Safety Precautions

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

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

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

Repair	Consult to the dealer from whom you have purchased this product for details of repair work. When the product is incorporated to the machine you have purchased, consult to the machine manufacturer or its dealer.
URL	Electric data of this product (Instruction Manual, CAD data) can be download from the following web site; industrial.panasonic.com/ac/e/

• Contakut to

Panasonic Corporation,

Electromechanical Control Business Division 1-1 Morofuku 7-chome, Daito, Osaka 574-0044, Japan ©Panasonic Corporation 2019

The contents of this catalog apply to the products as of March 2019.

Panasonic

Panasonic

AC

Servo

Motor

Ø

Driver

<MINAS

A6

family, MINAS

ш

series>

2019 / 3





AC Servo Motor & Driver MINAS A6 family / MINAS E series

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





More compact, more faster and more easy-to-use Servomotors

that meet the demands of the present age.

The MINAS A6 family of advanced AC servomotors is changing the landscape of industrial machinery.



Robots

A robot is required to operate stably despite arm posture and position, workload and other conditions changing from moment to moment.

The MINAS A6 family assures stable operation by suppressing effects of load to a minimum using "adaptive load control."

Processing machinery

With metal processing machine, it is very difficult to render mirror-like finishing on a polygonal body. The A6 family realizes "3.2 kHz frequency response" to improve feedback

responsiveness, thus enabling mirror surfacing without generating lines or streaks.

Component mounting machines

The A6 family also shows its versatility when used with a component mounting machine where speed and positional accuracy are demanded. In addition to high frequency response, it can process accidental disturbances with the help of built-in "adaptive load control," thus maintaining high productivity.



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-1-

INDEX A6 family

A 6	Family Line-up	3
Мо	tor Features	9
Dri	ver Features	11
Pro	otective Features	13
Oth	ner Driver Functions	13
Set	tup Support Software	15
Wi	reless LAN Dongle	17
Serv	vo motor with battery-less absolute encoder.	19
DC	24 V/48 V type, Dual-axis servo driver	19
Cor	mpliance with International Standards	20
Мо	tor Line-up	21
Мо	del Designation	22
Ov	erall Wiring	23
Ар	plicable Peripheral Equipments	27
Tab	ole of Part Numbers and Options	29
	Driver Specifications	43
	A6SF series	43
	A6SG series and A6SE series	45
	Wiring Diagram	47
	Wiring to the connector	
e.	XA, XB, XC, and Terminal Block	47
r;	Safety Function	51
	Wiring to the Connector, X3	51
	Control Circuit Diagram	52
	Wiring to the Connector, X4	52
	Wiring to the Connector, X5	54
	Wiring to the Connector, X6	55
	Dimensions of Driver	57
	,	
	Motor Specifications	62
-	Motor Dimensions	.119
ĕ	Special Order Product	203
2	Motors with Gear Reducer	.293
	Motor Specification Description	.303
-	Specifications of Motor connector	.307
	Encoder Cable	.309
	Motor Cable	.313
	Brake Cable	.321
	Interface Cable	.322
	Connector Kit	.323
S	Battery for Absolute Encoder	.338
io.	Surge Absorber for Motor Brake	.339
b	Wireless LAN Dongle	.340
Ŭ	Mounting Bracket	.341
	Reactor	.342
	External Regenerative Resistor	.343
	Daisy Chain	.345
-	Cable part No. Designation	.346
	List of Peripheral Equipments	
	Manufacturers	.347
	A6N serie	9
		0
	абь serie	ษ

Servomotors that flexibly and effectively fit into

various system configurations MII



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-3-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

4



It is MINAS A6 Family lineup that meets the

manufacturing industry needs. M



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-5-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/



It is MINAS A6 Family lineup that meets the

manufacturing industry needs. MINA

Rotary motor

Rotary motor

Standard

type

A6BE series

Special order product

Standard

type

A6NE series

Driver line-up



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-7-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-8-





Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-9-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-10-

Swifter, smarter and easier to use



High-speed response, high-precision positioning for quick and accurate movement

Our proprietary algorithm in addition to upgraded CPU and other hardware realized further high-speed response. Furthermore, high-precision positioning is achieved by automatically eliminating micro vibrations and machine oscillation caused by the resonance.



Example of operation with processing machine A mirror finish is obtained even if a process that tends to cause streaking.

Easy and quick setting, shortening conventional settling time by approx. 64%."

Newly developed fit gain function substantially reduces adjustment time. Adaptive notch filter and various gains can be automatically set and adjusted. %1 Comparison with conventional product A5II family

Settling (Measured or

A5II Fa 17 m

-12-



Realized 3.2 kHz frequency response to improve productivity

Realizes 3.2 kHz frequency response. At 139% that of conventional models *1, it enables high-speed operation and improves productivity. ※1 Comparison with conventional product A5II family

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-11-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

time low stiffness resonant mechanism) A6 Family 6 ms	Ball screw settling time 0 ms The above is a measu	Be Se	tt device ettling time ms r test environment	
ljustment window	●Automaticall	y propos	es	
C E (various settin	gs		
adia figs	Recommendation setting	an proposition		
the second se	Recommendation setting Ma	anual setting		
na presentaty deba rgaty	The end resultbecomes as fo	llows. Please choo	se recommendatio	
지 (100 년 100 년 10	Select Recommendation	Rigidity Comme	and Stebilizatio	
14 7 935 9	S Minimum stabilizati	22 83	00	
and the Tage Manager Lie .	Designate oversh.	22 0.4	1.0	
Carrier D Carrier	C Designate stabiliz	18 1.5	9.5	
#Possicured 9 mes al	High rigidity setting	22 0.4	1.0	
		-		÷
10	3.2	(Hz		
-10 स्र		A	.6 Family	
iain(onvention	1
-30		n	odel	
⁻⁵⁰ 100 1000	2000 3000	Frequen	icy (Hz)	
		_	_	

Reduced maintenance work

Lineup of motors protected by high dust-proof, high heat-resistant oil seal (With protective lip)

Motors protected by a highly dust-proof, oil-tight oil seal (with protection lip) have been added to the lineup of motor products equipped with oil seals of conventional specifications. The oil seals of this type of motor are made of a material of higher heat resistance.

You can select appropriate motor type according to your application environment such as dusty, powdery or gear connection necessity.

• Oil-seals (with protective lip) are not available for MSMF motors with flange size 80 mm or smaller. • MQMF and MHMF motors with flange size of 80 mm or smaller provided with oils seals (with protective lip) are not mounting-compatible with A5 Family models.

Applicable oil seals

Flange size	Flange size Motor type With oil seal					With oil seal (with protective lip)			
00	MSMF	O			No s	etting			
80 mm or less	MHMF, MQMF	O	Made of nitrile	Made of nitrile	O	Made of	Not mounting-compatible with A5 family products		
100 mm or more	All Type	O		O	fluororubber	Mounting-compatible with A5 family products			

Other driver functions

Adaptive load control

Adaptive load control automatically sets the best suitable gain table in response to fluctuations in inertia caused by changes in workload, thus keeping machines operating stably at all times.



Friction torque compensation

This function reduces the effect of machine related friction and improves responsiveness. Three kinds of friction compensation can be set: unbalanced load compensation, which sets an offset torque that is constantly applied; kinetic friction compensation, which changes direction in response to the direction of movement; and viscous friction compensation, which changes according to the speed command.

Manual/Auto damping filter

Equipped with a damping filter that is automatically set through the setup support software. This filter removes the natural vibration frequency component from the command input, greatly reducing vibration of the axis when stopping. The number of filters for simultaneous use has been increased to three from the conventional two filters. (Two from one in the two-degree-of-freedom-control mode.) The adaptive frequency has also been significantly expanded from 0.5 Hz to 300 Hz.



Manual/Auto notch filter

Equipped with auto-setting notch filters for greater convenience. Now there is no need to measure troublesome vibration frequencies.

lip" that prevents dust and oil pen

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. The A6 family is equipped with 5 notch filters with frequencies settable from 50 Hz to 5000 Hz. Depth can be individually adjusted within this range. (Two of the filters share automatic settings.)



Block operation function

255 block patterns can be created. Easy control is possible because the instruction can be given to block No. by Modbus (RS232, RS485) or interface (IO) signal.



and trouble.



It warns expected lifetime of the motor & driver, and



industrial.panasonic.com/ac/e/

shorts servomotor windings U, V and W at Servo-OFF, during positive direction/ negative direction, and during power shutdown

prevent the circuit breaker from shutting off the power supply as a result of inrush current occurring at power-on.

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-13-

-14-

Multifunctional software for quick adjustment support

PANATERM set-up support software

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 A6 Family through the USB interface. Choose either English, Japanese, Chinese, Korean-language display.

Setup wizard

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



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

1) Select the adjustment method 2) Load measurement 3) Confirming results Adjust gain to meet your needs



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



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-15-

Trial run

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



Fit gain

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



Significant increase of measuring objects Multi-functional waveform graphic



Please download from our web site and use after install to the PC. https://industrial.panasonic.com/ww/products/motors-compressors/fa-motors/ac-servo-motors/minas-a5-panaterm

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.



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.



Other features It has convenient functions such as motor / driver information such as load factor, power supply voltage, driver temperature etc, logging function capable of recording interface recording, display function of non-rotating factors etc ●Deterioration diagnosis ●Block action editor / monitor (A6SE, A6SG, A6SF series) ●Battery refresh ●Object editor (A6BE, A6BF series)

 Hardware cor 	nfiguration					
Personal	CPU	800 MHz or more				
computer	Memory	System memory 512 MB or m				
	Hard disk capacity	Vacancy of 512MB or more re				
	OS	Windows [®] Vista SP1 (32 bit) Windows [®] 10 (32 bit, 64 bit)				
	Serial communication function	USB port, COM port (Commu * A COM port is required to use R				
Display	Resolution	1024 × 768 pix or more				
	Number of colors	24 bit colors (TrueColor) or m				
<caution> This software is applicable only to A5 family. A6 family. To</caution>						

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

© Panasonic Corporation 2019 AQCTB04E 201903



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.

Name	Value	Unit	Status
Power supply on integrated time	3.0	h	
Driver temperature	34	degrees	
Number of times of irruptive resistance	0	times	
Number of times ob DB relay changing	0	times	
Fan operation time	0.0	h	
Fan life time integrated value	0.0	%	
Condenser life time integrated value	0.0	36	
Mekeruses	0		

Deterioration diagnosis

From the equipment information that can be detected by the motor, it is possible to display and check the deterioration and aging status of the equipment.



nore Graphics memory 32 MB or more

ecommended

Windows[®] 7 (32 bit, 64 bit), Windows[®] 8 (32 bit, 64 bit), Japanese, English, Chinese (Simplified), Korean version

inication speeds: 2400 bps to 115200 bps)

S232 communications. A 9600 bps or higher baud rate is recommended

ore

-16-

apply this software to A, AIII, E or A4 series, consult our distributors.

Adjustment of the industrial machinery is possible by smartphone. **Contributing to IoT by remote support.**



Wireless connection with PC, smartphone and other devices by only connecting to servo driver.

For initial setting of the servo driver, a USB mini-B cable (communication cable) is required.

Wireless LAN Dongle DV0PM20105 (Option)

Newly developed "wireless LAN dongle" which connects AC servo driver wirelessly with PC, smartphone, tablet devices etc. It has become surprisingly easy to adjust automatic drone carriers and devices installed at heights, which had previously been difficult to connect by wire. In addition, we plan to develop a "remote support service" that can adjust and monitor the status of equipment installed overseas in real time via the Internet.

Wireless connection to the servo driver. It can be adjusted from smartphones and tablets, even for devices where wired connections are difficult.

Connect to the internet and get the IoT servo driver. Equipment at overseas factories also gets real-time adjustment support from Japan. [Under development]

 Specifications DC 5V (Supplied from USB) 500 mA Power supply Max.2500 mW Power consumption Outline dimensions 9.9 mm (width) x 13 mm (height) x 39.4 mm (depth) Weight Appr. 4 g Ambient temperature for use 0 °C – 55 °C (Shall be no freeze Ambient humidity for use 20 %RH – 85 %RH (Shall be no freeze) USB mini-B Interface Available Countries* Japan, China, United States of America*, Korea*, Taiwan* Standards IEEE802.11b, IEEE802.11g, IEEE802.11n

*1 The use in a country that is not listed, will be violation of the law and regulations of that country *2 This is the theoretical speed and the actual communica- tion speed differs due to the usage circumstances or the connected equipment * Coming soon

Please download setup support software "PANATERM" and setup support software (app) from the home page (https://industrial.panasonic.com/ww/products/motors-compressors/fa-motors /ac-servo-motors/minas-a5-panaterm)

 Setup support software (app) for smartphones and tablet devices is charged. •If Android smartphones and tablet devices are in an environment where PANATERM operates, and if USB host connection is possible, wired connection using a USB cable is also possible.

Cautions when using Wireless LAN Dongle

In the frequency band for use of this equipment, the in-plant radio stations for the mobile identification which is used on the manufacturing lines in factories (Radio station that needs the license), specified low power radio stations (Radio station that needs no license) and amateur radio stations (Radio station that needs the license) are operated in addition to the industrial/scientific/medical equipment like microwave ovens.

- 1. Check that the in-plant radio stations for the mobile identification, specified low power radio stations and amateur radio stations are not operated in the vicinity prior to use this equipment.
- 2. If harmful radio wave interference occurred from this equipment to the in-plant radio stations for the mobile identification, immediately change the location or stop the use of electric wave and then contact our company (Described on back cover) to discuss the action to avoid interference (e.g. the installation of partitions).
- 3. If you have any problem, for example; when harmful radio wave interference occurred from this equipment to the in-plant radio stations for the mobile identification or the amateur radio stations, please contact our company (Described on back cover).

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-17-



Frequency range	2.412 GHz – 2.472 GHz					
Chan-nels (Center frequency)	1 – 13 ch					
Data transfer speed	IEEE802.11b: Max.11 Mbps					
(Value of standard ^{*2})	IEEE802.11g: Max.54 Mbps					
	IEEE802.11n: Max.300 Mbps					
Access system	Infrastructure mode					
Security	WPA-PSK (TKIP/AES)/					
	WPA2-PSK (TKIP/AES)					
Max. transmission	Indoors: Appr. 20 m (Varies depending					
distance (Prospect)	on the installation circumstances)					
Applicable equipment	MINAS A6 family (Since October 2016 production)					

A6N Series

A6B

Series

A6 Series

Series

Absolute system can be configured without the battery.

Battery-less absolute encoder motor is coming soon

Reduced the battery for the absolute encoder by installing the power generating element in the motor. In addition to improving maintainability, we support the construction of ecological and economical industrial machines and systems.

Maintenance work such as battery replacement is reduced because battery is not required anymore.

Reduce wasteful inventory management and replacement costs as battery is no required anymore. It contributes to the construction of ecological and economical industrial machines and systems.

