MJD
ı		

Par	rt 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)
Speci	ifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

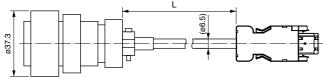


Title	Part No.	Manufacturer		
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M		
Shell kit	3E306-3200-008	(or equivalent)		
Connector (Motor side)	JN6FR07SM1	Japan Aviation		
Connector pin	LY10-C1-A1-10000	Electronics Ind.		
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.		

L (m)	Part No.(ex.)
3	MFECA0030MJE
5	MFECA0050MJE
10	MFECA0100MJE
20	MFECA0200MJE

[Unit: mm]

Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)	
Specifications	For 20-bit incremental encoder (Without battery box)			



Cable clamp

Cable

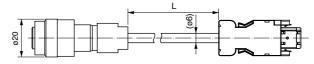
Part No.	Manufacturer
3E206-0100 KV	Sumitomo 3M
3E306-3200-008	(or equivalent)
N/MS3106B20-29S	Japan Aviation
	3E206-0100 KV 3E306-3200-008

N/MS3057-12A

0.2 mm² x3P (6-wire)

Manufacturer		L (m)	Part No.
 Sumitomo 3M (or equivalent)		3	MFECA0030ESD
		5	MFECA0050ESD
 Japan Aviation Electronics Ind.		10	MFECA0100ESD
		20	MFECA0200ESD
Oki Electric Cable Co., Ltd.			

Part No.	MFECA0 * * 0ETD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V), MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)		
Specifications	For 20-bit incremental encoder (Without battery box)				

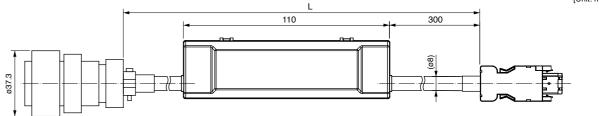


Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	(or equivalent)	3	MFECA0030ETD
Shell kit	3E306-3200-008		5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R		10	MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable	0.2 mm ² x3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ESE	Compatible motor output	0.9 kW to 5.0 kW (IP65 Motor)
Specifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

[Unit:	mn



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 encode	or 17-bit absolute encoder (With battery box) *			

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately

s not included. Flease buy the	absolute effcoder battery L	L		[Unit: mm]
•	4	110	300	
050		<u>-</u>	(90)	

Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	Γ
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.	_

L (m)	Part No.
3	MFECA0030ETE
5	MFECA0050ETE
10	MFECA0100ETE
20	MFECA0200ETE

189

[Unit: mm]

MSME 750 W(400 V), 1.0 kW to 2.0 kW,

Applicable model MDME 400 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)

[Unit: mm]

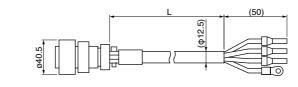
MFMCD0 * * 2ECD

Part No.

Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation	3	MFMCD0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCD0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCD0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCD0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		<u> </u>

Part No.	MFMCE0 * * 2ECD		MHME 2.0 kW (200 V and 400 V commonness)
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[Unit: mm]

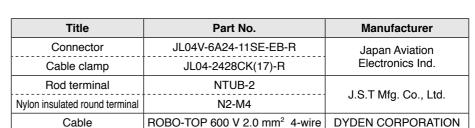


Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCE0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	1.5 kW(400 V), 2.5 kW(200 V and 400 V commonness)
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192

[Unit: mm]



	L (m)	Part No.
	3	MFMCF0032ECD
	5	MFMCF0052ECD
	10	MFMCF0102ECD
	20	MFMCF0202ECD

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

Part No.	MFMCA0 * * 0EED	Applicable model	50 W to 750 W, 200 W to 750 W,		
	(50)		(50)		[Unit: mm]

(50) L (50)

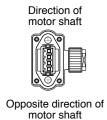
Title	Part No.	Manufacturer	
Connector	172159-1	Tyco Electronics	
Connector pin	170366-1		
Rod terminal	AI0.75-8GY	Phoenix Contact	
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION	

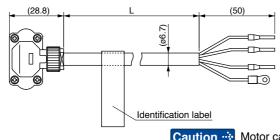
L (m)	Part No.
3	MFMCA0030EED
5	MFMCA0050EED
10	MFMCA0100EED
20	MFMCA0200EED

	MFMCA0 * * 0NJD (Highly bendable type, Direction of motor shaft)		MSME 50 W to 750 W(200V)
Part No.	MFMCA0 * * 0NKD (Highly bendable type, Opposite direction of motor shaft)		MSME 200 W to 750 W(200V)
Part No.		model	MSME 50 W to 750 W(200V)
	MFMCA0 * * 0RKD (Standard bendable type, Opposite direction of motor shaft)		MSME 200 W to 750 W(200V)

[Unit: mm]

[Unit: mm]







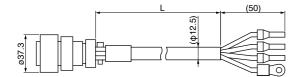
Caution → Motor cable for opposite direction of motor shaft cannot be used with a motor 50W and 100W.

Title	Part No.	Manufacturer	
Connector	JN8FT04SJ1	Japan Aviation	
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	
Rod terminal	AI0.75-8GY	Phoenix Contact	
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.	

L (m)	Part No.(ex.)			
3	MFMCA0030NJD			
5	MFMCA0050NJD			
10	MFMCA0100NJD			
20	MFMCA0200NJD			

Part No.	MFMCA0 * * 2ECD	Applicable model	MFME	1.5 kW(200 V)
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191



Title	Part No.	Manufacturer	
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation	
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	
Rod terminal	NTUB-2	LC T Mfg. Co. Ltd	
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION	

L (m)	Part No.		
3	MFMCA0032ECD		
5	MFMCA0052ECD		
10	MFMCA0102ECD		
20	MFMCA0202ECD		

=

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)

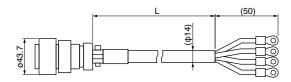
l -	L	(50)	
		(4)	
		9	
- H H H H H H H H H H			
°↓Ч ҢШ⊢+Ш°		1	

Title Part No.		Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

Part No.	N/I = N/I () 1 * * * * = (Applicable model	MFME 4.5 kW (200 V and 400 V commonness)
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[Unit: mm]

[Unit: mm]



Title Part No.		Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R Electronics Ind.		5	MFMCD0053ECT
Nylon insulated round terminal N5.5-5		J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

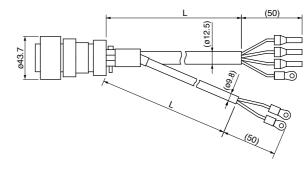
Part No.	MFMCA0 * * 2FCD	Applicable model	MDME MFME MHME	1.0 kW to 2.0 kW(200 V), 1.0 kW to 2.0 kW(200 V), 1.5 kW(200 V), 1.0 kW(200 V) to 1.5 kW(200 V) 0.9 kW(200V)
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(50)

Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032FCD
Cable clamp		JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052FCD
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCA0102FCD
Nylon insulated	Earth	N2-M4	LC TMfc Co Ltd	20	MFMCA0202FCD
round terminal Brak		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.	MFMCE0 * * 2FCD	Applicable model	MDME MFME MGME	750 W(400 V) to 2.0 kW(400 V), 400 W(400 V) to 2.0 kW(400 V), 1.5 kW(400 V), 2.5 kW(200 V/400 V), 0.9 kW(400 V) 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)

	. 11



Title		Part No.	Manufacturer
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated	Earth	N2-M4	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 2.0 mm ² 6-wire	DYDEN CORPORATION

L (m)	Part No.
3	MFMCE0032FCD
5	MFMCE0052FCD
10	MFMCE0102FCD
20	MFMCE0202FCD

Brake Cable

* It doesn't correspond to IP65 and IP67.

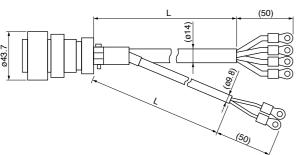
A5 Family

Options

* It doesn't correspond to IP65 and IP67.

Motor Cable (with Brake)

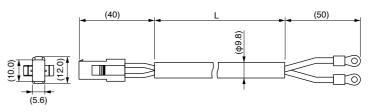
MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 4.5 kW, MHME 3.0 kW to 5.0 kW Applicable model MFMCA0 * * 3FCT Part No. MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)



L (50)	[Unit: mm]
(50)	
*	

Title		Part No.	Manufacturer	
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	
Nylon insulated Earth round terminal Brake		N5.5-5	J.S.T Mfg. Co., Ltd.	
		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	

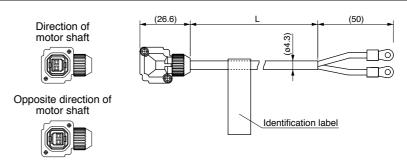
L (m)	Part No.			
3	MFMCA0033FCT			
5	MFMCA0053FCT			
10	MFMCA0103FCT			
20	MFMCA0203FCT			



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	T Flanks in	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) MFMCB0 ** 0PKT (Highly bendable type, Opposite direction of motor shaft)	Amaliaabla	MSME
Part	MFMCB0 ** 0SJT (Standard bendable type, Direction of motor shaft)	Applicable model	50 W to 750 W (200 V)
	MFMCB0 * * 0SKT (Standard bendable type, Opposite direction of motor shaft)		(200 V)

[Unit: mm]



Title Part No.		Manufacturer	L (m)	Part No.
Connector	JN4FT02SJMR	3 Japan Aviation		MFMCB0030
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	5	MFMCB0050
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100
Cable	AWG22 2-wire (ø4.3)	Hitachi Cable, Ltd.	20	MFMCB0200

0PJT 50PJT 00PJT 0PJT

195

196

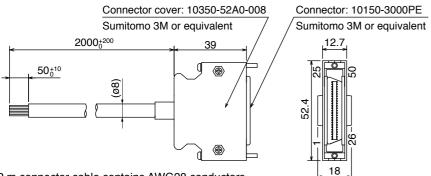
[Unit: mm]

Options

Options

Cable for Interface

Part No. DV0P4360



This 2 m connector cable contains AWG28 conductors.

Table for wiring

Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color
1	Orange (Red1)	11	Orange (Black2)	21	Orange (Red3)	31	Orange (Red4)	41	Orange (Red5)
2	Orange (Black1)	12	Yellow (Black1)	22	Orange (Black3)	32	Orange (Black4)	42	Orange (Black5)
3	Gray (Red1)	13	Gray (Red2)	23	Gray (Red3)	33	Gray (Red4)	43	Gray (Red5)
4	Gray (Black1)	14	Gray (Black2)	24	Gray (Black3)	34	White (Red4)	44	White (Red5)
5	White (Red1)	15	White (Red2)	25	White (Red3)	35	White (Black4)	45	White (Black5)
6	White (Black1)	16	Yellow (Red2)	26	White (Black3)	36	Yellow (Red4)	46	Yellow (Red5)
7	Yellow (Red1)	17	Yel (Blk2)/Pink (Blk2)	27	Yellow (Red3)	37	Yellow (Black4)	47	Yellow (Black5)
8	Pink (Red1)	18	Pink (Red2)	28	Yellow (Black3)	38	Pink (Red4)	48	Pink (Red5)
9	Pink (Black1)	19	White (Black2)	29	Pink (Red3)	39	Pink (Black4)	49	Pink (Black5)
10	Orange (Red2)	20	-	30	Pink (Black3)	40	Gray (Black4)	50	Gray (Black5)

<Remarks>

Color designation of the cable e.g.) Pin-1 Cable color: Orange (Red1): One red dot on the cable The shield of this cable is connected to the connector shell but not to the terminal.

Interface Conversion Cable

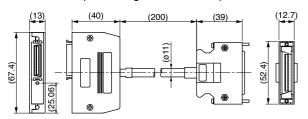
|--|

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.

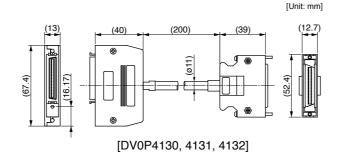
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control
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)

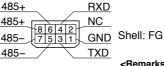
Part No. DV0PM20102

Components

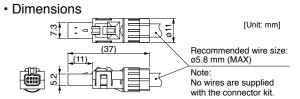
[Unit: mm]

Title	Part No.	Manufacturer	Note
Connector	CIF-PCNS08KK-072R	J.S.T Mfg. Co., Ltd.	For Connector X2 (8-pins)
	•		

• Pin disposition of connector, connector X2



(Viewed from cable) Do not connect anything to NC.



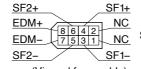
Connector Kit for Safety (Excluding A5IE, A5E Series)

Part No. DV0PM20103

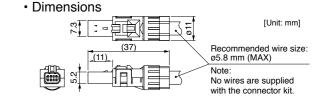
Components

<u> </u>			
Title	Part No.	Manufacturer	Note
Connector	CIF-PCNS08KK-071R	J.S.T Mfg. Co., Ltd.	For Connector X3 (8-pins)

Pin disposition of connector, connector X3



(Viewed from cable) Do not connect anything to NC.



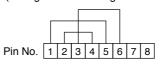
Safety bypass plug (Excluding A5IE, A5E Series)

Part No. DV0PM20094

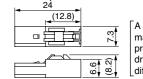
Components

Title	Part No.	Manufacturer	Note
Connector	CIF-PB08AK-GF1R	J.S.T Mfg. Co., Ltd.	For Connector X3

 Internal wiring (Wiring of the following has been applied inside the plug.)



· Dimensions (Resin color : black)



A design and color may vary from the plug provided together with driver. There is no difference in function.

[Unit: mm]

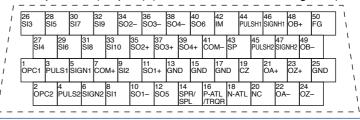
Connector Kit for Interface

Part No. DV0P4350

Components

Title	Part No.	Number	Manufacturer	Note
Connector	10150-3000PE	1	Sumitomo 3M	For Connector X4
Connector cover	10350-52A0-008	1	(or equivalent)	(50-pins)

• Pin disposition (50 pins) (viewed from the soldering side)



- 1) Check the stamped pin-No. on the connector body while making a wiring.
- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Part No. DV0PM20026

Title

Connector

Components

Connector Kit for External Scale (Excluding A5IE, A5E Series)

Part No.

MUF-PK10K-X

EXB (Viewed from cable)

Connector Kit for Encoder Part No. DV0PM20010

E5V

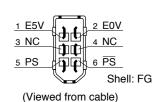
Components

Title	Part No.	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector X6
Shell kit	3E306-3200-008	(or equivalent)	FOI COTTILECTOL VO

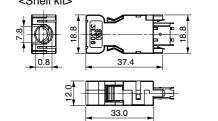
Pin disposition of connector, connector X6

• Pin disposition of connector, connector X5

EXA



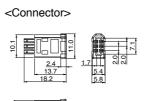




Manufacturer

J.S.T Mfg. Co., Ltd.

Dimensions



[Unit: mm]

Note

For Connector X5 (10-pins)

[Unit: mm]

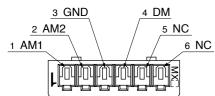
Connector Kit for Analog Monitor Signal

Part No. DV0PM20031

Components

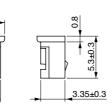
Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Molex Inc	For Connector V7 (6 nine)
Connector pin	500118100	6		For Connector X7 (6-pins)

• Pin disposition of connector, connector X7



Dimensions

12.9±0.3



<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B

Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V: Single row type)

· Components

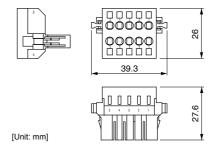
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20033 (For A-frame to D-frame 200 V: Double row type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-C	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT	2		FOI CONNECTOR XA

Dimensions



* When connection multiple axes in series, make sure the sum of the current value does not exceed the rated current (11.25 A) of DV0PM20033.

Remarks - ❖

When using drivers MDDKT5540 *** or MDDHT5540 *** in single-phase power supply, do not use DV0PM20033.

Driver part No.	Power supply	Rated input current
MADHT1105 *** MADKT1105 ***	Single phase 100 V	1.7 A
MADHT1107 *** MADKT1107 ***	Single phase 100 V	2.6 A
MADHT1505 *** MADKT1505 ***	Single phase/3-phase 200 V	1.6 A/0.9 A
MADHT1507 *** MADKT1507 ***	Single phase/3-phase 200 V	2.4 A/1.3 A
MBDHT2110 *** MBDKT2110 ***	Single phase 100 V	4.3 A
MBDHT2510 *** MBDKT2510 ***	Single phase/3-phase 200 V	4.1 A/2.4 A
MCDHT3120 *** MCDKT3120 ***	Single phase 100 V	7.6 A
MCDHT3520 *** MCDKT3520 ***	Single phase/3-phase 200 V	6.6 A/3.6 A
MDDHT3530 *** MDDKT3530 ***	Single phase/3-phase 200 V	9.1 A/5.2 A
MDDHT5540 *** MDDKT5540 ***	Single phase/3-phase 200 V	14.2 A/8.1 A

Part No. DV0PM20044 (For E-frame 200 V)

· Components

•				
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-L	1	LC 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 Mfa Co. Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	FOI COIIIIeCIOI XA

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	LC T Mfg. Co. Ltd	For Connector XD
Handle lever	MJFAT-0T	1	J.S.T Mfg. Co., Ltd.	For Connector XD

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. DV0PM20045 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	LCTMfc Co Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	FOI COIIIIeCIOI AC

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	06JFAT-SAXGF	1	LC T Mfa Co. Ltd	For Connector XB
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20046 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAXGSA-L	1	LC T Mfg. Co. Ltd	For Connector VP
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XB

Part No. | **DV0PM20054** (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector XB
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	FOI COIIIIeCtor AB

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Options

A5 Family

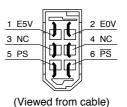
Connector Kit for Motor/Encoder Connection

Dart No	DV0D4200	Applicable	MSMD 50 W to 750 W, MHMD 200 W to 750 W
Part No.			(absolute encoder type)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Connector	172161-1	1	Type Fleetrenies	For Encoder cable	
Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
Connector	172159-1	1	Tyco Electronics	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

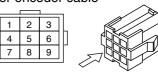
• Pin disposition of connector, connector X6



Shell: FG

Do not connect

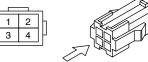
· Pin disposition of connector for encoder cable



(Viewed from cable)					
PIN No. Application		PIN No.	Application		
1 BAT+		6	NC		
2	BAT-	7	E5V		
3	FG(SHIELD)	8	E0V		
4 PS		9	NC		
5 PS <remarks></remarks>			(S>		

for motor cable

· Pin disposition of connector



(Viewed from cable)

PIN No.	Application	
1	U-phase	
2	V-phase	
3	W-phase	
4	Ground	

Do not connect anything to NC.

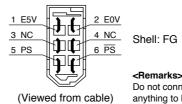
* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

Part No.	DV0P4380		50 W to 750 W, 200 W to 750 W,	200 W to 750 W 200 W to 750 W
			ental encoder type	

Components

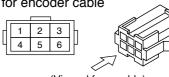
Title Part No.		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Connector	172160-1	1	Tues Flastronies	For Encoder cable	
Connector pin	170365-1	6	Tyco Electronics	(6-pins)	
Connector	172159-1	1	Tugo Floatronico	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

• Pin disposition of connector, connector X6



Do not connect

· Pin disposition of connector for encoder cable



(Viewed from cable)

((Vicwed Horri Cable)					
PIN No.	Application					
1	NC					
2	PS					
3	PS					
4	E5V	_				
5	E0V	<remarks> Do not connect</remarks>				
6	FG(SHIELD)	anything to NC.				
		, ,				

· Pin disposition of connector for motor cable



(Viewed from cable)

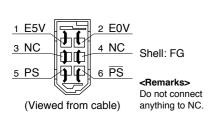
,	
IN No.	Application
1	U-phase
2	V-phase
3	W-phase
4	Ground

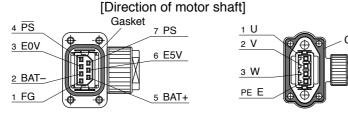
Part No.	DV0PM20035	Applicable model	MSME	50 W to 400 W(100 V), 50 W to 750 W(200 V)
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Components

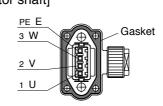
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008		(or equivalent)	For Connector A6 (6-pins)	
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)	
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable	
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.	(4-pins)	

- Pin disposition of connector, Pin disposition of connector connector X6 for encoder cable
- · Pin disposition of connector for motor cable





[Opposite direction of motor shaft] Gasket _{1 FG} 5 BAT+ 2 BAT-6 E5V



brake

* Pins 2 and 5 are left unused (NC) with an incremental encoder.

Remarks - Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.	DV0PM20036	Applicable model	\ N N
----------	------------	------------------	-------------

<IP67 motor> MSME 750 W (400 V), 1.0 kW to 2.0 kW, Without MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector At (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A-20-4SE-EB-R	1	Japan Aviation	For Motor coble	
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 motor=""></ip65>	
Dart No	DV0P4310	Applicable	MSME 750 W (400 V), 1.0 kW to 2.0 kW	Without
Part No.	DV0P4310	model	MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW	brake
			MHME 1.0 kW to 1.5 kW, MGME 0.9 kW	

Components

•					
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor 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	
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

			<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>\\/ithqut</th></ip65>	notor>			\\/ithqut
Part No.	111111111111111111111111111111111111111	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	Without
			MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 3.0 kW	brake

Components

•					
Title	Title Part No. N		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	Fau Facadau achla	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20038	Applicable model	<ip67 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MFME 1.5 kW (Common to with/ without brake), MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip67>	With brake
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Components

Title	Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FOI WIOLOI CADIE	

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No.		Applicable model	<ip65 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip65>	With brake
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Components

Title	Γitle Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector VC (C nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	Fay Face day cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.		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 Franciscopie	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor coblo	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	For Motor cable	

Part No.		Applicable model	<ip65 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 3.0 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 3.0 kW</ip65>	With brake
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Components

Title	Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B24-11S	1	Japan Aviation	For Motor cobla	
Cable clamp	N/MS3057-16A	1	Electronics Ind.	For Motor cable	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Part No.	DV0PM20056	Applicable model	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	Without brake
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Components

Title Part No.		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	Fau Canadata VC (Caina)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freedor coble	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-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: Φ 22 to Φ 25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

[·] When manufacturing the motor extension cable, refer to "Driver and List of Applicable Penipheral Equipment" on pages 19 and 20 for thickness of the electric wire used and the size of the crimp terminal.

Part No.		Applicable model	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	With brake	
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	
Shell kit	3E306-3200-008	200-008 1 (or equivalent)		For Connector X6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freeder coble
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	Can Matan ashla
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Droke coble
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable

^{*} Cable cover size: Φ 22 to Φ 25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

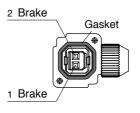
Part No.	1)VOPINIZOO40	Applicable model	MSME 50 W to 750 W	
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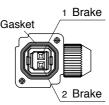
Components

Title	Part No.	Number	Manufacturer	Note
Connector	JN4FT02SJM-R	1	Japan Aviation	For brake cable
Socket contact	ST-TMH-S-C1B-3500	2	Electronics Ind.	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.

[•] When manufacturing the motor extension cable, refer to "Driver and List of Applicable Penipheral Equipment" on pages 19 and 20 for thickness of the electric wire used and the size of the crimp terminal.

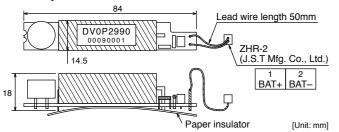
Mounting Bracket

A5 Family

Battery for Absolute Encoder

Part No. DV0P2990

· Lithium battery: 3.6 V 2000 mAh



<Caution>

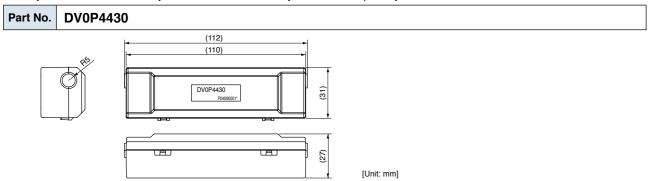
Battery for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

This battery is categorized as hazardous substance, and you may be required to present an application of hazardous substance when you transport by air (both passenger and cargo airlines).

Battery Box for Absolute Encoder *

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.



When waking a cable for 17-bit absolute encoder by yourself

When you make your own cable for 17-bit absolute encoder, connect the optional battery for absolute encoder, DV0P2990 as per the wiring diagram below. Connector of the battery for absolute encoder shall be provided by customer as well.

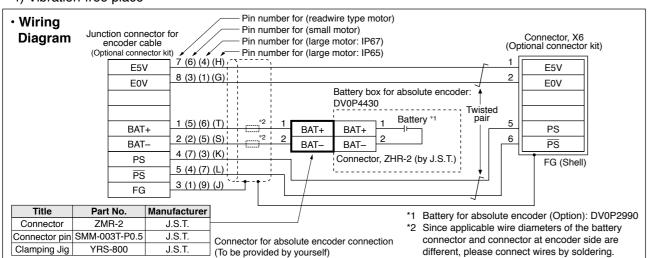
<Caution>

Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

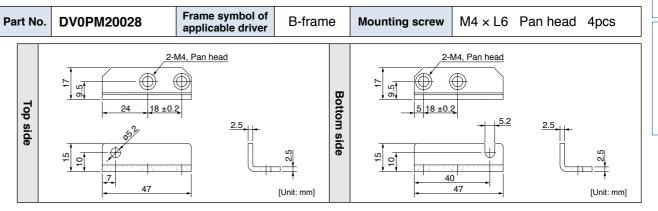
Refer to the instruction manual of the battery for handling the battery.

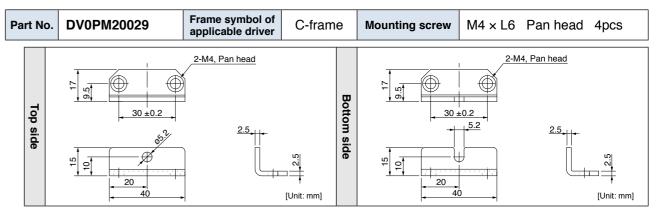
Installation Place of Battery

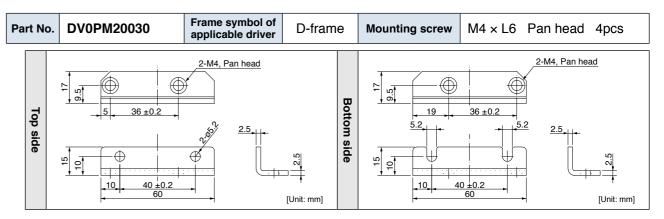
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable gas, grinding oil, oil mist, iron powder or chips and etc.
- 3) Well-ventilated and humid and dust-free place.
- 4) Vibration-free place



Frame symbol of Part No. DV0PM20027 M4 x L6 Pan head 4pcs A-frame Mounting screw applicable driver 2-M4, Pan head Bottom 11 ±0.2







For E, F and G-frame, it is possible to make both a front end and back end mounting by changing the mounting direction of L-shape bracket (attachment).

Options

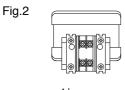
Reactor

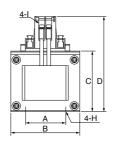
• Wiring of the reactor <3-Phase>

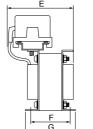
Servo

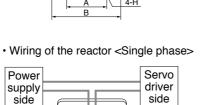
driver

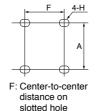
side











[Unit: mm]

	Part No.	A	В	С	D	E (Max)	F	G	Н	ı	Inductance (mH)	Rated current (A)
	DV0P220	65±1	125±1	(93)	136мах	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3
	DV0P221	60±1	150±1	(113)	155мах	130	60+3/-0	75±2	4-7φ×12	M4	4.02	5
Eia 1	DV0P222	60±1	150±1	(113)	155мах	140	70+3/-0	85±2	4-7φ×12	M4	2	8
Fig.1	DV0P223	60±1	150±1	(113)	155мах	150	79+3/-0	95±2	4-7φ×12	M4	1.39	11
	DV0P224	60±1	150±1	(113)	160мах	155	84+3/-0	100±2	4-7φ×12	M5	0.848	16
	DV0P225	60±1	150±1	(113)	160мах	170	100+3/-0	115±2	4-7φ×12	M5	0.557	25
	DV0P227	55±0.7	80±1	66.5±1	110мах	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.2	DV0P228	55±0.7	80±1	66.5±1	110мах	95	46±2	60±2	4-5φ×10	M4	2	8
	DV0PM20047	55±0.7	80±1	66.5±1	110мах	105	56±2	70±2	4-5φ×10	M4	1.39	11

^{*} For application, refer to P.21 to P.28 and P.153 to P.154 "Table of Part Numbers and Options".

: Center-to-center distance

on outer circular arc

Harmonic restraint

Power

supply

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.

- All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines
 for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system".
 The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according
 to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a
 contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

			Spec				
Part No.	Manufacturer's part No.	Resistance	cable core outside diameter		Rated power (reference) *1		Activation
Part No.		Resistance		Weight	Free air	with fan 1 m/s	temperature of built-in thermal protector
		Ω	mm	kg	W	W	
DV0P4280	RF70M	50		0.1	10	25	
DV0P4281	RF70M	100		0.1	10	25	
DV0P4282	RF180B	25	φ1.07	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 $100 \, ^{\circ}$ 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.

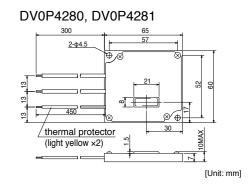
*2 Terminal block with screw tightening torque as shown below.

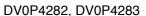
T1, T2, 24 V, 0 V, E: M4: 1.2 N·m to 1.4 N·m R1, R2 : M5: 2.0 N·m to 2.4 N·m

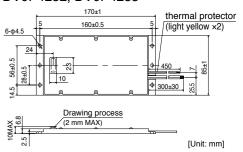
Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

	Power supply						
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-phase, 400 V				
А	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	_				
В	DV0P4283	D) (0D 4000					
С	DV0P4282	DV0P4283					
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				

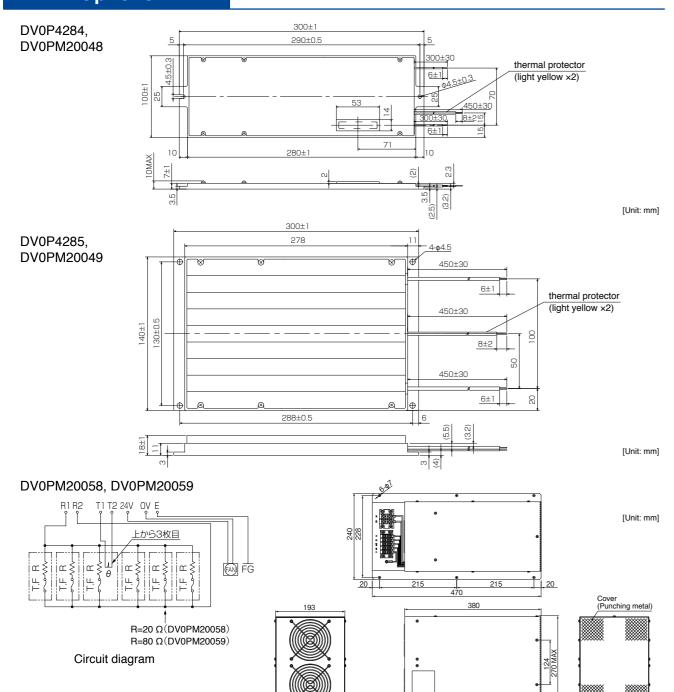






^{*1} Power with which the driver can be used without activating the built-in thermal protector.

A5 Family



External Regenerative Resistor

<Caution when using external regenerative resistor>

Regenerative resistor gets very hot.

Configure a circuit so that a power supply shuts down when built-in thermal protector of the regenerative resistor works. Because it is automatic reset thermal protector, please apply a self-holding circuit to the outside in order to maintain safety in case of sudden activation. During the failure of the driver, the surface temperature of the regenerative resistor may exceed the operating temperature before thermal protector starts to work.

Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

• Be attached the regenerative resistance to non-combustible material such as metal.

- Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.
- Do not install the regenerative resistor near flammable materials.

	Motor	Part No.	Manufacturer	
MSMD	50 W to 750 W			
MSMJ	200 W to 750 W	TND14V271K	NIPPON CHEMI-CON CORPORATION	
	50 W to 750 W			
MSME	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation	
	4.0 kW to 5.0 kW	NVD07SCD082	KOA Corporation	
	400 W (400 V), 600 W (400 V)	Z15D151	SEMITEC Corporation	
MBME	1.0 kW to 3.0 kW	NVD07SCD082	KOA Corporation	
MDME	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	
	11 kW, 15 kW	NVD07SCD082	KOA Corporation	
МЕМЕ	1.5 kW	Z15D151	SEMITEC Corporation	
MFME	2.5 kW, 4.5 kW	All/D0700D000	I/OA Oowooyation	
MOME	0.9 kW	NVD07SCD082	KOA Corporation	
MGME	2.0 kW to 6.0 kW	Z15D151	SEMITEC Corporation	
MHMD MHMJ	200 W to 750 W	TND14V271K	NIPPON CHEMI-CON CORPORATION	
MHME	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation	
IVIDIVIE	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	

List of Peripheral Equipments

Manufacturer	Tel No. / Home Page	Peripheral components	
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker	
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay	
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor	
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm		
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	Surge absorber for holding brake	
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	ŭ	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/		
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Ferrite core	
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/		
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter	
Japan Aviation Electronics Industry, Ltd.	+81-3-3780-2717 http://www.jae.co.jp/e-top/index.html		
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	Connector	
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php		
Sumitomo 3M	+81-3-5716-7290 http://solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/		
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html		
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable	
DR. JOHANNES HEIDENHAIN GmbH	+81-3-3234-7781 http://www.heidenhain.de/de_EN/company/contact/		
Fagor Automation S.Coop.	+34-943-719-200 http://www.fagorautomation.com		
Magnescale Co., Ltd.	+81-463-92-7971 http://www.mgscale.com/mgs/language/english/	Fadancele	
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	External scale	
Nidec Sankyo Corporation	+81-3-5740-3006 http://www.nidec-sankyo.co.jp/		
Renishaw plc	+44 1453 524524 www.renishaw.com		
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/		
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



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

)	ш	e	n	LS	•

Model Designation 220 Overall Wiring 221 Driver and List of Applicable Peripheral Equipments 221 Driver 223 Driver Specifications 223 Standard Wiring Example of Main Circuit 224 Encorder Wiring Diagram 224 Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242 <th>Features</th> <th>215</th>	Features	215
Overall Wiring 221 Driver and List of Applicable Peripheral Equipments 221 Driver 223 Driver Specifications 223 Standard Wiring Example of Main Circuit 224 Encorder Wiring Diagram 224 Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Motor Line-up	219
Driver and List of Applicable Peripheral Equipments 221 Driver 223 Driver Specifications 223 Standard Wiring Example of Main Circuit 224 Encorder Wiring Diagram 224 Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Model Designation	220
Driver 223 Driver Specifications 223 Standard Wiring Example of Main Circuit 224 Encorder Wiring Diagram 224 Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Overall Wiring	221
Driver Specifications 223 Standard Wiring Example of Main Circuit 224 Encorder Wiring Diagram 224 Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Driver and List of Applicable Peripheral Equipments	221
Standard Wiring Example of Main Circuit 224 Encorder Wiring Diagram 224 Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Driver	223
Encorder Wiring Diagram	Driver Specifications	223
Control Circuit Standard Wiring Example 225 Dimensions of Driver 226 Motor 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Standard Wiring Example of Main Circuit	224
Dimensions of Driver	Encorder Wiring Diagram	224
Motor. 227 Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Control Circuit Standard Wiring Example	225
Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Dimensions of Driver	226
Specifications/Model designation/Torque Characteristics 227 Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Motor	227
Dimensions of Moter 231 Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242		
Motors with Gear Reducer 232 Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	·	
Options 236 Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242		
Setup Support Software 236 Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242		
Cable part No. Designation 237 Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Ontions	236
Cable Set 238 Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	•	
Encoder Cable 238 Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Setup Support Software	236
Motor Cable 238 Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Setup Support Software	236
Brake Cable 238 Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Setup Support Software	236 237 238
Connector Kit 239 Interface Cable 241 Communication Cable 241 Console 241 DIN Rail Mounting Unit 242 External Regenerative Resistor 242	Setup Support Software Cable part No. Designation Cable Set Encoder Cable	236 237 238
Interface Cable	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable	236 237 238 238
Communication Cable	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable	236 237 238 238 238
Console	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit	236237238238238238
DIN Rail Mounting Unit	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable	236 237 238 238 238 239
External Regenerative Resistor242	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable Communication Cable	236238238238238238239241
-	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable Communication Cable. Console	236238238238238238241241
11640101	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable Communication Cable Console DIN Rail Mounting Unit	236238238238238238239241241
Surge Absorber for Motor Brake243	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable Communication Cable Console DIN Rail Mounting Unit External Regenerative Resistor	
List of Peripheral Components	Setup Support Software Cable part No. Designation Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable Communication Cable. Console DIN Rail Mounting Unit External Regenerative Resistor Reactor	

Lasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

MINAS E Series

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

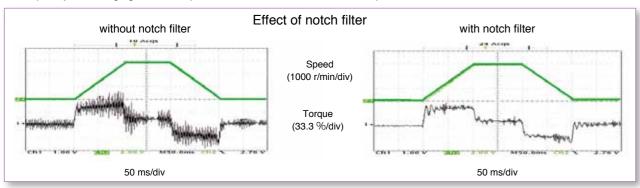
? Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain tuning.
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.

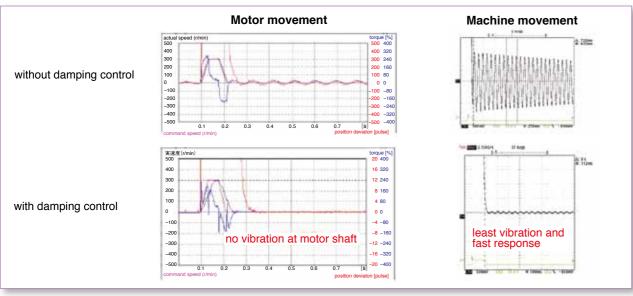
Notch filter (Note1)

- 1-channel notch filter is equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.



Damping control (Note1)

You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up vibration frequency in 0.1 Hz unit. Note) Only applies to manual adjustment



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 used at the same time

3. Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to P.241, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control mode.

Inrush current suppressing function

- Inrush suppressing resistor, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on, is equipped in this driver.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with external resistor, where energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/ CCW over- travel inhibition, power shutdown and trip.
- You can select the action sequence depending on the machine requirement.

Setup support software (Option)

With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters.

Note) Refer to P.236 for setup support software.

Key-way shaft and tapped shaft end

- Easy pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup time.

Note) Refer to P.236 for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup time

Note) Refer to P.236 for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external input.
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards







Subject		Standard conformed	
Motor	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to Low-Voltage
	EN50178	UL508C CSA22.2 No.14	Directives
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	
	EN61000-6-2 Immunity for Industrial Environments		
Matau	EC61000-4-2 Electrostatic Discharge Immun		
Motor and driver	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references
	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	Lightening Surge Immunity Test	
	IEC61000-4-6 High Frequency Conduction Immunity Test		
	IEC61000-4-11	Instantaneous Outage Immunity Test	

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 Europe, a division of Panasonic Marketing Europe GmbH

218

Winsbergring 15,22525 Hamburg,F.R.Germany

* When exporting this product, follow statutory provisions of the destination country.

Oil seal

without with*

Model Designation

Servo Motor

Symbol MUMA Ultra low inertia (50 W to 400 W)

Motor rated output

SMT machines

High repetitive

Inserters

positioning

application

Except shaft Small capacity throughhole Ultra low inertia

connector

	iioa oaipai
Symbol	Rated output
5A	50 W
01	100 W
02	200 W
04	400 W

Voltage specifications

Symbol	Specifications	
1	100 V	
2	200 V	
Z	100 V/200 V common (50 W only)	

M U M A 5 A Z P 1 S **

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

See P.227 for motor specifications

Motor with gear reducer

M U M A 0 1 1 P 3 1 N

Motor rated output Symbol Rated output Symbol Type 01 100 W Ultra low inertia MUMA (100 W to 400 W) 02 200 W 04 400 W

Voltage specifications					
Symbol	Specifications				
1	100 V				
2	200 V				

Rotary encoder specifications							
Symbol	Format	Pulse counts	Resolution	Wires			
Р	Incremental	2500 P/r	10000	5			

Gear reduction ration, gear type

acai readener rameri, gear type							
	t (W)	r outpu	Moto	Gear			
Gear type	400	200	100	reduction ratio	Symbol		
Cau biab	•	•	•	1/5	1N		
For high accuracy	•	•	•	1/9	2N		
accuracy	•	•	•	1/25	4N		

Special specifications

Holding brake

without with

•

Motor structure

S

Т

Symbol Specifications 1 Standard

Design order

Shaft

Key-way,

center tap

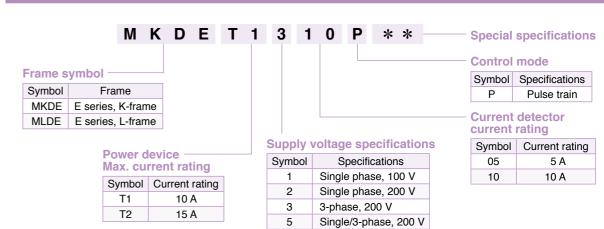
* Motor with oil seal is manufactured by order.

Motor structure

Symbol	Shaft	Holding brake		
Syllibol	Key-way	without	with	
3	•	•		
4	•			

See P.232 for motor with gear reducer specifications

Servo Driver



See P.223 for driver specifications

219

MINAS E series

0.05 to 0.4

0.05

0.1

0.2

0.4

 \bigcirc

(5000)

 \bigcirc

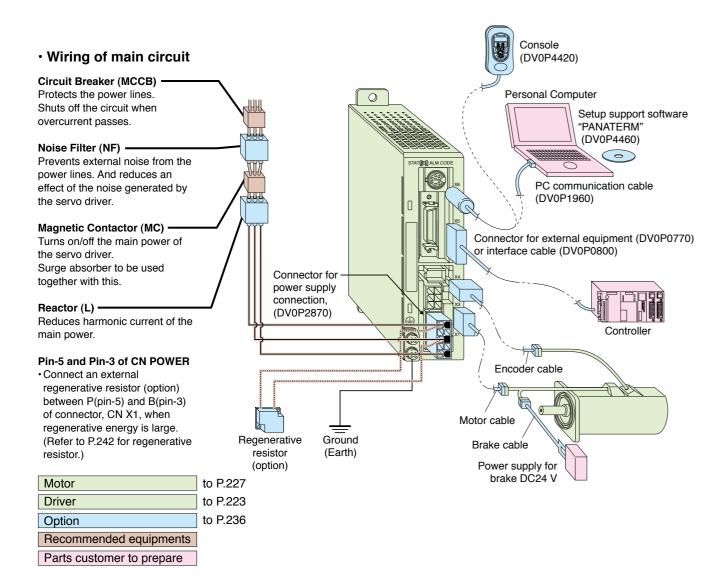
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Motor Line-up

MUMA

Ultra low inertia

Overall Wiring/ Driver and List of Applicable Peripheral Equipments



List of recommended peripheral equipments

	Motor					Magnetic		
Power supply	Series	Output	capacity (at rated) output)	Circuit Breaker (Rated current)	Noise Filter	Contactor (Contact Composition)	Wire diameter (L1, L2, L3, U, V and W)	
Single		50 W	0.3 kVA	(5 A)		10.4		
phase,		100 W	0.4 kVA		10 A (3P+1a) 15 A DV0P4160 (3P+1a)	-		
100 V		200 W	0.5 kVA	(10 A)		(01 114)		
		50 W	0.01970	(5 A)				
Single		100 W	0.3 kVA			_	0.75 mm ² to 0.85 mm ² AWG18	
phase, 200 V	MUMA	200 W	0.5 kVA					
		400 W	0.9 kVA	(10 A)				
		50 W	0.017/4	(5 A)	(5 A)		10 A	
3-phase 200 V		100 W	0.3 kVA			(5 A)		
		200 W	0.5 kVA	1		(3P+1a)		
		400 W	0.9 kVA	(10 A)				

- * Select the single and 3-phase common specifications corresponding to the power supplies.
- To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, (9) marked) between noise filter and power supply.
- For details of the noise filters, refer to P.256.

<Remarks>

· Use a copper conductor cables with temperature rating of 60 °C or higher for main power connector and ground

Use a cable for ground with diameter of 2.0 mm² (AWG14) or larger.

Carrying page								
	Part No.	Carrying page						
Console				DV0P4420	241			
Setup Support Software, PANATERM			Japanese English	DV0P4460	236			
RS232 Commu (for Connection			Cable	DV0P1960	241			
Interface Cable)			DV0P0800	241			
Connector Kit f	or E	xterr	nal Equipment	DV0P0770	240			
Connector Kit f	or M	otor	and Encoder	DV0P3670	239			
Connector Kit f	or D	river	Power Supply	DV0P2870	239			
Encoder Cable			MFECA0 * *	0EAM	238			
Motor Cable			MFMCA0 * *	0AEB	238			
Brake Cable			MFMCB0 * * 0GET		238			
Cable Set (3 m) (Note	3)	DV0P37300		238			
Cable Set (5 m) ^{(Note}	3)	DV0P39200		238			
DIN Rail Mount	t Uni	t	DV0P3811		242			
External Regenerative	100) V	50 Ω 10 W	DV0P2890	242			
Resistor	200) V	100 Ω 10 W	DV0P2891	242			
			100 V	DV0P227				
Reactor			100 V	DV0P228	243			
			200 V	DV0P220				
Noise Filter				DV0P4160	256			
			gle phase) V, 200 V	DV0P4190	256			
		3-р	hase 200 V	DV0P1450				
Ferrite core		DV0P1460	256					

(Note 3) Cable set (3 m) contains,

- 1) Interface cable: DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m) : MFMCA0030AEB
- 4) Connector kit for driver power supply connection: DV0P2870 Cable set (5 m) contains,
- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m) : MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

■ Table of Part Numbers and Options

MINAS E Series

			2500P/r, Inc	remental				Option				
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable Note) 2	Brake (1	External Regenerative Resistor	Reactor	Noise Filter
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)						DV0P227	
phase	100	MUMA011P1 🗆	227	MKDET1110P	226 (K)					DV0P2890	DVUFZZI	
100 V	200	MUMA021P1 🗌	227	MLDET2110P	226 (L)						DV0P228	
	50	MUMA5AZP1 □	229	MKDET1505P	226 (K)							
Single	100	MUMA012P1	229	MKDET1505P	226 (K)							
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)	MFECA0 * * 0EAM	MFMCA0**0AEB					DV0P4160
	400	MUMA042P1	229	MLDET2510P	226 (L)	IVIFECAU A A VEAIVI	MITINICAU * * UAED	MFMCB0 >	* * 0GET			DV0F4100
	50	MUMA5AZP1 □	229	MKDET1505P	226 (K)					DV0P2891	DV0P220	
	100	MUMA012P1	229	MKDET1505P	226 (K)							
3-phase 200 V	200	MUMA022P1	229	MKDET1310P	226 (K)							
200 1	400	MUMA042P1	229	MLDET2510P	226 (L)							
	400	IVIOIVIAU42P1	229	MLDET2310P	220 (L)							

- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

221 222

Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

E Series

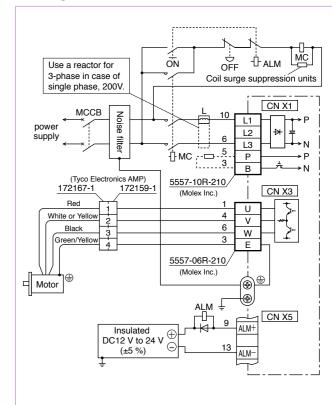
Wiring Diagram

Standard Wiring Example of Main Circuit

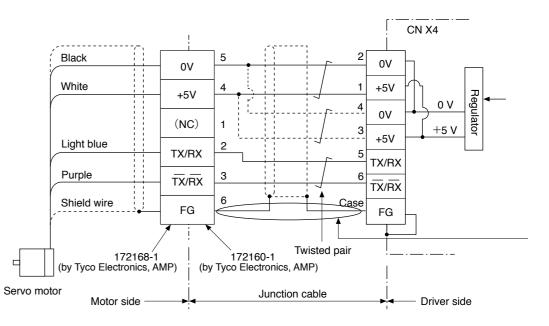
3-Phase, 200 V

Ů ALM Coil surge suppression units CN X1 12 L3 ∱мс ,-------------Р 5557-10R-210/ 172167-1 CN X3 Red White or Yellow 2 Black W 5557-06R-210 (Molex Inc.) Motor CN X5 Insulated DC12 V to 24 V (±5 %) ALM-

Single Phase, 100 V / 200 V



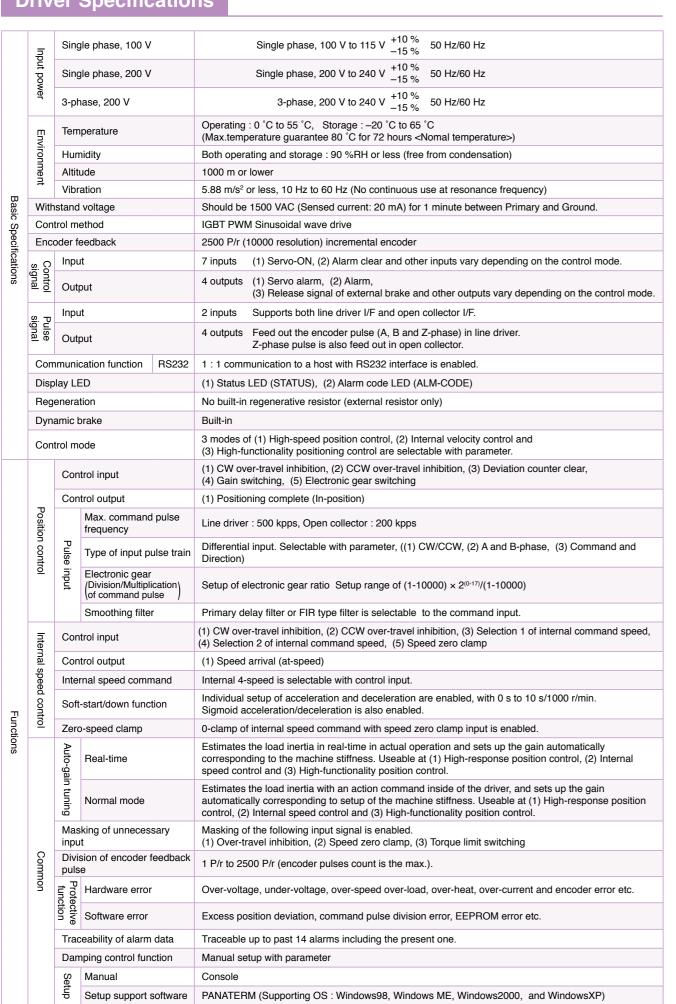
Encorder Wiring Diagram



When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

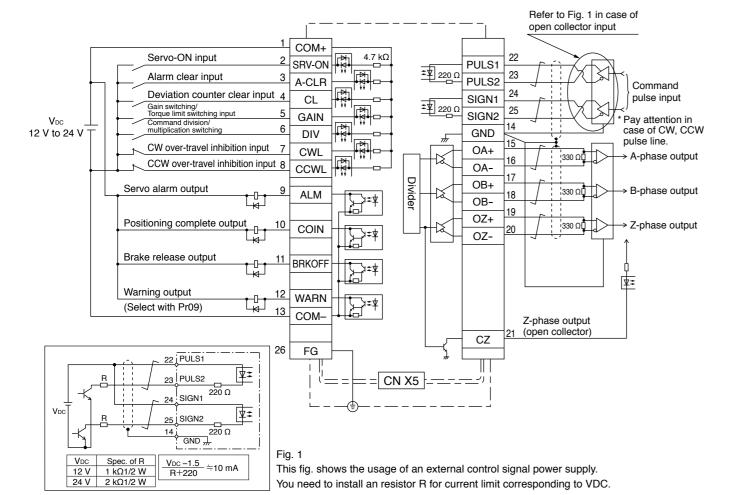
- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher bending resistance.
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

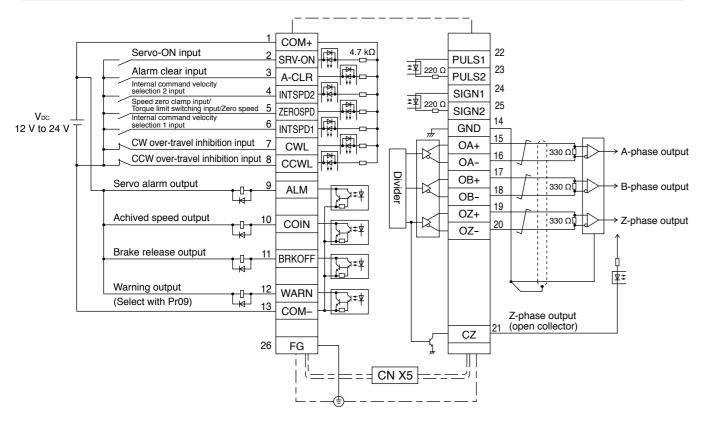


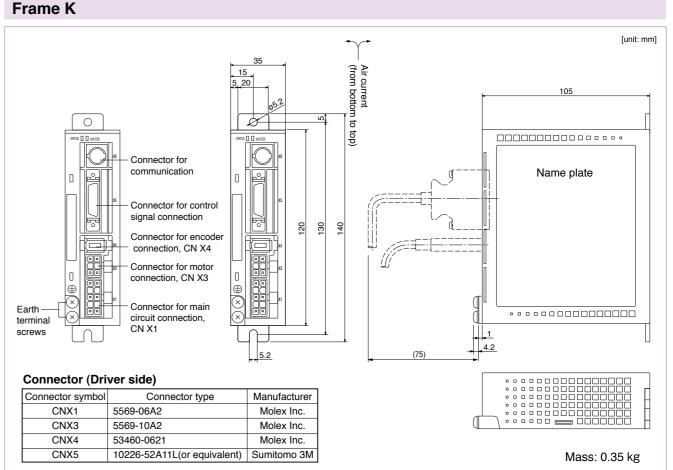
CN X 5 Wiring Example at Position Control Mode

Control Circuit Standard Wiring Example

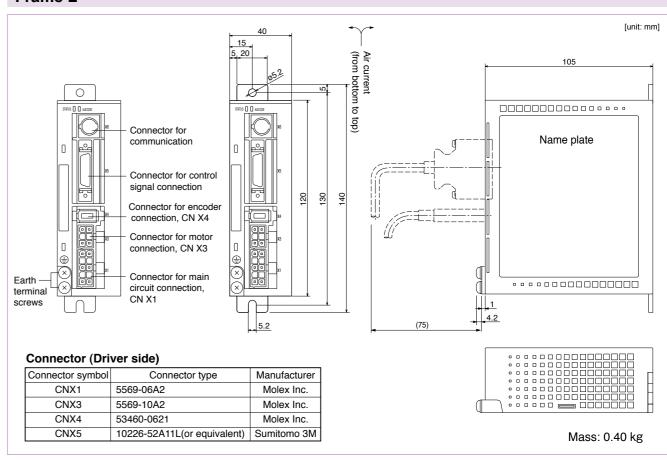


CN X 5 Wiring Example at Internal Velocity Control Mode





Frame L



Motor Specifications

Environment

Installation location

Vibration resistance

Altitude

Mass (kg), () represents holding brake type

100 V **MUMA** 50 W to 200 W

Brake specifications (This brake wil	be released when it is energized. Do not use this for braking	the motor in motion.)
Static friction torque (N m)	0.29	1.27
Engaging time (ms)	25	50
Releasing time (ms) Note)4	20 (30)	15 (100)
Exciting current (DC) (A)	0.26	0.36
Releasing voltage	DC 1 V or more	
Exciting voltage	DV 24 V ±10 %	

0.4 (0.6)

Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust

1000 m or lower

49 m/s2 or less

0.5 (0.7)

0.96 (1.36)

Permissible	load		
5 .	Radial load P-direction (N)	147	392
During assembly	Thrust load A-direction (N)	88	147
	Thrust load B-direction (N)	117	196
	Radial load P-direction (N)	68	245
During operation	Thrust load A-direction (N)	58	98
•	Thrust load B-direction (N)	58	98

For motor dimensions, refer to P.231, and for the diver, refer to P.226.