Bettern, less checkute encoder motor list	
ballery-less absolute encoder motor list	

	80 mm sq. or less Leadwire type				100 mm sq. or more Encoder connector (Small size JN2) type				JN2) type			
	50 W	100 W	200 W	400 W	750 W	1000 W	1.0 kW	1.5 kW	2.0 kW	3.0 kW	4.0 kW	5.0 kW
Low inertia	100 V 200 V		100 V 200 V		200 V	200 V	200 V	200 V	200 V	200 V	200 V	200 V
Middle inertia		100 V 200 V	100 V 200 V	100 V 200 V								
Middle inertia	Tab	le descript	ion				200 V	200 V	200 V	200 V	200 V	200 V
Middle inertia	Volta	age					850 W	1.3 kW 1.4	3 kW 2.4 kV	2.9 kW		4.4 kW
High inertia MHMF	100 V 200 V		(100 V) 200 V		200 V	200 V	200 V	200 V	200 V	200 V	200 V	200 V

DC 24 V / 48 V type Special order product

 DC24 V / DC48 V power supply support, ultra-compact motor and driver. Rated output : DC24 V: 100 W, 200 W

DC48 V: 200 W, 400 W (Both have a flange size of 60 mm)





CE	c FN ®us ^c	US LISTED US (AGSF Series)	ies) (A6SE and A6SG series)
		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 EN61000-6-4 EN61800-3	_
	Low-Voltage	EN61800-5-1	EN60034-1
ELL Directives	Directives	EN50178	EN60034-5
EO Directives	Machinery Directives Functional safety ⁺¹	ISO13849-1 EN61508 EN62061 EN61800-5-2 IEC61326-3-1 IEC60204-1	_
UL Standards		UL508C(E164620)	UL1004-1, UL 1004-6 (E327868)
CSA S	tandards	C22.2 No.274	C22.2 No.100
Radio Waves Act	(South Korea) (KC) ^{⁺2}	KN11 KN61000-4-2,3,4,5,6,8,11	_
IEC : International Electric UL : Underwriters Labor	otechnical Commission atories	EN : Europaischen Normen CSA : Canadian Standards Association	EMC : Electromagnetic Compatibility

Safety narameters

	With diagnosis by EMD	Without diagnosis by EMD
Cofoty Joycel	EN61508 (SIL3)	EN61508 (SIL2)
Salely level	EN62061 (SILCL3)	EN62061 (SILCL2)
Performance level	ISO13849-1 PL e (Cat.3)	ISO13849-1 PL d (Cat.3)
Safety function	EN61800-5-2 (SIL 3, STO)	EN61800-5-2 (SIL 2, STO)
	<for a,b,c,d,e,f="" size=""></for>	<for a,b,c,d,e,f="" size=""></for>
Dangaraya failura rata par unit tima	$PFH = 1.34 \times 10^{-8}$ (% SIL3 = 13.4 %)	PFH = 1.40×10 ⁻⁸ (% SIL2 = 1.40 %)
Dangerous failure fate per unit time	<for and="" g="" h="" size=""></for>	<for and="" g="" h="" size=""></for>
	PFH =1.78 × 10 ⁻⁸ (% SIL3 = 17.8 %)	PFH = 1.85×10 ⁻⁸ (% SIL2 = 1.85 %)
Dangerous side average failure time	MTTFd : High (100 years)	MTTFd : High (100 years)
Average self-diagnosis rate	DC : Medium	DC : Low
Mission time	15 years	15 years
When export this product follow statu	tory provisions of the destination country	A 급 기기 (업무용 방송통신기자재)
*1 A6SE, A6SG, A6NE and A6BE serie	s doesn't correspond to the functional safety	이 기기는 업무용(A 급) 전자파적합기기로서 판매기
standard.		또는 사용자는 이 점을 주의하시기 바라며, 가정의
*2 Information related to the Korea Rac	lio Law	지역에서 사용하는 것을 목적으로 합니다.
This servo driver is a Class A comm designed for home use.	ercial broadcasting radio wave generator not	(대상기종 : Servo Driver)
The user and dealer should be awar	e of this fact.	

This products is not an object of china compulsory certification (CCC).

Low noise, compliant with EMC directives

Radiated noise is minimized to meet EMC directives and to support international standards.

Compliance with EU safety standards.

Panasonic Corporation Electromechanical Control Business Division

industrial.panasonic.com/ac/e/

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.)

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-19-

-20-

Comp	oliano	ce w	vith	MII	JAS	A 6
inter	natio	nal	star	ndar	ds	
CE	c FL ®us	CUL US LISTED	Toy Product Softy	(A6SF series) (A	6SE and A6SG series)	

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.
 Excluding the single-phase 100-V type.
 Please verify the actual compliance with your machine
checking the F47 standard for voltage sag immunity.

MINAS A6 series Motor Line-up

Motor Line-up

	М	otor	Rated output (kW)	Rated rotational speed (Max. speed) (r/min)	Rotary encoder 23-bit absolute	Enclosure (*1)	Motor lead-out configuration	Features	Applications
		80 mm sq. or less	0.050.10.20.40.751.0	3000 (6000)	0	IP65	Leadwire	Small capacity Suitable for high speed application	 Bonder Semicon- ductor production
-ow inertia	MSMF	80 mm sq. or less	0.05 0.1 0.2 0.4 0.75 1.0	3000 (6000)	0	IP67	Connector	Suitable for all applications	equipment · Packing machines etc
-			1.01.52.03.0	3000 (5000)	0	IP67	Connector	 Middle capacity Suitable for the machines directly coupled with ball screw and binh 	 SMT machines Food machines LCD
		100 mm sq. or more	4.0 5.0	3000 (4500)				stiffness and high repetitive application	production equipment etc
	MQMF	80 mm sq. or less	0.1 0.2 0.4	3000 (6500)	0	IP65	Leadwire	Small capacity Flat type and suit- able for low stiffness machines with belt driven	 SMT machines Inserter machines
	(Flat type)	80 mm sq. or less	0.1 0.2 0.4	3000 (6500)	0	IP67	Connector	 Motors with gear reducers are also available. (See. P.293) 	 Beit drive machines unloading robot
ddle inertia	моме		1.01.52.03.04.05.0	2000 (3000)		IP67	Connector	Middle capacity Suitable for low stiff-	 Conveyors Robots Machine
Mic	MDMF	130 mm sq. or more	7.5 11.0 15.0 22.0	1500 (3000) 1500 (2000)	0	(22.0 kW) (: IP44)	(22.0 kW (: Terminal)	ness machines with belt driven	tool etc
	MGMF (Low speed/ High torque type	130 mm sq. or more	0.85 1.3 1.8 2.4 2.9 4.4 5.5	1500 (3000)	0	IP67	Connector	 Middle capacity Suitable for low speed and high torque application 	 Conveyors Robots Textile machines etc
		3	0.05 0.1 0.2 0.4	3000 (6500)	0	IP65	Leadwire	Small capacity Suitable for low stiff-	
a		80 mm sq. or less	0.75 1.0 0.05 0.1	(6000)				 Motors with gear reducers are also 	 Conveyors Robots etc
Jh inert	MHMF		0.2 0.4	(6500) 3000	0	IP67	Connector	available. (See. P.293)	
Hi		so min sq. or less	1.0 1.5 2.0 3.0 4.0 5.0	(6000) 2000 (3000)	0	IP67	Connector	 Middle capacity Suitable for low stiffness machines with belt driven, and large load moment 	 Conveyors Robots LCD manufacturing equipment
		130 mm sq. or more	7.5	1500 (3000)		_		of inertia	etc
(*1) Please refer to P.303 for protection * For possible combinations of m		n class conditions notors and driv	ers, see P.29	to P.42.	Whe system batt Whe system batt Whe system system batt	en using a ro em (using m ery to the ab en using a ro em (not usir	tary encoder as an ab ulti-turn data), connect solute encoder. tary encoder as an inc g multi-turn data), do r	solute t a remental not	

MHM High inertia (50 W to 7.5 kW) **③ Motor rated output** Symbol Rated output Symbol Rated output Symbol Rated output 50 W 5A 13 1.3 kW 4.4 kW 44 01 100 W 15 1.5 kW 50 5.0 kW 02 200 W 18 1.8 kW 55 5.5 kW 04 2.0 kW 7.5 kW 400 W 20 75 08 750 W 24 2.4 kW C1 11.0 kW 2.9 kW 0.85 kW 1000 W 29 C5 15.0 kW 09 (130 mm sq.) (80 mm sq.) 30 3.0 kW D2 22.0 kW 10 1.0 kW 40 4.0 kW 4 Voltage specifications 6 Design order Symbol Specifications Symbol Specifications 100 V Standard 1 200 V 2 100 V/ 200 V common <Note> Ζ (50 W only) When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder. **(5) Rotary encoder specifications** Format Pulse counts Resolution Wires Symbol 23-bit 8388608 L Absolute 7 ⑦ Motor specifications: IP67² 100 mm sq. to 220 mmsq. MSMF, MHMF, MDMF, MGMF Holding brake Oil seal Encoder terminal Shaft with With protective JN2 (Small size) (Large size)⁻³ Symbol Key-way without with Round C 5 • ٠ • • C 6 ● • ٠ C 7 • • •

MINAS A6 Series

Servo Motor

1) Type

Symbol

Refer to P.29 to P.42 for motor and driver combinations.

Туре

MSM Low inertia (50 W to 5.0 kW)

MQM Middle inertia (100 W to 400 W)

MDM Middle inertia (1.0 kW to 22.0 kW)

MGM Middle inertia (0.85 kW to 5.5 kW)

(2)

2 Series

(3)

Symbol Series name

F A6 family

С	8	•		•			•		•
D	5	•			•	•		•	
D	6	•			•	•			•
D	7	•			•		•	•	
D	8	•			•		•		•
G	5		•	•		•		•	
G	6		•	•		•			•
G	7		•	٠			•	•	
G	8		•	٠			•		•
Н	5		•		۲	•		•	
Н	6		•		•	•			•
Н	7		•		•		•	•	
Н	8				•				

	Servo	Drive	er														
			М	Α	D	L	Ν	1	5	S	Е	*	*	*		Spec	ial specifications
				1		2	3	4	5	6	\bigcirc						
1) Fra	me symb	ol			3 Sa	fety	Func	tion					(5) Si	lqqu	y voltage spe	ecificat	ions
Symbol	Frame	Symbol	Fram	е	Symbol Specifications							Symbol Specifications					
MAD	MAD A-Frame MED E-Frame			ne	N without the safety				fety fur	nction			1	5	Single phase 10	0 V 0	
MBD	B-Frame	-Frame MFD F-Frame			T with the safety function								3	3	3-phase 200 V		
MCD	C-Frame	MGD	G-Fran	ne	~ ••								5	5	Single/3-phase	200 V	
MDD	D-Frame	MHD	H-Fran	ne	(4) Max. current rating							6) I/f	spe	cifications	7 Clas	ssification of type	
					Symbo	I Cur	rrent rat	ing	Symbol	Curren	nt rating		Symbol				
(2) Ser	ies				0		6 A		9	8	30 A		(specification)		Symbol	Specification	
Symbol	Series	name			1		8 A		Α	10	00 A					E	Basic type
I	A6 fa	mily	1		2		12 A		В	12	20 A					E	(Pulse train only)
L	A0 Ia	iiiiy			3		22 A		С	16	50 A				S	E	Multi fanction type
					4		24 A		Е	24	10 A			(Ana	log/Pulse)	ſ	(Pulse, analog, full-closed)
					5		40 A		F	36	60 A					G	RS485 communication type
					8		60 A									u	(Pulse train only)

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-21-

connect a battery for absolute encoder.

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-22-

Model Designation

4

•



* For combination of elements of model number, refer to Index P.448.

⑦ Motor specifications: 80 mm sq. or less MHMF 50 W to 1000 W MQMF 100 W to 400 W

		Sh	aft	Holding	g brake		Oil sea	I	Motor e termi	ncoder nal ^{*1}
Syn	lod	Round	Key-way, center tap	without	with	without	with	With protective lip	Connector JN	Lead wire
Α	1	•		•		•			•	
Α	2	•		•		•				•
В	1	•			•	•			•	
В	2	•			•	•				•
С	1	•		•			•		•	
С	2	•		•			•			•
С	3	•		•				•	•	
С	4	•		•				•		•
D	1	•			•		•		•	
D	2	•			•		•			•
D	3	•			•			•	•	
D	4	•			•			•		•
S	1		•	•		•			•	
S	2		•	•		•				•
Т	1		•		•	•			•	
Т	2		•		•	•				•
U	1		•	•			•		•	
U	2		•	•			•			•
U	3		•	•				•	•	
U	4		•	•				•		•
V	1		•		۲		•		•	
V	2		•		•		•			•
V	3		•		•			•	•	
V	4		•		•			•		•

*1 Connector type: IP67, Lead wire type: IP65 *2 22.0 kW: IP44 *3 Connector on the motor side encoder. (Also applicable to screwed type.) A6B Series Special Order Product ш Series

A6 Series

A6N Series

<A6SF Series (Driver: A-frame Motor: 200 W)>





<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

-24-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/





<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.

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-26-

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

MINAS A6 Series Driver and List of Applicable Peripheral Equipments

Driver	Applicable motor	Voltage (V) *1	Rated output (kW)	Required Power (at the (rated load) (kVA)	Circuit breaker (rated (current) (A)	Noise filter (Single phase 3-phase	Surge absorber (Single phase 3-phase	Ferrite core	Rated operating current of magnetic contactor contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *3	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *4	Diameter and withstand voltage of brake cable	
	MSMF MHMF	Single	0.05						-			Cabic				
MADI	MSMF MQMF MHMF	phase, 100	0.1	approx. 0.4		DV0P4170	DV0P4190									
MADE	MSMF MHMF	Single/	0.05			DV0P4170	DV0P4190								0.00 2	
	MSMF MQMF MHMF	3-phase 200	0.1, 0.2	approx. 0.5	10	DV0PM20042	DV0P1450								to 0.75 mm ² /	
MBDI	MSMF	Single phase, 100	0.2			DV0P4170	DV0P4190		20 A (3P+1a)						AWG22 to AWG18	
WEBE	MHMF	Single/ 3-phase 200	0.4	approx. 0.9		DV0P4170 DV0PM20042	DV0P4190 DV0P1450			0.75 mm ² / AWG18				0.75 mm ² / AWG18	100 VAC or more	
MODI	MSMF MQMF MHMF	Single phase, 100	0.4	approx. 0.9	45		DV0P4190			or more to	Co		Co	or more to		
WICDL	MSMF MHMF	Single/ 3-phase 200	0.75	approx. 1.8	15	DV0PM20042	DV0P4190 DV0P1450			2.0 mm ² / AWG14 600 VAC	nnection		nnection	2.0 mm ² / AWG14 600 VAC		
	MGMF		0.85	approx. 2.0						or more	to ey		to ey	or more		
	MSMF]	1.0 (80 mm sq.)								clusiv		clusiv			
	MDMF MHMF		1.0	approx.							/e cor		/e cor			
MDDL	MHMF	Single/ 3-phase 200	1.0 (80 mm sq.) 1.0	2.4	20	DV0P4220	DV0P4190 DV0P1450	DV0P1460	30 A (3P+1a)		nnector		nnector			
	MGMF		1.3	approx. 2.6												
	MSMF MDMF MHMF		1.5	approx. 2.9												
	MGMF		1.8	approx. 3.4						2.0 mm ² / AWG14		0.75 mm²/ AWG18		2.0 mm ² / AWG14 600 VAC		
MEDL	MSMF MDMF MHMF	3-phase 200	2.0	approx. 3.8	30	DV0PM20043	DV0P1450		60 A	600 VAC or more to 3.5 mm²/ AWG12		600 VAC or more		or more to 3.5 mm²/ AWG12 600 VAC or more	0.75 mm ² / AWG18 100 VAC or more	
	MGMF		2.4	approx. 4.5					(3P+1a)	600 VAC or more						
	MGMF		2.9	approx. 5.0												
	MSMF MDMF MHMF		3.0	approx. 5.2						3.5 mm ² /	11 mm or		11 mm or	3.5 mm²/ AWG12		
MFDL	MSMF MDMF MHMF	3-phase 200	4.0	approx. 6.5	50	DV0P3410	DV0P1450			AWG12 600 VAC	smaller		smaller	600 VAC or more		
	MGMF		4.4	approx. 7.0					100 A (3P+1a)	or more	/L] 		/ <u>Δ</u> 			
	MSMF MDMF MHMF		5.0	approx. 7.8							Terminal block M5		Terminal block M5			
	MGMF	3-phase	5.5	approx. 8.5		HF3080C-SZA			100 A	8.0 mm ² / AWG8				14 mm ² / AWG6		
MGDL	MDMF MHMF	200	7.5	approx. 11	60	(Recommended) components	DV0P1450		(3P+1a)	600 VAC				600 VAC or more		
			11.0	approx. 15				DV0P1460		22 mm ² /				22 mm ² / AWG4		
			15.0	approx. 20	125			RJ8095 (Recommended components)		600 VAC or more	16 mm or smaller		10 mm or smaller	600 VAC or more *6	0.75 mm ² / AWG18 100 VAC	
MHDL	MDMF	3-phase 200	22.0	approx. 28	175	HF3100C-SZA (Recommended) components)	DV0P1450	T400-61D *5	150 A (3P+1a)	38 mm²/ AWG2 600 VAC or more	Terminal block M6		Terminal block M4	22.8 mm or smaller $\phi 8.5$ Terminal block	or more	

*1 Select peripheral equipments for single/3phase common specification according to the power source.

*2 The magnetic contactor used for the external dynamic brake resistor should have the same rating as the magnetic contactor used for the main circuit. *3 For the ground screw, use the same crimp terminal as that for the main circuit terminal block.

*4 The thickness of the grounding wire and the thickness of the external dynamic brake resistor should be the same as or larger than the thickness of the motor wire. The motor wire is a shielded wire that complies with the European Union Directive / UL standard. (G and H frame only)

*5 Please use all to comply with international standards.

*6 22.0 kW The connection of the motor power line is a terminal block. In order to comply with the CSA standard, it is necessary to use a CSA standardcertified power wire round terminal.