Model Designation

Symbol Type Ultra low inertia MUMA (50 W to 200 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02

200 W

Voltage specifications Symbol Specifications 100 V 100/200 V Z

(50 W only)

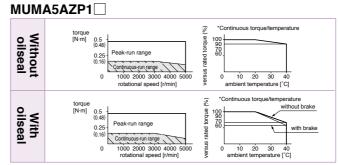
Design order 1 : Standard

	Shaft	Holding	brake	Oil s	eal
Symbol	Key-way, center tap	without	with	without	with
S	•	•		•	
Т	•		•	•	

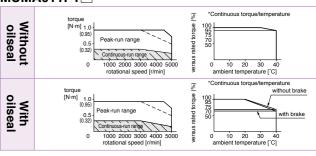
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

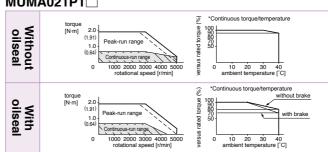
Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]



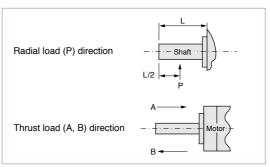
MUMA011P1



MUMA021P1



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %) Running range (Torque limit setup: 200 %) Running range (Torque limit setup : 100 %



- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC115 V (at 100 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in regenerative brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent).
 - () represents the actually measured value using a diode (200 V, 1 A or equivalent)

Motor Specifications

200 V **MUMA** 50 W to 400 W

Low inertia

Brake specifications (This brake will	be released when it is energized. Do not use t	his for braking the motor in motion.)
Static friction torque (N · m)	0.29	1.27
Engaging time (ms)	25	50
Releasing time (ms) Note)4	20 (30)	15 (100)
Exciting current (DC) (A)	0.26	0.36
Releasing voltage	DC 1 V	or more
Exciting voltage	DV 24	V ±10 %

Permissible	oad		
	Radial load P-direction (N)	147	392
During assembly	Thrust load A-direction (N)	88	147
,	Thrust load B-direction (N)	117	196
	Radial load P-direction (N)	68	245
During operation	Thrust load A-direction (N)	58	98
opo.anon	Thrust load B-direction (N)	58	98

For motor dimensions, refer to P.231, and for the driver, refer to P.226.

Note) Driver for 50 W and 100 W has a common power supply of single phase and 3-phase 200 V.

Driver for 200 W, the upper row is the power supply of 3-phase 200 V, and lower is the power supply of single-phase 200 V.

Driver for 400 W, the upper row is the power supply of 3-phase 200 V, and lower is the common power supply of single-phase and 3-phase 200 V.

Model Designation

M S

Symbol Type Ultra low inertia MUMA (50 W to 400 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W 04 400 W

Voltage specifications Symbol Specifications 2 200 V 100/200 V Z (50 W only)

Design order 1 : Standard

Motor structure

	Shaft	Holding	hrako	Oil s	ادم
Symbol		riolaling	Diano	Oii 3	cai
Syllibol	Key-way, center tap	without	with	without	with
S	•	•		•	
Т	•		•	•	

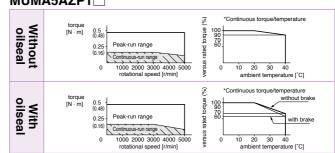
Rotary encoder specifications

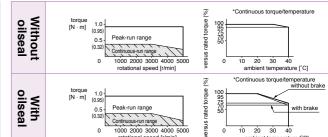
MUMA012P1

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

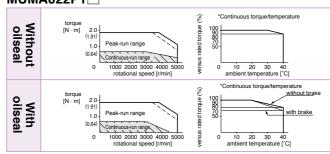
Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

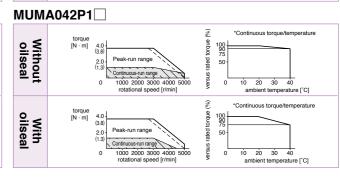
MUMA5AZP1



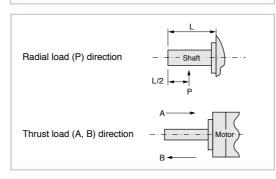


MUMA022P1





*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %) Running range (Torque limit setup: 200 %) Running range (Torque limit setup : 100 %



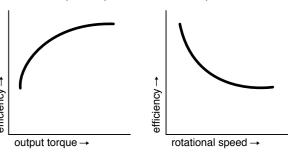
- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m = (load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC240 V (at 200 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in regenerative brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent).
 - () represents the actually measured value using a diode (200 V, 1 A or equivalent)

MINAS E Series Motors with Gear Reducer

Motor Types with Gear Reducer

Reduction	Мо	tor output ((W)	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

Format

Symbol

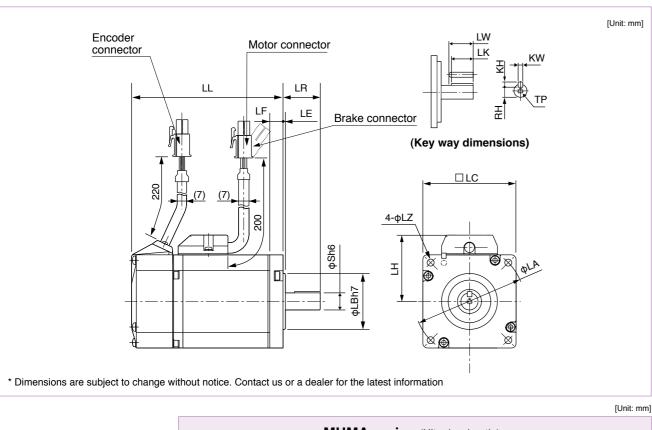
Symbol Type Low inertia MUMA (100 to 400 W) Motor rated output Symbol Rated output Voltage specifications 01 100 W Symbol Specifications 02 200 W 100 V 04 400 W

	2	200 V	
D		Dulas assurts	14/:
Pu	lise counts	Pulse counts	Wire
1	2500 P/r	10000	5

Motor types with gear reducer Type of Reduction 100 400 ratio reducer 1/5 For High 2N 1/9 4N 1/25

Motor structure Holding brake 4

	Motor type	MUMA	
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer	
	Composition of gear	Planetary gear	
	Gear efficiency	65 % to 85 %	
0	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft	
Gear	Composition of gear	Planetary gear	
reducer	Mounting method	Flange mounting	
	Permissible moment of inertia of the load	10 times or smaller than rotor moment of inertia of the motor	
	(conversion to the motor shaft)	To times or smaller than rotor moment of inertia of the motor	
	Protective structure	IP44 (at gear reducer)	
	Ambient temperature	0 °C to 40 °C	
	Ambient humidity	85 %RH (free from condensation) or less	
Environment	Vibration resistance	49 m/s ² or less (at motor frame)	
	Impact resistance	98 m/s² or less	



MUMA 50 W to 400 W

						[Unit:		
				MUMA series	(Ultra low inertia)			
Motor outpu	ıt		50 W	100 W	200 W	400 W		
Motor mode	ŀ	MUMA	5A□P1□	01□P1□	02□P1□	04□P1□		
Rotary enco	oder speci	fications	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental		
	Without brake		75.5	92.5	96	123.5		
LL		With brake	107	124	129	156.5		
	LR		24	24	30	30		
	S		8	8	11	14		
LA LB LC LE		LA		48	70	70		
		22	22	50	50			
		42 42		60	60			
			2	2	3	3		
	LF		7	7	7	7		
	LH		LH		34	34	43	43
	LZ		3.4	3.4	4.5	4.5		
	LW		14	14	20	25		
	LK		12.5	12.5	18	22.5		
	ΚW		3h9	3h9	4h9	5h9		
Key way	KH		3	3	4	5		
	RH		6.2	6.2	8.5	11		
	TP		M3 × 6 (depth)	M3 × 6 (depth)	M4 × 8 (depth)	M5 × 10 (depth)		
Maga (kg)		Without brake	0.40	0.50	0.96	1.5		
Mass (kg)		With brake	0.60	0.70	1.36	1.9		
Connector/F	Plug speci	ifications		refer to Options	s, P.239, P.240.			

<Cautions>

Reduce the moment of inertia ratio if high speed response operation is required.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Torque Characteristics

100 V

200 V

Table of Motor with Gear Reducer Specifications

	Motor		MUMA with gear reducer										
Model	Output	Reduction	Output	Rated	Max.		Rated Peak max. (Moment of inertia (motor + reducer/converted to motor shaft		ass	Permissible radial load	Permissible thrust load
		ratio	•	speed	speed	torque	torque	w/o brake	w/ brake	w/o brake	w/ brake	Taulai luau	tiliust load
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10	⁻⁴kg·m²)	(k	g)	(N)	(N)
MUMA01□P□1N		1/5	75	600	1000	1.18	3.72	0.072	0.076	1.05	1.25	490	245
MUMA01□P□2N	100	1/9	80	333	555	2.25	6.86	0.0663	0.0703	1.05	1.25	588	294
MUMA01□P□4N		1/25	80	120	200	6.27	19.0	0.0645	0.0685	2.20	2.40	1670	833
MUMA02□P□1N		1/5	170	600	1000	2.65	8.04	0.218	0.248	1.68	2.08	490	245
MUMA02□P□2N	200	1/9	132	333	555	3.72	11.3	0.368	0.398	2.66	3.06	1180	588
MUMA02□P□4N		1/25	140	120	200	11.1	33.3	0.388	0.418	2.66	3.06	1670	833
MUMA042P□1N		1/5	340	600	1000	5.39	16.2	0.533	0.563	3.2	3.6	980	490
MUMA042P□2N	400	1/9	332	333	555	9.51	28.5	0.438	0.468	3.2	3.6	1180	588
MUMA042P□4N		1/25	332	120	200	26.4	79.2	0.470	0.500	4.7	5.1	2060	1030

Table of Motor Specifications/

The Combination of the Driver and the Motor

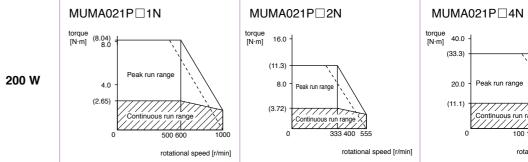
For dimensions, refer to P.235.

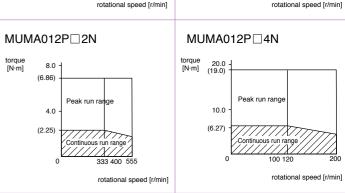
The Combination of the Driver and the Motor with Gear Reducer

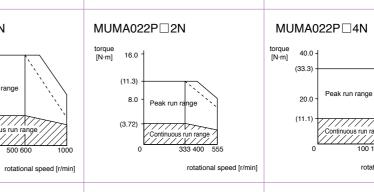
Combination with driver		10	0 V	200 V				
Encoder Motor		Part No. of motor Single phase, 10		Part No. of motor	3-phase, 200 V	Single phase, 200 V		
outp	output	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	Part No. of driver		
	100 W	MUMA011P□□N	MKDET1110P	MUMA012P□□N	MKDET1505P	MKDET1505P		
2500 P/r	200 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P		
Incremental	400 W			MUMA042P□□N	MLDET2510P	MLDET2510P		
			_	IVIUIVIAU42PUUN	MLDET2310P	MILDE 125 TUP		

For dimensions, refer to P.235.

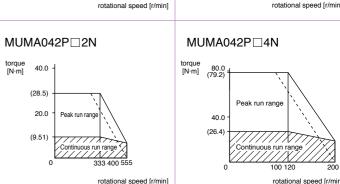
For F	For High Precision (MUMA Series 100 W to 400 W)								
Supply voltage o driver	Reduction ratio Motor output	1/5	1/9	1/25					
		MUMA011P□1N	MUMA011P□2N	MUMA011P□4N					
	100 W	torque 4.0 [N·m] (3.72) Peak run range 2.0 (1.18) Continuous run range	torque 8.0 [N·m] (6.86) Peak run range 4.0 Peak run range	torque 20.0 - (19.0) - Peak run range 10.0 - (6.27) - (Continuous run range 20.0 - (19.0) - (20.0) - (







rotational speed [r/min]



Dotted line represents the torque at 10 % less supply voltage.

MUMA012P□1N

MUMA022P□1N

MUMA042P ☐ 1N

torque [N·m] 20.0 -(16.2)

rotational speed [r/min]

rotational speed [r/min]

100 W

200 W

400 W

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

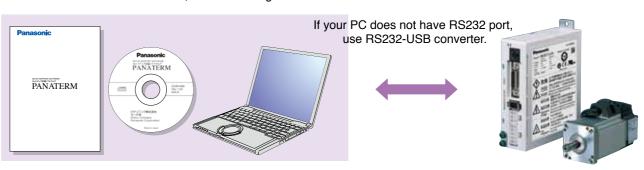
																[U	Init: mm]
Model	Motor output	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	Key way B×H×LD	Т
MUMA01□P□1N		1/5	192	92.5													
WOWAUTET ETT		173	223.5	124	32	20	52	50	60	12	10	M5	18	67.5		4×4×16	2.5
MUMA01□P□2N	100 W	1/9	192	92.5	32	20	52	30	00	12	10	(Depth: 12)	10	07.5		424210	2.5
WOWAUT	100 00	173	223.5	124													
MUMA01□P□4N		1/25	234.5	92.5	50	30	78	70	90	19	17	M6	26	92	3	6×6×22	3.5
WOWAUT		1/23	266	124	50	30	70	70	30	19	17	(Depth: 20)	20	92	3	0x0x22	3.5
MUMA02 P 1N		1/5	200.5	96	32	20	52	50	60	12	10	M5	18	72.5		4×4×16	2.5
WOWA02_I _ IIV		173	233.5	129	32	20	52	50	00	12	10	(Depth: 12)	10	12.5		424210	2.5
MUMA02 P 2N	200 W	1/9	235.5	96										89.5			
WOWA02_I2IV	200 W	173	268.5	129										09.5			
MUMA02 P 4N		1/25	246	96										100			
WOWAOZLI L4N		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	30	19	17	(Depth: 20)	20			0x0x22	3.5
WOWA0421 LIN		173	296	156.5										90 E			
MUMA042P□2N	400 W	1/9	263	123.5										89.5			
WOWAU42FZN	400 W	179	296	156.5													
MUMA042P□4N		1/25	288.5	123.5	61	40	98	90	115	24	18	M8	35	104	5		
INICINIAU42F4IN		1/25	321.5	156.5	01	40	90	90	113	24	10	(Depth: 20)	ათ	104	5	8×7×30	4

Upper column : without brake Lower column : with brake

Setup Support Software "PANATERM" for MINAS series AC Servo Motor & Driver

Part No. DV0P4460 (Japanese/English version)

The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A4 series, E series through the RS232 serial interface.



Basic Function

Parameter setup

- · After a parameter is defined on the screen, it will be sent to the driver immediately.
- Once you register parameters you frequently use, they can be easily set up on the screen.

Monitoring Control Conditions

Monitor

- · Control conditions: Control mode, velocity, torque, error and warning
- Driver input signal
- · Load conditions: Total count of command/feedback pulses, Load ratio, Regenerative resistor load ratio

Alarm

- · Displays the numbers and contents of the current alarm and up to 14 error events in the past.
- · Clears the numbers and contents of the current alarm and up to 14 error events in the past.

Setup

Auto tuning

· Gain adjustment and inertia ratio measurement

Graphic waveform display

• The graphic display shows command velocity, actual velocity, torque, and error waveforms.

Absolute encoder setup

- · Clears absolute encoder at the origin.
- · Displays single revolution/multi-revolution data.
- · Displays absolute encoder status.

Analysis of Mechanical Operation Data

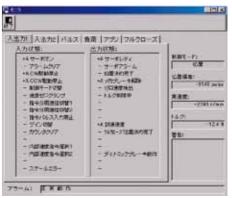
Frequency analysis

• Measures frequency characteristics of the machine, and displays Bode diagram.

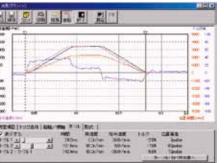
■ Can not use with A5 family.

HEROLDHICH - SPED. M.O.S. (HEROLD) HY. ADA-DED II MIGRA STAG 2. 第1周里4一/第1月至8 D ROBBERSON 4 MINNODOWNERS 15 ##3+-#3+9-# 15 24-#2+9-#2453#\$\$

Parameter



Monitor



Graphic waveform display

[Personal computer] • CPU : Pentium 100MHz or more • Memory : 16 MB or more (32 MB recommended)

- · Hard disk capacity (vacancy of 25 MB or more recommended) · OS: Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version)
- Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

[Display] • Resolution : 640*480 (VGA) or more (desirably 1024*768) • Number of colors : 256 colors or more

[CD-ROM drive] · CD-ROM drive operable on the above-mentioned personal computer

C

Α

Type classification

Α

Type classification

A Standard

Design Oder

B Special

0

0

Motor Cable, Brake Cable

3 4 5

C

F

M

0

0

Encoder Cable

Ε

M Connector (MUMA)

A Tyco Electronics, AMP connector

E PVC cable with shield by Oki Electric Cable Co., 0.20 mm² × 3P

B Molex Inc.

T Clamp terminal

E Tyco Electronics, AMP connector

ROBO-TOP⊚ is a trade mark of DYDEN CORPORATION

A ROBO-TOP_® 4-wire (DYDEN CORPORATION) G ROBO-TOP_® 2-wire (DYDEN CORPORATION)

[Unit: mm]

ROBO-TOP_® is a trade mark of DYDEN CORPORATION

[Unit: mm]

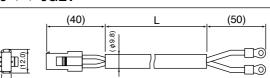
[Unit: mm]

Part No.

MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB 10 20 MFMCA0200AEB

L (m)

$\mathsf{ROBO}\text{-}\mathsf{TOP}_{\otimes}$ is a trade mark of DYDEN CORPORATION



L (m)	Part No.
3	MFMCB0030GET
5	MFMCB0050GET
10	MFMCB0100GET
20	MFMCB0200GET

Cable

Part No. DV0P37300

- 1) Interface cable: DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m): MFMCA0030AEB
- 4) Connector kit for driver power supply connection : DV0P2870

Cable Set (3 m)

Cable Set (5 m)

- Part No. DV0P39200 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m): MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

Encoder Cable

Part No. MFECA0 * * 0EAM

	-	L	-	
		(5)		
		90		
		h-	 	
(4) (14) (4)				

Title	Part No.	Manufacturer	L (m)	Part No.
TILLE	rait No.	Manuacturei	L (111)	Fait NO.
Connector (Driver side)	3E206-0100KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	or equivalent	5	MFECA0050EAM
Connector	172160-1	Tyco Electronics	10	MFECA0100EAM
Connector Pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	$0.20 \text{ mm}^2 \times 3P$	Oki Electric Cable Co., Ltd.		

(50)

	Motor Cab	Ie (RORO-	TOP. 105	°C 600 V	DD,
--	-----------	-----------	----------	----------	-----

Part No.	MFMCA0 * * 0AEB
	(50)

(4) 10.0) (4)	
Title	Part No.
0	170150 1

Title	Part No.	Manufacturer	
Connector	172159-1	Tugo Flootronico	
Connector Pin	170362-1, 170366-1	Tyco Electronics	
Connector	5557-06R-210	Molex Inc	
Connector Pin	5556T	Molex IIIC	
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden Co.,Ltd.	

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

Part No. MFMCB0 * * 0GET

	(40)	, L	(50)
(0.2) (5.6)		(49.8)	

Title	Part No.	Manufacturer	L (m)	Part No
Connector	172157-1	Tugo Floatronico	3	MFMCB0030
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCB0050
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden Co.,Ltd.	20	MFMCB0200

AC servo motor cable

Ε

Α

Cable end

(Encoder side)

0050

0100

0200

10 11 12

Ε

Cable type

Cross section of cable core

В

Cable end at motor side

Cable end at driver side

0

2

3

003

005

010

020

0.75 mm²

1.25 mm²

2.0 mm²

3.5 mm²

3 m

5 m

10 m

20 m

Α

Cable end (Driver side)

3 m

5 m

10 m

20 m

5

0

Cable type

Cable length

8

5

Cable length

0

MFECA: Encoder cable

237

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		(10 pins)

Pin configuration of connector CN X1

<u>ئے</u>	,	3				
- [10	9	8	7	6	1.1
- 1	L1	(NC)	L2	(NC)	L3	11
- 1	5	4	3	2	1	11
	Р	(NC)	В	(NC)	E	



Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material
57026-5000	UL1007
57027-5000	UL1015

<Cautions>

- 1. The above pin disposition is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.
- 3. Do not connect anything to pins marked "NC".

Connector Kit for Motor/Encoder Connection

Part No. DV0P3670 (Incremental 2500 pulse, 5-wire)

This option is required when you make your own encoder cable and motor cable. (Brake cable is required for brake.)

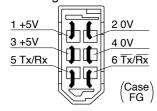
Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For connector, CN X4
Shell kit	3E306-3200-008	1	or equivalent	(6 pins)
Connector (6 pins)	172160-1	1	Type Floatronics	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tyco Electronics	For junction to motor power cable
Connector pin	170366-1	4	Tyco Electronics	(4 pins)
Connector (6 pins)	5557-06R-210	1	Molex Inc.	For connector, CN X3
Connector pin	5556PBTL	4	IVIOLEX INC.	(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

	•	,	
Title	Part No.	Manufacturer	Cable material
For encoder cable junction	755330-1	Tyco Electronics	
For motor power cable junction	755331-1	Tyco Electronics	_
For Connector CN X3	57026-5000	Molex Inc.	UL1007
For Connector CN X3	57027-5000		UI 1015

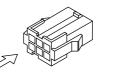
239

<Remarks>

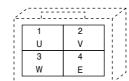
- 1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

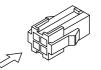
Pin configuration of encoder cable junction

ے,	, ,			/
ſ	1	2	3	-
	NC	TX/RX	TX/RX	-
Ī	4	5	6	į
	+5V	0V	FG	Ι.



Pin configuration of motor power cable junction





Pin configuration of mating connector to CN X3 connector

<u> </u>			1	_
6	;	5	4	
l v	I	(NC)	v	
3	}	2	1	
E		(NC)	U	
				_



<Cautions>

- 1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.

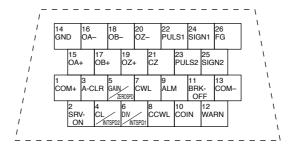
Connector Kit for External Peripheral Equipment

Part No.	DV0P0770

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector	10126-3000PE	1	Sumitomo 3M	For connector, CN X5
Connector cover	10326-52A0-008	1	or equivalent	(26 pins)

Pin configuration of connector CN X5 (26 pins) (viewed from the soldering side)



<Cautions>

- 1. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.225 for symbols and functions of the above signals.

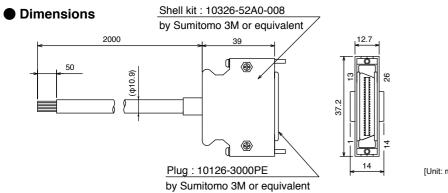
DIN Rail Mounting Unit/ External Regenerative Resistor

Interface Cable

Part No. DV0P0800 Cable of 2 m is connected.

Communication Cable/ Console

Interface Cable/



Wiring table

_	J							
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.

Communication Cable (For Connection with PC)

Part No. DV0P1960 2000 Mini-DIN 8P

[Unit: mm]

MD connector

Console

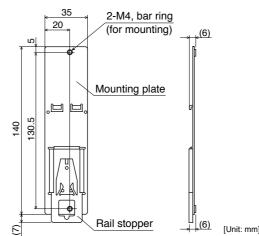
D-sub connector 9P

Part No. DV0P4420 M3 length 5 mm Tightening torque for Name plate the insert screw shall be 0.5 N·m or less MD connector Mini DIN-8P

DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

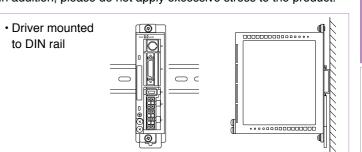


<Notes>

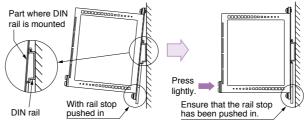
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.

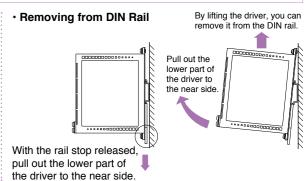


· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

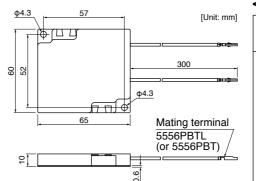


External Regenerative Resistor

			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 of when using external regeneration resistor>

Since it becomes high temperature, external regeneration resistor must be installed according to the contents shown below.

- · Attach to incombustibles, such as metal.
- · Install in the place which cannot touch directly by covering with incombustibles etc.
- · Do not install near the combustibles.

Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in amplifier

The thermal cutoff is for preventing ignition of the regeneration resistor in amplifier failure, and is not for controlling the skin temperature of resistor.

<Remarks>

Thermal fuse is installed for safety.

The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation. Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Please carry out air cooling if needed.

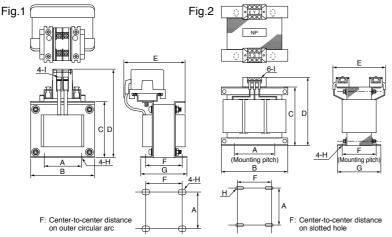
List of Peripheral Components

Options

E Series

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.	
	Single phase, 100 V	50 W to 100 W	DV0P227	1	
MKDE	Single phase, 200 V	50 W to 100 W	DV0P220	2	
	3-phase, 200 V	50 W to 200 W	DV0F220		
	Single phase, 100 V	200 W	DV0P228	1	
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2	
	3-phase, 200 V	400 W			



Surge Absorber for Motor Brake

[Unit: mm]

	Part No.	А	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
Fig. 1	DV0P227	55±0.7	80±1	66.5±1	110 Max	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.1	DV0P228	55±0.7	80±1	66.5±1	110 Max	95	46±2	60±2	4-5φ×10	M4	2	8
Fig.2	DV0P220	65±1	125±1	(93)	136 Max	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3

Harmonic restraint on general-purpose inverter and servo driver

Reactor/

On September, 1994, Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system and Guidelines for harmonic restraint on household electrical appliances and general-purpose articles established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004.

We inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver will be modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the Guide-lines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

<Remarks>

When using a reactor, be sure to install one reactor to one servo driver.

■ Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber for motor brake				
Wotor	Part No. (Manufacturer's)	Manufacturer			
MUMA 50 W to 400 W	Z15D151	SEMITEC Corporation			

243

List of Peripheral Components

Manufacturer	Tel No. / Home Page	Peripheral components	
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker	
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay	
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor	
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for motor brake	
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Ferrite core	
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter	
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/		
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	Connector	
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp		
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable	

^{*} The above list is for reference only. We may change the manufacturer without notice.

244

MEMO

Information

Contents

A5 Family	247
EC Directives / Conformity to UL Standards / KC	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 A5I and A5 Series	279
Connection Between E Series Driver and Controller	283
Index	288
Salas Offica	206

EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products.

However, our AC servos meet the relevant EC Directives for Low Voltage Equipment so that the machine or equipment comprising our AC servos can meet EC Directives.

EMC Directives

MINAS Servo System conforms to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

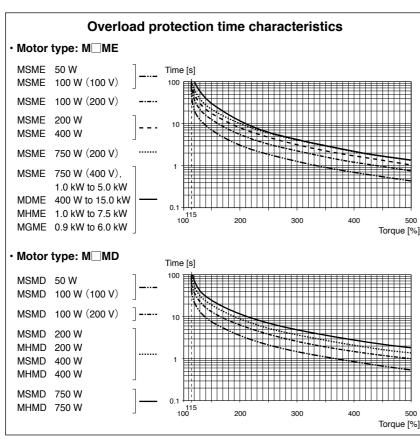
Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Make sure to install a circuit breaker or fuse which are UL recognized (Listed (1) marked) between the power supply and the noise filter.
 - For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Equipments".
 - Use a copper cable with temperature rating of 75 °C or higher.
- (3) Over-load protection level

Over-load protective function will be activated when the effective current exceeds 115 % or more than the rated current based on the time characteristics (see the graph). Confirm that the effective current of the driver does not exceed the rated current.

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
EC	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
Directives	Machinery Directives Functional safety 11	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standard	s	UL508C (E164620)	UL1004-1, UL1004-6 (E327868)
CSA Standa	rds	C22.2 No.14	C22.2 No.100
Radio Waves Act (South Korea) (KC) '2		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	_

IEC : International Electrotechnical Commission

EN : Europaischen NormenEMC : Electromagnetic CompatibilityUL : Underwriters LaboratoriesCSA : Canadian Standards Association

Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Europe, a division of

Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

- When export this product, follow statutory provisions of the destination country.
- *1 A5IIE and A5E series doesn't correspond to the functional safety standard.
- *2 Information related to the Korea Radio Law

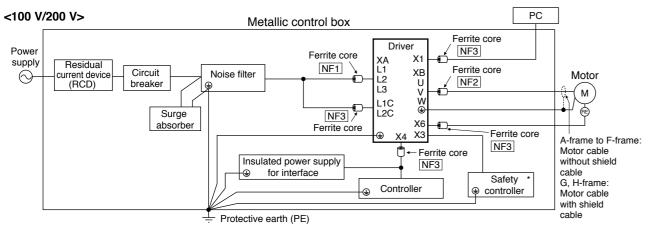
This servo driver is a Class A commercial broadcasting radio wave generator not designed for home use. The user and dealer should be aware of this fact.

A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

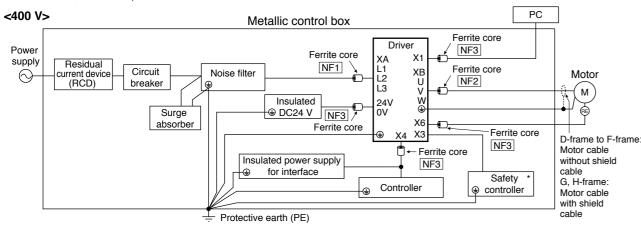
Installation Environment

Use the servo driver in the environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



For NF1 to NF3, refer to the Table "Ferrite core" (P.254).

^{*} A5IE, A5E is not provided with X3 terminal.



For NF1 to NF3, refer to the Table "Ferrite core" (P.254).

<Caution>

Use options correctly after reading Operating Instructions of the options to better understand the precautions. Take care not to apply excessive stress to each optional part.

Power Supply

100 V type (A-frame to C-frame)	Single phase, 100 V $^{+10~\%}_{-15~\%}$ to 120 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V type (A-frame to D-frame)	Single/3-phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V type (E-frame to H-frame)	3-phase, 200 V ⁺¹⁰ % to 230 V ⁺¹⁰ % ₋₁₅ %	50 Hz/60 Hz
400 V type [Main power supply] (D-frame to H-frame)	3-phase, 380 V ⁺¹⁰ / ₋₁₅ % to 480 V ⁺¹⁰ / ₋₁₅ %	50 Hz/60 Hz
400 V type [Control power supply] (D-frame to H-frame)	DC 24 V ±15 %	

- (1) This product is designed to be used in over-voltage category (installation category) **I** of EN 61800-5-1:2007.
- (2) Use an insulated power supply of DC12 V to 24 V which has CE marking or complies with EN60950.

Circuit Breaker

Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

The short-circuit protection circuit on the product is not for protection of branch circuit.

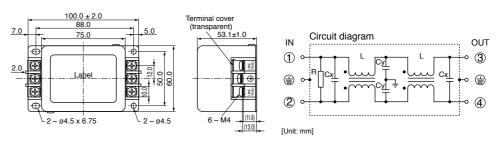
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

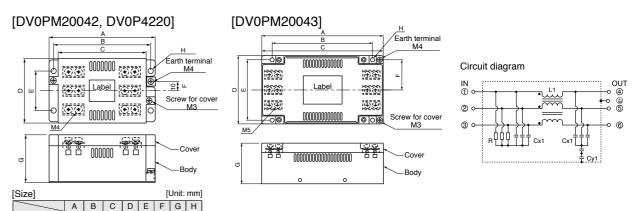
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170	Single phase 100 V, 200 V	SUP-EK5-ER-6	A-frame and B-frame	Okaya Electric Ind.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
	3-phase 200 V		A-frame and B-frame	
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame	



DV0PM20042 115 105 95 70 43 10 52 5.5 DV0P4220 145 135 125 70 50 10 52 5.5 DV0PM20043 165 136 165 90 80 40 54 5.5 leaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

F-frame G-frame and H-frame

Circuit diagram [Unit: mm] LOAD A B C D • FS5559-60-34 410 170 370 388 FS5559-80-34 460 180 420 438

Current rating

(A)

60

80

16

30

42

42

Voltage specifications

for driver

3-phase 200 V

3-phase 400 V

Part No.

FS5559-60-34

FS5559-80-34

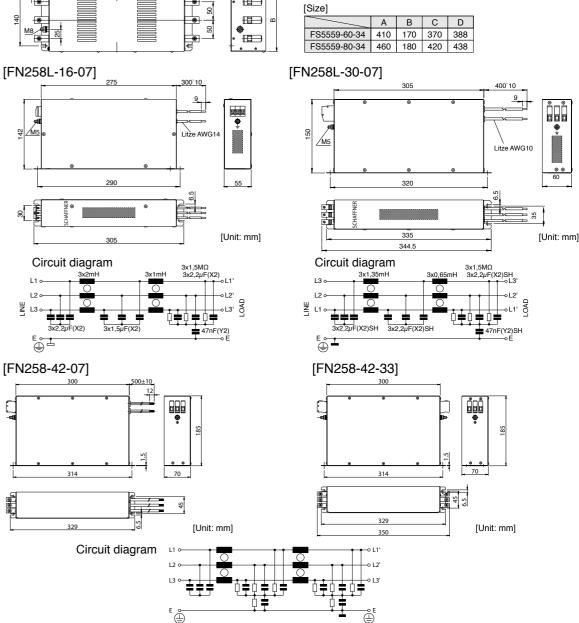
FN258L-16-07

FN258L-30-07

FN258-42-07

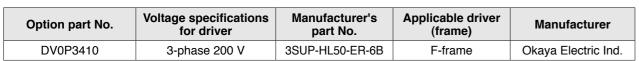
FN258-42-33

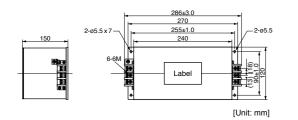
[FS5559-60-34, FS5559-80-34]

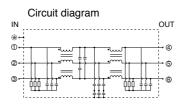


<Remarks>

- 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.

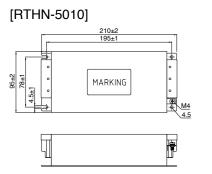


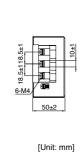


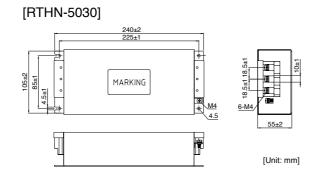


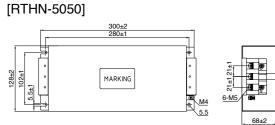
Recommended components

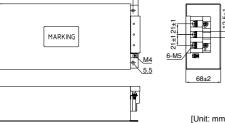
Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A-frame to C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E-frame and F-frame	











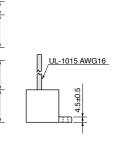
<Remarks>

- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- · For detailed specification of the filter, contact the manufacturer.
- · When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

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41±1

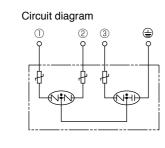
Surge Absorber



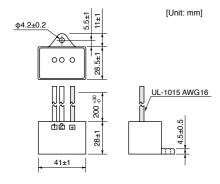
Provide a surge absorber for the primary side of noise filter.

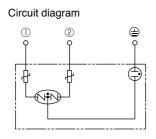
[Unit: mm]

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 Liectric iriu.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer	
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.	





Ferrite core

Install ferrite core to all cables (power cable, motor cable, encoder cable and interface cable)

Symbol*1	Cable Name	100 V/200 V Amp. frame symbol	400 V Amp. frame symbol	Option part No.	Manufacturer's part No.	Manufacturer	Qty.
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1
NF2	Motor cable	A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
		G, H	G, H	Recommended components	T400-61D	MICROMETALS	1
NF3	24 V Power cable Encoder cable Interface cable USB cable Control power cable	Common (to all frames)		DV0P1460	ZCAT3035-1330	TDK Corp.	4

^{*1} For symbols, refer to the Block Diagram "Installation Environment" (P.249).

To connect the ferrite core to the connector XB connection cable, adjust the sheath length at the tip of the cable, as required.

<Caution>

Fix the ferrite core in order to prevent excessive stress to the cables.

<Fig.2: Dimensions>

	•										
Part No. Current	Current 100 kHz	Part No. Current 100 kHz Size [Unit: mm]									
	(μH)	Α	В	С	D1	D2	Core thickness	Е	F		
	RJ8035	35 A	9.9±3	170	150	23	80	53	24	R3.5	7
	RJ8095	95 A	7.9±3	200	180	34	130	107	35	R3.5	7

Fig.1: DV0P1460(Option)

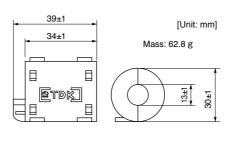
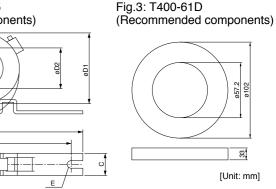


Fig.2: RJ8035, RJ8095 (Recommended components)



Residual Current Device

Install a type B Residual current device (RCD) at primary side of the power supply.

Type B: Residual current device which detects a direct-current ingredient.

Grounding

- (1) Connect the protective earth terminal ((1)) of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals (). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral equipments, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

Compliance to EC and EMC Directives

EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products. MINAS AC Servos conforms to the EC Directives for Low Voltage Equipment so that the machine incorporating our servos has an easy access to the conformity to relevant EC Directives for the machine.

EMC Directives

MINAS Servo System conform to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

Conformed Standards

Subject		Conformed Standard						
	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to					
Motor	EN50178	UL508C CSA22.2 No.14	Low- Voltage Directives					
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment						
	EN61000-6-2 Immunity for Industrial Environments							
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to					
Motor	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references					
and driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives					
	IEC61000-4-5	Lightening Surge Immunity Test	1					
	IEC61000-4-6	High Frequency Conduction Immunity Test	1					
	IEC61000-4-11 Instantaneous Outage Immunity Test							

- IEC: International Electrotechnical Commission EN : Europaischen Normen
- **EMC: Electromagnetic Compatibility**
- UL : Underwriters Laboratories
- CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC, article 9(2)

- Panasonic Testing Centre
- Panasonic Service Furone
- a division of Panasonic Marketing Europe GmbH Winsbergring 15,22525 Hamburg, F.R. Germany

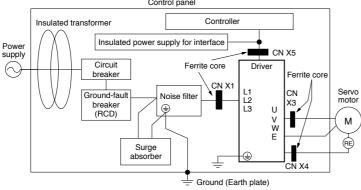
Composition of Peripheral Components

<Pre><Pre>cautions in using options>

Use options correctly after reading operation manuals of the options to better understand the precautions. Take care not to apply excessive stress to each optional part. Control pane

Installation Environment

Use Minas driver in environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



Power Supply

100 V system	Single phase, 100 V $^{+10~\%}_{-15~\%}$ to 115 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V system	Single phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V system	3-phase, 200 V ^{+10 %} _{-15 %} to 240 V ^{+10 %} _{-15 %}	50 Hz/60 Hz

- (1) Use the power supply under an environment of Overvoltage Category II specified in IEC60664-1.
- (2) For a interface power supply, use the insulated one with 12 VDC to 24 VDC which conforms to CE Marking or EN Standards (EN60950).

Circuit Breaker

Connect a circuit breaker which conforms to IEC standards and is UL recognized (UL Listed, (n) marked), between the power supply and the noise filter.

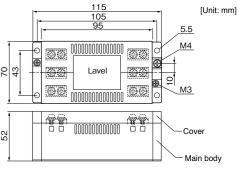
Noise Filter

When you install one noise filter in the power supply for multi axis application, consult with the manufacture of the filter.

Composition of Peripheral Components

Conformity to UL Standards

Option part No. Part No.		Manufacturer		
DV0P4160	3SUP-HU10-ER-6	Okaya Electric Industries Co.		



Surge Absorber

Install a surge absorber at primary side of the noise filter.

Option part No.	Driver voltage spec	Part No.	Manufacturer	Option part No.	Driver voltage spec	Part No.	Manufacturer
DV0P1450	3-phase, 200 V	R·A·V-781BXZ-4	Okaya Electric	DV0P4190	Single phase, 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric
Circuit diagra		11±1 41±1	UL-1015 AWG16	Circuit diagr		0.2 1#1 1#1 41±1	MR-1015 AWG16 V-1015

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged

Ferrite Core

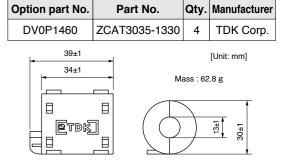
Install ferrite core to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- Please fix a ferrite core to avoid excessive stress to the cable.
- · When using multiple axes, noise generated from each driver might influence driver and peripheral equipment and result to

Please insert ferrite core between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)



Grounding

- (1) Connect the protective earth terminal of the driver ((1) and protective earth terminal of the control panel (PE) without fail to prevent electrical shocks.
- (2) Do not co-clamp to the ground terminals ((\perp)). Two ground terminals are provided.

Ground-Fault Breaker

Install a ground fault curcuit braker (RCD) to the primary side of the power supply.

Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Install a circuit breaker or fuse which are UL recognized (LISTED (1) marked) between the power supply and the noise filter without fail.

AC Servo Motor Capacity Selection Software re Option Selection Software for AC Servo Motor

AC Servo Motor Capacity Selection Software

We have prepared PC software "M-SELECT" for AC servo motor capacity selection. Consult our sales representative or authorized distributor.

Three-step selection

Select components and specified values
 Select appropriate mechanical parameter items
 and fill them with parameter values derived from

the real machine.
To simulate the target machine as practical as possible, use maximum number of parameters available.



2. Enter operation pattern

Input the planned operation pattern that will contain [speed and rotation standard] or [absolute position

standard] with optional settings such as S-acceleration/de celeration.



3. Select the motor

When the data required in step 1 and 2 above have been input, the software lists the motors,

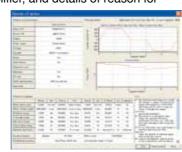
which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.



Details of motor

Once the motor is selected, specifications of the motor and amplifier, and details of reason for

determination are displayed and may be printed out.



Option Selection Software for AC Servo Motor

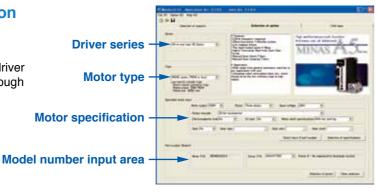
We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software.

257

Two procedures for option selection

1. Selection according to driver series and motor type

Suitable option can be selected by selecting driver series, motor type and motor specification through pulldown menu.



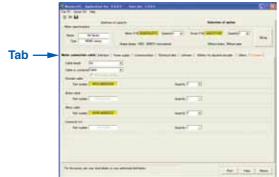
2. Entry of model number

If you know the model number based on the servo motor and driver currently used, enter the model number.

Result of selection

Tab sheet specific to each of option model numbers is used for easier identification of the desired option.

* When you are using the motor capacity selection software, simply press [Option Selection] tab and the screen as shown right will appear.



Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

Organization of the System of Units

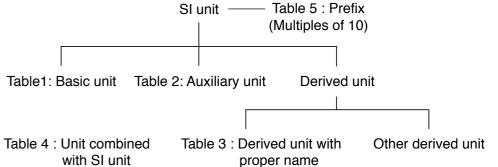


Table1: Basic unit

Quantity	Name of unit	Symbol of unit
Length	meter	m
Weight	kilogram	kg
Time	second	s
Current	ampere	Α
Thermodynamic temperature	kelvin	K
Amount of substance	mol	mol
Luminous intensity	candela	cd

Table 2: Auxiliary unit

Quantity	Name of unit	Symbol of unit		
Plane angle	radian	rad		
Solid angle	steradian	sr		

Table 3: Major derived unit with proper name

Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg·m/s ²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	watt	W	1 W = 1 J/s
Electric charge, Amount of electricity	coulomb	С	1 C = 1 A·s
Electric potential, Potential difference, Voltage, Electromotive force	volt	V	1 V = 1 J/C
Electrostatic capacity, Capacitance	farad	F	1 F = 1 C/V
Electric resistance	ohm	Ω	1 Ω = 1 V/A
Electric conductance	siemens	S	1 S = 1 Ω ⁻¹
Magnetic flux	weber	Wb	1 Wb = 1 V·s
Magnetic flux density, Magnetic induction	tesla	Т	1 T = 1 Wb/m ²
Inductance	henry	Н	1 H = 1 Wb/A
Degree centigrade (Celsius)	degree centigrade (Celsius) / degree	°C	t °C = (t+273.15) K
Luminous flux	lumen	lm	1 lm = 1 cd·sr
Illuminance	lux	lx	1 lx = 1 lm/m ²

258

Table 4: Unit combined with SI unit

Table 4. Offic Combined With Stuffic			
Quantity	Symbol of unit		
	minute	min	
Time	hour	h	
	day	d	
	degree	٥	
Plane angle	minute	1	
	second	"	
Volume	liter	I, L	
Weight	ton	t	

Table 5: Prefix

Multiples powered	Pr	efix
to unit	Name	Symbol
10 ¹⁸	exa	Е
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)	μm	1 μ = 1 μm (micrometer)
Acceleration	Gal	m/s ²	1 Gal = 10 ⁻² m/s ²
	G	m/s ²	1 G = 9.80665 m/s ²
Frequency	c/s, c	Hz	1 c/s = Hz
Revolving speed, Number of revolutions	rpm	s ⁻¹ or min ⁻¹ , r/min	1 rpm = 1 min ⁻¹
Weight	kgf	_) Same value
Mass	_	kg	Same value
Weight flow rate	kgf/s	_) Sama valua
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m ³	_) Sama valua
Density	_	kg/m ³	Same value
Specific volume	m³/kgf	m³/kg	Same value
Load	kgf	N	1 kgf = 9.80665 N
Force	kgf	N	1 kgf = 9.80665 N
	dyn	N	1 dyn = 10 ⁻⁵ N
Moment of force	kgf⋅m	N∙m	1 kgf·m = 9.806 N·m
Pressure	kgf/cm ²	Pa, bar (1) or kgf/cm ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
		3,711 3 3	= 0.980665 bar
	at (Engineering atmospheric pressure)	Pa	1 at = 9.80665 x 10 ⁴ Pa
	atm (Atmospheric pressure)	Pa	1 atm = 1.01325 x 10 ⁵ Pa
	mH ₂ O, mAq	Pa	1 mH₂O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg ⁽²⁾	1 mmHg = 133.322 Pa
	Torr	Pa	
Stress	kgf/mm ²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
Oli 033	1,0,,,,,,,	1 4 51 14/111	=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
	Ng//om	1 4 51 14/11	= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m ²
Liadio medalae		1 4 51 14/111	1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf⋅m	J (joule)	1 kgf·m = 9.80665 J
Energy, Work	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf·m/s	W (watt)	1 kgf·m/s = 9.80665 W
Work efficiency, I ower	PS	W (Watt)	1 PS = 0.7355 kW
Viscosity	PP	Pa·s	1 P = 0.1 Pa·s
· ·			10 ⁻² St = 1 mm ² /s
Kinetic viscosity	St K	mm²/s K (kelvin)	1 K = 1 K
Thermodynamic temperature		K (Kelviii)	1 deg = 1 K
Temperature interval	deg		1 cal = 4.18605 J
Amount of heat	cal	J J/K ⁽³⁾	
Heat capacity	cal/°C		1 cal/°C = 4.18605 J/K
Specific heat, Specific heat capacity	cal/ (kgf·°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kgf·°C) = 4.18605 J/ (kg·K)
Entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K)
Internal energy (Enthalpy)	cal	J	1 cal = 4.18605 J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	W	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m ²	1 kcal/ (h·m²) = 1.16279 W/m²
Thermal conductivity	cal/ (h·m·°C)	W/ (m·K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m²·°C) = 1.16279 W/ (m²·K)
Intensity of magnetic field	Oe	A/m	1 Oe = 10 ³ / (4π) A/m
Magnetic flux	Mx	Wb (weber)	1 Mx = 10 ⁻⁸ Wb
Magnetic flux density	Gs,G	T (tesla)	1 Gs = 10 ⁻⁴ T

Major Compatible Unit

Note

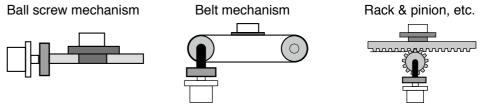
- (1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.
- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

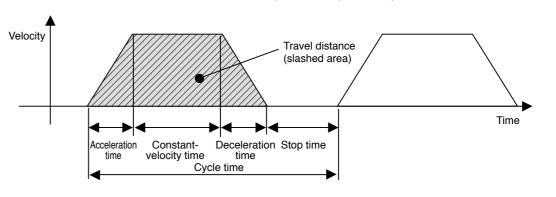
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<Typical mechanism>



2. Definition of operating pattern.

Acceleration/deceleration time, Constant-velocity time, Stop time, Cycle time, Travel distance



Note) Selection of motor capacity significantly varies depending on the operating pattern.

The motor capacity can be reduced if the acceleration/deceleration time and stop time are set as long as possible.

3. Calculation of load inertia and inertia ratio.

Calculate load inertia for each mechanical component. (Refer to "General inertia calculation method" described later.)

Divide the calculated load inertia by the inertia of the selected motor to check the inertia ratio. For calculation of the inertia ratio, note that the catalog value of the motor inertia is expressed as " \times 10⁻⁴ kg·m²".

4. Calculation of motor velocity

Calculate the motor velocity from the moving distance, acceleration / deceleration time and constant-velocity time.

5. Calculation of torque

Calculate the required motor torque from the load inertia, acceleration/deceleration time and constant-velocity time.

6. Calculation of motor

Select a motor that meets the above 3 to 5 requirements.

Description on the Items Related to Motor Selection

1. Torque

(1) Peak torque

Indicate the maximum torque that the motor requires during operation (mainly in acceleration and deceleration steps). The reference value is 80% or less of the maximum motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

(2) Traveling torque, Stop holding torque

Indicates the torque that the motor requires for a long time. The reference value is 80% or less of the rated motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

Traveling torque calculation formula for each mechanism

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

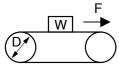
F: External force [N]

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]

ta: Acceleration time [s]

tc: Cycle time [s]

Tf: Traveling torque [N·m]

tb: Constant-velocity time [s]

(Run time + Stop time)

Td: Deceleration torque [N·m]

td: Deceleration time [s]

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition.

Inertia ratio is calculated by dividing load inertia by rotor inertia.

Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less.

If you need quicker response, a lower inertia ratio is required.

/ For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further \increased.