-27-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Related page

Noise filter	.P.412	"Composition of F
Surge absorber	.P.413	"Composition of F
Ferrite core	.P.414	"Composition of F
Motor/brake connector	.P.307	"Specifications of

About circuit breaker and magnetic contactor (h) 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.

<Caution>

· 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.

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

	DriverTerminal block screwTerminal cover fastening screwTerminal nameNominal sizeFastening torque (N·m) Note)1Nominal sizeFastening torque (N·m) Note)1L2, L 3, L1C, L2C, P, RB, B, N, U, V, WM51.0 to 1.7M30.19 to 0.21C, L2CM40.7 to 1.0M30.19 to 0.21L2, L3, P, B, N, U, V, WM52.0 to 2.40.19 to 0.21				
Frame	Terminal name	Nominal size	Fastening torque (N·m) Note)1	Nominal size	Fastening torque (N·m) Note)1
MFDL	L1, L2, \perp 3, L1C, L2C, P, RB, B, N, U, V, W	M5	1.0 to 1.7	M3	0.19 to 0.21
	L1C, L2C	M4	0.7 to 1.0	MO	0 10 to 0 01
MGDL	L1, L2, L3, P, B, N, U, V, W	M5	2.0 to 2.4	IVIS	0.19100.21
МПОІ	L1C, L2C, DB1, DB2	M4	0.7 to 1.0	M5	2.0 to 2.5
WINDL	L1, L2, L3, P, B, N, U, V, W	M6	2.2 to 2.5	M3	0.19 to 0.21

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

	Grou	und screw	Cor host c	Connector to host controller (X4) minal size Fastening torque (N·m) Note)1
Driver frame	Nominal size	Fastening torque (N·m) Note)1	Nominal size	Fastening torque (N⋅m) Note)1
MADL, MBDL, MCDL, MDDL, MEDL	M4	1.0 to 1.2		
MFDL	M5	1.8 to 2.0	MDE	0.2 to 0.25
MGDL	M5	5 1.8 to 2.0		
MHDL	M6	2.4 to 2.6		

Motor: Fastening torque

	U, V, Ground t	W terminal erminal screw	Terminal box cover fastening screw		
Motor	Nominal size	Fastening torque (N⋅m) Note)1	Nominal size	Fastening torque (N·m) Note)1	
MDMF 22.0 kW	M8	12.0	M5	4.4	

Note)1 <Caution>

- Applying fastening torque larger than the maximum value may result in damage to the product.
- generate heat (smoking, firing) .

<Remarks>

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-28-

Peripheral Equipments" Peripheral Equipments" Peripheral Equipments" Motor connector"

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

· Use the attached exclusive connector for A-frame to E-frame, and maintain the peeled off length of 8 mm to 9 mm.

· Do not turn on power without tightening all terminal block screws properly, otherwise, loose contacts may

A6B Series Special Order Product

	1.1		
		 - 1	

MSMF, MQMF, MHMF: Leadwire type IP65

			Motor				Driver							(Optional parts	refer to P.306			
		Power	Output	Dart No.	Rating/	A6SF series Multi fanction type (Pulse, analog,)	A6SG series RS485 communication		Power capacity / at \	Encode 23-t Use in the absolute system	Use	coder C 23-bit / n the system	able Note)3 Absolute Use in the Incremental	Motor Ca	ble Note)3	Brake Cable	External	Reactor	Noise Filter
М	otor series	supply	(W)	Note)1	Dimensions (page)	(full-closed)	A6SE series Basic (Pulse signal input)	Frame	(rated load) (kVA)	(with battery bo Note)5	(with b	ery box) e)5	system (without battery box)	without Brake	with Brake	Note)3	Regenerative Resistor	Single phase 3-phase	Single phase
							Note)2, Note)4			Fi		Fixed	l cable	Movab	le cable	Movable cable			
			50	MSMF5AZL1 🗌 2	63, 119	MADLT01SF	MADLN01S	A-frame	Approx.								DV0P4280	DV0P227	
		Single	100	MSMF011L1 2	65, 120	MADLT11SF	MADLN11S	*	0.4								2701 1200	D TOT LET	DV0P4170
		100 V	200	MSMF021L1 🗌 2	67, 121	MBDLT21SF	MBDLN21S	B-frame ★	Approx. 0.5								DV0P4283		
	MGME		400	MSMF041L1 🗌 2	69, 123	MCDLT31SF	MCDLN31S	C-frame	Approx. 0.9							DV0P4282	DV0P228	DV0PM20042	
Low	(Leadwire)		50	MSMF5AZL1 🗌 2	64, 119	MADLT05SF	MADLN05S			MFECA	м	CA	MFECA	MFMCA 0 * *0EED		MEMOR			
inerti	type /		100	MSMF012L1 2	66, 120	MADLT05SF	MADLN05S	A-frame	Approx. 0.5	0 * * 0EAE (For fixed)	0* (Fo	DEAE ixed)	0 * * 0EAD (For fixed)			0 * * 0GET	DV0P4281	DV0P227	DV0P4170
ם.	IP65	Single	200	MSMF022L1 2	68, 121	MADLT15SF	MADLN15S	*	-							Note)6		DV0F220	DV0PM20042
		phase/ 3-phase	400	MSMF042L1 🗌 2	70, 123	MBDLT25SF	MBDLN25S	B-frame	Approx.								DV0P4283	DV0P228	
		200 V	750	MSMF082L1 🗌 2	71, 124	MCDLT35SF	MCDLN35S	C-frame	Approx.									DV0P220	DV0PM20042
10	1000	MSMF092L1 🗌 2	72, 125	MDDLT45SF	MDDLN45S	D-frame	Approx. 2.4								DV0P4284	DV0P228	DV0P4220		
			100	MQMF011L1 2 MQMF011L1 4	79, 135	MADLT11SF	MADLN11S	A-frame ★	Approx. 0.4								DV0P4280	DV0P222	
Single phase	200		81, 139	MBDLT21SF	MBDLN21S	B-frame	Approx.								DV0P4283		DV0P4170		
ddle ine	MQMF /Leadwire\	100 V	400		83, 143	MCDLT31SF	MCDLN31S	★ C-frame	Approx.	MFECA	MFECA 0 * *0EAE (For fixed)	MFECA 0 * * 0EAD (For fixed)	MFMCA 0 * *0EED		MEMOR	DV0P4282	DV0P228	DV0PM20042	
ertia I	(type)		100		80 135	MADI T05SE			0.9	0 * * 0EAE (For fixed)					0 * * 0GET Note)6	DV0P4281			
=lat typ	IP65	Single phase/	200	MQMF012L1 4 MQMF022L1 2	82 139	MADI T15SF	MADI N15S	A-frame ★	Approx. 0.5	(*********)							DV0P227 DV0P220	DV0P4170	
Э Ө		3-phase 200 V	400	MQMF022L1 4 MQMF042L1 2	94 142			B-frame	Approx.							DV0P4283	DV0P228	DV0PM20042	
			400 50	MQMF042L1	85 147	MADI TO1SE		*	0.9									DV0P220	
		Single	100	MHMF5AZL1	87, 151	MADLT11SF	MADENUTS	A-frame ★	Approx. 0.4								DV0P4280	DV0P227	DV0P4170
		phase 100 V	200		89, 155	MBDLT21SF	MBDLN21S	B-frame	Approx.								DV0P4283		
			400		91, 159	MCDLT31SF	MCDLN31S	★ C-frame	Approx.								DV0P4282	DV0P228	DV0PM20042
Нį	MHMF		50	MHMF041L1 U 4 MHMF5AZL1 2	86 147	MADI T05SF			0.9	NEED			MEEAA						
High (Leadwire) (type)	100	MHMF5AZL1	88. 151	MADLT05SF	MADLN05S	A-frame	Approx.	MFECA 0 * * 0EAE	0*		MFECA 0 * * 0EAD	MF 0 * *	MCA 0EED	MFMCB 0 * *0GET	DV0P4281	DV0P227			
	200		90, 155	MADLT15SF	MADLN15S	*	0.5	(For lixed)	(FC	ixeu)	(FUI lixed)			Note)6		DV0P220	DV0P4170 DV0PM20042		
		phase/ 3-phase	400		92, 159	MBDLT25SF	MBDLN25S	B-frame	Approx.								DV0P4283	DV0P228	
		200 V	750		93, 163	MCDLT35SF	MCDLN35S	★ C-frame	Approx.								DV0P220	DV0PM20042	
			1000		94, 167	MDDLT55SF	MDDLN55S	D-frame	Approx. 2.4								DV0P4284	DV0P228	DV0P4220

★: Frame-A and B drivers are not equipped with regenerative resistors. When regeneration occurs, please prepare an optional external regenerative resistor.

Note)1 🗌 : Represents the motor specifications. (refer to "Model designation" P.22.)

Note)2 \diamond : Represents the driver specifications. (refer to "Model designation" P.22.)

Note)3 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030EAE

Note)4 Because A6SE series driver (dedicated for position control) does not support the absolute system specification, only incremental system can be used in combination.

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-29-

Panasonic Corporation Electromechanical Control Business Division

industrial.panasonic.com/ac/e/

-30-

Note)5 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

Note)6 Brake cable and motor cables are required for the motors with brake.

	- 1 C
Continen	
001103	

able of Part Numbers and Options 80 mm sq. or less 50 W to 1000 W

MSMF, MQMF: Connector type IP67

	Motor						Driver					Optional parts 🕨	refer to P.306			
						A6SF series	A6SG series		Power	able Note)3	Motor Ca	ble Note)3				
					Rating/	Multi fanction type	RS485 communication		capacity	bsolute						
N	<i>l</i> lotor series	Power supply	Output (W)	Part No. Note)1	Spec. Dimensions (page)	(Puise, analog, full-closed)	A6SE series Basic (Pulse signal input) Note)2, Note)5	Frame	(at (rated load) (kVA)	Use in the Incremental system (without battery box)	without Brake	with Brake	Brake Cable Note)3	External Regenerative Resistor	Reactor (Single phase) (3-phase)	
			50	MSMF5AZL1 🗌 1	63, 119	MADLT01SF	MADLN01S	A.frame	Approx.					DV0P4280	D\/0P227	
		Single	100	MSMF011L1 🗌 1	65, 121	MADLT11SF	MADLN11S	*	0.4						D VOI 227	
		100 V	200	MSMF021L1 🗌 1	67, 122	MBDLT21SF	MBDLN21S	B-frame ★	Approx. 0.5	MFECA 0 * * 0MJD	MF 0** For n	MCA ONJD vovable,	MFMCB 0 * * 0PJT (For movable,)	DV0P4283	D\/0P228	
			400	MSMF041L1 🗌 1	69, 123	MCDLT31SF	MCDLN31S	C-frame	Approx. 0.9	(direction of motor shaft)	MF		MFMCB	DV0P4282	5101 220	[
MSMF Connecto type Tia: 3000 r/mi IP67	MSMF (Connector) type		50	MSMF5AZL1 🗌 1	64, 119	MADLT05SF	MADLN05S			0 * * 0MKD For movable, opposite direction of motor shaft	U * * For r opposit of mo	ovable, e direction tor shaft	0**0PKT For movable, opposite direction of motor shaft	DV0P4281		
	3000 r/min IP67		100	MSMF012L1 🗌 1	66, 121	MADLT05SF	MADLN05S	A-frame ★	Approx. 0.5	MFECA 0 * * 0TJD / For fixed,)	MF 0 * ≯ / Foi	MCA ORJD fixed, \	MFMCB 0 * * 0SJT		DV0P227 DV0P220	
		Single phase/	200	MSMF022L1 🗌 1	68, 122	MADLT15SF	MADLN15S			MFECA	(dire (mot	tion of or shaft	(motor shaft) MFMCB 0 * * 0SKT			
		3-phase 200 V	400	MSMF042L1 🗌 1	70, 123	MBDLT25SF	MBDLN25S	B-frame ★	Approx. 0.9	For fixed, opposite direction of motor shaft	U** (Foi opposit	fixed, e direction tor shaft	(opposite direction of motor shaft	DV0P4283	DV0P228	
			750	MSMF082L1 🗌 1	71, 125	MCDLT35SF	MCDLN35S	C-frame	Approx. 1.8			ite)4	Notoji		DV0P220	
			1000	MSMF092L1 🗌 1	72, 126	MDDLT45SF	MDDLN45S	D-frame	Approx. 2.4					DV0P4284	DV0P228	
			100	MQMF011L1 [] 1 MQMF011L1 [] 3	79, 137	MADLT11SF	MADLN11S	A-frame ★	Approx. 0.4	MFECA				DV0P4280	DV0P227	
<u>s</u>		Single phase 100 V	200	MQMF021L1 [] 1 MQMF021L1 [] 3	81, 141	MBDLT21SF	MBDLN21S	B-frame ★	Approx. 0.5	(For movable, direction of motor shaft)	(For movable, direction of motor shaft)	(For movable, direction of motor shaft)		DV0P4283		
Midde MQMF	MQMF (Connector)		400	MQMF041L1 🗌 1 MQMF041L1 🗌 3	83, 145	MCDLT31SF	MCDLN31S	C-frame	Approx. 0.9	MFECA 0 * * 0MKD For movable, opposite direction of motor shaft	MFMCA 0 * * 0UGD For movable, opposite direction of motor shaft	MFMCA 0 * * 0VGD For movable, opposite direction of motor shaft		DV0P4282	DV0P228	0
tia Flat ty	3000 r/min IP67	Qinglo	100	MQMF012L1 🗌 1 MQMF012L1 🗌 3	80, 137	MADLT05SF	MADLN05S	A.,	Approx.	MFECA 0 * * 0TJD / For fixed,)	MFMCA 0 * * 0WFD	MFMCA 0 * * 0XFD	_	DV0P4281	DV0P227	
at type		phase/ 3-phase	200	MQMF022L1 🗌 1 MQMF022L1 🗌 3	82, 141	MADLT15SF	MADLN15S	A-frame ★	0.5	(direction of motor shaft) MFECA 0 * * 0TKD	MFMCA	MFMCA		DV0D 1005	DV0P220	C
		200 V	400	MQMF042L1 [] 1 MQMF042L1 [] 3	84, 145	MBDLT25SF	MBDLN25S	B-frame ★	Approx. 0.9	For fixed, opposite direction of motor shaft	(opposite direction of motor shaft	(opposite direction of motor shaft		DV0P4283	DV0P228	

eger quippe rege , P c picp

external regenerative resistor.

 \diamond : Represents the driver specifications. (refer to "Model designation" P.22.) Note)2

Note)3 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030MJE

Note)4 Cables for opposite to output shaft cannot be used with 50 W or 100 W motor. (MSMF connector type only.)

Note)5 Because A6SE series driver (dedicated for position control) does not support the absolute system specification, only incremental system can be used in combination.

Note)6 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

Note)7 Brake cable and motor cables are required for the motors with brake.

Novable : For application where the cable is movable.

Fixed : For application where the cable is fixed.