General inertia calculation method

General mertia	General inertia calculation method				
Shape	J calculation formula	Shape	J calculation formula		
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$	Hollow cylinder	$J = \frac{1}{8} W(D^2 + d^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $d : Inner diameter [m]$		
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$ $W : Weight [kg]$ $a, b, c : Side length [m]$	Uniform rod	$J = \frac{1}{48} W(3D^2 + 4L^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $L : Length [m]$		
Straight rod	$J = \frac{1}{3} WL^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $L : Length [m]$	Separated rod	$J = \frac{1}{8} WD^{2} + WS^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $S : Distance [m]$		
Reduction gear	Inertia on shaft "a" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[\mathrm{kg} \cdot \mathrm{m}^2]$ $n_1 : \text{A rotational speed of a shaft } [\mathrm{r/min}]$ $n_2 : \text{A rotational speed of b shaft } [\mathrm{r/min}]$				
Conveyor	$J = \frac{1}{4} W D^{2} [kg \cdot m^{2}]$ $W : \text{Workpiece weight on conveyor } [kg]$ $D : \text{Drum diameter } [m]$ * Excluding drum J	Ball screw	$J = J_B + \frac{W \cdot P^2}{4\pi^2} \text{ [kg·m²]}$ $W : \text{Weight [kg]}$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$		

If weight (W [kg]) is unknown, calculate it with the following formula:

Weight W[kg]=Density ρ [kg/m³] x Volume V[m³]

Density of each material

Iron $\rho = 7.9 \times 10^3 \, [kg/m^3]$

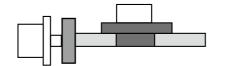
Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass $\rho = 8.5 \times 10^3 \, [kg/m^3]$

To Drive Ball Screw Mechanism

1. Example of motor selection for driving ball screw mechanism

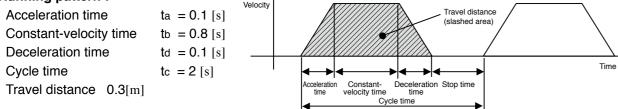
Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$



Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :



3. Ball screw weight

BW =
$$\rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$$

= 1.24 [kg]

4. Load inertia

$$JL = JC + JB = JC + \frac{1}{8}BW \times BD^{2} + \frac{WA \cdot BP^{2}}{4\pi^{2}}$$

$$= 0.00001 + (1.24 \times 0.02^{2}) / 8 + 10 \times 0.02^{2} / 4\pi^{2}$$

$$= 1.73 \times 10^{-4} [kg \cdot m^{2}]$$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-4} Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: JM = 0.051×10^{-4} Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

$$\frac{1}{2}$$
 × Acceleration time×Vmax+Constant-velocity time×Vmax+ $\frac{1}{2}$ × Deceleration time×Vmax = Travel distance $\frac{1}{2}$ × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 0.3 0.9 × Vmax = 0.3 Vmax = 0.3 / 0.9 = 0.334 [m/s]

8. Calculation of motor velocity (N [r/min]) Ball screw lead per resolution: Bp = 0.02 [m]

$$N = 0.334 / 0.02 = 16.7 [r/s]$$

= 16.7 × 60 = 1002 [r/min] < 3000 [r/min] (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque
$$T_f = \frac{BP}{2\pi B \, \eta} \ (\mu gWA + F) = \frac{0.02}{2\pi \ x \ 0.9} \ (0.1 \times 9.8 \times 10 + 0)$$

$$= 0.035 \ [\text{N·m}]$$
Acceleration torque
$$T_a = \frac{(\text{JL} + \text{JM}) \times 2\pi \text{N} [\text{r/s}]}{\text{Acceleration time [s]}} + \text{Traveling torque}$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 \ [\text{N·m}]$$

Deceleration torque $Td = \frac{(JL + JM) \times 2\pi N[r/s]}{Deceleration time [s]}$ - Traveling torque $=\frac{(1.73\times10^{-4}+0.14\times10^{-4})\times2\pi\times16.7}{0.1}-0.035$

 $= 0.196 - 0.035 = 0.161 [N \cdot m]$

10. Verification of maximum torque

To Drive Ball Screw Mechanism

Example of Motor Selection

Acceleration torque = $Ta = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

11. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

Example of Motor Selection

Example of motor selection for timing belt mechanism

1.Mechanism Workpiece weight WA = 2[kg] (including belt)

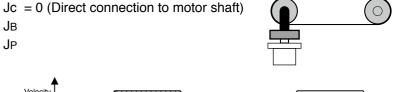
> Pulley diameter PD = 0.05[m]

Pulley weight WP= 0.5[kg] (Use manufacturer-specified catalog value, or calculation value.)

Mechanical efficiency $B\eta = 0.8$

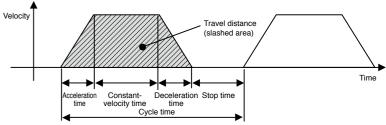
Coupling inertia

Belt mechanism inertia Pulley inertia



2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time td = 0.1[s]Cycle time tc = 2[s]Travel distance 1[m]



3. Load inertia JL = JC + JB + JP

= JC +
$$\frac{1}{4}$$
WA × PD² + $\frac{1}{8}$ WP × PD² × 2
= 0 + $\frac{1}{4}$ × 2 × 0.05² + $\frac{1}{8}$ × 0.5 × 0.05² × 2
= 0.00156 = 15.6 × 10⁻⁴ [kg·m²]

4. Provisional motor selection

In case of MSME 750 W motor : $JM = 0.87 \times 10^{-4} \, [kg \cdot m^2]$

5. Calculation of inertia ratio

JL / JM = $15.6 \times 10^{-4} / 0.87 \times 10^{-4}$ Therefore, the inertia ratio is "17.9" (less than "20")

Request for motor selection I: Ball screw drive

Request Sheet for Motor Selection

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

7. Calculation of motor velocity (N [r/min])

Vmax = 1 / 0.9 = 1.111[m/s]

A single rotation of pulley :
$$\pi \times PD = 0.157 [m]$$

N = 1.111 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{P_D}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061[\,N\cdot m]$$
Acceleration torque
$$T_a = \frac{(JL + JM)\,\times\,2\pi\,N[\,r/s\,]}{Acceleration\,time[\,s\,]} + Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812[\,N\cdot m\,]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi\,N[\,r/s\,]}{Deceleration\,time[\,s\,]} - Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

$$= 0.751 - 0.061 = 0.69[\,N\cdot m\,]$$

9. Verification of maximum torque

Acceleration torque $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor)

10. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$
= 0.241 [N·m] < 2.4 [N·m] (Rated torque of MSME 750 W motor)

11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

1. Driven mechanism and running data

12) Total length of the ball

13) Lead of the ball screw

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	
2)	Cycle time	to:	S	Running pattern
	(Fill in items 3) and 4) if required.)			Al Cocity
3)	Acceleration time	ta:	S	ℓ_1
4)	Deceleration time	td:	S	t_a t_b t_b t_b t_b
5)	Stopping time	ts:	S	
6)	Max. velocity	V:	mm/s	F ~
7)	External force	F:	N	Wa
8)	Positioning accuracy of the work load	±	mm	
9)	Total weight of the work load and the table	WA:	kg	
10)	Power supply voltage		V	
11)	Diameter of the ball screw		mm	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

mm

14) Traveling direction (horizontal, vertical etc.)

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	

ℓ ₁ :	mm	

15) Diameter of the pulley

16) Weight of the pulley

Motor side		Ball so	rew side
D ₁ :	mm	D ₂ :	mm
\\/ ₁ ·	kσ	/\/o·	kσ

mm

kg

(Fill in items 3) and 4) if required.)

3) Acceleration time

ts:

V:

F:

td:

mm/s

Ν

mm

kg

٧

mm

mm

 $\mathsf{m}\mathsf{m}$

5) Stopping time

4) Deceleration time

2) Cycle time

6) Max. velocity

7) External force Positioning accuracy of the 8) work load

9) Total weight of the work load and the table

10) Power supply voltage

11) Diameter of the ball screw

12) Total length of the ball screw

13) Lead of the ball screw

Traveling direction (horizontal, vertical etc.)

у	D ₁ :	mm	D ₂ :	mm
	W1:	kg	W2:	kg

(or item 17) and 18))

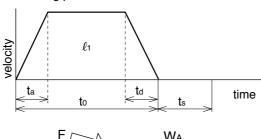
17) Width of the pulley

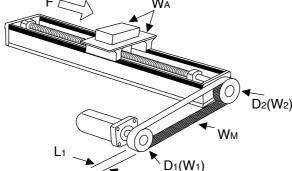
18) Material of the pulley

19) Wei

ight of the belt	W _M :

Running pattern





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address :
Tel:
Fax :
F-mail address:

Request Sheet for Motor Selection

Request for motor selection III: Belt drive

Ν

mm

mm

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm
2)	Cycle time	to:	S

(Fill in items 3) and 4) if required.)



5) Stopping time ts:

V: 6) Max. velocity mm/s

F:

D₁:

8) Positioning accuracy of the work load

7) External force

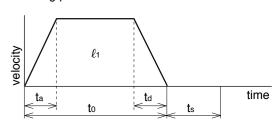
12) Diameter of the driving pulley

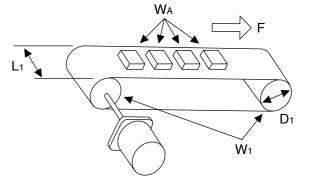
9) Total weight of the work load WA: kg

٧ 10) Power supply voltage

W_M: 11) Weight of the belt kg

W₁: 13) Total weight of the pulley kg Running pattern





(or item 14) and 15))

14) Width of the pulley

		1
15)	Material of the pulley	

L₁:

-		
16)	Traveling direction	
16)	(horizontal, vertical etc.)	

2. Other data	(Fill the details or	n specific mechanism	and its configurations	in the following blank.
---------------	----------------------	----------------------	------------------------	-------------------------

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection V: Turntable drive

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	d ₁ :	deg

Dimensions of the

Prism		Cylinder	
a:	mm	a:	mm
b:	mm	b:	mm
c:	mm	c:	mm

(Fill in items 3) and 4) if required.)

2) Cycle time

4) Deceleration time

3) Acceleration time

td: 5) Stopping time

6) Max. rotational speed of the table deg/s V: r/s

7) Positioning accuracy of the work load deg

WA: 8) Weight of one work load

Driving radius of the center of gravity of the work R₁:

D₁:

W₁:

T₁:

10) Diameter of the table

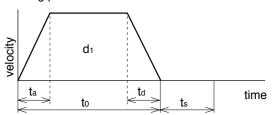
Diameter of the table support

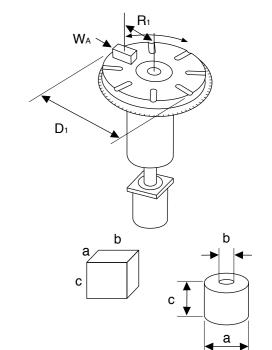
11) Mass of the table

13) Power supply voltage

Running pattern

15) Number of work loads





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

kg

mm

mm

kg

 mm

٧

Department/Section:	
Name :	
Address :	
Tel:	
Fax:	

Request Sheet for Motor Selection

Request for motor selection IV: Timing pulley + Belt drive

1. Driven mechanism and running data

Travel distance of the work load per one cycle	ℓ ₁ :	mm
2) Cycle time	to:	s

s	17)	Weight of the

,	•	•	Į
			Γ
17)	Weight of the pulley		١

18) Width of the pulley

19) Material of the pulley

Traveling direction

(horizontal, vertical etc.)

20) Weight of the belt

Running pattern

ta

16) Diameter of the pulley D₃:

Weight of the pulley	W3:	kg	W4:	

Motor side

WL:

mm D₄:

Belt side

mm

kg

time

mm

kg

(Fill in items 3) and 4) if required.) (or item 18) and 19))

3) Acceleration time s 4) Deceleration time td: S

5) Stopping time ts:

V: mm/s 6) Max. velocity F: 7) External force Ν

Positioning accuracy of the 8) work load

9) Total weight of the work load WA: kg ٧ 10) Power supply voltage

11) Weight of motor side belt

L1:

	Motor side		Belt side	
Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
Weight of the	W ₁ :	kg	W2:	kg

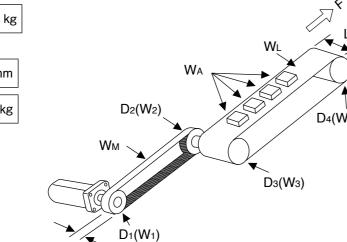
mm

(or item 14) and 15))

Width of the 14)

pulley

Material of the 15) pulley



td

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:

pcs

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	d1:	deg
2)	Cycle time	to:	S

cle time	to:	s	

(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. rotational speed of t table	he	v:	deg/
	(0	r)	V:	r/

Positioning accuracy of the work load	±	
8) Weight of one work load	WA:	kį

9) Driving radius of the center of gravity of the work	R ₁ :	m
or grainly or the front		

10) Diameter of the table	D ₁ :	mm

T₁:

12)	Diameter of the table
12)	support

11) Mass of the table

13)	Power supply voltage	

13)	Power supply volta	age				V
			(Prisr	n)	(Cylinder)
14)	Dimension of the work load	a:		mm	a:	mm
		b:		mm	b:	mm
		c:		mm	c:	mm
15)	Number of work lo	ads				pcs

16)	Diameter of the pulley	D ₂ :	mm	D ₃ :	mı
17)	Weight of the pulley	W2:	kg	W3:	k

Motor side

or item 18) and 19))	
----------------------	--

19) Material of the pulley	
----------------------------	--

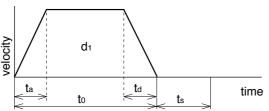
20)	Weight of the belt
-----	--------------------

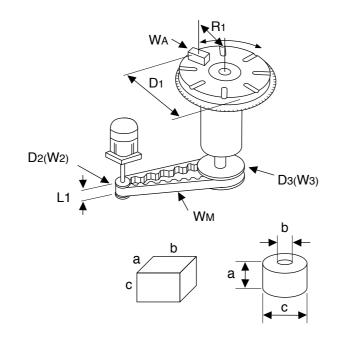
	L1:	mm
--	-----	----

Turntable side

Weight of the helt	W _M :
Weight of the belt	VVM.







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

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	Running patter
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	<u> </u>
5)	Stopping time	ts:	S	
6)	Max. velocity	V:	mm/s	

Positioning accuracy of the	
work load	±

7) External pulling force

12) Mass of the roller

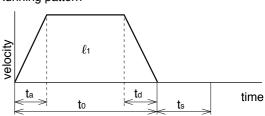
) Number of rollers	pcs

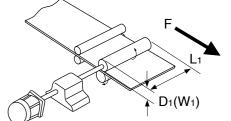
10)	Power supply voltage	

11) Diameter of the roller	D ₁ :

i		
	W ₁ :	kg

Running	pattern
iuiiiiig	pattern





(or item 13) and 14))

14) Material of the roller

L1.	111111

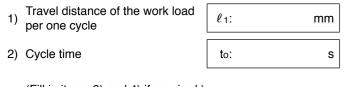
2. Other data (Fill the details on specific mechanism and its configurations in the following blan
--

mm

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request for motor selection III: Driving with Rack & Pinion

1. Driven mechanism and running data



	(Fill in items 3) and 4) if required.)		
3)	Acceleration time	ta:	S
4)	Deceleration time	td:	S
5)	Stopping time	ts:	S
6)	Max. velocity	V:	mm/s
7)	External force	F:	N
8)	Positioning accuracy of the work load	±	mm
9)	Total weight of the work load	WA:	kg
10)	Power supply voltage		V

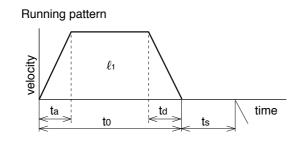
11) Diameter of the pinion

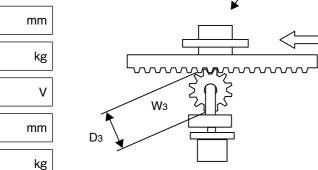
Traveling direction (horizontal, vertical, etc.)

12) Mass of the pinion

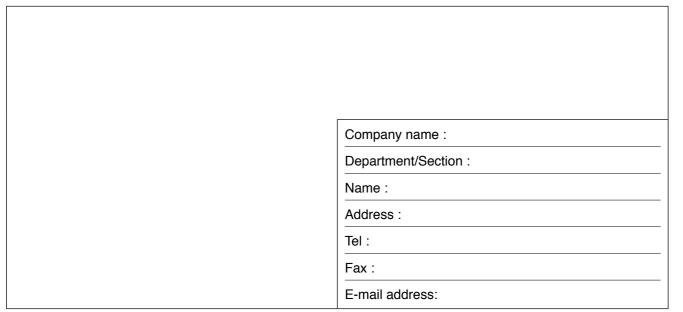
D₃:

W3:

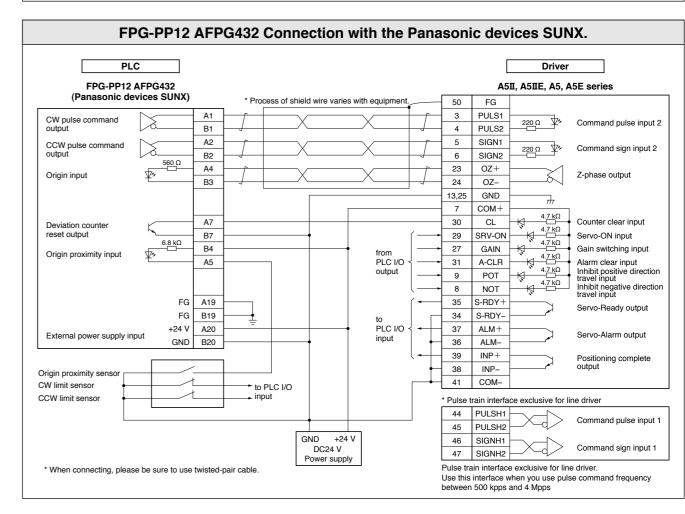


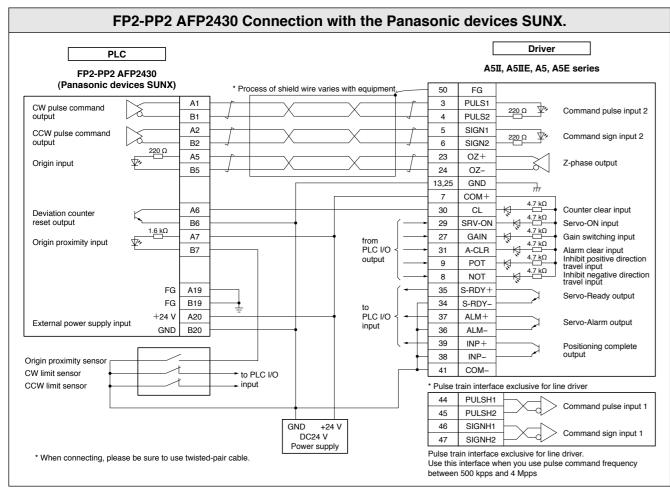


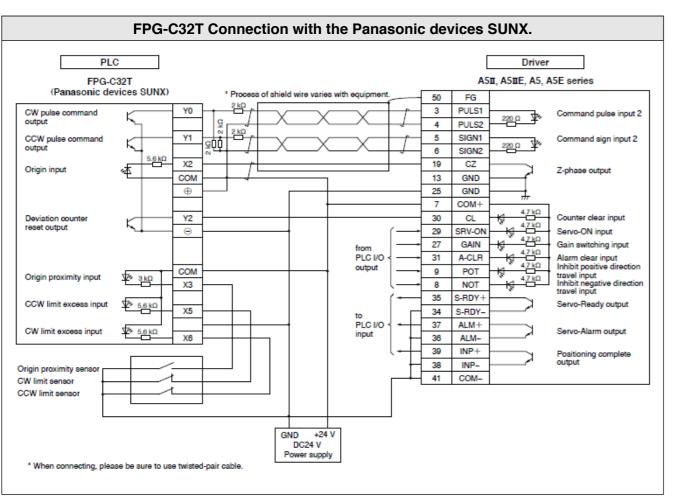
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

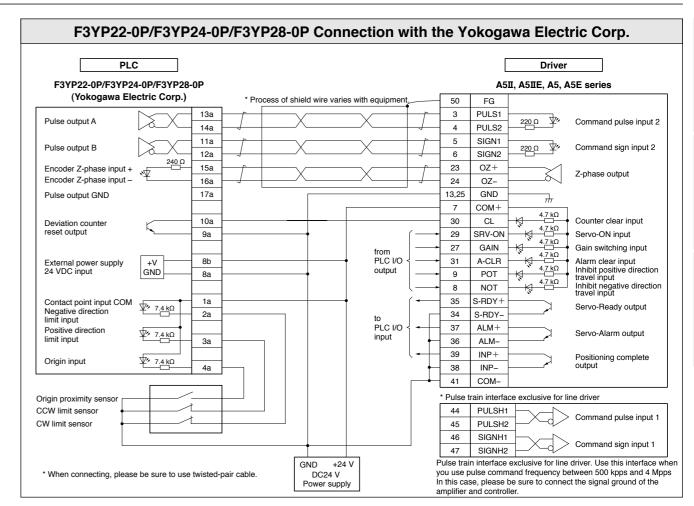


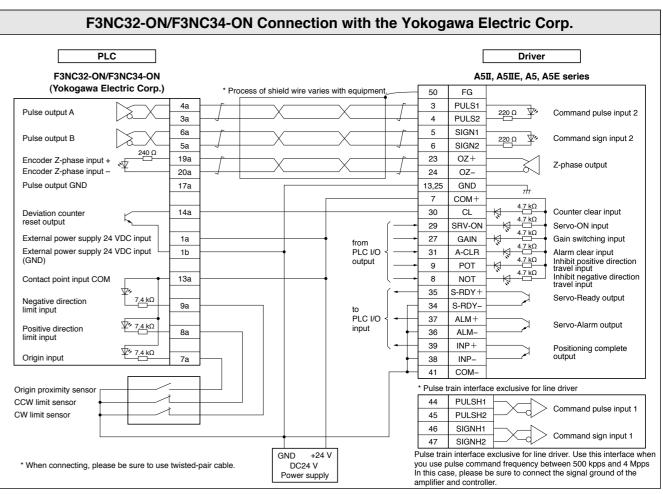
FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) Connection with the Panasonic devices SUNX. PLC Driver FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) A5II, A5IIE, A5, A5E series (Panasonic devices SUNX) Process of shield wire varies with equipr PULS1 A1 A10 3 CW pulse command 220 Ω 💯 Command pulse input 2 B1 B10 PULS2 A2 A11 CCW pulse comma output 5 SIGN1 220 Ω 💯 Command sign input 2 B2 B11 SIGN2 3.9 kΩ A3 A12 07+23 Z-phase output Origin input (5 VDC) A4 A13 OZ-24 B3 B12 13,25 GND B5 B14 COM+ Servo-ON output 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 A-CLR 31 Alarm clear input 6.8 kΩ Inhibit positive direction travel input Inhibit negative direction travel input РОТ 🤘 Limit excess (+) 4.7 kΩ A6 A15 8 NOT 35 S-RDY+ Limit excess ⊝ Servo-Ready output B6 B15 34 S-RDYto PLC I/O +24 V A20 A20 37 ALM+ Servo-Alarm output External power supply input GND B20 B20 36 ALM-INP+ 39 Positioning complete 38 INP-Origin proximity sensor 41 COM-CW limit sensor CCW limit sensor * Pulse train interface exclusive for line driver 44 PULSH1 Command pulse input PULSH2 45 GND +24 V 46 SIGNH1 Command sign input 1 DC24 V SIGNH2 47 Pulse train interface exclusive for line driver. * When connecting, please be sure to use twisted-pair cable Use this interface when you use pulse command frequency between 500 kpps and 4 Mpps

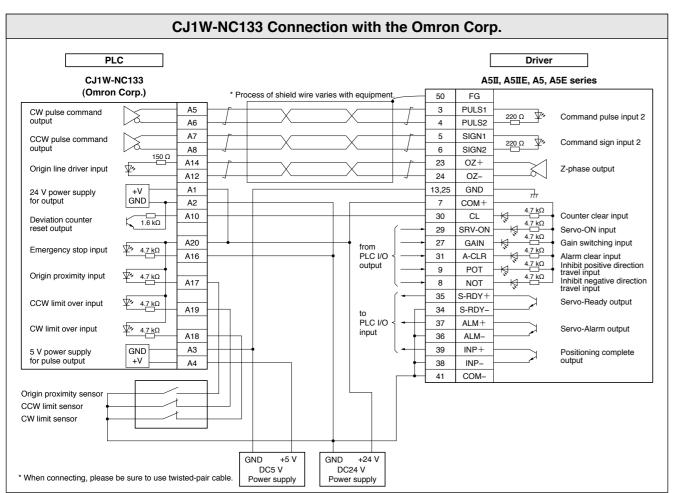


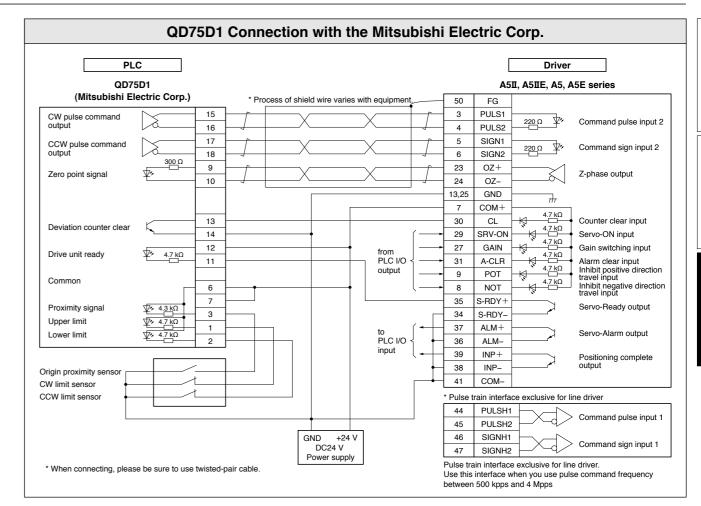


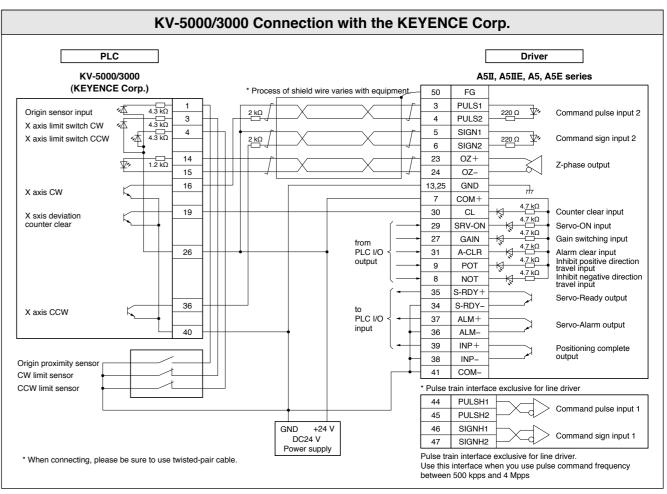






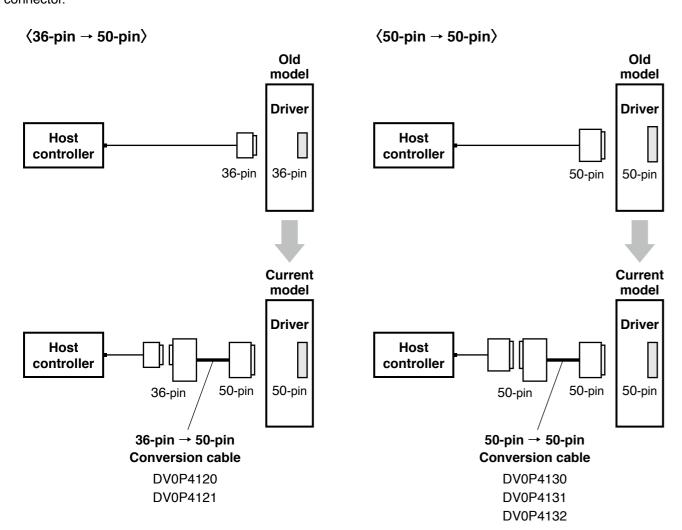






Driver and Controller

For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion connector.



When selecting the cable, refer to the table below because the part number of the cable is specific to the control mode of the old model.

Old model	Control mode	Control mode Conversion cable part No.	
X series XX series (36-pin)	Position/velocity control	DV0P4120	P.280
	Torque control	DV0P4121	P.200
V series (50-pin)	Position control	DV0P4130	D 004
	Velocity control	DV0P4131	P.281
	Torque control	DV0P4132	P.282

279

Conversion Wiring Table

	DV0P4120			DV0P4121		
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-
3	13	Signal ground	GND	13	Signal ground	GND
4	19	Z-phase output	CZ	19	Z-phase output	CZ
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL
14	14	Speed command input	SPR	NC		
15	15	Signal ground	GND	15	Signal ground	GND
16	43	Speed monitor output	SP	43	Speed monitor output	SP
17	25	Signal ground	GND	25	Signal ground	GND
18	50	Frame ground	FG	50	Frame ground	FG
19	21	A-phase output	OA+	21	A-phase output	OA+
20	22	A-phase output	OA-	22	A-phase output	OA-
21	48	B-phase output	OB+	48	B-phase output	OB+
22	49	B-phase output	OB-	49	B-phase output	OB-
23	NC			NC		
24	NC			NC		
25	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+
	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-
28	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (-)	ALM-
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (–)	S-RDY-
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR
35	17	Signal ground	GND	17	Signal ground	GND
36	42	Torque monitor output	IM	42	Torque monitor output	IM

^{* &}quot;NC" is no connect.

280

^{*} For external dimensions, refer to P.197.

A5 Family Connection Between Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

		DV0P4130		DV0P4131			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
2	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
3	3	Command pulse input 2	PULS1	NC			
4	4	Command pulse input 2	PULS2	NC			
5	5	Command pulse sign input 2	SIGN1	NC			
6	6	Command pulse sign input 2	SIGN2	NC			
7	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
8	NC			NC			
9	NC			NC			
10	NC			NC			
11	11	External brake release signal	BRK-OFF+	11	External brake release signal	BRK-OFF+	
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP	
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC	
14	NC			14	Speed command input	SPR	
15	15	Signal ground	GND	15	Signal ground	GND	
16	16	CCW direction torque limit input	CCWTL	16	CCW direction torque limit input	CCWTL	
17	17	Signal ground	GND	17	Signal ground	GND	
18	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
19	19	Z-phase output	CZ	19	Z-phase output	CZ	
20	NC			NC			
21	21	A-phase output	OA+	21	A-phase output	OA+	
22	22	A-phase output	OA-	22	A-phase output	OA-	
23	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
24	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
25	50	Frame ground	FG	50	Frame ground	FG	
26	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN	
28	NC			33	Selection 1 input of internal command speed	INTSPD1	
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
30	30	Deviation counter clear input	CL	NC			
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	33	Command pulse inhibition input	INH	NC			
34	NC			NC			
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
36	NC			NC			
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
38	NC			NC			
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED	
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC	
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (-)	BRK-OFF-	
	34	Positioning complete output (–)	COIN-	34	Speed arrival output (-)	AT-SPEED	
41	36	Servo-Alarm output (-)	ALM-	36	Servo-Alarm output (–)	ALM-	
	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (–)	S-RDY-	
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (–)	COM-	
42	42	Torque monitor output	IM	42	Torque monitor output	IM	
43	43	Speed monitor output	SP	43	Speed monitor output	SP	
44	25	Signal ground	GND	25	Signal ground	GND	
45	25	Signal ground	GND	25	Signal ground	GND	
46	25	Signal ground	GND	25	Signal ground	GND	
47	NC			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	

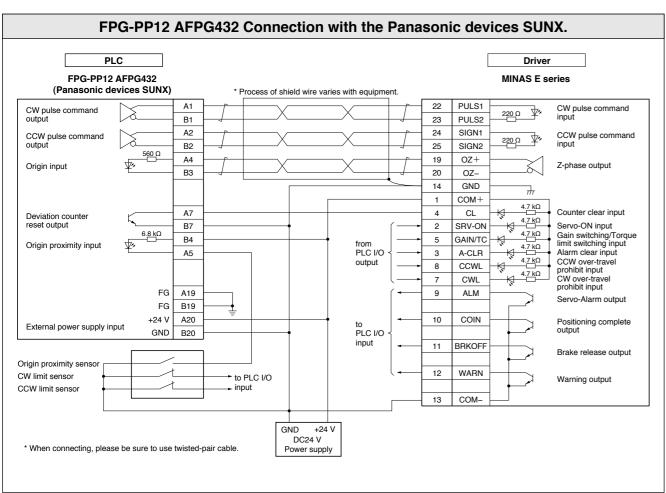
281

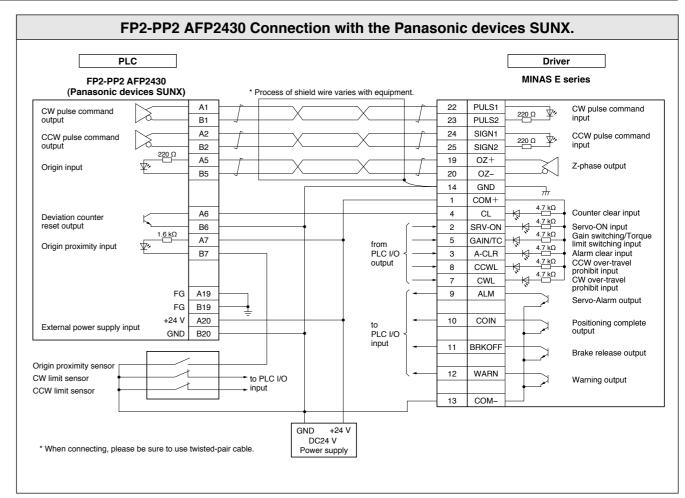
* "NC	" is no	connect.	
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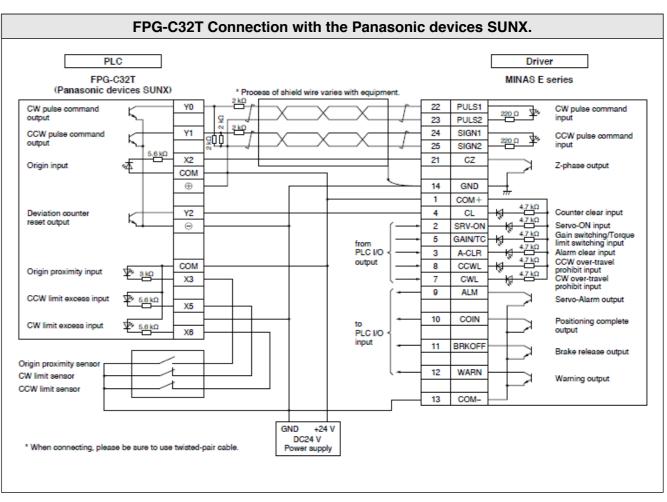
DV0P4132			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol
1	8	CW over-travel inhibit input	CWL
2	9	CCW over-travel inhibit input	CCWL
3	NC		
4	NC		
5	NC		
6	NC		
7	7	Power supply for control signal (+)	COM+
8	NC		
9	NC		
10	NC		
11	11	External brake release signal	BRK-OFF+
12	12	Zero-speed detection output signal	ZSP
13	13	Torque in-limit signal output	TLC
14	NC		
15	15	Signal ground	GND
16	16	Torque command input	TRQR
17	17	Signal ground	GND
18	18	CW direction torque limit input	CWTL
19	19	Z-phase output	CZ
20	NC		
21	21	A-phase output	OA+
22	22	A-phase output	OA-
23	23	Z-phase output	OZ+
24	24	Z-phase output	OZ-
25	50	Frame ground	FG
26	26	Speed zero clamp input	ZEROSPD
27	27	Gain switching input	GAIN
28	NC		
29	29	Servo-ON input	SRV-ON
30	NC		
31	31	Alarm clear input	A-CLR
32	32	Control mode switching input	C-MODE
33	NC		
34	NC		
35	35	Servo-Ready output	S-RDY+
36	NC		
37	37	Servo-Alarm output	ALM+
38	NC		
39	39	Speed arrival output	AT-SPEED+
40	40	Torque in-limit signal output	TLC
41	10	External brake release signal (-)	BRK-OFF-
	34	Speed arrival output (-)	AT-SPEED-
	36	Servo-Alarm output (–)	ALM-
	38	Servo-Ready output (-)	S-RDY-
	41	Power supply for control signal (-)	COM-
42	42	Torque monitor output	IM
43	43	Speed monitor output	SP
44	25	Signal ground	GND
45	25	Signal ground	GND
46	25	Signal ground	GND
47	NC		
48	48	B-phase output	OB+
49	49	B-phase output	OB-
	50	Frame ground	FG

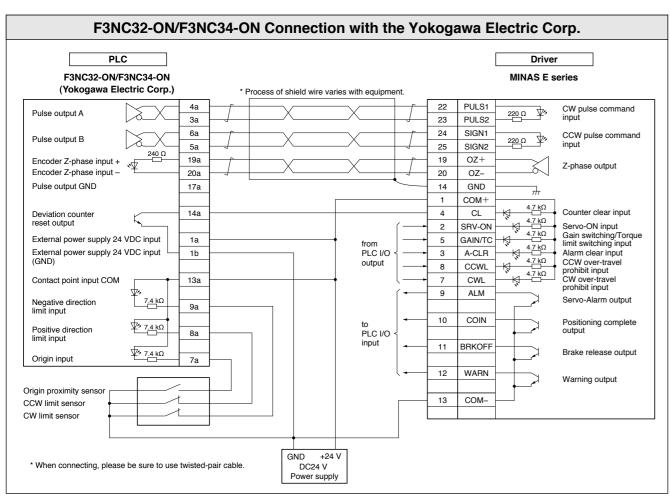
^{* &}quot;NC" is no connect.

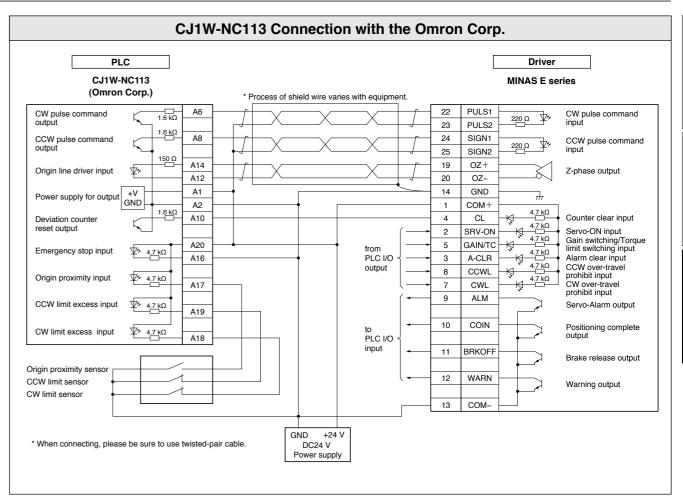
282

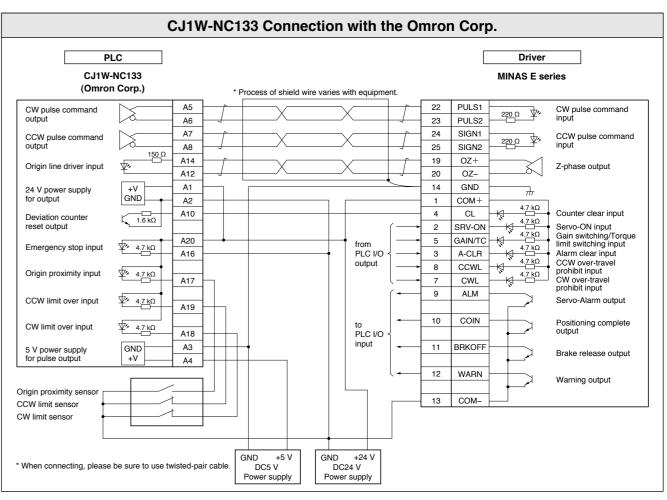


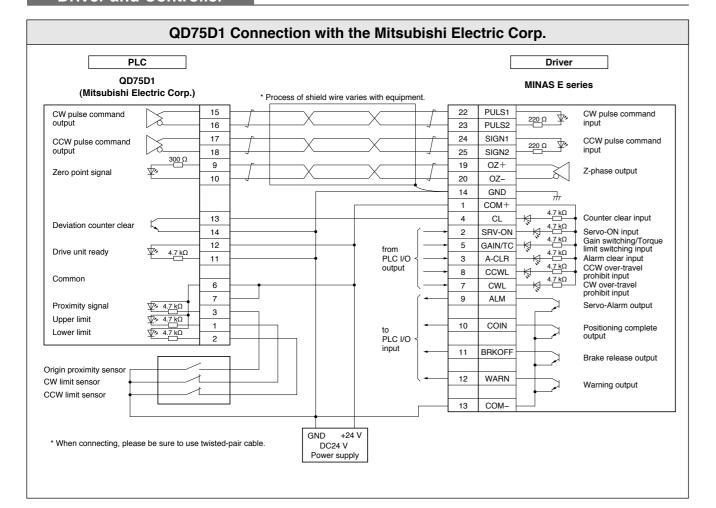












287

Connection Between Driver and Controller

DV0P Part No.	Title	Page
DV0P0770	Connector kit for external peripheral equipment	240
DV0P0800	Interface cable	241
DV0P0800	Surge absorber (3-phase)	253,256
DV0P1460	Ferrite core	254,256
DV0P1960	Communication cable	241
DV0P220	Reactor	209
DV0P220	Reactor	209
DV0P221	Reactor	209
DV0P222 DV0P223	110.0010	209
DV0P223 DV0P224	Reactor Reactor	
DV0P224 DV0P225		209
	Reactor	209
DV0P227	Reactor	209
DV0P228	Reactor Connector Lit for newer cumply connection	209
DV0P2870	Connector kit for power supply connection	239
DV0P2890	External regenerative resistor	242
DV0P2891	External regenerative resistor	242
DV0P2990	Battery For Absolute Encoder	207
DV0P3410	Noise Filter	251
DV0P3670	Connector kit for motor/encoder connection	239
DV0P37300	Cable set (3 m)	238
DV0P3811	DIN rail mounting unit	242
DV0P39200	Cable set (5 m)	238
DV0P4120	Interface conversion cable	197
DV0P4121	Interface conversion cable	197
DV0P4130	Interface conversion cable	197
DV0P4131	Interface conversion cable	197
DV0P4132	Interface conversion cable	197
DV0P4160	Noise filter	256
DV0P4170	Noise Filter	250
DV0P4190	Surge absorber (Single phase)	253,25
DV0P4220	Noise Filter	250
DV0P4280	External Regenerative Resistor: 50 Ω 25 W	210
DV0P4281	External Regenerative Resistor: 100 Ω 25 W	210
DV0P4282	External Regenerative Resistor: 25 Ω 50 W	210
DV0P4283	External Regenerative Resistor: 50 Ω 50 W	210
DV0P4284	External Regenerative Resistor: 30 Ω100 W	210
DV0P4285	External Regenerative Resistor: 20 Ω130 W	210
DV0P4290	Connector Kit for Motor/Encoder Connection	202
DV0P4310	Connector Kit for Motor/Encoder Connection	204
DV0P4320	Connector Kit for Motor/Encoder Connection	204
DV0P4330	Connector Kit for Motor/Encoder Connection	205
DV0P4340	Connector Kit for Motor/Encoder Connection	205
DV0P4350	Interface Connector	198
DV0P4360	Interface cable	197
DV0P4380	Connector Kit for Motor/Encoder Connection	202
DV0P4420	Console	241
DV0P4430	Battery Box	207
DV0P4460	Setup support software "PANATERM" for	236
	MINAS series AC servo motor & Driver	
DV0PM20010	Connector Kit: Encoder	199
DV0PM20102	Connector Kit: RS485, 232	198
DV0PM20103	Connector Kit: Safety	198
DV0PM20026	Connector Kit: External Scale	199
DV0PM20027	Mounting bracket: A-frame	208
DV0PM20028	Mounting bracket: B-frame	208
DV0PM20029	Mounting bracket: C-frame	208
DV0PM20030	Mounting bracket: D-frame	208
DV0PM20031	Connector Kit: Analog Monitor Signal	199
DV0PM20032	Connector for Power Supply Input Connection	200
	(A-frame to D-frame (Single row type))	200
DV0PM20033	Connector for Power Supply Input Connection (A-frame to D-frame (Double row type))	200
	Connector for Motor Connection	201
DV0PM20034	(A-frame to D-frame)	
	(A-frame to D-frame)	203
DV0PM20035	Connector Kit for Motor/Encoder Connection	203
DV0PM20035 DV0PM20036	Connector Kit for Motor/Encoder Connection Connector Kit for Motor/Encoder Connection	203
DV0PM20035 DV0PM20036 DV0PM20037	Connector Kit for Motor/Encoder Connection Connector Kit for Motor/Encoder Connection Connector Kit for Motor/Encoder Connection	203 204
DV0PM20035 DV0PM20036 DV0PM20037 DV0PM20038	Connector Kit for Motor/Encoder Connection	203 204 204
DV0PM20035 DV0PM20036 DV0PM20037 DV0PM20038 DV0PM20039	Connector Kit for Motor/Encoder Connection	203 204 204 205
DV0PM20035 DV0PM20036 DV0PM20037 DV0PM20038	Connector Kit for Motor/Encoder Connection	203 204 204

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-frame, 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

MADHT		
Part No.	Title	Page
MADHT1105	A5 series Driver: A-frame	29,42
MADHT1105E	A5E series Driver: A-frame	31,42
MADHT1107	A5 series Driver: A-frame	29,42
MADHT1107E	A5E series Driver: A-frame	31,42
MADHT1505	A5 series Driver: A-frame	29,42
MADHT1505E	A5E series Driver: A-frame	31,42
MADHT1507	A5 series Driver: A-frame	29,42
MADHT1507E	A5E series Driver: A-frame	31,42

MADKT		
Part No.	Title	Page
MADKT1105	A5II series Driver: A-frame	29,42
MADKT1105E	A5IE series Driver: A-frame	31,42
MADKT1107	A5 ■ series Driver: A-frame	29,42
MADKT1107E	A5IIE series Driver: A-frame	31,42
MADKT1505	A5II series Driver: A-frame	29,42
MADKT1505E	A5IE series Driver: A-frame	31,42
MADKT1507	A5 ■ series Driver: A-frame	29,42
MADKT1507E	A5IIE series Driver: A-frame	31,42

MBDHT		
MBDHI		
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 I 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		
Title	Page	
A5 series Driver: C-frame	29,43	
A5E series Driver: C-frame	31,43	
A5 series Driver: C-frame	29,43	
A5E series Driver: C-frame	31,43	
	A5 series Driver: C-frame A5E series Driver: C-frame A5 series Driver: C-frame	

MCDKT		
Part No.	Title	Page
MCDKT3120	A5II series Driver: C-frame	29,43
MCDKT3120E	A5∏E series Driver: C-frame	31,43

(Alphabetical Order)

MCDKT		
Part No.	Title	Page
MCDKT3520	A5I 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.	erua) Tit	le Page
MDME102GCGM	MDME 1.0 kW Increme	
MDME102GCH	MDME 1.0 kW Increme	
MDME102GCHM	MDME 1.0 kW Increme	ntal encoder 164
MDME102S1C	MDME 1.0 kW Absolute	e encoder 80
MDME102S1D	MDME 1.0 kW Absolute	e encoder 80
MDME102S1G	MDME 1.0 kW Absolute	e encoder 80
MDME102S1H	MDME 1.0 kW Absolute	e encoder 80
MDME102SCC	MDME 1.0 kW Absolute	
MDME102SCCM	MDME 1.0 kW Absolute	
MDME102SCD	MDME 1.0 kW Absolute	
MDME102SCDM	MDME 1.0 kW Absolute	
MDME102SCG	MDME 1.0 kW Absolute	
MDME102SCGM	MDME 1.0 kW Absolute	
MDME102SCH	MDME 1.0 kW Absolute MDME 1.0 kW Absolute	
MDME102SCHM MDME104G1C	MDME 1.0 kW Absolute	
MDME104G1C	MDME 1.0 kW Increme	
MDME104G1G	MDME 1.0 kW Increme	
MDME104G1H	MDME 1.0 kW Increme	
MDME104GTT	MDME 1.0 kW Increme	
MDME104GCD	MDME 1.0 kW Increme	
MDME104GCG	MDME 1.0 kW Increme	
MDME104GCH	MDME 1.0 kW Increme	
MDME104S1C	MDME 1.0 kW Absolute	
MDME104S1D	MDME 1.0 kW Absolute	e encoder 113
MDME104S1G	MDME 1.0 kW Absolute	e encoder 113
MDME104S1H	MDME 1.0 kW Absolute	e encoder 113
MDME104SCC	MDME 1.0 kW Absolute	e encoder 113
MDME104SCD	MDME 1.0 kW Absolute	e encoder 113
MDME104SCG	MDME 1.0 kW Absolute	e encoder 113
MDME104SCH	MDME 1.0 kW Absolute	e encoder 113
MDME152G1C	MDME 1.5 kW Increme	ntal encoder 81
MDME152G1D	MDME 1.5 kW Increme	
MDME152G1G	MDME 1.5 kW Increme	
MDME152G1H	MDME 1.5 kW Increme	
MDME152GCC	MDME 1.5 kW Increme	
MDME152GCCM	MDME 1.5 kW Increme	
MDME152GCD	MDME 1.5 kW Increme	
MDME152GCDM	MDME 1.5 kW Increme	
MDME152GCG MDME152GCGM	MDME 1.5 kW Increme	
MDME152GCGM	MDME 1.5 kW Increme	
MDME152GCHM	MDME 1.5 kW Increme	
MDME152S1C	MDME 1.5 kW Absolute	
MDME152S1D	MDME 1.5 kW Absolute	
MDME152S1G	MDME 1.5 kW Absolute	
MDME152S1H	MDME 1.5 kW Absolute	
MDME152SCC	MDME 1.5 kW Absolute	e encoder 81
MDME152SCCM	MDME 1.5 kW Absolute	
MDME152SCD	MDME 1.5 kW Absolute	e encoder 81
MDME152SCDM	MDME 1.5 kW Absolute	e encoder 165
MDME152SCG	MDME 1.5 kW Absolute	e encoder 81
MDME152SCGM	MDME 1.5 kW Absolute	e encoder 165
MDME152SCH	MDME 1.5 kW Absolute	e encoder 81
MDME152SCHM	MDME 1.5 kW Absolute	e encoder 165
MDME154G1C	MDME 1.5 kW Increme	ntal encoder 114
MDME154G1D	MDME 1.5 kW Increme	
MDME154G1G	MDME 1.5 kW Increme	
MDME154G1H	MDME 1.5 kW Increme	
MDME154GCC	MDME 1.5 kW Increme	
MDME154GCD	MDME 1.5 kW Increme	
MDME154GCG	MDME 1.5 kW Increme	
MDME154GCH	MDME 1.5 kW Increme	
MDME154S1C	MDME 1.5 kW Absolute	
MDME154S1D	MDME 1.5 kW Absolute	
MDME154S1G	MDME 1.5 kW Absolute	
MDME154S1H	MDME 1.5 kW Absolute MDME 1.5 kW Absolute	
MDME154SCC	MDME 1.5 kW Absolute	
MDME154SCD MDME154SCG	MDME 1.5 kW Absolute	
MDME154SCG MDME154SCH	MDME 1.5 kW Absolute	
I IODEUI LUTUUII	WIDINE I'' VAN WIDOURIE	7 011000001 114

MDME (Middle in Part No.	Title	Page
MDME202G1D	MDME 2.0 kW Incremental encoder	82
MDME202G1B	MDME 2.0 kW Incremental encoder	82
MDME202G1G MDME202G1H	MDME 2.0 kW Incremental encoder	82
MDME202GTH MDME202GCC	MDME 2.0 kW Incremental encoder MDME 2.0 kW Incremental encoder	82
MDME202GCC MDME202GCCM	MDME 2.0 kW Incremental encoder MDME 2.0 kW Incremental encoder	166
MDME202GCD	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
MDME202S1C	MDME 2.0 kW Absolute encoder	82
MDME202S1D	MDME 2.0 kW Absolute encoder	82
MDME202S1G	MDME 2.0 kW Absolute encoder	82
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
MDME202SCHW	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	MDME 2.0 kW Absolute encoder	115
MDME204SCG	MDME 2.0 kW Absolute encoder	115
MDME204SCH	MDME 2.0 kW Absolute encoder	115
MDME302G1C	MDME 3.0 kW Incremental encoder	83
MDME302G1C	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
MDME302SCG	MDME 3.0 kW Absolute encoder	83
MDME302SCGM	MDME 3.0 kW Absolute encoder	167
MDME302SCH	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
	MDME 2 0 k/M incremental asserdar	
MDME304GCD	MDME 3.0 kW Incremental encoder	116
	MDME 3.0 kW Incremental encoder MDME 3.0 kW Incremental encoder MDME 3.0 kW Incremental encoder	116 116 116