Direction of motor shaft/Opposite direction of motor shaft : Cable direction

46	Series	

able of Part Numbers and Options 80 mm sq. or less 50 W to 1000 W

MHMF: Connector type IP67

			Motor				Driver					C	ptional parts 🕨 re	efer to P.306			
						A6SF series	A6SG series		Power	Encoder Cable	Note)3	Motor Cab	le Note)3				
Mo	or series	Power supply	Output (W)	Part No. Note)1	Rating/ Spec. Dimensions (page)	(Pulse, analog, full-closed)	A6SE series Basic (Pulse signal input) Note)2. Note)4	Frame	capacity (at (rated load) (kVA)	23-bit Absolu Use in the absolute system (with battery box) Note)5	lute Use in the ncremental system hout battery box)	without Brake	with Brake	Brake Cable Note)3	External Regenerative Resistor	Reactor (Single phase) (3-phase)	Noise Filter (Single phase) 3-phase
			50	MHMF5AZL1 🗌 1 MHMF5AZL1 🗌 3	85, 149	MADLT01SF	MADLN01S	A.frame	Approx.			MFMCA 0 * * 7UFD (Movable/fixed common-use, direction of motor shaft	MFMCA 0 * * 7VFD (Movable/fixed) common-use, direction of motor shaft		DV0P4280	DV0P227	
			100	MHMF011L1 🗌 1 MHMF011L1 🗌 3	87, 153	MADLT11SF	MADLN11S	*	* 0.4			MFMCA 0**7UGD Movable/fixed common-use, opposite direction of motor shaft	MFMCA 0**7VGD Movable/fixed common-use, opposite direction of motor shaft				DV0P4170
		Single phase	200	MHMF021L1 🗌 1	89. 157	MBDLT21SF	MBDLN21S	B-frame	Approx.			MFMCA 0 * * 0UFD (For movable, direction of motor shaft	MFMCA 0* * 0VFD (For movable, direction of motor shaft)		DV0P4283		
버MHMF g (Connector)		100 V		MHMF021L1 🗌 3				*	0.5			MFMCA 0**0UGD For movable, opposite direction of motor shaft	MFMCA 0**0VGD (opposite direction of motor shaft			DV0P228	
			400	MHMF041L1 🗌 1 MHMF041L1 🗍 3	91, 161	MCDLT31SF	MCDLN31S♦	C-frame	Approx. 0.9	MFECA 0 * * 0MJE 0 : (For movable, direction of motor shaft)	MFECA D**0MJD (For movable, direction of motor shaft)	MFMCA 0 * * 0WFD (For fixed, (direction of motor shaft)	MFMCA 0**0XFD (For fixed, direction of motor shaft)		DV0P4282		DV0PM20042
	MHMF (Connector) type									MFECA 0**0MKE opposite direction of motor shaft	MFECA 0 * * 0MKD For movable, pposite direction of motor shaft	MFMCA 0**0WGD For fixed, opposite direction of motor shaft	MFMCA 0 * * 0XGD For fixed, opposite direction of motor shaft	_			
	3000 r/min IP67		50	MHMF5AZL1 🗌 1 MHMF5AZL1 🗌 3	86, 149	MADLT05SF	MADLN05S			MFECA 0**0TJE 0 (^{For fixed,} (direction of motor shaft)	MFECA 0 * * 0TJD (For fixed, direction of motor shaft)	MFMCA 0 * * 7UFD (Movable/fixed) common-use, direction of motor shaft	MFMCA 0**7VFD (Movable/fixed common-use, direction of motor shaft		DV0P4281		
			100	MHMF012L1 [] 1 MHMF012L1 [] 3	88, 153	MADLT05SF	MADLN05S	A-frame ★	Approx. 0.5	MFECA 0**0TKE 0: For fixed, opposite direction of motor shaft	MFECA 0 * * 0TKD For fixed, pposite direction of motor shaft	MFMCA 0**7UGD / Movable/fixed common-use, opposite direction of motor shaft	MFMCA 0**7VGD Movable/fixed common-use, opposite direction of motor shaft		5001 4201	DV0P227 DV0P220	DV0P4170
		Single phase/	200	MHMF022L1 1 MHMF022L1 3	90, 157	MADLT15SF	MADLN15S					MFMCA 0 * * 0UFD (For movable, direction of motor shaft	MFMCA 0**0VFD For movable, direction of motor shaft				DV0PM20042
		3-phase 200 V	400	MHMF042L1 🗌 1 MHMF042L1 🗌 3	92, 161	MBDLT25SF	MBDLN25S	B-frame ★	Approx. 0.9			MFMCA 0**0UGD For movable, opposite direction of motor shaft	MFMCA 0 * * 0VGD For movable, opposite direction of motor shaft		DV0P4283	DV0P228	
		750	MHMF082L1 🗌 1 MHMF082L1 🗌 3	93, 165	MCDLT35SF	MCDLN35S	C-frame	Approx. 1.8			MFMCA 0 * * 0WFD (For fixed, direction of motor shaft)	MFMCA 0 * * 0XFD (For fixed, direction of motor shaft)			DV0P220	DV0PM20042	
			1000	MHMF092L1 [] 1 MHMF092L1 [] 3	94, 169	MDDLT55SF	MDDLN55S	D-frame	Approx. 2.4			MFMCA 0 * * 0WGD For fixed, opposite direction of motor shaft	MFMCA 0 * * 0XGD For fixed, opposite direction of motor shaft		DV0P4284	DV0P228 DV0P222	DV0P4220

external regenerative resistor.

Note)1 🗌 : Represents the motor specifications. (refer to "Model designation" P.22.)

Note)2 \diamond : Represents the driver specifications. (refer to "Model designation" P.22.)

Note)3 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030MJE

Note)4 Because A6SE series driver (dedicated for position control) does not support the absolute system specification, only incremental system can be used in combination.

Note)5 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

Fixed : For application where the cable is fixed.

Direction of motor shaft/Opposite direction of motor shaft : Cable direction

-34-

			Motor				Driver					Opt	ional parts 🕨 refe	er to P.306		
					Rating/	A6SF series Multi fanction type (Pulse, analog,)	A6SG series RS485 communication		Power capacity	Encoder C JL10 (L One-tour N/MS sc	able Note)3,5 arge size) th lock type rewed type	Motor Cabl JL (One-touch JL04 scre	e Note)3,5 10 lock type wed type	-		
Γ	Notor series	Power supply	Output (W)	Part No. Note)1	Spec. Dimensions (page)	(full-closed)	A6SE series Basic (Pulse signal input) Note)2, Note)4	Frame	(rated load (kVA)	23-bit Use in the absolute system (with battery box) Note)7	Absolute Use in the Incremental system (without battery box)	without Brake	with Brake	External Regenerative Resistor	Reactor (Single phase / 3-phase)	Noise Filter
		Cingle							Annroy	Fixe	d cable	Movabl	e cable			
		phase/	1000	MSMF102L1 0 8	73, 127	MDDLT55SF	MDDLN55S	D-frame	2.4			MFMCD	MFMCA	DV0P4284	DV0P228 / DV0P222	DV0P4220
_	MSMF	3-phase 200 V	1500	MSMF152L1	74, 128	MDDLT55SF	MDDLN55S \Diamond		Approx. 2.9	MEECA	MEECA	MEMCD	MEMCA		DV0PM20047 / DV0P222	
Low i	Large size		2000	MSMF202L1	75, 129	MEDLT83SF	MEDLN83S	E-frame	Approx. 3.8	0 * * 0EPE	0**0EPD	0 * * 2ECD	0 * * 2FCD	DV0P4285 Note)6	DV0P223	DV0PM20043
nertia	3000 r/min	3-phase	3000	MSMF302L1	76, 131	MFDLTA3SF	MFDLNA3S		Approx. 5.2	MFECA	MFECA	MFMCA	MFMCA		DV0P224	
Щ	IP67	200 V	4000	MSMF402L1 6 MSMF402L1 8	77, 132	MFDLTB3SF	MFDLNB3S	F-frame	Approx. 6.5	0 * * 0ESE	0 * * 0ESD	0 * * 3EUT	0 * * 3FUT	DV0P4285		DV0P3410
			5000	MSMF502L1 6 MSMF502L1 8	78, 133	MFDLTB3SF	MFDLNB3S	-	Approx.			MFMCA 0 * * 3ECT	MFMCA 0 * * 3FCT		DV0P225	
		Single	1000	MDMF102L1 6 MDMF102L1 6 MDMF102L1 8	102, 180	MDDLT45SF	MDDLN45S		Approx.			MFMCD	MFMCA		DV0P228 / DV0P222	
		3-phase	1500	MDMF152L1 6 MDMF152L1 6 MDMF152L1 8	103, 181	MDDLT55SF	MDDLN55S	D-frame	Approx.			0 * * 2EUD	0 * * 2FUD	DV0P4284	DV0PM20047 / DV0P222	DV0P4220
	Large size	200 1	2000	MDMF202L1 6 MDMF202L1 6 MDMF202L1 8	104, 183	MEDLT83SF	MEDLN83S	E-frame	Approx. 3.8	MFECA 0 * * 0EPE	MFECA 0 * * 0EPD	MFMCD 0 * * 2ECD	MFMCA 0 * * 2FCD	DV0P4285	DV0P223	DV0PM20043
	2000 r/min	3-nhase	3000	MDMF302L1 6 MDMF302L1 6 MDMF302L1 8	105, 184	MFDLTA3SF	MFDLNA3S		Approx. 5.2	MFECA	MFECA	MFMCA	MFMCA	Notejo	DV0P224	
	IP67	200 V	4000	MDMF402L1 6 MDMF402L1 6 MDMF402L1 8	106, 185	MFDLTB3SF	MFDLNB3S	F-frame	Approx. 6.5	0 * *0ESE	0 * * 0ESD	0 * * 3EUT	0 * * 3FUT	DV0P4285		DV0P3410
Mi			5000	MDMF502L1 6 MDMF502L1 8	107, 187	MFDLTB3SF	MFDLNB3S		Approx. 7.8			MFMCA 0 * * 3ECT	MFMCA 0 * * 3FCT		DV0P225	
ddle ir		Single phase/	850	MGMF092L1 6 MGMF092L1 8	112, 193	MDDLT45SF	MDDLN45S	_	Approx. 2.0			MFMCD	MFMCA		DV0P228 / DV0P221	
nertia		3-phase 200 V	1300	MGMF132L1 🗌 6 MGMF132L1 🗌 8	113, 195	MDDLT55SF	MDDLN55S	D-frame	Approx. 2.6			0 * * 2EUD	0 * * 2FUD	DV0P4284	DV0PM20047 / DV0P222	DV0P4220
	MGMF Large size		1800	MGMF182L1 🗌 6 MGMF182L1 🗌 8	114, 196	MEDLT83SF	MEDLN83S		Approx. 3.4	MFECA	MFECA	0 * * 2ECD	0 * * 2FCD		DV0P223	
	JL10 type /Low speed/\		0.400	MGMF242L1 🗌 6	115 107			E-frame	Approx.	0 * * 0EPE	0 * * 0EPD	MFMCE 0 * * 3EUT	MFMCD 0 * * 3FUT	DV0P4285		DV0PM20043
	High torque type	3-phase 200 V	2400	MGMF242L1 🗌 8	115, 197	MEDL1935F	MEDLN935		4.5	MFECA 0 * * 0ESE	MFECA 0 * * 0ESD	MFMCE 0 * * 3ECT	MFMCD 0 * * 3FCT		DV0P224	
	1500 r/min IP67		2900	MGMF292L1	116, 199	MFDLTB3SF	MFDLNB3S	_	Approx. 5.0			MFMCA 0 * * 3EUT	MFMCA 0 * *3FUT	DV0P4285		
			4400	MGMF442L1 🗌 6 MGMF442L1 🗌 8	117, 200	MFDLTB3SF	MFDLNB3S	⊢-frame	Approx. 7.0			MFMCA 0 * * 3ECT	MFMCA 0 * * 3FCT	×2 in parallel	DV0P225	DV0P3410
		Single	1000	MHMF102L1	95, 171	MDDLT45SF	MDDLN45S		Approx. 2.4			MFMCD 0 * * 2EUD	MFMCA 0**2FUD		DV0P228 / DV0P222	
		3-phase 200 V	1500	MHMF152L1 🗌 6 MHMF152L1 🗌 8	96, 172	MDDLT55SF	MDDLN55S	D-frame	Approx. 2.9			MFMCD 0 * * 2FCD	MFMCA 0 * * 2FCD	DV0P4284	DV0PM20047 / DV0P222	DV0P4220
Ŧ	MHMF								Anorov	MFECA	MFECA	MFMCE 0 * * 2EUD	MFMCE 0 * * 2FUD	DV0P4295		
gh ine	JL10 type		2000		97, 173	MEDLT83SF	MEDLN83S	E-frame	3.8	0 * * 0EPE	0 * * 0EPD	MFMCE	MFMCE	Note)6	DV0P223	DV0PM20043
ertia	2000 r/min IP67	3-phase	3000		98, 175	MFDLTA3SF	MFDLNA3S		Approx.	MFECA 0 * * 0ESE	MFECA 0 * * 0ESD	MFMCA			DV0P224	
		200 V	4000		99, 176	MFDLTB3SF	MFDLNB3S	F-frame	Approx.			0 * * 3EUT	0 * * 3FUT	DV0P4285		DV0P3410
			5000	MHMF502L1 6 MHMF502L1 8	100, 177	MFDLTB3SF	MFDLNB3S	-	Approx. 7.8			MFMCA 0 * * 3ECT	MFMCA 0 * * 3FCT	×2 in parallel	DV0P225	

: Represents the motor specifications. (refer to "Model designation" P.22.) Note)1

Note)2 \diamond : Represents the driver specifications. (refer to "Model designation" P.22.)

Note)3 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030EPE

Note)4 Because A6SE series driver (dedicated for position control) does not support the absolute system specification,

only incremental system can be used in combination.

Note)5 Use of JL10 type encoder cables and motor cables enable one-touch lock connections. Conventional screwed type N/MS and JL04V type cables can also be used.

-36-

Note)6 For other possible combinations, refer to P.343.

Note)7 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

A6 Family

A6N Series

A6B Series Special Order Product

E Series

	Motor						Driver					Opt	tional parts Frefe	er to P.306		
						A6SF series	A6SG series		Power	Encoder JN2 (Cable Note)3	Motor Cab JL /One-touch	le Note)3,5 10	-		
					Rating/	Multi fanction type	RS485 communication		capacity	(One-too	ch lock type)		wed type			
Μ	otor series	Power	Output	Part No.	Spec.	(full-closed)	A6SE series	Frame	(rated)	23-bi	Absolute	_		External	Reactor	Noise Filter
		suppiy	(vv)	Note) 1	(page)		Basic (Pulse signal input) Note)2, Note)4		\ load / (kVA)	Use in the absolute system (with battery box Note)7	Use in the Incremental system (without battery box)	without Brake	with Brake	Resistor	(Single phase / 3-phase)	
										Fix	ed cable	Movab	e cable			
		Single phase/ 3-phase	1000	MSMF102L1 5 MSMF102L1 7	73, 127	MDDLT55SF	MDDLN55S	D-frame	Approx. 2.4			MFMCD 0 * * 2EUD	MFMCA 0 * * 2FUD	DV0P4284	DV0P228 / DV0P222	DV0P4220
_	MSMF	200 V	1500	MSMF152L1 7	74, 129	MDDLT55SF	MDDLN55S		2.9			MFMCD	MFMCA		DV0PM20047 / DV0P222	
_ow in	Small size JN2 type		2000	MSMF202L1 5 MSMF202L1 7	75, 130	MEDLT83SF	MEDLN83S	E-frame	me 3.8 Approx.	MFECA	MFECA	0**2ECD	0**2FCD	DV0P4285 Note)6	DV0P223	DV0PM20043
ertia	3000 r/min	3-phase	3000	MSMF302L1 [] 5 MSMF302L1 [] 7	76, 131	MFDLTA3SF	MFDLNA3S		Approx. 5.2	0**0ETE	0**0E1D				DV0P224	
-	IP67	200 V	4000	MSMF402L1 5 MSMF402L1 7	77, 133	MFDLTB3SF	MFDLNB3S	F-frame	Approx. 6.5			MFMCA	MFMCA	DV0P4285 ×2 in parallel	DV0P225	DV0P3410
			5000	MSMF502L1 5 MSMF502L1 7	78, 134	MFDLTB3SF	MFDLNB3S		Approx. 7.8			0 * * 3ECT	0 * * 3FCT		BV01 220	
		Single phase/	1000	MDMF102L1 5 MDMF102L1 7	102, 181	MDDLT45SF	MDDLN45S	D-frame	D-frame Approx. 2.4 Approx. 2.9 Approx.			MFMCD 0 * * 2FUD	MFMCA 0 * * 2FUD	DV0P4284	DV0P228 / DV0P222	DV0P4220
	MDMF	3-phase 200 V	1500	MDMF152L1 5 MDMF152L1 7	103, 182	MDDLT55SF	MDDLN55S					MFMCD	MFMCA		DV0PM20047 / DV0P222	
	Small size JN2 type		2000	MDMF202L1	104, 183	MEDLT83SF	MEDLN83S	E-frame	Approx. 3.8	MFECA	MFECA	0 * * 2ECD	0 * * 2FCD	DV0P4285 Note)6	DV0P223	DV0PM20043
	2000 r/min	3-phase	3000	MDMF302L1 5 MDMF302L1 7	105, 185	MFDLTA3SF	MFDLNA3S	-	Approx. 5.2	0 * * 0ETE	0 * * 0ETD	MFMCA	MFMCA		DV0P224	_
	IP07	200 V	4000	MDMF402L1	106, 186	MFDLTB3SF	MFDLNB3S	F-frame	Approx. 6.5			MFMCA	MFMCA	DV0P4285 ×2 in parallel	DV0P225	DV0P3410
Mid			5000	MDMF502L1 5 MDMF502L1 7	107, 187	MFDLTB3SF	MFDLNB3S		Approx. 7.8			0 * * 3ECT	0 * * 3FCT			
dle in		Single phase/	850	MGMF092L1	112, 194	MDDLT45SF	MDDLN45S	D-frame	Approx. 2.0			MFMCD	MFMCA	DV0P4284	DV0P228 / DV0P221	- DV0P4220
ertia	MGMF	3-phase 200 V	1300	MGMF132L1 [_] 5 MGMF132L1 [_] 7	113, 195	MDDLT55SF	MDDLN55S		Approx. 2.6			MFMCD	MFMCA		DV0PM20047 / DV0P222	
	Small size		1800	MGMF182L1 🗌 5 MGMF182L1 🗌 7	114, 197	MEDLT83SF	MEDLN83S	-	Approx. 3.4			0 * * 2ECD	0 * * 2FCD	-	DV0P223	-
	Low speed/		2400	MGMF242 L1 3	115. 198	MEDLT93SF	MEDLN93S	E-frame	Approx.	MFECA 0**0ETE	MFECA 0 * * 0ETD	0 * * 3EUT	MFMCD 0 * * 3FUT	DV0P4285		DV0PM20043
	type	3-phase 200 V		MGMF242 L1 [] 7	,				4.5			MFMCE 0 * * 3ECT	MFMCD 0 * * 3FCT		DV0P224	
	IP67		2900	MGMF292L1	116, 199	MFDLTB3SF	MFDLNB3S	E frama	Approx. 5.0			MFMCA 0 * * 3EUT	MFMCA 0 * * 3FUT	DV0P4285		DV0P3410
			4400	MGMF442L1 🗌 5 MGMF442L1 🗌 7	117, 201	MFDLTB3SF	MFDLNB3S	1 -irane	Approx. 7.0			MFMCA 0 * * 3ECT	MFMCA 0 * * 3FCT	×2 in parallel	DV0P225	D VOI OTIO
		Single phase/	1000	MHMF102L1 5 MHMF102L1 7	95, 171	MDDLT45SF	MDDLN45S \diamondsuit	- D/	Approx. 2.4			MFMCD 0 * * 2EUD	MFMCA 0 * * 2FUD	DV0B4294	DV0P228 / DV0P222	
		3-phase 200 V	1500	MHMF152L1 🗌 5 MHMF152L1 🗌 7	96, 173	MDDLT55SF	MDDLN55S \Diamond	D-trame	Approx. 2.9			MFMCD 0 * * 2ECD	MFMCA 0 * * 2FCD	DV0F4204	DV0PM20047 / DV0P222	DV0F4220
Ť	MHMF								Approx			MFMCE 0 * * 2EUD	MFMCE 0 * * 2FUD	DV0P4285		
gh ine	JN2 type		2000	MHMF202L1 7	97, 174	MEDLT83SF	MEDLN83S◇	E-frame	3.8	MFECA 0 * * 0ETE	MFECA 0 * * 0ETD	MFMCE	MFMCE	Note)6	DV0P223	DV0PM20043
rtia	2000 r/min IP67	3-phase 200 V	3000	MHMF302L1 5	98, 175	MFDLTA3SF	MFDLNA3S		Approx.			MFMCA	MFMCA		DV0P224	
			4000	MHMF402L1 5 MHMF402L1 7	99, 177	MFDLTB3SF	MFDLNB3S	F-frame	Approx. 6.5			0 * * 3EUT	0 * * 3FUT	DV0P4285		DV0P3410
			5000	MHMF502L1	100, 178	MFDLTB3SF	MFDLNB3S	-	Approx. 7.8			MFMCA 0 * * 3ECT	MFMCA 0 * * 3FCT		DV0P225	

Note)2 \diamond : Represents the driver specifications. (refer to "Model designation" P.22.)

Note)3 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030ETE

Note)4 Because A6SE series driver (dedicated for position control) does not support the absolute system specification,

only incremental system can be used in combination.

be used.

Note)6 For other possible combinations, refer to P.343.

Note)7 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

-38-

Note)5 Use of JL10 type motor cables enable one-touch lock connections. Conventional screwed type JL04V type cables can also

© Panasonic Corporation 2019 AQCTB04E 201903

A6 Family

A6N Series

A6B Series Special Order Product

E Series

Table of Part Numbers
and Options176 mm sq. or more5.5 kW to 22.0 kWIP67 motorEncoder connector (Large size JL10) type A6 Series

			Motor				Driver				Ор	tional parts 🕨 refe	r to P.306		
					Rating/	A6SF series Multi fanction type	A6SG series RS485 communication		Power capacity	Encoder Cable Note)2,3 JL10 (Large size) (One-touch lock type) WMS screwed type)	Moto	r Cable te)6	External		
N	otor series	Power supply	Output (W)	Part No. Note)1	Spec. Dimensions (page)	(Pulse, analog, full-closed)	A6SE series Basic (Pulse signal input)	Frame	(rated load) (kVA)	23-bit AbsoluteUse in the absolute system (with battery box) Note)4Use in the Incremental system (without battery box)	without Brake	with Brake	Regenerative Resistor	Reactor (Single phase / 3-phase)	Noise Filter
										Fixed cable					
			7500	MDMF752L1 🗌 6	108 188	MGDLTC3SF	_	G-frame	Approx. 11				DV0P4285 ×3 in parallel		HF3080C-SZ (Recommende components P.413
	MDMF Large size JL10 type 1500 r/min IP67	3-phase	11000	MDMFC12L1 🗌 6	109 189	MHDLTE3SF	_		Approx. 15	MFECA MFECA 0 * * 0EPE 0 * * 0EPD	Note)6	Note)6			
Middle	IP67 IP44 (22000 W)	200 V	15000	MDMFC52L1 🗌 6	110 191	MHDLTE3SF	_	H-frame	Approx. 20	MFECA MFECA 0 * * 0ESE 0 * * 0ESD			DV0P4285 ×6 in parallel	— Note)5	HF3100C-S2 (Recommende components P.413
e inertia			22000	MDMFD22L1 🗌 6	111 192	MHDLTF3SF	_		Approx. 28		Note)6 (U, V, W, Ground) : M8 terminal block)	Note)6 (U, V, W, Ground : M8 terminal block)			
	MGMF Large size JL10 type (Low speed/ High torque type 1500 r/min IP67	3-phase 200 V	5500	MGMF552L1 🗌 6	118 201	MGDLTC3SF	_	G-frame	Approx. 8.5	MFECA MFECA 0**0EPE 0**0EPD MFECA MFECA 0**0ESE 0**0ESD	Note)6	Note)6	DV0P4285	— Note)5	HF3080C-SZ (Recommende components P.413
High inertia	MHMF Large size JL10 type 1500 r/min IP67	3-phase 200 V	7500	MHMF752L1 □ 6	101 179	MGDLTC3SF		G-frame	Approx. 11	MFECA MFECA 0**0EPE 0**0EPD MFECA MFECA 0**0ESE 0**0ESD	Note)6	Note)6	×3 in parallel	— Note)5	HF3080C-SZ (Recommende components P.413

About dynamic brake

G frame is built-in / external, H frame is external

The indication of the internal / {external} dynamic brake resistance capacity is the maximum allowable inertia (load inertia moment ratio to rotor inertia moment is 10 times) up to three consecutive emergency stops at the rated speed. If used under conditions higher than that, the resistance may break and the dynamic brake may not operate.

Recommended resistance: 1.2 Ω 400 W or more x 3 pieces

For inquiries: Iwaki Musen Kenkyusho Co.,Ltd. Tel: +81-44-833-4311

Note)1	: Represe	nts	the	motor	sp	ecificatior	ns. (refer	to "Mode	l designation'	' P.22	.)
	 -									_	

Note)2 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030ETE

Note)3 Use of JL10 type encoder cables and motor cables enable one-touch lock connections. Conventional screwed type N/MS and JL04V type cables can also be used.

Note)4 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

Note)5 The reactor has to be prepared by the customer.

Note)6 We recommend purchasing an optional connector kit.

Connector kit (option) components Note)6

	D	river	Option No.	Encoder C	able	Motor	Cable	Brake	Cable
Motor	Frame	Connection terminal	Connector Kit for motor, encoder connection	Motor side	Driver side	Motor side	Driver side	Motor side	Power supply for brake
			DV0PM20107	Large size connector				not included	
MDMF 7.5 kW	G	M5	DV0PM20108	One-touch lock type	For	Connector	(to be supplied) by customer	Connector Screwed type	(to be supplied)
MHMF 7.5 kW	ŭ	IVIO	DV0PM20111	Large size connector	Connector X6	Screwed type	M5 Round terminal	not included	(by customer)
			DV0PM20112	Screwed type				Connector Screwed type	
MDMF 11.0 kW			DV0PM20107	Large size connector				not included	
	<u>ц</u>	Me	DV0PM20108	One-touch lock type	For	Connector	(to be supplied) by customer	Connector Screwed type	/to be supplied)
MDMF 15.0 kW		NIC	DV0PM20111	Large size connector	Connector X6	Screwed type	M6 Round terminal	not included	(by customer)
			DV0PM20112	Screwed type				Connector Screwed type	
			DV0PM20109	Large size connector				not included	
MDMF 22.0 kW	ц	Me	DV0PM20110	One-touch lock type	For	to be supplied	(to be supplied) by customer	Connector Screwed type	(to be supplied)
		NIC	DV0PM20113	Large size connector	Connector X6	M8	M6 Round terminal	not included	(by customer)
			DV0PM20114	Screwed type		Round terminal		Connector Screwed type	

Table of Part Numbers
and Options176 mm sq. or more5.5 kW to 22.0 kWIP67 motorEncoder connector (Small size JN2) type A6 Series

		Motor				Driver						Opt	ional parts 🕨 refe	er to P.306		
									Encoder		able Note)2	Motor	Cable			
				Rating/	A6SF series Multi fanction type	A6SG series RS485		Power capacity	JN2 (: (One-tou		nall size) n lock type)	Not	e)5			
Motor series	Power supply	Output (W)	Part No. Note)1	Spec. Dimensions (page)	(Pulse, analog, full-closed)	A6SE series Basic (Pulse signal input)	Frame	(at rated load (kVA)	23-bi Use in the absolute system (with battery box Note)3	U abso (with	bsolute Use in the Incremental system (without battery box	without Brake	with Brake	External Regenerative Resistor	Reactor (Single phase / 3-phase)	Noise Filter
		7500	MDMF752L1 🗌 5	108 189	MGDLTC3SF	_	G-frame	Approx. 11						DV0P4285 ×3 in parallel		HF3080C-SZ (Recommended components P.413
MDMF Small size JN2 type 1500 r/min IP67	3-phase	11000	MDMFC12L1 🗌 5	109 190	MHDLTE3SF	_		Approx. 15	MFECA		MFECA	Note)5	Note)5			
IP67 Made (22000 W)	200 V	15000	MDMFC52L1 🗌 5	110 191	MHDLTE3SF	_	H-frame	Approx. 20	0**0ETE	0:	0 * * 0ETD			DV0P4285 ×6 in parallel	— Note)4	HF3100C-SZ (Recommended components P.413
inertia		22000	MDMFD22L1 🗌 5	111 193	MHDLTF3SF	_		Approx. 28				Note)5 (U, V, W, Ground) : M8 terminal block)	Note)5 (U, V, W, Ground) : M8 terminal block)			
MGMF Small size JN2 type /Low speed// High torque type 1500 r/min IP67	3-phase 200 V	5500	MGMF552L1 🗌 5	118 202	MGDLTC3SF	_	G-frame	Approx. 8.5	MFECA 0 * * 0ETE	0:	MFECA 0**0ETD	Note)5	Note)5	DV0P4285	– Note)4	HF3080C-SZ/ (Recommendec components P.413
MHMF Small size JN2 type 1500 r/min IP67	3-phase 200 V	7500	MHMF752L1 🗌 5	101 179	MGDLTC3SF	_	G-frame	Approx. 11	MFECA 0 * * 0ETE	0:	MFECA 0**0ETD	Note)5	Note)5	×3 in parallel	_ Note)4	HF3080C-SZ/ (Recommended components P.413

About dynamic brake

G frame is built-in / external, H frame is external

The indication of the internal / {external} dynamic brake resistance capacity is the maximum allowable inertia (load inertia moment ratio to rotor inertia moment is 10 times) up to three consecutive emergency stops at the rated speed. If used under conditions higher than that, the resistance may break and the dynamic brake may not operate.

Recommended resistance: 1.2 Ω 400 W or more x 3 pieces

For inquiries: Iwaki Musen Kenkyusho Co., Ltd. Tel: +81-44-833-4311

Note)2 **: Represents the cable length (03/3 m, 05/5 m, 10/10 m, 20/20 m). Example. 3 m/MFECA0030ETE Note)3 Please note that a battery is not supplied together with 23-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

Note)4 The reactor has to be prepared by the customer.

Note)5 We recommend purchasing an optional connector kit.

-41-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Connector kit (option) components Note)5

	•	• •	•						
	D	river	Option No.	Encoder C	able	Motor	Cable	Brake	Cable
Motor	Frame	Connection terminal	Connector Kit for motor, encoder connection	Motor side	Driver side	Motor side	Driver side	Motor side	Power supply for brake
MDMF 7.5 kW	G	M5	DV0PM20056	Small size connector	For	Connector	(to be supplied) by customer	not included	(to be supplied)
MHMF 7.5 kW	u	CIVI	DV0PM20057	Screwed type	Connector X6	Screwed type	M5 Round terminal	Connector Screwed type	(by customer)
MDMF 11.0 kW	ш	Me	DV0PM20056	Small size connector	For	Connector	(to be supplied) by customer	not included	/to be supplied)
MDMF 15.0 kW	п	IVIO	DV0PM20057	Screwed type	Connector X6	Screwed type	M6 Round terminal	Connector Screwed type	(by customer)
MDMF 22.0 kW		МС	DV0PM20115	Small size connector	For	Terminal block (to be supplied)	(to be supplied) by customer	not included	/to be supplied)
	n	ΝΟ	DV0PM20116	Screwed type	Connector X6	M8 Round terminal	M6 Round terminal	Connector Screwed type	(by customer)

A6 Series Driver Specifications A6SF series (Multifanction type)

Position, Speed, Torque, Full-closed type

		100.1/	Mai	n circuit	Single phase 100 V $^{+10 \%}_{-15 \%}$ to 120 V $^{+10 \%}_{-15 \%}$ 50 Hz / 60 Hz
		100 V	Conti	rol circuit	Single phase 100 V $^{+10 \%}_{-15 \%}$ to 120 V $^{+10 \%}_{-15 \%}$ 50 Hz / 60 Hz
	Input		Main	A-frame to D-frame	Single/3-phase 200 V ^{+10 %} _{-15 %} to 240 V ^{+10 %} _{-15 %} 50 Hz / 60 Hz
	power	000 V	circuit	E-frame to H-frame	3-phase 200 V ^{+10 %} 15 % to 240 V ^{+10 %} 15 % 50 Hz / 60 Hz
		200 V	Control	A-frame to D-frame	Single phase 200 V $^{+10 \%}_{-15 \%}$ to 240 V $^{+10 \%}_{-15 \%}$ 50 Hz / 60 Hz
			circuit	E-frame to H-frame	Single phase 200 V $^{+10}_{-15}$ % to 240 V $^{+10}_{-15}$ % 50 Hz / 60 Hz
			temp	perature	Ambient temperature: 0 °C to 55 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation ^{*1})
	En	vironment	hu	midity	Both operating and storage : 20 %RH to 85 %RH (free from condensation ^{*1})
			AI	titude	Lower than 1000 m
			Vik	oration	5.88 m/s ² or less, 10 Hz to 60 Hz
	Со	ntrol metho	d		IGBT PWM Sinusoidal wave drive
	End	coder feedk	back		 23-bit (8388608 resolution) absolute encoder, 7-wire serial * When using it as an incremental system (not using multiturn data), do not connect the battery for absolute encoder. Parameter Pr. 0.15 must be set to "1" (factory settings).
Basic Spe	Ext	ernal scale	e feedba	ck	A/B phase, homing signal differential input. Serial communication is also supported. Manufacturers that support serial communication scale: Fagor Automation S.Coop., HEIDENHAIN, Magnescale Co., Ltd., Mitutoyo Corporation Nidec Sankyo Corporation, Renishaw plc
ecificatio		Control o	anal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.
ons	-	Control Si	ynai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.
	iterfa		anol	Input	3 inputs (16-bit A/D : 1 input, 12-bit A/D : 2 inputs)
	ace (Analog sig	Jiai	Output	2 outputs (Analog monitor: 2 output)
	connector	Dulas sign		Input	2 inputs (Photo-coupler input, Line receiver input) Both open collector and line driver interface can be connected. High speed line driver interface can be connected.
		ruise sigi	lai	Output	4 outputs (Line driver: 3 output, open collector: 1 output) Line driver output for encoder pulses (A/B/Z signal) or external feedback pulses (EXA/ EXB/EXZ signal) open collector output also available for Z or EXZ signal.
				USB	USB interface to connect to computers for parameter setting or status monitoring.
	Coi fun	mmunicatic ction	on	RS232	1:1 communication
				RS485	1: n communication (max 31) (Supports Modbus)
	Saf	ety functio	n		A dedicated connector is provided for Functional Safety.
	Fro	nt panel			(1) 5 keys (2) LED (6-digit)
	Re	generation			A-frame, B-frame, G-frame, H-frame: no built-in regenerative resistor (external resistor only) C-frame to F-frame: Built-in regenerative resistor (external resistor is also enabled.)
	Dyr	namic brak	e		A-frame to G-frame: Built-in H-frame: External resistor only
	Co	ntrol 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.