MDME (Middle in Part No.	ertia) Title	Dogo
MDME304S1D	MDME 3.0 kW Absolute encoder	Page 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 MDME304SCH	MDME 3.0 kW Absolute encoder MDME 3.0 kW Absolute encoder	116
MDME402G1C	MDME 4.0 kW Incremental encoder	116 84
MDME402G1D	MDME 4.0 kW Incremental encoder	84
MDME402G1G	MDME 4.0 kW Incremental encoder	84
MDME402G1H	MDME 4.0 kW Incremental encoder	84
MDME402GCC	MDME 4.0 kW Incremental encoder	84
MDME402GCCM	MDME 4.0 kW Incremental encoder	168
MDME402GCD MDME402GCDM	MDME 4.0 kW Incremental encoder MDME 4.0 kW Incremental encoder	168
MDME402GCDM	MDME 4.0 kW Incremental encoder	84
MDME402GCGM	MDME 4.0 kW Incremental encoder	168
MDME402GCH	MDME 4.0 kW Incremental encoder	84
MDME402GCHM	MDME 4.0 kW Incremental encoder	168
MDME402S1C	MDME 4.0 kW Absolute encoder	84
MDME402S1D	MDME 4.0 kW Absolute encoder	84
MDME402S1G MDME402S1H	MDME 4.0 kW Absolute encoder MDME 4.0 kW Absolute encoder	84
MDME402SCC	MDME 4.0 kW Absolute encoder	84
MDME402SCCM	MDME 4.0 kW Absolute encoder	168
MDME402SCD	MDME 4.0 kW Absolute encoder	84
MDME402SCDM	MDME 4.0 kW Absolute encoder	168
MDME402SCG	MDME 4.0 kW Absolute encoder	84
MDME402SCGM	MDME 4.0 kW Absolute encoder	168 84
MDME402SCH MDME402SCHM	MDME 4.0 kW Absolute encoder MDME 4.0 kW Absolute encoder	168
MDME404G1C	MDME 4.0 kW Incremental encoder	117
MDME404G1D	MDME 4.0 kW Incremental encoder	117
MDME404G1G	MDME 4.0 kW Incremental encoder	117
MDME404G1H	MDME 4.0 kW Incremental encoder	117
MDME404GCC	MDME 4.0 kW Incremental encoder	117
MDME404GCD MDME404GCG	MDME 4.0 kW Incremental encoder MDME 4.0 kW Incremental encoder	117
MDME404GCH	MDME 4.0 kW Incremental encoder	117
MDME404S1C	MDME 4.0 kW Absolute encoder	117
MDME404S1D	MDME 4.0 kW Absolute encoder	117
MDME404S1G	MDME 4.0 kW Absolute encoder	117
MDME404S1H	MDME 4.0 kW Absolute encoder	117
MDME404SCC MDME404SCD	MDME 4.0 kW Absolute encoder 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 encoder	85
MDME502G1D	MDME 5.0 kW Incremental encoder	85
MDME502G1G	MDME 5.0 kW Incremental encoder	85
MDME502G1H MDME502GCC	MDME 5.0 kW Incremental encoder MDME 5.0 kW Incremental encoder	85 85
MDME502GCC	MDME 5.0 kW Incremental encoder	169
MDME502GCD	MDME 5.0 kW Incremental encoder	85
MDME502GCDM	MDME 5.0 kW Incremental encoder	169
MDME502GCG	MDME 5.0 kW Incremental encoder	85
MDME502GCGM	MDME 5.0 kW Incremental encoder	169
MDME502GCHM	MDME 5.0 kW Incremental encoder	85
MDME502GCHM MDME502S1C	MDME 5.0 kW Incremental encoder MDME 5.0 kW Absolute encoder	169 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 MDME502SCDM	MDME 5.0 kW Absolute encoder MDME 5.0 kW Absolute encoder	85 169
MDME502SCDM	MDME 5.0 kW Absolute encoder	85
MDME502SCGM	MDME 5.0 kW Absolute encoder	169
MDME502SCH	MDME 5.0 kW Absolute encoder	85
MDME502SCHM	MDME 5.0 kW Absolute encoder	169
MDME504G1C	MDME 5.0 kW Incremental encoder	118

(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	MDME 7.5 kW Incremental encoder	119
MDME754S1C	MDME 7.5 kW Absolute encoder	119
MDME754S1D MDME754S1G	MDME 7.5 kW Absolute encoder MDME 7.5 kW Absolute encoder	119 119
MDME754S1H	MDME 7.5 kW Absolute encoder	119
MDME73431H	MDME 11.0 kW Incremental encoder	87
MDMEC12G1C	MDME 11.0 kW incremental encoder	87
MDMEC12G1B	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	A5IE series Driver: E-frame	31,45
MEDKT7364	A5I series Driver: E-frame	29,44
MEDKT7364E	A5IE 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 I series Driver: F-frame	29,45
MFDKTA464E	A5IE series Driver: F-frame	31,45
MFDKTB3A2	A5II series Driver: F-frame	29,45
MFDKTB3A2E	A5IIE series Driver: F-frame	31,45

MEEGA Part No.	Title	Page
MFECA0030EAD	Encoder Cable (without Battery Box)	188
MFECA0030EAE	Encoder Cable (with Battery Box)	188
MFECA0030EAL	Encoder Cable (with Battery Box) Encoder Cable (without Battery Box)	188.238
MFECA0030ESD	Encoder Cable (without Battery Box)	189
MFECA0030ESD	Encoder Cable (with Battery Box)	190
MFECA0030E3E	Encoder Cable (with Battery Box) Encoder Cable (without Battery Box)	190
MFECA0030ETD	Encoder Cable (with Battery Box)	190
MFECA0030ETE	Encoder Cable (with Battery Box) Encoder Cable (without Battery Box)	189
MFECA0030MJE	` '	189
	Encoder Cable (with Battery Box)	
MFECA0030MKD	Encoder Cable (without Battery Box)	189
	Encoder Cable (with Battery Box)	
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 (without Battery Box)	190
MFECA0100ETE	Encoder Cable (with Battery Box)	190
MFECA0100MJD	Encoder Cable (without Battery Box)	189
MFECA0100MJE	Encoder Cable (with Battery Box)	189
MFECA0100MKD	Encoder Cable (without Battery Box)	189
MFECA0100MKE	Encoder Cable (with Battery Box)	189
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

Part No.	Title	Page
MFMCA0030AEB	Motor Cable	238
MFMCA0030EED	Motor Cable (without Brake)	191
MFMCA0030NJD	Motor Cable (without Brake)	191
MFMCA0030NKD	Motor Cable (without Brake)	191
MFMCA0030RJD	Motor Cable (without Brake)	191
MFMCA0030RKD	Motor Cable (without Brake)	191
MFMCA0032ECD	Motor Cable (without Brake)	191
MFMCA0032FCD	Motor Cable (with Brake)	194
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

Title	Page
Brake Cable	196,238
Brake Cable	196
Brake Cable	196,238
Brake Cable	196
Brake Cable	196
Brake Cable	196
	Brake Cable

MFMCB		
Part No.	Title	Page
MFMCB0050SKT	Brake Cable	196
MFMCB0100GET	Brake Cable	196,238
MFMCB0100PJT	Brake Cable	196
MFMCB0100PKT	Brake Cable	196
MFMCB0100SJT	Brake Cable	196
MFMCB0100SKT	Brake Cable	196
MFMCB0200GET	Brake Cable	196,238
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
	Tiuc	1 age
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

Title	Page
Motor Cable (without Brake)	192
	Motor Cable (without Brake) Motor Cable (without Brake) Motor Cable (without Brake)

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 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
MG	DKTB4A2	A5II series Driver: G-frame	29,46
MG	DKTC3B4	A5 ■ series Driver: G-frame	29,46

WIGDIN 1 C3D4	AJE Selies Dilver. G-lialile	25,40		
MGME (Middle inertia)				
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	•	
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	MGME 2.0 kW Incremental encoder	93
MGME202GCDM	MGME 2.0 kW Incremental encoder	171
MGME202GCG	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	MGME 2.0 kW Absolute encoder	171
MGME202SCD	MGME 2.0 kW Absolute encoder	93
MGME202SCDM	MGME 2.0 kW Absolute encoder	171
MGME202SCG	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	MGME 2.0 kW Incremental encoder	126
MGME204GCD	MGME 2.0 kW Incremental encoder	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
MGME204STH		
MGME204SCD	MGME 2.0 kW Absolute encoder MGME 2.0 kW Absolute encoder	126
		126
MGME204SCG	MGME 2.0 kW Absolute encoder	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	MGME 3.0 kW Incremental encoder	172
MGME302GCG	MGME 3.0 kW Incremental encoder	94
MGME302GCGM	MGME 3.0 kW Incremental encoder	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
MGME302SCD	MGME 3.0 kW Absolute encoder	94
MGME302SCDM	MGME 3.0 kW Absolute encoder	172
MGME302SCG	MGME 3.0 kW Absolute encoder	94
MGME302SCGM	MGME 3.0 kW Absolute encoder	172
MGME302SCH	MGME 3.0 kW Absolute encoder	94
MGME302SCHM	MGME 3.0 kW Absolute encoder	172
MGME304G1C	MGME 3.0 kW Incremental encoder	127
MGME304G1D	MGME 3.0 kW Incremental encoder	127
	MGME 3.0 kW Incremental encoder	
MGME304G1G	MGME 3.0 kW Incremental encoder	127
MGME304G1H		127
MGME304GCC MGME304GCD	MGME 3.0 kW Incremental encoder	127
nar = na = 3(1/1(=('1)	MGME 3.0 kW Incremental encoder	127
MGME304GCG	MGME 3.0 kW Incremental encoder	127

MGME (Middle inertia)		
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	tia)	
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
	MHMD 400 W Incremental encoder	62
MHMD042G1D		
MHMD042G1D MHMD042G1N	MHMD 400 W Incremental encoder	62
MHMD042G1D MHMD042G1N MHMD042G1P	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q	MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder MHMD 400 W Incremental encoder	62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R	MHMD 400 W Incremental encoder	62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S	MHMD 400 W Incremental encoder	62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1S	MHMD 400 W Incremental encoder	62 62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1T	MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1U MHMD042G1U	MHMD 400 W Incremental encoder	62 62 62 62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1U MHMD042G1U	MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1S	MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1U MHMD042G1U MHMD042G1U MHMD042G1V MHMD042S1A MHMD042S1B	MHMD 400 W Incremental encoder MHMD 400 W Absolute encoder	62 62 62 62 62 62 62 62 62
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1U MHMD042G1U MHMD042G1U MHMD042G1V	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
MHMD042G1D MHMD042G1N MHMD042G1P MHMD042G1Q MHMD042G1R MHMD042G1S MHMD042G1T MHMD042G1U MHMD042G1U MHMD042G1U MHMD042G1V MHMD042S1A MHMD042S1B MHMD042S1C	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

(Alphabetical Order)

MHMD (High iner	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

	D ((1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Reducer (High inertia)	
Part No.	Title	Page
MHMD041S31N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S32N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S33N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S34N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S41N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S42N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S43N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD041S44N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042G31N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G32N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G33N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G34N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G41N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G42N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G43N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042G44N	MHMD with reduction gear 400 W Incremental encoder	141,149
MHMD042S31N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S32N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S33N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S34N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S41N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S42N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S43N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD042S44N	MHMD with reduction gear 400 W Absolute encoder	141,149
MHMD082G31N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G32N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G33N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G34N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G41N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G42N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G43N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082G44N	MHMD with reduction gear 750 W Incremental encoder	141,149
MHMD082S31N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S32N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S33N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S34N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S41N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S42N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S43N	MHMD with reduction gear 750 W Absolute encoder	141,149
MHMD082S44N	MHMD with reduction gear 750 W Absolute encoder	141,149
IVII IIVIDUULUTTIN	WILLIAM WILLI TECHNOLIOTI GEAL 700 W ADSOLUTE ETICONEL	1-71,1-13

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	Dogo
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		

MHME (High inertia) 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 MHME 2.0 kW Incremental encoder 132 MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME204S1G MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132 MHME204SCC MHME 2.0 kW Absolute encoder 132
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 MHME 2.0 kW Incremental encoder 132 MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME204S1G MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
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 MHME 2.0 kW Incremental encoder 132 MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
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 MHME 2.0 kW Incremental encoder 132 MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
MHME204G1D MHME 2.0 kW Incremental encoder 132 MHME204G1G MHME 2.0 kW Incremental encoder 132 MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
MHME204G1G MHME 2.0 kW Incremental encoder 132 MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
MHME204G1H MHME 2.0 kW Incremental encoder 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute 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 MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
MHME204S1C MHME 2.0 kW Absolute encoder 132 MHME204S1D MHME 2.0 kW Absolute encoder 132 MHME204S1G MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
MHME204S1D MHME 2.0 kW Absolute encoder 132 MHME204S1G MHME 2.0 kW Absolute encoder 132 MHME204S1H MHME 2.0 kW Absolute encoder 132
MHME204S1H 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
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 MHME 3.0 kW Incremental encoder 100
MHME302GCC MHME 3.0 kW Incremental encoder 100
MHME302GCCM MHME 3.0 kW Incremental encoder 179
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 MHME 3.0 kW Absolute encoder 100
MHME302S1D 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 MHME 3.0 kW Absolute encoder 100
MHME302SCGM MHME 3.0 kW Absolute encoder 179
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 MHME 3.0 kW Incremental encoder 133
MHME304GCD MHME 3.0 kW Incremental encoder 133
MHME304GCG 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 133
MHME304SCD MHME 3.0 kW Absolute encoder 133
MHME304SCG 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 MHME 4.0 kW Incremental encoder 180 MHME402GCD MHME 4.0 kW Incremental encoder 101
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 Order)

MHME402S1D	MHME (High iner	tia)	
MHME402STG		Title	Page
MHME402S1H	MHME402S1D	MHME 4.0 kW Absolute encoder	101
MHME402SCC MHME 4.0 kW Absolute encoder 101			101
MHME402SCCM MHME 4.0 kW Absolute encoder 180 MHME402SCD MHME 4.0 kW Absolute encoder 191 MHME402SCD MHME 4.0 kW Absolute encoder 191 MHME402SCG MHME 4.0 kW Absolute encoder 191 MHME402SCG MHME 4.0 kW Absolute encoder 191 MHME402SCG MHME 4.0 kW Absolute encoder 191 MHME402SCH MHME 4.0 kW Absolute encoder 191 MHME404GCC MHME 4.0 kW Absolute encoder 193 MHME404GC MHME40.0 kW Incremental encoder 193 MHME404GC MHME4.0 kW Absolute encoder 193 MHME404STC MHME4.0 kW Absolute encoder 193 MHME404STC MHME4.0 kW Absolute encoder 193 MHME404STC MHME4.0 kW Absolute encoder 193 MHME404SC MHME4.0 kW Absolute encoder 193 MHME502GC MHME5.0 kW Incremental encoder 193 MHME502GCC MHME5.0 kW Abso			101
MHME402SCD			101
MHME402SCDM MHME 4.0 kW Absolute encoder 180 MHME402SCG MHME 4.0 kW Absolute encoder 101 MHME402SCG MHME 4.0 kW Absolute encoder 181 MHME402SCH MHME 4.0 kW Absolute encoder 181 MHME402SCH MHME 4.0 kW Absolute encoder 182 MHME404CH MHME504CH MHME5			_
MHME402SCG MHME 4.0 kW Absolute encoder 101 MHME402SCH MHME 4.0 kW Absolute encoder 106 MHME402SCH MHME 4.0 kW Absolute encoder 101 MHME404G1C MHME 4.0 kW Absolute encoder 136 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GCC MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404S1C MHME 4.0 kW Absolute encoder 134 MHME404S1D MHME 4.0 kW Absolute encoder 134 MHME404S1D 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 MHME404SC MHME 4.0 kW Absolute encoder			
MHME402SCGM MHME 4.0 kW Absolute encoder 180 MHME402SCHM MHME 4.0 kW Absolute encoder 101 MHME402SCHM MHME 4.0 kW Noremental encoder 138 MHME402SCHM MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 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 MHME404SC MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME502GG MHME 5.0 kW Absolute encoder 134 MHME503CG MHME 5.0 kW Absolute encoder			_
MHME402SCH MHME 4.0 kW Absolute encoder 101 MHME401C MHME 4.0 kW Incremental encoder 136 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1B MHME 4.0 kW Incremental encoder 134 MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Absolute encoder 134 MHME404GCD MHME 4.0 kW Absolute encoder 134 MHME404S1C 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 MHME502GC MHME 5.0 kW North Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental en			
MHME402SCHM MHME 4.0 kW Absolute encoder 180 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1M MHME 4.0 kW Incremental encoder 134 MHME404GCC MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404SCD 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 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental en			_
MHME404G1C MHME 4.0 kW Incremental encoder 134 MHME404G1D MHME 4.0 kW Incremental encoder 134 MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404GCD 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 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404S1C 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 MHME502GM MHME 5.0 kW Incremental encoder 102 MHME502GM MHME 5.0 kW Incremental encoder 102 MHME502GM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encode			_
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 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 MHME502GD MHME 5.0 kW Incremental encoder 102 MHME502GD MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder<			
MHME404G1G MHME 4.0 kW Incremental encoder 134 MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GCC MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Mosolute 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 MHME404S1G MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder <td></td> <td></td> <td></td>			
MHME404G1H MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCH 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 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 5.0 kW Incremental encoder 102 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1 MHME 5.0 kW Incremental encoder			
MHME404GCC MHME 4.0 kW Incremental encoder 134 MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCG 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 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 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCM MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Incremental en			134
MHME404GCD MHME 4.0 kW Incremental encoder 134 MHME404GCG 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 MHME404SCC MHME 4.0 kW Absolute encoder 134 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCG 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 MHME502G1 MHME 5.0 kW Incremental encoder 102 MHME502GC MHME 5.0 kW Incremental encoder 102 MHME502GCO MHME 5.0 kW Incremental encoder 102 MHME502GCO MHME 5.0 kW Incremental encoder 102 MHME502GCO MHME 5.0 kW Incremental encode			134
MHME404GCG MHME 4.0 kW Incremental encoder 134 MHME404GCH MHME 4.0 kW Absolute encoder 134 MHME404S1D 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 5.0 kW Incremental encoder 102 MHME404SCD MHME 5.0 kW Incremental encoder 102 MHME502GD MHME 5.0 kW Incremental encoder 102 MHME502GD MHME 5.0 kW Incremental encoder 102 MHME502GI MHME 5.0 kW Incremental encoder 102 MHME502GCC 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> <td></td> <td>134</td>			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 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 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502GC0 MHME 5.0 kW Incremental encoder 102 MHME502GCC MHME 5.0 kW Incremental encoder 102 MHME502GCD MHME 5.0 kW Incremental encoder 102 MHME502GCG MHME 5.0 kW Incremental enc			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 MHME404SCH MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502G1B MHME 5.0 kW Incremental encoder 102 MHME502GC MMHME 5.0 kW Incremental encoder 102 MHME502GCDM 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 Absolute encoder	MHME404GCH	MHME 4.0 kW Incremental 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 MHME404SCG MHME 4.0 kW Absolute encoder 134 MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D 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 MHME502GCCM MHME 5.0 kW Incremental encoder 102 MHME502GCDM MHME 5.0 kW Incremental encoder 102 MHME502GCGM MHME 5.0 kW Absolute encoder 102 MHME502GC MHME 5.0 kW Absolut	MHME404S1C	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 MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCH MHME 4.0 kW Absolute encoder 132 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 120 MHME502GCDM MHME 5.0 kW Incremental encoder 121 MHME502GCM MHME 5.0 kW Incremental encoder 122 MHME502GCM MHME 5.0 kW Incremental encoder 122 MHME502GCM MHME 5.0 kW Incremental encoder 122 MHME502GCH MHME 5.0 kW Incremental encoder 122 MHME502GCH MHME 5.0 kW Incremental encoder 122 MHME502GC MHME 5.0 kW Incremen	MHME404S1D	MHME 4.0 kW Absolute encoder	134
MHME404SCD MHME 4.0 kW Absolute encoder 134 MHME404SCD 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 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 MHME502GCDM MHME 5.0 kW Incremental encoder 102 MHME502GCDM MHME 5.0 kW Incremental encoder 102 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 Absolute encoder 102 MHME502STC MHME 5.0 kW Absolute encoder 102 MHME502STD MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolu	MHME404S1G	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 4.0 kW Absolute encoder 134 MHME502G1C 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 MHME502GCC MHME 5.0 kW Incremental encoder 181 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCDM MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 181 MHME502GCGM MHME 5.0 kW Incremental encoder 181 MHME502GCGM MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502STG MHME 5.0 kW Absolute encoder 102 MHME502STG MHME 5.0 kW Absolute encoder 102 MHME502SCM MHME 5.0 kW Absolute	MHME404S1H	MHME 4.0 kW Absolute encoder	134
MHME404SCG 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 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 112 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 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1 MHME 5.0 kW Absolute enco	MHME404SCC	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 MHME502G1W 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 MHME502GCG 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 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute enc	MHME404SCD	MHME 4.0 kW Absolute encoder	134
MHME502G1C MHME 5.0 kW Incremental encoder 102 MHME502G1D MHME 5.0 kW Incremental encoder 102 MHME502G1G 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 181 MHME502GCD MHME 5.0 kW Incremental encoder 181 MHME502GCG MHME 5.0 kW Incremental encoder 192 MHME502GCGM MHME 5.0 kW Incremental encoder 192 MHME502GCGM MHME 5.0 kW Incremental encoder 192 MHME502GCH MHME 5.0 kW Incremental encoder 192 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCM MHME 5.0 kW Absolute encoder 102 MHME502ST0 MHME 5.0 kW Absolute encoder 102 MHME502ST1 MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCM MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute	MHME404SCG	MHME 4.0 kW Absolute encoder	134
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 MHME502GCDM 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 MHME502GCHM MHME 5.0 kW Incremental encoder 102 MHME502GCH MHME 5.0 kW Absolute encoder 102 MHME502GCH 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 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCD MHME 5.0 kW Absolute enco	MHME404SCH	MHME 4.0 kW Absolute encoder	134
MHME502G1G MHME 5.0 kW Incremental encoder 102 MHME502GCH 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 102 MHME502GCG MHME 5.0 kW Incremental encoder 102 MHME502GCGM 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 MHME502S1D MHME 5.0 kW Absolute encoder 102 MHME502S1 MHME 5.0 kW Absolute encoder 102 MHME502SCM MHME 5.0 kW Absolute encoder 102 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encode	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 MHME502GCDD 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 MHME502SCC MHME 5.0 kW Absolute encoder 102 MHME502S1G MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 102 MHME502SCCM MHME 5.0 kW Absolute encoder 102 MHME502SCDM MHME 5.0 kW Absolute encoder 102 MHME502SCG MHME 5.0 kW Absolute encoder 131 MHME502SCG MHME 5.0 kW Absolute enco			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 112 MHME502GCH MHME 5.0 kW Incremental encoder 181 MHME502GCHM MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 182 MHME502GCH 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 MHME502SCDM MHME 5.0 kW Absolute encoder 181 MHME502SCGM MHME 5.0 kW Absolute encoder 182 MHME502SCGM MHME 5.0 kW Absolute encod			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 102 MHME502GCGM MHME 5.0 kW Incremental encoder 181 MHME502GCH MHME 5.0 kW Incremental encoder 102 MHME502GCHM MHME 5.0 kW Absolute 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 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 102 MHME502SCDM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 102 MHME502SCGM MHME 5.0 kW Absolute encoder 103 MHME504GCG MHME 5.0 kW Absolute encoder </td <td></td> <td></td> <td>102</td>			102
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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 192 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 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder	MHME502S1G		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 192 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 MHME504GC MHME 5.0 kW Incremental encoder 135 MHME504GCD MHME 5.0 kW Incremental encoder 135 MHME504GCG MHME 5.0 kW Incremental encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder 135 MHME504S1G MHME 5.0 kW Absolute encoder	MHME502S1H	MHME 5.0 kW Absolute encoder	102
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 MHME504G1G 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 MHME504GCB 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 <td></td> <td></td> <td>102</td>			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 Absolute encoder 135 MHME504S1C MHME 5.0 kW Absolute encoder 135 MHME504S1G 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	MHME502SCCM	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 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 MHME504S1G 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	MHME502SCD	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 MHME504S1B MHME 5.0 kW Absolute encoder 135 MHME504S1G 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	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 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC 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 MHME504S1H MHME 5.0 kW Absolute encoder 135 MHME504SCC MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder	MHME502SCGM	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 MHME504S1B MHME 5.0 kW Absolute encoder 135 MHME504S1G 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 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder	MHME502SCH	MHME 5.0 kW Absolute encoder	102
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 MHME504S1B 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 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135			181
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 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135	MHME504G1C		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 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135			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 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 5.0 kW Absolute encoder 135			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 MHME504SCG MHME 5.0 kW Absolute encoder 135 MHME504SCH MHME 7.5 kW Incremental encoder 103			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 MHME504SCH MHME 5.0 kW Absolute encoder 135			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			
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 MHME504SCH 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			_
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			
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			
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			
MHME504SCDMHME 5.0 kW Absolute encoder135MHME504SCGMHME 5.0 kW Absolute encoder135MHME504SCHMHME 5.0 kW Absolute encoder135MHME752G1CMHME 7.5 kW Incremental encoder103			_
MHME504SCGMHME 5.0 kW Absolute encoder135MHME504SCHMHME 5.0 kW Absolute encoder135MHME752G1CMHME 7.5 kW Incremental encoder103			
MHME504SCH MHME 5.0 kW Absolute encoder 135 MHME752G1C MHME 7.5 kW Incremental encoder 103			
MHME752G1C MHME 7.5 kW Incremental encoder 103			
			_
			103
			103
			103
			103

MHME (High iner	tia)	
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	ertia)	
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
		173
MHMJ022S1B	MHMJ 200 W Absolute encoder	11.0
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	
MHMJ082S1D	MHMJ 750 W Absolute encoder MHMJ 750 W Absolute encoder	175
		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	Title	Page
MSMD011G1A	MSMD 100 W Incremental encoder	51
MSMD011G1A	MSMD 100 W Incremental encoder	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	51
	MSMD 100 W Absolute encoder	
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
MSMD012S1C	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
MSMD021S1R	MSMD 200 W Absolute encoder	53
MSMD021S1S	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	MSMD 200 W Incremental encoder	54
MSMD022G1Q	MSMD 200 W Incremental encoder	54
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
MSMD022S1D	MSMD 200 W Absolute encoder	54
MSMD022S1R	MSMD 200 W Absolute encoder	54
MSMD022S1Q	MSMD 200 W Absolute encoder	54
MSMD022S1Q 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	MSMD 400 W Incremental encoder	55
MSMD041G1T	MSMD 400 W Incremental encoder	55
MSMD041G1U	MSMD 400 W Incremental encoder	55
MSMD041G1V	MSMD 400 W Incremental encoder	55
MSMD041S1A	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
MSMD041S1R	MSMD 400 W Absolute encoder	55
MSMD041S1Q	MSMD 400 W Absolute encoder	55
MSMD041S1R	MSMD 400 W Absolute encoder	55
	MSMD 400 W Absolute encoder MSMD 400 W Absolute encoder	
MSMD041S1S		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	56
MSMD042S1A	MSMD 400 W Incremental encoder	56
MSMD042S1B	MSMD 400 W Absolute encoder	56
MSMD042S1C	MSMD 400 W Absolute encoder	56
MSMD042S1D	MSMD 400 W Absolute encoder	56

(Alphabetical Order)

MSMD (Low inertia)		
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
MSMD082G1P	MSMD 750 W Incremental encoder	57
MSMD082G1Q	MSMD 750 W Incremental encoder	57
MSMD082G1Q 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	49,50
MSMD5AZS1B	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1C	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1D	MSMD 50 W Absolute encoder	
MSMD5AZS1D	MSMD 50 W Absolute encoder	49,50
MSMD5AZS1N MSMD5AZS1P		49,50
	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