Panasonic Corporation Electromechanical Control Business Division	
industrial.panasonic.com/ac/e/	-43-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

	Co	Control input			 (1) servo-ON input (2) Alarm clear input (3) Gain switch input (4) Positive direction drive inhibit input (5) Negative direction drive inhibit input (6) Forced alarm input (7) Inertia ratio switch input 		
	Co	ontrol output			 Servo-alarm output (2) Servo-ready output (3) External brake off output At-speed output (5) Torque in-limit output (6) Zero speed detection output Warning output (8) Alarm clear attribute output (9) Servo on status output 		
		Control input			 (1) Deviation counter clear input (2) Command pulse inhibit input (3) Command division/multiplication switch input (4) Anti-vibration switch input (5) Torque limit switch input (6) Control mode switch input 		
		Control ou	utput Max. command	pulse frequency	 (1) In-position output (2) Position command ON/OFF output 500 kpps (Optocoupler interface). 8 Mpps (When using line receiver input multiplied by 4) 	A6	
			Input pulse si	anal format	Differential input. Selectable by parameter.	Far	
	Pos	Pulse		gnarionnat	([1]Positive/Negative pulse [2]A/B quadrature [3]Pulse/Direction)	nily	
	ition cor	input	Electronic gea (Division/Mult command pul	ar iplication of se)	Any value of $1 - 2^{30}$ can be set for both numerator (which corresponds to encoder resolution) and denominator (which corresponds to command pulse resolution per motor revolution), but the combination has to be within the range shown above.		
	itrol		Smoothing filt	ter	Primary delay filter or FIR type filter is adaptable to the command input		
		Analog	Torque limit c	ommand input	Individual torque limit for both positive and negative direction is enabled.	A6	
		Two-degree-of-freedom control			Analog voltage can be used as torque feed forward input.	s N	
		Anti-vibra	tion control	Control	Available	erie	
		Load varia	ation suppress	ion control	Available	, s	
		Block ope	eration		Modbus (RS 232, RS 485) or interface is selectable		
		Control in	put		(1) Internal command velocity selection input(2) Speed zero clamp input(3) Velocity command sign input(4) Control mode switch input		
		Control ou	utput		(1) Speed coincidence output (2) Velocity command ON/OFF output	Spec	
	Sbe	Analog	Velocity comm	nand input	Velocity command input with analog voltage is possible. Scale setting and com- mand polarity vary depending on parameters. (6 V/Rated rotational speed: Default)		
	ed	input	Torque limit c	ommand input	Individual torque limit for both positive and negative direction is enabled.	ler Pr	
	ğ	Torque feed for		orward input	Analog voltage can be used as torque feed forward input.	oduc	
	ntro	Internal velocity command		nd	Switching the internal 8 speed is enabled by command input.		
	_	Soft-start/down function			with 0 s to 10 s /1000 r/min. Sigmoid acceleration is enabled,		
т		Speed zero clamp			Internal velocity command can be clamped to 0 with speed zero clamp input.		
unc		Two-degree-of-freedom control		control	Available	m	
lör	Torc	Control input			Speed zero clamp input, torque command sign input, control mode switch input.	Se	
-	que	Control output			(1) Speed coincidence output (2) Speed in-limit output	rieg	
	con	input	Torque comm	and input	mand polarity vary depending on parameters. (3 V/rated torque Default)	S S	
	trol	Speed lim	nit function		Speed limit value with parameter is enabled.		
		Control input			 (1) Deviation counter clear input (2) Command pulse inhibit input (3) Command division/multiplication switch input (4) Anti-vibration switch input (5) Torque limit switch input 	_	
		Control output			(1) In-position output (2) Position command ON/OFF output	nfo	
		Max. command pulse frequency		pulse frequency	500 kpps (Optocoupler interface), 8 Mpps (When using line receiver input multiplied by 4)	E E	
		.	Input pulse si	gnal format	Differential input. Selectable by parameter. ([1]Positive/Negative pulse [2]A/B quadrature [3]Pulse/Direction)	ation	
	Full-clo	Pulse input	Electronic gea (Division/Mult command pul	ar iplication of se)	Applicable scaling ratio: 1/1000 times to 8000 times Any value of 1 - 2 ³⁰ can be set for both numerator (which corresponds to encoder resolution) and denominator (which corresponds to command pulse resolution per motor revolution), but the combination has to be within the range shown above.		
	sed	A	Smoothing filt	er	Primary delay filter or FIR type filter is adaptable to the command input		
	ŝ	input	Torque feed for	ormand input	Analog voltage can be used as torgue feed forward input		
	ntrol	Setting range of external scale division/multiplication		l scale	1/40 times to 1280 times Although ratio of the encoder pulse (numerator) and external scale pulse (de- nominator) can be arbitrarily set in the range of 1 to 2^{23} for the numerator and in the range of 1 to 2^{23} for the denominator, this product should be used within the aforementioned range.		
		Two-degree-of-freedom control		control	Available		
		Anti-vibra	tion control		Available		
		Load varia	ation suppress	ion control	Available		
	Q	Block operation Auto tuning			The load inertia is identified in real time by the driving state of the motor operating ac- cording 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.		
	omr	Division o	f encoder feed	back pulse	Set up of any value is enabled (encoder pulses count is the max.).		
	non	Protective	function	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.		
		Alarm data trace back			Excess position deviation, command pulse division error, EEPHOM error etc.		
		. ium uu					

A6SG series (RS485 communication type) A6SE series (Besic type)

Position control only type

		100 V	Mai	n circuit	Single phase 100	0 V ^{+10 %} to [−]	120 V ^{+10 %} –15 %	50 Hz / 60 Hz
			Cont	rol circuit	Single phase 100	0 V ⁺¹⁰ % to [−]	120 V ^{+10 %} –15 %	50 Hz / 60 Hz
	Input		Main	A-frame to D-frame	Single/3-phase 200	0 V ^{+10 %} to 2 −15 %	240 V ^{+10 %} –15 %	50 Hz / 60 Hz
	power	000.14	circuit	E-frame to F-frame	3-phase 200	0 V ^{+10 %} to 2 −15 %	240 V ^{+10 %} –15 %	50 Hz / 60 Hz
		200 V	Control	A-frame to D-frame	Single phase 200	0 V ^{+10 %} to 2 −15 %	240 V ^{+10 %} –15 %	50 Hz / 60 Hz
			circuit	E-frame to F-frame	Single phase 200	0 V ^{+10 %} to 2 −15 %	240 V ^{+10 %} –15 %	50 Hz / 60 Hz
		temperature		perature	Ambient temperature: 0 °C to 5 Storage temperature: -20 °C to (Max.temperature guarantee: 8	5 °C (free from 0 65 °C 10 °C for 72 hou	r freezing) urs free from	condensation ^{*1})
	Env	vironment	hu	midity	Both operating and storage : 20	0 %RH to 85 %	RH (free from	condensation ^{*1})
		Altitude		titude	Lower than 1000 m			
			Vibration		5.88 m/s ² or less, 10 Hz to 60 Hz			
	Co	ntrol metho	bd		IGBT PWM Sinusoidal wave drive			
Basic Specifications	Encoder feedback				23-bit (8388608 resolution) abs * A6SG series When using it as an increment battery for absolute encoder. * A6SE series Since it can be used only as a absolute encoder. Parameter	olute encoder, ntal system (no Parameter Pr. an incremental Pr. 0.15 must	7-wire serial t using multitu 0.15 must be system, do no be set to "1" (rn data), do not connect the set to "1" (factory settings). ot connect the battery for factory settings).
		Control of	Control signal Output		General purpose 10 inputs The function of general-purpose	e input is selec	ted by parame	eters.
	Interfac	Control Si			General purpose 6 outputs The function of general-purpose input is selected by parameters.			
	ie cor	Input		Input	None			
	nect	Analog si	Analog signal Output		2 outputs (Analog monitor: 2 output)			
	or			Input	2 inputs (Photo-coupler input, L	ine receiver in	put)	
		ruise sigi	la	Output	4 outputs (Line driver: 3 output, open collector: 1 output)			
				USB	USB interface to connect to computers for parameter setting or status monitoring.			
	Co fun	mmunicatio ction	on	RS232	1:1 communication		* RS485, RS	6232 connector is not installed
				RS485	1: n communication (max 31)		on A6 SE s	eries.
	Fro	Front panel			(1) 5 keys (2) LED (6-digit)			
	Re	Regeneration			A-frame, B,-frame: no built-in regenerative resistor (external resistor only) C-frame to F-frame: Built-in regenerative resistor (external resistor is also enabled.)			
	Dyı	Dynamic brake			A-frame to F-frame: Built-in			
	Co	Control mode			ntrol mode (1) Position control (2) Internal velocity command (3) Position/Internal velocity command			

(1) Deviation counter clear input (2) Command pulse inhibit input (3) Command division/multiplication switch input (4) Anti-vibration switch input Control input (5) Torque limit switch input (6) Control mode switch input Control output (1) In-position output (2) Position command ON/OFF output Max. command 500 kpps (Optocoupler interface) 8 Mpps (Line receiver interface) pulse frequency Input pulse signal Differential input. Selectable by parameter. format ([1]Positive/Negative pulse [2]A/B quadrature [3]Pulse/Direction) Position Pulse Electronic gear Applicable scaling ratio: 1/1000 times to 8000 times (Division/Multiplica-Any value of 1 - 2³⁰ can be set for both numerator (which corresponds to encoder i control tion of command resolution) and denominator (which corresponds to command pulse resolution per pulse) motor revolution), but the combination has to be within the range shown above. Smoothing filter Primary delay filter or FIR type filter is adaptable to the command input Anti-vibration control Available Two-degree-of-freedom control Available Function Load variation suppression Available control Block operation Modbus (RS 232, RS 485) or interface is selectable. (A6SE : interface only.) (1) Internal command velocity selection input (2) Speed zero clamp input Control input (3) Velocity command sign input (4) Control mode switch input (1) Speed coincidence output (2) Velocity command ON/OFF output Control output Speed Internal velocity command Switching the internal 8 speed is enabled by command input. contro Individual setup of acceleration and deceleration is enabled, Soft-start/down function with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled. Zero-speed clamp Internal velocity command can be clamped to 0 with speed zero clamp input. Two-degree-of-freedom control Available The load inertia is identified in real time by the driving state of the motor operating ac-Auto tuning cording to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting. Division of encoder feedback Common Set up of any value is enabled (encoder pulses count is the max.). pulse Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encod-Hard error Protective er error etc. function Excess position deviation, command pulse division error, EEPROM error etc. Soft error Alarm data trace back Tracing back of alarm data is available

Control input

Control output

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

(1) servo-ON input (2) Alarm clear input (3) Gain switch input
(4) Positive direction drive inhibit input (5) Negative direction drive inhibit input
(6) Forced alarm input (7) Inertia ratio switch input

(1) Servo-alarm output (2) Servo-ready output (3) External brake off output (4) At-speed output (5) Torque in-limit output (6) Zero speed detection output (7) Warning output (8) Alarm clear attribute output (9) Servo on status output

A6 Family

A6N Series

A6B Series Special Order Product

m

Series

Imformation

© Panasonic Corporation 2019 AQCTB04E 201903

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

In Case of Leadwire type





• The pin number of X4 is based on the factory setting parameters.

* Power supply for motor brake and connector X4 requires insulation. Do not connect to the same power supply.

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



• The pin number of X4 is based on the factory setting parameters.

* Power supply for motor brake and connector X4 requires insulation. Do not connect to the same power supply.

Connect an external regenerative resistor.

Frame S No. (A	Short wire (Accessory)	ire pry) Built-in regenerative resistor	Connection of the connector XB	▲ Do not connect anything to N.
			In case of using an external regenerative resistor	In case of not using an external regenerative resistor
A-frame B-frame	without	without	 Connect an external regenerative resistor between P-B. 	Always open between P-B.

* Refer to P.307 Specifications of Motor connector.





• The pin number of X4 is based on the factory setting parameters.

* Power supply for motor brake and connector X4 requires insulation. Do not connect to the same power supply. Note)1

Frame No.	Short wire (Accessory)	Built-in regenerative resistor	Connection of the connector XB	▲ Do not connect anything to N.
			In case of using an external regenerative resistor	In case of not using an external regenerative resistor
C-frame D-frame	with	with	 Remove the short wire accessory from between RB-B. Connect an external regenerative resistor between P-B. 	Shorted between RB-B with an attached short wire
* Refer to P.307, P.308, Specifications of Motor connector.				

Panasonic Corporation Electromechanical Control Business Division -48industrial.panasonic.com/ac/e/

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



• The pin number of X4 is based on the factory setting parameters.

Frame No.	Short wire (Accessory)	rt wire essory) Built-in regenerative resistor	Connection of the connector XC	▲ Do not connect anything to N.
			In case of using	In case of not using
			an external regenerative resistor	an external regenerative resistor
E-frame	with	with	 Remove the short wire accessory from between RB-B. Connect an external regenerative resistor between P-B. 	Shorted between RB-B with an attached short wire

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



• The pin number of X4 is based on the factory setting parameters.

Note)1

,				
Frame No.	Short bar (Accessory)	Short bar regenerative	Connection of terminal block	1 Do not connect anything to N.
			In case of using	In case of not using
		resistor	an external regenerative resistor	an external regenerative resistor
F-frame	with	with	 Remove the short bar accessory from between RB-B. Connect an external regenerative resistor between P-B. 	Shorted between RB-B with an attached short bar

* Refer to P.308, Specifications of Motor connector.

* Power supply for motor brake and

connector X4 requires insulation.

* Built-in / {external} The standard

of the dynamic brake resistance's

emergency stops from the rated

speed at the maximum allowable

times the rotor inertia moment).

If it is used under more conditions

the resistance may be broken and

the dynamic brake may not operate.

capability is up to three consecutive

inertia (load inertia moment ratio 10

supply.

Do not connect to the same power

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



Frame	Short bar	Built-in	Connection of terminal block	A Do not connect anything to N.
No.	(Accessory)	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 P-B.	 Always open between P-B.

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



* Refer to P.308, Specifications of Motor connector.

Panasonic Corporation Electromechanical Control Business Division -50industrial.panasonic.com/ac/e/

Series

-
~
0
_
മ
-
Ξ.
0
- 3-
_

About the Dynamic Brake

G frame has built-in dynamic brake resistor. When using built-in dynamic brake, set switch XS to "1" side

When exceeding the capacity of built-in dynamic brake resistor, set switch XS to "2" side and use external dynamic brake resistor.

When using external dynamic brake

- Note 1) Set switch XS to "2" side.
- Note 2) Make the electromagnetic contactor (MC2) the same as the electromagnetic contactor (MC1) of the main circuit.
- Note 3) Provide an auxiliary contact, and configure protection so that the servo will not turn on in the external sequence if the main contact is welded
- Note 4) Mount the dynamic brake resistor on incombustible material such as metal.
- Note 5) Install a thermal protector on the dynamic brake resistor and monitor it with the upper I / O, and configure protection so that the servo is not turned on in the external sequence when the thermal protector is operating
- Note 6) If the upper I / O cannot monitor the thermal protector, input the output of the thermal protector between L2C and DB2 so that the dynamic brake does not operate when the temperature protection works.

About motor wiring

Note 7) This is the terminal symbol of the connector.

- * Power supply for motor brake and connector X4 requires insulation. Do not connect to the same power supply.
- * Do not use built-in dynamic brake and external dynamic brake at the same time.

rnal ve w)	The H fr will be in Use an collision	The H frame does not have a built-in dynamic brake resistor, so it will be in a free run state when the motor does emergency stop. Use an external dynamic brake resistor if it may cause a machine collision.				
	Where	n using external dynamic brake				
-	Note 1)	Make the electromagnetic contactor (MC2) the same as the				
nal	Noto 2)	electromagnetic contactor (MC1) of the main circuit.				
	Note 2)	that the servo will not turn on in the external sequence if the main contact is welded.				
	Note 3)	Mount the dynamic brake resistor on incombustible material such as metal.				
	Note 4)	Install a thermal protector on the dynamic brake resistor and monitor it with the upper I / O, and configure protection so that the servo is not turned on in the external sequence when the thermal protector is operating.				
	Note 5)	If the upper I / O cannot monitor the thermal protector, input the output of the thermal protector between L2C and DB2 so that the dynamic brake does not operate when the temperature protection works.				
	Abou	it motor wiring				
	Note 6)	This is the terminal symbol of the connector. () Is the terminal symbol of 22.0 kW motor.				
]	* Do no the sa	ot use built-in dynamic brake and external dynamic brake at ame time.				
of ter	minal blo	ck \triangle Do not connect anything to N.				
aonor	ativo roci	stor In case of not using an external regenerative resistor				

of terminal block	<u>A</u> Do not connect anything to N.
enerative resistor	In case of not using an external regenerative resistor
resistor between P-B.	 Always open between P-B.

A6 Series Wiring to the Connector, X3 * Excluding A6SE, A6SG Series Safety Function

Connecting the host controller can configure a safety circuit that controls the safety functions. When not constructing the safety circuit, use the supplied safety bypass plug.

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 STO state. When the driver becomes STO state, front panel displays the "St.". Then, when the driver's state is STO input is off and servo-on input is off, the driver automatically becomes servo-off.

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 than failure monitoring.
- 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 danger condition.
- When using STO function, connect equipment conforming to the safety standards.



Panasonic Corporation Automotive & Industrial Systems Company http://panasonic.net/id/

-51-

Wiring to the Connector, X4

Wiring Example of Position Control Mode



In case of open collector I/F (1) When you use the external resistor with 12 V and 24 V power supply PULS1 Command pulse input A SIGN1 ≖■本中† 220Ω (Use with SIGN2 500 knns or les A6 Family GND OA+ A-phase VDC VDC-1.5 R+220 ≒10 mA juqtuo 1 OAof R V 820 01/2 W B-phase OB+ 49 output 24 V 2 kΩ1/2 W OB-2) When you do not use the externa Z-phase OZ+ resistor with 24 V power supply output OZ-A6N Series ¥: GND F Z-phase output (open collector) CZ (_____ : Twisted pair) <Note> Do not connect anythig to Pin No.14 15, 16, 18, A6 SE series and A6 SG series can not be used A6B - GND Positive direction torque limit input (0 V to +10 V) Series Negative direction torque limit input (-10 V to 0 V) 1 kΩ Velocity monitor output SP Torque monitor output IM The functions of the following pin can be changed using parameters. ===**X**4 -----^{;;} Input: 8, 9, 26, 27, 28, 29, 31, 32 Output: 10-11, 12, 34-35, 36-37, 38-39, 40 <Remark> Refer to P.324, Specifications of Interface connector The above diagram is a composition of the shipment parar ш Series Wiring Example of Velocity Control Mode * Excluding A6SE, A6SG Series 7 COM+ nternal command speed election 1 input 33 INTSPD1 4.7 kΩ 1 sneed election 2 input 30 INTSPD2 Servo-ON input 29 SRV-ON Imformation (____: Twisted pair) Gain switch input 27 GAIN Internal command speed selection 3 input 28 INTSPD3 Zero speed clamp input 26 ZEROSPD OA+ **₽** A-phase output 22 Control mode switch input 32 C-MODE OA-48 Alarm clear input 31 A-CLR OB+ B-phase output OB-Positive direction drive inhibit input 9 POT 23 OZ+ ∣ [r₩ drive inhibit inpu 8 Z-phase output NOT Servo-Ready output 35 S-RDY+ 34 S-RDY-OZ-Servo-Alarm output ____ ₽=‡ GND 19 Z-phase output (open collecto 39 AT-SPEED+ 38 AT-SPEED-CZ At-speed output VDC 12 V to 24 V External brake off output 11 BRKOFF+ Torque in-limit output _____ ₽=₹ elocity command GND 15 ∫ input (0 V to ± 10 V) Zero speed detection output 12 + 20 kn/20 kn 187 kn + 20 kn/20 kn 187 kn ↓ 20 kn/0 332 kn ↓ 20 kn/0 332 kn ↓ 20 kn/0 332 kn ↓ 20 kn/0 187 kn ↓ 20 kn/0 177 kn ↓ 20 kn ↓ 2 ZSP Positive direction torque limit input (0 V to +10 V) GND COM-1-20 kg 20 kg 18.7 kg N-ATL Negative direction torque limit input (-10 V to 0 V) 1 <u>kΩ</u> SP Velocity monitor output Torque monitor output IM 50 FG The functions of the following pin can be changed using parameters Input: 8, 9, 26, 27, 28, 29, 30, 31, 32, 33 Output: 10-11, 12, 34-35, 36-37, 38-39, 40 The above diagram is a composition of the shipment parameter

<Remark> Refer to P.324, Specifications of Interface connector.

Control Circuit Diagram

A6 Series

Wiring Example of Torque Control Mode



Wiring Example of Full-closed Control Mode

* Excluding A6SE, A6SG Series

* Excluding A6SE, A6SG Series



Wiring to the Connector, X5 * Excluding A6SE, A6SG Series

Applicable External Scale

S

(1)

S

(A

Applicable External Scale	Manufacturer	Model No.	Resolution [µm]	Maximum speed (m/s) ^{*1}
Parallel type AB-phase)	General	_	Maximum speed at 4 I	ter 4 × multiplication : Mpps
		SL700-PL101RP/RHP SL710-PL101RP/RHP	0.1	10
	Magnapagla Co. 1 td	SR75 / SR85	0.01 to 1	3.3
	Magnescale Co., Ltd.	BF1	0.001/0.01	0.4/1.8
erial type ncremental system)		SQ10	0.05/0.1/ 0.5/1	3
	NIDEC SANKYO CORPORATION	PSLH041 + PSLG	0.1	6
		TONIC	0.001 to 5	0.40
	Renishaw plc	ATOM	0.001 to 10	6.48 m/s @ 1 μm
		VIONIC	0.0025 to 5	0.040 III/S @ 0.1 µIII
		S2AP/SV2AP/G2AP	0.01/0.05	3
		LAP	0.01/0.05	3
	Fagor Automation S.Coop	EXA/ EXG/ EXT	0.01/0.05	8
		H2AP-D200/H2AP-D90	29 bit/23 bit	750 r/min, 1500 r/min
		S2AP-D170,/S2AP-D90	23 bit	1500 r/min
		LIC2197P/LIC2199P	0.05/0.1	10
		LIC4193P/LIC4195P LIC4197P/LIC4199P	0.001/0.005/0.01	10
		LC195P/LC495P	0.001/0.01	3
erial type	HEIDENHAIN	ECA 4490P	27 bits to 29 bits	7000 r/min to 550 r/min (Depends on drum size)
(bsolute system)		RCN 2x90P/RCN 5x90P	26 bits/28 bits	1500 r/min
		RCN 8x90P	29 bit	500 r/min
	RSF Electronik	MC 15P MP/MC 15P MK	0.05/0.1	10
	Magnescale Co., Ltd.	SR77 / SR87	0.01 to 1	3.3
		AT573-SC/H	0.05	2.5
	Mitutoyo Corporation	ST700	0.1	5
		ST1300	0.001/0.01	8
			0.001	A5/0.4, A6/4
	Renishaw plc	RESOLUTE	0.05	A5/20, A6/100
			0.1	A5/40, A6/100

*1 The maximum speed is a characteristic of the driver. It is limited by the configration of the machine and the system.

* For more information about the external scale product, please contact the manufacturer.

Wiring Diagram of X5



-54-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/





A6B Series Special Order Product

Ш Series



-55-



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

[[]Connector pin assignment] Refer to P.307, P.308 "Specifications of Motor connector".

A6 Series **Dimensions of Driver** * All dimensions shown in this catalog are for the A6SF series, but outer dimensions are the same as the A6SE series. For appearance, refer to P.23 and P.24.

A-frame



B-frame



XA: ① Main power input terminals ② Control power input terminals XB: 1) Terminals for external regenerative resistor 2 Terminals for motor connection X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector For mounting X5: For external scale connection 65 (50) X6: For encoder connection 60 / 20(Mounting di 05.2 Front Pane XA -X3 XB: (XF **%** XF 2.5 20(Mounting dim 40 ensions 5.2 (90)60 For mounting Rack mount type (Option: Front-end mounting) For connectors used to connect to the driver, power supply and motor,



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-57-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

A6 Series Dimensions of Driver

* All dimensions shown in this catalog are for the A6SF series, but outer dimensions are the same as the A6SE series. For appearance, refer to P.23 and P.24.

E-frame (200 V)



F-frame (200 V)



G-frame (200 V) (The A6SE series is not line up)



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-59-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-60-

H-frame (200 V) (The A6SE series is not line up)



Features/ Lineup

Features

- Line-up IP67 motor: 50 W to 5.0 kW
- Max speed: 6500r/min (MHMF 50 W to 400 W)
- · Low inertia (MSMF) to High inertia (MHMF).
- · Low cogging torque: Rated torque ratio 0.5 % (typical value).
- · 23-bit absolute encoder (8388608 pulse).

Motor Lineup



Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-61-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-62-

Motor Specifications A6 Series



High inertia 6000 r/min (750 W,1000 W) Rated speed : 3000 r/min 50 W to 1000 W IP65: Leadwire type



: 2000 r/min (11.0 kW to 22.0 kW) : 1500 r/min (11.0 kW to 22.0 kW)

Motor Contents

ISMF
50 W to 5.0 kW P.63
100 W to 400 W P 79
IHMF
50 W to 7.5 kW P.85
IDMF
1.0 kW to 22.0 kW P.102
IGMF
0.85 kW to 5.5 kW P.112
imensions
MSMF
(50 W to 1000 W)P.119
MSMF
(1.0 kW to 5.0 kW)P.127
MOME
(100 W to 400 W)P.135
MHMF
(50 W to 1000 W)P.147
МНМЕ
(1.0 kW to 7.5 kW)P.171
MDMF
(1.0 kW to 22.0 kW)P.180
MGMF
(0.85 kW to 5.5 kW)P.193
pecial Order ProductP.203

Motors with Gear

Reducer. ..P.293

Motor Specification Description

Environmental Conditions	P.303
Notes on [Motor specificatio	n]
page	P.303
Permissible Load at	
Output Shaft	P.304
Built-in Holding Brake	P.305

Imformation

A6 Family

A6N Series

A6B Series Special Order Product

Ш

Series

100 V MSMF 50 W [Low inertia 38 mm sq.]

Specifications

				AC100 V	
Motor model *1		MSMF5AZL1			
		Multi	function type	MADLT01SF	
Applicable	Model No	RS48	5 communication type *2	MADLN01SG	
driver		Basic	c type *2	MADLN01SE	
	Fram	e sym	bol	A-frame	
Power supply	capacit	у	(kVA)	0.4	
Rated output			(W)	50	
Rated torque			(N·m)	0.16	
Continuous sta	all torqu	ie	(N·m)	0.16	
Momentary Ma	ax. pea	k torqu	ue (N·m)	0.48	
Rated current			(A(rms))	1.1	
Max. current			(A(o-p))	4.7	
Regenerative	brake		Without option	No limit Note)2	
frequency (time	es/min)	Note)1	DV0P4280	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia		Without brake	0.026	
of rotor (×10 ⁻⁴ kg·m ²)			With brake	0.029	
Recommended moment of inertia ratio of the load and the rotor			or Note)3	30 times or less	
Rotary encode	er speci	ficatio	ns⁺³	23-bit Absolute	
	Re	solutic	on per single turn	8388608	

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Static friction torque (N·m)	0.294 or more			
Engaging time (ms)	35 or less			
Releasing time (ms) Note)4	20 or less			
Exciting current (DC) (A)	0.30			
Releasing voltage (DC) (V)	1 or more			
Exciting voltage (DC) (V)	24±1.2			

• Permissible load (For details, refer to P.304)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88.0
	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)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.119		—	P.119		-		
Connector type (IP67)	P.119		_	P.120		—		

200 V MSMF 50 W [Low inertia 38 mm sq.]

Specifications

				AC200 V	• Brake	specifications (For detail	s, refer to P.305)	
Motor model 1		MSMF5AZL1	(Inis br Do not	(Do not use this for braking the motor in motion.)				
		Multif	unction type	MADLT05SF	Static fri	ction torque (N·m)	0.294 or more	
Applicable	Model No.	RS48	5 communication type *2	MADLN05SG	Engagin	ig time (ms)	35 or less	
driver		Basic	type *2	MADLN05SE	Releasir	ng time (ms) Note)4	20 or less	
	Fram	e sym	lool	A-frame	Exciting	current (DC) (A)	0.30	
Power supply	capacit	у	(kVA)	0.5	Releasir	ng voltage (DC) (V)	1 or more	
Rated output			(W)	50	Exciting	voltage (DC) (V)	24±1.2	
Rated torque			(N·m)	0.16	• Permi	• Permissible load (For details, refer to P304)		
Continuous st	all torqu	ie	(N·m)	0.16		Badial load B direction (N)	147	
Momentary M	ax. pea	k torqu	ie (N·m)	0.48	During		147	
Rated current	Rated current(A(rms))Max. current(A(o-p))		(A(rms))	1.1	assembly	Thrust load A-direction (N)	88.0	
Max. current			(A(o-p))	4.7]	Thrust load B-direction (N)	117.6	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	68.6	
frequency (time	es/min)	Note)1	DV0P4281	No limit Note)2	operation	Thrust load A, B-direction (N)	58.8	
Rated rotation	al spee	d	(r/min)	3000	For deta	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	al speed		(r/min)	6000	• Dimens	ions of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.026	n 1 ∐ Ir specifi	*1 in the motor part number represents the mo		
of rotor (×10 ⁻⁴ kg·m ²) With brake		With brake	0.029	*2 Basic	*2 Basic type and RS485 communication type are			
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa		
Resolution per single turn			n per single turn	8388608	a batte	ery for absolute encoder.		



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.119			P.119				
Connector type (IP67)	P.119			P.120				

-64-

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

Panasonic Corporation Electromechanical Control Business Division -63industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

m Series

Imformation

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

100 V MSMF 100 W [Low inertia 38 mm sq.]

Specifications

					AC100 V		
Motor model *1		MSMF011L1					
		Multi	function type		MADLT11SF		
Applicable	Model No	RS48	5 communicatior	n type *2	MADLN11SG		
driver	110.	Basic	c type ^{⁺2}		MADLN11SE		
	Fram	e sym	bol		A-frame		
Power supply	capacit	у		(kVA)	0.4		
Rated output				(W)	100		
Rated torque				(N·m)	0.32		
Continuous sta	all torqu	ie		(N·m)	0.32		
Momentary Ma	ax. pea	k torqu	le	(N·m)	0.95		
Rated current			(A	(rms))	1.6		
Max. current			(A	(o-p))	6.9		
Regenerative	brake		Without option		No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4280		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	6000		
Moment of ine	rtia		Without brake		0.048		
of rotor (×10 ⁻⁴ kg·m ²)			With brake		0.051		
Recommended moment of inertia ratio of the load and the rotor					30 times or less		
Rotary encode	er speci	ficatio	ns [∗] ³		23-bit Absolute		
	Re	solutic	on per single t	8388608			

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

bo not use this for braking the motor in motor.				
Static friction torque (N·m)	0.294 or more			
Engaging time (ms)	35 or less			
Releasing time (ms) Note)4	20 or less			
Exciting current (DC) (A)	0.30			
Releasing voltage (DC) (V)	1 or more			
Exciting voltage (DC) (V)	24±1.2			

• Permissible load (For details, refer to P.304)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88.0
	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)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft						
	without brake			with brake			
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
Leadwire type (IP65)	P.120		—	P.120		_	
Connector type (IP67)	P.121		_	P.121			

-65-

200 V MSMF 100 W [Low inertia 38 mm sq.]

Specifications

				AC200 V	• Brake	specifications (For detail	s, refer to P.305)	
Motor model *1	1			MSMF012L1	(Inis br Do not	(Do not use this for braking the motor in motion.)		
Mult		Multif	unction type	MADLT05SF	Static fri	Static friction torque (N·m)		
Applicable	Model No.	RS48	5 communication type *2	MADLN05SG	Engagin	g time (ms)	35 or less	
driver		Basic	type *2	MADLN05SE	Releasir	ng time (ms) Note)4	20 or less	
	Fram	e sym	lool	A-frame	Exciting	current (DC) (A)	0.30	
Power supply	capacit	у	(kVA)	0.5	Releasir	ng voltage (DC) (V)	1 or more	
Rated output (W)		100	Exciting	voltage (DC) (V)	24±1.2			
Rated torque (N·m)		0.32	• Permi	Permissible load (For details refer to P304				
Continuous stall torque (N·m)		(N·m)	0.32		Badial load P-direction (NI)	147		
Momentary Max. peak torque (N·m)		ie (N·m)	0.95	During		147		
Rated current (A(rms))		1.1	assembly	I hrust load A-direction (N)	88.0			
Max. current	Max. current (A(o-p))		(A(o-p))	4.7		Thrust load B-direction (N)	117.6	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	68.6	
frequency (time	es/min)	Note)1	DV0P4281	No limit Note)2	operation	Thrust load A, B-direction (N)	58.8	
Rated rotation	al spee	d	(r/min)	3000	For deta	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	l speed	l	(r/min)	6000	• Dimensi	ions of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.048		the motor part number repre	sents the motor	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	0.051	*2 Basic	type and RS485 communicat	ion type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	15 ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an increment		
Resolution per single turn			n per single turn	8388608	a batte	a battery for absolute encoder.		