	Reducer (Low inertia)	В
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	9	141,148
MSMD012G33N	MSMD with reduction gear 100 W Incremental encoder	141,14
MSMD012G34N	9	141,14
MSMD012G41N	3	141,14
MSMD012G42N	9	141,14
MSMD012G43N	3	141,14
MSMD012G44N	-	141,14
MSMD012S31N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S32N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S33N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S34N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S41N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S42N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S43N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD012S44N	MSMD with reduction gear 100 W Absolute encoder	141,14
MSMD021G31N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD021G32N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD021G33N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD021G34N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD021G41N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD021G42N	,	141,14
MSMD021G43N	-	141,14
MSMD021G44N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD021S31N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD021S32N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD021S33N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S34N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD021S41N	MSMD with reduction gear 200 W Absolute encoder	141,148
MSMD021S42N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD021S43N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD021S44N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022G31N		141,14
MSMD022G32N	5	141,14
MSMD022G32N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD022G33N	<u> </u>	141,14
	<u> </u>	_
MSMD022G41N		141,14
MSMD022G42N	MSMD with reduction gear 200 W Incremental encoder	141,14
MSMD022G43N MSMD022G44N	MSMD with reduction gear 200 W Incremental encoder MSMD with reduction gear 200 W Incremental encoder	141,148
		141,148
MSMD022S31N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S32N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S33N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S34N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S41N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S42N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S43N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD022S44N	MSMD with reduction gear 200 W Absolute encoder	141,14
MSMD041G31N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041G32N	<u> </u>	141,14
MSMD041G33N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041G34N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041G41N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041G42N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041G43N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041G44N	MSMD with reduction gear 400 W Incremental encoder	141,14
MSMD041S31N	MSMD with reduction gear 400 W Absolute encoder	141,14
MSMD041S32N	MSMD with reduction gear 400 W Absolute encoder	141,14
MSMD041S33N	MSMD with reduction gear 400 W Absolute encoder	141,14
MSMD041S34N	MSMD with reduction gear 400 W Absolute encoder	141,14
MSMD041S41N	MSMD with reduction gear 400 W Absolute encoder	141,14
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	9	141,14
MSMD042G32N		141,148
MSMD042G33N		
		141,148
MSMD042G34N	MSMD with reduction gear 400 W Incremental encoder MSMD with reduction gear 400 W Incremental encoder	141,148
MSMD042G41N		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 ine Part No.	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
MSME021G1B	MSME 200 W Incremental encoder	69
MSME021G1C	MSME 200 W Incremental encoder	69
MSME021G1D	MSME 200 W Incremental encoder	69
MSME021G1N	MSME 200 W Incremental encoder	69
MSME021G1N	MSME 200 W Incremental encoder	69
MSME021G1P	MSME 200 W Incremental encoder	69
		69
MSME021G1R	MSME 200 W Incremental encoder	
MSME021G1S	MSME 200 W Incremental encoder	69
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
MSME022G1N	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
MSME041G15 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
MSME041S1N	MSME 400 W Absolute encoder	71
MSME041S1P	MSME 400 W Absolute encoder	71
MSME041S1Q	MSME 400 W Absolute encoder	71

Index (Alphabetical Order)

MSME (Low iner	tia)	
Part No.	Title	Page
MSME041S1R	MSME 400 W Absolute encoder	71
MSME041S1S	MSME 400 W Absolute encoder	71
MSME041S1T	MSME 400 W Absolute encoder	71
MSME041S1U MSME041S1V	MSME 400 W Absolute encoder MSME 400 W Absolute encoder	71
MSME041STV	MSME 400 W Incremental encoder	71
MSME042G1B	MSME 400 W Incremental encoder	72
MSME042G1C	MSME 400 W Incremental encoder	72
MSME042G1D	MSME 400 W Incremental encoder	72
MSME042G1N	MSME 400 W Incremental encoder	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 MSME042G1U	MSME 400 W Incremental encoder MSME 400 W Incremental encoder	72
MSME042G1V	MSME 400 W Incremental encoder	72
MSME042S1A	MSME 400 W Absolute encoder	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	MSME 400 W Absolute encoder	72
MSME042S1T	MSME 400 W Absolute encoder	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	MSME 750 W Absolute encoder	73
MSME082S1B	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 MSME 750 W Absolute encoder	73
MSME082S1U	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	MSME 750 W Incremental encoder	104
MSME084GCG	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 MSME084SCG	MSME 750 W Absolute encoder MSME 750 W Absolute encoder	104
MSME084SCH	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 inertia)		
Part No. MSME102G1H	Title	Page
MSME102GTH MSME102GCC	MSME 1.0 kW Incremental encoder 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	158
MSME102S1C	MSME 1.0 kW Absolute encoder	74
MSME102S1D	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 MSME102SCDM	MSME 1.0 kW Absolute encoder MSME 1.0 kW Absolute encoder	74
MSME102SCDM MSME102SCG	MSME 1.0 kW Absolute encoder MSME 1.0 kW Absolute encoder	158 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	MSME 1.0 kW Incremental encoder	105
MSME104G1G	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	MSME 1.5 kW Absolute encoder	75
MSME152S1D	MSME 1.5 kW Absolute encoder	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 MSME152SCDM	MSME 1.5 kW Absolute encoder MSME 1.5 kW Absolute encoder	75 159
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 Absolute encoder	106
MSME154G1D	MSME 1.5 kW Incremental encoder	106
MSME154G1G	MSME 1.5 kW Incremental encoder	106
MSME154G1H	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
MSME154S1G	MSME 1.5 kW Absolute encoder	106

Part No.	tia) 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
MSME202GCC	MSME 2.0 kW Incremental encoder	76
MSME202GCCM	MSME 2.0 kW Incremental encoder	160
MSME202GCD	MSME 2.0 kW Incremental encoder	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 MSME 2.0 kW Absolute encoder	160 76
MSME202SCDM	MSME 2.0 kW Absolute encoder	160
MSME202SCDW	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
MSME204GCG	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
MSME302GCDM	MSME 3.0 kW Incremental encoder	161
MSME302GCDM	MSME 3.0 kW Incremental encoder MSME 3.0 kW Incremental encoder	161
MSME302GCGM	MSME 3.0 kW Incremental encoder MSME 3.0 kW Incremental encoder	161
MSME302GCGM MSME302GCH	MSME 3.0 kW Incremental encoder MSME 3.0 kW Incremental encoder	77
MSME302GCHM	MSME 3.0 kW Incremental encoder	161
MSME302GCHM	MSME 3.0 kW Incremental encoder MSME 3.0 kW Absolute encoder	77
MSME302S1D	MSME 3.0 kW Absolute encoder	77
MSME302S1G	MSME 3.0 kW Absolute encoder	77
MSME302S1H	MSME 3.0 kW Absolute encoder	77
MSME302SCC	MSME 3.0 kW Absolute encoder	77
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
	MSME 3.0 kW Incremental encoder	108

Part No. MSME304G1H MSME304GCC MSME304GCD MSME304GCG MSME304GCG MSME304GCH MSME304S1C MSME304S1D MSME304S1G	Title MSME 3.0 kW Incremental encoder 108 108	
MSME304GCC MSME304GCD MSME304GCG MSME304GCH MSME304S1C MSME304S1D MSME304S1G	MSME 3.0 kW Incremental encoder MSME 3.0 kW Incremental encoder	
MSME304GCD MSME304GCG MSME304GCH MSME304S1C MSME304S1D MSME304S1G	MSME 3.0 kW Incremental encoder	108
MSME304GCG MSME304GCH MSME304S1C MSME304S1D MSME304S1G		
MSME304GCH MSME304S1C MSME304S1D MSME304S1G		108
MSME304S1C MSME304S1D MSME304S1G		108
MSME304S1D MSME304S1G	MSME 3.0 kW Incremental encoder MSME 3.0 kW Absolute encoder	108
MSME304S1G	MSME 3.0 kW Absolute encoder	108
	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	MSME 4.0 kW Incremental encoder	78
MSME402G1D	MSME 4.0 kW Incremental encoder	78
MSME402G1G	MSME 4.0 kW Incremental encoder	78
MSME402G1H	MSME 4.0 kW Incremental encoder	78
MSME402GCC MSME402GCCM	MSME 4.0 kW Incremental encoder MSME 4.0 kW Incremental encoder	78 162
MSME402GCCM 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	MSME 4.0 kW Incremental encoder	162
MSME402GCH	MSME 4.0 kW Incremental encoder	78
MSME402GCHM	MSME 4.0 kW Incremental encoder	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	MSME 4.0 kW Incremental encoder	109
MSME404G1H	MSME 4.0 kW Incremental encoder	109
MSME404GCC	MSME 4.0 kW Incremental encoder	109
MSME404GCD	MSME 4.0 kW Incremental encoder MSME 4.0 kW Incremental encoder	109
MSME404GCG 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	MSME 4.0 kW Absolute encoder	109
MSME404SCC	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 MSME502G1G	MSME 5.0 kW Incremental encoder MSME 5.0 kW Incremental encoder	79 79
MSME502G1H	MSME 5.0 kW Incremental encoder	79
MSME502GCC	MSME 5.0 kW Incremental encoder	79
MSME502GCCM	MSME 5.0 kW Incremental encoder	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	79
MSME502S1G MSME502S1H	MSME 5.0 kW Absolute encoder MSME 5.0 kW Absolute encoder	79 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

(Alphabetical Order)

MSME (Low iner	tia)	
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

MSMED12S31N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S32N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S33N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S34N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S41N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S42N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S43N MSME with reduction gear 100 W Absolute encoder 141,14 MSMED12S44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder	MCME	Podrova // auricantia	
MSMED12S31N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S33N 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 MSME012S41N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S41N MSME with reduction gear 200 W Incremental encoder 141,14 MSME012S44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G31N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G42N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021G44N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder			Page
MSME012S32N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S34N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S34N 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 MSME012S41N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S41N MSME with reduction gear 200 W Incremental encoder 141,14 MSME012S41N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G31N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder </th <th>MSME012S31N</th> <th>MSME with reduction gear 100 W Absolute encoder</th> <th>141,147</th>	MSME012S31N	MSME with reduction gear 100 W Absolute encoder	141,147
MSME012S33N MSME with reduction gear 100 W Absolute encoder 141.14 MSME012S34N MSME with reduction gear 100 W Absolute encoder 141.14 MSME012S42N MSME with reduction gear 100 W Absolute encoder 141.14 MSME012S42N MSME with reduction gear 100 W Absolute encoder 141.14 MSME012S44N MSME with reduction gear 200 W Incremental encoder 141.14 MSME012S44N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G331N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G42N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021S31N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S31N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S32N MSME with reduction gear 200 W Absolute encoder	MSMF012S32N	-	-
MSME012S34N MSME with reduction gear 100 W Absolute encoder 41,14 MSME012S34NN MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S34NN MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S43N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S34N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S34N MSME with reduction gear 200 W Absolute encoder		, , , , , , , , , , , , , , , , , , ,	
MSME012841N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012842N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012843N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012844N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G41N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G4AN MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S32N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S41N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S44N MSME with reduction gear 200 W Absolute encoder		-	_
MSME012S42N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S43N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G31N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G42N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G43N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G43N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021G33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S31N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S34N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S34N MSME with reduction gear 200 W Absolute encoder			_
MSME012S43N MSME with reduction gear 100 W Absolute encoder 141,14 MSME012S44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G32N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G32N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G41N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G44N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S32N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S41N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S44N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S44N MSME with reduction gear 200 W Incremental encoder 141,14 MSME022S33N MSME with reduction gear 200 W Incremental encoder </td <td></td> <td></td> <td>-</td>			-
MSME012S44N MSME with reduction gear 100 W Absolute encoder 141.14 MSME021G31N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G32N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G3AN MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G42N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G42N MSME with reduction gear 200 W Incremental encoder 141.14 MSME021G44N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S31N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S33N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S42N MSME with reduction gear 200 W Absolute encoder 141.14 MSME021S42N MSME with reduction gear 200 W Incremental encoder 141.14 MSME022S31N MSME with reduction gear 200 W Incremental encoder 141.14 MSME022S34N MSME with reduction gear 200 W Incremental encoder </td <td></td> <td>-</td> <td></td>		-	
MSME021G31N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G32N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G34N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G43N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021G33N MSME with reduction gear 200 W Incremental encoder 141,14 MSME021S31N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S32N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S34N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S42N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S42N MSME with reduction gear 200 W Absolute encoder 141,14 MSME021S44N MSME with reduction gear 200 W Absolute encoder 141,14 MSME022S41N MSME with reduction gear 200 W Absolute encoder 141,14 MSME022G33N MSME with reduction gear 200 W Incremental encoder		· · · · · · · · · · · · · · · · · · ·	_
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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 141,14 MSME042G34N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G31N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S31N 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 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S34N MSME with reduction gear 400 W Absolute encoder 141,14		· · · · · · · · · · · · · · · · · · ·	_
MSME with reduction gear 400 W Absolute encoder MSME with reduction gear 400 W Incremental encoder MSME with reduction gear 400 W Incremental encoder MSME042G32N MSME with reduction gear 400 W Incremental encoder MSME042G33N MSME with reduction gear 400 W Incremental encoder MSME042G34N MSME with reduction gear 400 W Incremental encoder MSME042G41N MSME with reduction gear 400 W Incremental encoder MSME042G42N MSME with reduction gear 400 W Incremental encoder MSME042G43N MSME with reduction gear 400 W Incremental encoder MSME042G43N MSME with reduction gear 400 W Incremental encoder MSME042G44N MSME with reduction gear 400 W Incremental encoder MSME042G31N MSME with reduction gear 400 W Absolute encoder MSME042S31N MSME with reduction gear 400 W Absolute encoder MSME042S33N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S34N MSME with reduction gear 400 W Absolute encoder MSME042S33N MSME with reduction gear 400 W Absolute encoder MSME042S33N MSME with reduction gear 400 W Absolute encoder MSME042S33N MSME with reduction gear 400 W Absolute encoder MSME042S33N MSME with reduction gear 400 W Absolute encoder MSME042S33N MSME with reduction gear 400 W Absolute encoder		, , , , , , , , , , , , , , , , , , ,	-
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 141,14 MSME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 MSME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S42N 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 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with		, , , , , , , , , , , , , , , , , , ,	141,14
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 141,14 MSME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G31N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14			141,147
ASME042G33N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G31N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S32N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S33N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S41N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14		, i	141,147
MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 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 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14		<u> </u>	141,147
ASME042G41N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 ASME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S32N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S33N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S34N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S41N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 ASME042S43N MSME with reduction gear 400 W Absolute encoder 141,14	MSME042G33N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 MSME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14	MSME042G34N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G42N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 MSME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14	MSME042G41N	MSME with reduction gear 400 W Incremental encoder	141,147
MSME042G43N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14		, i	141,147
MSME042G44N MSME with reduction gear 400 W Incremental encoder 141,14 MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14		· ·	141,147
MSME042S31N MSME with reduction gear 400 W Absolute encoder 141,14 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 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14		i -	_
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 141,14 MSME042S43N 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 141,14			
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 141,14		· ·	
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 141,14		-	
MSME042S42N MSME with reduction gear 400 W Absolute encoder 141,14 MSME042S43N MSME with reduction gear 400 W Absolute encoder 141,14			141,147
MSME with reduction gear 400 W Absolute encoder 141,14			141,147
	MSME042S42N	MSME with reduction gear 400 W Absolute encoder	141,147
MSME042S44N MSME with reduction gear 400 W Absolute encoder 141,14	MSME042S43N	MSME with reduction gear 400 W Absolute encoder	141,147
	VISME042S44N	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

MSMJ (Low ine	rtia)	
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
MSMJ022S1A	MSMJ 200 W Absolute encoder	155
MSMJ022S1B	MSMJ 200 W Absolute encoder	155
MSMJ022S1D	MSMJ 200 W Absolute encoder	155
	MSMJ 200 W Absolute encoder	
MSMJ022S1S		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
MSMJ082G1V	MSMJ 750 W Incremental encoder 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		

Part No. Title					
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			

Part No.	Title	Page
MUMA011P31N	MUMA with reduction gear 100 W Incremental encoder	232,235
MUMA011P32N	MUMA with reduction gear 100 W Incremental encoder	232,235
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

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	[cause cause]		Web site	https://www.panasonic-electric-works	com/eu/index.htm
			Via del	Commercio 3-5 (Z.I.Ferlina), 37012	+39-045-6752711
	Panasonic Electric Works Italia srl		Bussolengo (VR), Italy		+39-045-6700444
	[Subsidiary]	Verona	e-mail	https://www.panasonic-electric-works	com/eu/93.htm
			Web site	https://www.panasonic-electric-works	.com/eu/322.htm
Italy					+39-02-270-98-1
	Lenze Italia S.r.l.		Viale Monza 338 20128 Milano		+39-02-270-98-290
	[Distributors]	Milano	e-mail	mail@Lenzeltalia.it	'
			Web site	http://www.lenze.com/it-it/azienda/ler	ze-in-italia/
			Sunrise	e Parkway, Linford Wood Milton	+44(0)1908231599
	Panasonic Electric Works UK Ltd.	Milton Keynes, MK14 6LF Unite	Keynes, MK14 6LF United Kingdom		+44(0)1908231555
	[Sales office]		https://www.panasonic-electric-works	com/eu/93.htm	
United			Web site	https://www.panasonic-electric-works	.com/eu/index.htm
Kingdom	Land limited		Priory E	Business Park, Bedford, MK44 3WH.	+44-1234-7532-00 +44-1234-7532-20
	Lenze Limited [Distributors]	Bedford	e-mail	uk.sales@lenze.com	1
			Web site		e/lenze-in-united-kinadom
				1 14 3 11 1	+43(0)2236-26846
	Ponggonia Electric Medica Accetic Oc. 111		Josef Madersperger Strasson 2362 Biedermannsdorf (Vie		+43(0)2236-46133
Austria	Panasonic Electric Works Austria GmbH [Sales office]	Biedermannsdorf	1	https://www.panasonic-electric-works	. ,
			Web site		
			AACD SILE	intpo.//www.panasonic-electric-works	+48(0)22338-11-33
Polska	Panasonic Electric Works Polska sp. z.o.o.	Warszawa	ul. Woł	oska 9a, 02-583 Warszawa	+48(0)22213-95-01
. Jiona	[Sales office]		e-mail	https://www.panasonic-electric-works	com/eu/93.htm
			Web site	https://www.panasonic-electric-works	.com/eu/index.htm
<u> </u>			De Rijn	4 (Postbus 211), 5684 PJ Best,	+31(0)499372727
Nederland	Panasonic Electric Works Sales	PJ Best	Nederland		+31(0)499372185
Nederland	Western Europe B.V. [Sales office]		e-mail	https://www.panasonic-electric-works	com/eu/93.htm
	1,		Web site	https://www.panasonic-electric-works	com/eu/index htm

Region	Company Name	City	Address	TEL					
	[Category]		7.44	FAX					
	Panasonic Electric Works Czech s.r.o.		Veveří 3163/111, 616 00 Brno, Czech	+420(0)541217001					
Czech Republic		Brno		+420(0)541217101					
	[Sales office]		e-mail https://www.panasonic-electric-works.						
			Web site https://www.panasonic-electric-works.co						
			Barajas Park, San Severo 20, 28042 Madrid,	+34-91-329-3875					
Spain	Panasonic Electric Works Espana S.A.	Madrid	Spain	+34-91-329-2976					
	[Subsidiary]		e-mail https://www.panasonic-electric-works.						
			Web site https://www.panasonic-electric-works.	.com/eu/322.ntm +40-21-255-0543					
			sos. Bucuresti, nr.63, Ciorogirla, Ilfov, RO- 077055, ROMANIA	+40-21-255-0544					
Romania	C.I.T. Automatizari SRL [Distributors]	Bucuresti	e-mail office@citautomatizari.ro	+40-21-255-0544					
	[Distribution]		Web site http://www.citautomatizari.ro						
			Web site http://www.citautomatizan.io	+36(0)19998926					
	Danasania Flactuia Wayka Hungani		Neumann J. u. 1., 1117 Budapest, Hungary	+36(0)19998927					
Hungary	Panasonic Electric Works Hungary [Sales office]	Budapest	e-mail https://www.panasonic-electric-works.	. ,					
	,		Web site https://www.panasonic-electric-works.						
				+33(0)417997050					
	Panagania Flactuia Wayka Caburain AC		Grundstrasse 8, 6343 Rotkreuz, Schwitzerland	+31(0)417997055					
Switzerland	Panasonic Electric Works Schweiz AG [Sales office]	Rotkreuz	e-mail https://www.panasonic-electric-works.						
	,		Web site https://www.panasonic-electric-works.						
			<u> </u>	+7-812-703-09-81					
Russia	Electroprivod Ltd.	St.Petersburg	Office 417, litera 43, Polustrovskiy avenue, Saint-Petersburg, Russia	+7-812-493-27-26					
Trassia	[Distributors]	Oth cloroburg	Web site http://www.electroprivod.ru	17 012 400 27 20					
			10042 SOK.NO:10 A.O.S.B CIGLI-IZMIR,	+90 232 433 8515					
	BOSTEK TEKNOLOJI GELISTIRME VE		TURKEY	+90 232 433 8881					
	ROBOT SIST.SAN.TIC.A.S	Izmir	e-mail sales@bostek.com.tr	, , , , , , , , , , , , , , , , , , , ,					
	[Distributors]		Web site http://www.bostek.com.tr/						
Turkey			Des Sanayi Sitesi 104 Sokak A07 Blok No:02	+90-216-466-3683					
	Savior Kontrol Otomasyon		Yukarı Dudullu Ümraniye İstanbul Turkey	+90-216-466-3685					
	[Distributors]	Istanbul	e-mail info@savior.com.tr						
			Web site http://www.savior.com.tr/						
	Panasonic Industrial Devices Sales		Top Floor, South Wing, ChinaChem Gloden	+852-2529-7322					
	(Hong Kong) Co.,Ltd. (PIDSHK) [Sales office]	Hong kong	Plaza, 77 Mody Road, S.T.S. East, Kowloon, HongKong	+852-2598-9743					
	Panasonic Industrial Devices Sales		Floor 6, China Insurance Building, 166	+86-21-3855-2442					
China	(China) Co.,Ltd. (PIDSCN)	Shanghai	East Road LuJiaZui PuDong New District,						
	[Sales office]		Shanghai, China	+86-21-3855-2375					
	Panasonic Industrial Devices Sales (China) Co.,Ltd. (PIDSCN)	Shenzhen	8/F, Tower Three, Kerry Plaza, 1-1 Zhongxinsi	+86-755-8255-8791					
	[Sales office]		Road, Futian District, Shenzhen, China						
			12th Floor, Ambience Commercial,	+91-124-6670400					
	Industrial Division, Panasonic India Pvt Ltd.	Gurgaon,	Behind Ambience Mall, Gurgaon - 122002, Haryana, India	+91-124-6670338					
	[Sales office]	Haryana	http://industrial.panasonic.com/sa/pro						
			Web site compressors/fa-motors						
			Sardar Patel Ring Road, Near Bright School,	+91-79-39845300					
	Lubi Electronics	Gandhinaga, Gujarat	Nana Chiloda, Dist.: Gandhinagar - 382330, Gujarat, India	+91-79-39845599					
	[Distributors]	Gujarat	Web site http://www.lubielectronics.com						
India			59, Bibijan Street, 2nd Floor, Moiz Manzil,	+91-22-23455052					
	Luna Bearings	Mumbai,		1 '	1 '	1 '	Mumbai - 400003, Maharashtra, India	+91-22-23427773	
	[Distributors]	Maharashtra	Web site http://www.lunabearings.com						
			A/6, Plot No.74, Shree Ganesh Complex,	.01.0500.001000					
	Vashi Electricals Pvt. Ltd.	Mumbai, Maharashtra	1 ' 1		1 '	Mumba:	M:!!	Behind Gupta Compound, Dapole Road,	+91-2522-661600
	[Distributors]					Mankoli Naka, Bhiwandi - 421305, Maharashtra, India	+91-2522-661620		
	-		Web site http://www.vashielectricals.com						
		<u> </u>	1.02 300 Hup.//www.vasilielectificals.com						

Region		Company Name [Category]	City	Address	TEL
					FAX
Korea		Panasonic Industrial Devices Sales Korea Co., Ltd. (PIDSKR) [Sales office]	Seoul	6F DONG-IL Tower 38, Teheran-ro 114-gil, Gangnam-gu, Seoul, 135-851, Korea	+82-2-795-9600
					+82-2-2052-1053
Taiwan		Panasonic Industrial Devices Sales	.	12F, No.9, SongGao Rd., Taipei 110, Taiwan,	+886-2-2757-1900
	Taiwan	Taiwan Co.,Ltd. [Sales office]	Taipei	R.O.C.	+886-2-2757-1977
		Panasonic Industrial Devices Sales Asia Pte.Ltd. [Sales office]	Singapore	No.3 Bedok South Road Singapore 469269	+65-6390-3718
					+65-9435-6844
South-eastern Asia	Singapore	Intermech Machinery Pte.Ltd. [Distributors]	Singapore	2 Woodlands Sector 1 #03-25, Woodlands	+65-6751-5088
				Spectrum 1 Singapore 738068	+65-6759-2122
				Web site http://www.intermech.com.sg	
	Malaysia	Panamech Machinery Sdn Bhd [Distributors]	Kuala Lumpur	No.14, Lorong Sanggul 1C, Bandar Puteri, 41200 Klang, Selangor Darul Ehsan	+60-3-5161-7876
					+60-3-5161-7136
				Web site http://panamech.com.my/	
		Panamech (PG) Sdn Bhd [Distributors]	Penang	Sri Relau Komplex, Unit 1-3-11, Persiaran Bukit Jambul 1, 11900 Penang	+60-4-643-8266
					+60-4-645-1639
				Web site http://panamech.com.my/	
	Thailand	Premier Automation Center Co.,Ltd. [Distributors]	Bangkok	73 Soi Ladkrabang 30 Ladkrabang	+66-2181-2299
				Ladkrabang Bangkok 10520	+66-2181-2288
				Web site http://www.premier-ac.co.th	
		Plenty Island (Thai) Co.,Ltd. [Distributors]	Bangkok	3 Soi Charoenrat 10, Charoenrat Road.,	+66-2291-9933
				Bangkhlo, Bangkhorlaem, Bangkok 10120	+66-2291-2065
				Web site http://www.plenty.co.th	T
	Indonesia ·	PT. Handal Yesindo Sejahtera [Distributors]	Surabaya	Jl. Raya Kutisari 8A, Surabaya, Indonesia	+62-31-843-8844
					+62-31-841-4333
				Web site http://www.handalyesindo.com	
		PT.Riasarana Electrindo [Distributors]	Jakarta	Jl. Prof. Dr. Latumenten Grogol Permai blok	+62-21-564-9178
				D No. 8-15 Jakarta 11460, Indonesia	+62-21-566-7405
				Web site http://www.risacorps.com	T
	Philippines	Movaflex Designs Unlimited, Inc. [Distributors]	Manila	136 Calbayog Street, Mandaluyong City,	+63-2-881-3636
				Metro Manila, Philippines.	+63-2-998-3881
				Web site http://www.movaflex.com/	