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.120		_	P.120		_		
Connector type (IP67)	P.121		—	P.121		_		

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

-66-

Motor Specifications A6 Series

A6 Family



A6B Series Special Order Product

m Series

100 V MSMF 200 W [Low inertia 60 mm sq.]

Specifications

Motor model '' MSMF021L1 Applicable Model Multifunction type MBDLT21SF Model RS485 communication type '2 MBDLN21SG Basic type '2 MBDLN21SE Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64			AC100 V			
Applicable driver Model No. Multifunction type MBDLT21SF Model driver Model No. RS485 communication type "2 MBDLN21SG Basic type "2 MBDLN21SE Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64	Motor model *1		MSMF021L1			
Applicable driver Model No. RS485 communication type '2 MBDLN21SG Basic type '2 MBDLN21SE Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64			Multi	function type)	MBDLT21SF
driver Basic type ^{*2} MBDLN21SE Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64	Applicable	Model No	RS48	5 communicati	on type *2	MBDLN21SG
Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64	driver		Basic	c type ^{⁺2}		MBDLN21SE
Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64		Fram	e sym	bol		B-frame
Rated output (W) 200 Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64	Power supply	capacit	у		(kVA)	0.5
Rated torque (N·m) 0.64 Continuous stall torque (N·m) 0.64	Rated output				(W)	200
Continuous stall torque (N·m) 0.64	Rated torque				(N·m)	0.64
	Continuous stall torque (N·m)					0.64
Momentary Max. peak torque (N·m) 1.91	Momentary Max. peak torque (N·m)					1.91
Rated current (A(rms)) 2.5	Rated current			(4	A(rms))	2.5
Max. current (A(o-p)) 10.6	Max. current			(A(o-p))	10.6
Regenerative brake Without option No limit Note)2	Regenerative	brake		Without option		No limit Note)2
frequency (times/min) Note)1 DV0P4283 No limit Note)2	frequency (time	es/min)	Note)1	DV0P4283		No limit Note)2
Rated rotational speed (r/min) 3000	Rated rotation	al spee	d		(r/min)	3000
Max. rotational speed (r/min) 6000	Max. rotationa	l speed			(r/min)	6000
Moment of inertia Without brake 0.14	Moment of ine	rtia		Without br	ake	0.14
of rotor (x10 ⁻⁴ kg·m ²) With brake 0.17	of rotor (×10 ⁻⁴ kg·m ²)			With brake	;	0.17
Recommended moment of inertia ratio of the load and the rotor Note)3 30 times or less	Recommended moment of inertia ratio of the load and the rotor Note)3				30 times or less	
Rotary encoder specifications ^{*3} 23-bit Absolute	Rotary encode	er speci	ficatio	ns*3		23-bit Absolute
Resolution per single turn 8388608		Re	solutic	on per single	turn	8388608

• Brake specifications (For details, refer to P.305) /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.304)

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)	98.0

• For details of Note)1 to Note)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	1							
Motor specifications	Round shaft/ Key way, center tap shaft							
	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.121		—	P.122		—		
Connector type (IP67)	P.122		_	P.122		_		

200 V MSMF 200 W [Low inertia 60 mm sq.]

Specifications

				AC200 V	Brake	specifications (For details	s, refer to P.305)	
Motor model ¹			MSMF022L1	(This br Do not	(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
Multifunction type		unction type	MADLT15SF	Static fri	Static friction torque (N·m)			
Applicable	Model No	RS48	5 communication type *2	MADLN15SG	Engagin	g time (ms)	50 or less	
driver		Basic	type *2	MADLN15SE	Releasir	ng time (ms) Note)4	15 or less	
	Fram	e sym	loc	A-frame	Exciting	current (DC) (A)	0.36	
Power supply	capacit	у	(kVA)	0.5	Releasir	ng voltage (DC) (V)	1 or more	
Rated output			(W)	200	Exciting	voltage (DC) (V)	24±1.2	
Rated torque (N·m)		0.64	• Permi	• Permissible load (For details, refer to P.304				
Continuous stall torque (N·m)		(N·m)	0.64		Padial load P direction (N)	202		
Momentary M	ax. pea	k torqu	ie (N·m)	1.91	During		392	
Rated current (A(rms))		1.5	assembly	Thrust load A-direction (N)	147			
Max. current			(A(o-p))	6.5	┨	Thrust load B-direction (N)	196	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	245	
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	operation	Thrust load A, B-direction (N)	98.0	
Rated rotation	al spee	d	(r/min)	3000	 For detail 	• For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	l speed		(r/min)	6000	• Dimensi	ions of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.14	n r 	the motor part number repre	sents the motor	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	0.17	*2 Basic	type and RS485 communicati	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		nertia Dr Note)3	30 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.			
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an increment		
Resolution per single turn		8388608	a batte	system (not using multi-turn data), do not connec a battery for absolute encoder.				



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.121			P.122				
Connector type (IP67)	P.122		_	P.122		—		

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. A6N Series

A6 Family

A6B Series Special Order Product

m Series

100 V MSMF 400 W [Low inertia 60 mm sq.]

Specifications

		AC100 V		
Motor model *1				MSMF041L1
		Multi	function type	MCDLT31SF
Applicable	Model No	RS48	5 communication type *	MCDLN31SG
driver		Basio	c type *2	MCDLN31SE
	Fram	e sym	bol	C-frame
Power supply	capacit	у	(kVA)	0.9
Rated output			(W)	400
Rated torque			(N·m)	1.27
Continuous st	all torqu	1.27		
Momentary M	ax. pea	3.82		
Rated current			(A(rms))	4.6
Max. current			(A(o-p))	19.5
Regenerative brake			Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4282	No limit Note)2
Rated rotation	al spee	d	(r/min)	3000
Max. rotationa	l speed		(r/min)	6000
Moment of ine	ertia		Without brake	0.27
of rotor (×10 ⁻⁴ kg·m ²)			With brake	0.30
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encode	er speci	ficatio	ns⁺³	23-bit Absolute
	Re	solutio	on per single turn	8388608

• Brake specifications (For details, refer to P.305) /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.304)

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)	98.0

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
	without brake			with brake				
	·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
	Leadwire type (IP65)	P.123		—	P.123			
	Connector type (IP67)	P.123		_	P.124			

200 V MSMF 400 W [Low inertia 60 mm sq.]

Specifications

		AC200 V	• Brake	Brake specifications (For details, refer to P.305) (This brake will be released when it is aparated)				
Motor model ^{*1}		MSMF042L1	(Do not	(Do not use this for braking the motor in motion.)				
		Multif	unction type	MBDLT25SF	Static fri	ction torque (N·m)	1.27 or more	
Applicable	Model No.	RS48	5 communication type *2	MBDLN25SG Engaging time (ms)		50 or less		
driver		Basic	type *2	MBDLN25SE	Releasir	Releasing time (ms) Note)4		
	Fram	e sym	loc	B-frame	Exciting	current (DC) (A)	0.36	
Power supply	capacit	y	(kVA)	0.9	Releasir	ng voltage (DC) (V)	1 or more	
Rated output			(W)	400	Exciting	voltage (DC) (V)	24±1.2	
Rated torque			(N·m)	1.27	• Permi	• Permissible load (For details, refer to P304)		
Continuous stall torque (N·m)		(N·m)	1.27					
Momentary M	ax. pea	k torqu	ie (N·m)	3.82	During	Radial load P-direction (N)	392	
Rated current			(A(rms))	2.4	assembly	Thrust load A-direction (N)	147	
Max. current			(A(o-p))	10.2		Thrust load B-direction (N)	196	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	245	
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	operation	Thrust load A, B-direction (N)	98.0	
Rated rotation	al spee	d	(r/min)	3000	For deta	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	l speed	1	(r/min)	6000	• Dimensi	Dimensions of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.27		n the motor part number repre	sents the motor	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	0.30	*2 Basic	type and RS485 communicati	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	15 ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an increment		
Resolution per single turn		8388608	a battery for absolute encoder.					



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.123		_	P.123		_		
Connector type (IP67)	P.123		—	P.124		_		

-70-

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

-69-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

m Series

Imformation

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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 MSMF 750 W [Low inertia 80 mm sq.]

Specifications

				AC200 V		
Motor model *1		MSMF082L1				
		Multi	function type	MCDLT35SF		
Applicable	Model No	RS48	5 communication type *2	MCDLN35SG		
driver		Basic	c type *2	MCDLN35SE		
	Fram	e sym	bol	C-frame		
Power supply	capacit	у	(kVA)	1.8		
Rated output			(W)	750		
Rated torque			(N·m)	2.39		
Continuous sta	all torqu	ie	(N·m)	2.39		
Momentary Ma	ax. pea	7.16				
Rated current			(A(rms))	4.1		
Max. current			(A(o-p))	17.4		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/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	0.96		
of rotor (×10 ⁻⁴ kg·m ²)			With brake	1.06		
Recommended moment of inertia ratio of the load and the rotor Note)3				20 times or less		
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	8388608				

• Brake specifications (For details, refer to P.305) (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.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
	without brake			with brake				
		without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
	Leadwire type (IP65)	P.124		—	P.124		_	
	Connector type (IP67)	P.125		_	P.125		_	

200 V MSMF 1000 W [Low inertia 80 mm sq.]

Specifications

				AC200 V
Motor model *1	1	MSMF092L1		
		Multi	function type	MDDLT45SF
Applicable	Model No.	RS48	5 communication type *2	MDDLN45SG
driver		Basic	c type *2	MDDLN45SE
	Fram	e sym	bol	D-frame
Power supply	capacit	у	(kVA)	2.4
Rated output			(W)	1000
Rated torque (N·m)			3.18	
Continuous st	all torqu	le	(N·m)	3.18
Momentary Max. peak torque (N·m)			9.55	
Rated current (A(rms)			(A(rms))	5.7
Max. current			(A(o-p))	24.2
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2
Rated rotation	al spee	d	(r/min)	3000
Max. rotationa	al speed		(r/min)	6000
Moment of ine	ertia		Without brake	1.26
of rotor (×10 ⁻⁴ kg·m ²)		With brake	1.36	
Recommended moment of ine ratio of the load and the rotor			inertia Dr Note)3	15 times or less
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
	Re	solutio	on per single turn	8388608



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.125		_	P.126				
Connector type (IP67)	P.126			P.126				

-72-

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Static friction torque (N·m)	3.80 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±2.4

• Permissible load (For details, refer to P.304)

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)4, refer to P.303.
- · Dimensions of Driver, refer to P.58.
- *1 in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. A6N Series

A6 Family

A6B Series

> Ш Series

Motor Specifications 200 V MSMF 1.0 kW [Low inertia 100 mm sq.]

Specifications

				AC200 V
Motor model *1			IP67	MSMF102L1
		Multi	function type	MDDLT55SF
Applicable	Model No	RS48	5 communication type *	MDDLN55SG
driver	110.	Basio	c type *2	MDDLN55SE
	Fram	e sym	bol	D-frame
Power supply	capacit	у	(kVA)	2.4
Rated output			(W)	1000
Rated torque			(N·m)	3.18
Continuous sta	all torqu	le	(N·m)	3.82
Momentary Ma	ax. pea	k torqı	ue (N·m)	9.55
Rated current			(A(rms))	6.6
Max. current			(A(o-p))	28
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2
Rated rotation	al spee	d	(r/min)	3000
Max. rotationa	l speed		(r/min)	5000
Moment of ine	rtia		Without brake	2.15
of rotor (×10 ⁻⁴ kg·m ²)			With brake	2.47
Recommende ratio of the loa	d mome d and t	ent of he rote	inertia Or Note)3	15 times or less
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
	Re	solutio	on per single turn	8388608

• Brake specifications (For details, refer to P.305) /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)	8.0 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

During	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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications		Key way shaft/ Round shaft						
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
	Encoder connector Large size (JL10) type		P.127			P.127		
	Encoder connector Small size (JN2) type	_	P.127		_	P.128		

-73-

200 V MSMF 1.5 kW [Low inertia 100 mm sq.]

Specifications

				AC200 V	Brake	specifications (For details	, refer to P.305)		
Motor model *1			IP67	MSMF152L1	(This br Do not	ake will be released when it is e use this for braking the motor ir	nergized. motion.		
		Multif	unction type	MDDLT55SF	Static fri	Static friction torque (N·m)			
Applicable	Model No	RS48	5 communication type *2	MDDLN55SG	Engagin	g time (ms)	50 or less		
driver		Basic	type *2	MDDLN55SE	Releasir	Releasing time (ms) Note)4			
	Fram	e sym	loc	D-frame	Exciting	current (DC) (A)	0.81		
Power supply	capacit	у	(kVA)	2.9	Releasir	ng voltage (DC) (V)	2 or more		
Rated output			(W)	1500	Exciting	voltage (DC) (V)	24±2.4		
Rated torque			(N·m)	4.77	• Permi	• Dermissible load (For details, refer to P 304)			
Continuous sta	all torqu	ie	(N·m)	5.72	• Fermi				
Momentary Ma	ax. pea	k torqu	ie (N·m)	14.3	During	Radial load P-direction (N)	980		
Rated current (A(rms))		(A(rms))	8.2	assembly	Thrust load A-direction (N)	588			
Max. current			(A(o-p))	35		Thrust load B-direction (N)	686		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	490		
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2	operation	Thrust load A, B-direction (N)	196		
Rated rotation	al spee	d	(r/min)	3000	For deta	ails of Note)1 to Note)4, refer t	o P.303.		
Max. rotationa	l speed	l	(r/min)	5000	• Dimensi	Dimensions of Driver, refer to P.58.			
Moment of ine	rtia		Without brake	3.10		cations.	sents the motor		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	3.45	*2 Basic	type and RS485 communication	on type are		
Recommende ratio of the loa	d mome d and t	ent of i he roto	nertia Dr Note)3	15 times or less "Position control type". Detail of model designation, refer to P		P.22.			
Rotary encode	er speci	ficatio	ations ^{*3} 23-bit Absolute *3 When using a rotary encoder as		using a rotary encoder as a	an incremental			
	Re	solutio	n per single turn	8388608	a batte	ery for absolute encoder.			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	_	P.128			P.128			
Encoder connector Small size (JN2) type	_	P.129		_	P.129			

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

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

-74-

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

ш Series

Imformation

Motor Specifications 200 V MSMF 2.0 kW [Low inertia 100 mm sq.]

Specifications

				AC200 V
Motor model *1			IP67	MSMF202L1
		Multi	function type	MEDLT83SF
Applicable	Model No	RS48	5 communication type *2	MEDLN83SG
driver	110.	Basio	c type *2	MEDLN83SE
	Fram	e sym	bol	E-frame
Power supply	capacit	у	(kVA)	3.8
Rated output			(W)	2000
Rated torque			(N·m)	6.37
Continuous sta	all torqu	ie	(N·m)	7.64
Momentary Ma	ax. pea	k torqı	ue (N·m)	19.1
Rated current			(A(rms))	11.3
Max. current			(A(o-p))	48
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4285	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	4.06
of rotor (×10 ⁻⁴ kg·m ²)			With brake	4.41
Recommende ratio of the loa	d mome d and t	ent of he rote	inertia Dr Note)3	15 times or less
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
	Re	solutio	on per single turn	8388608

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

	,
Static friction torque (N·m)	8.0 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Key way shaft/ Round shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
	Encoder connector Large size (JL10) type	—	P.129			P.130		
	Encoder connector Small size (JN2) type		P.130			P.130		

200 V MSMF 3.0 kW [Low inertia 120 mm sq.]

Specifications

				10000.1/	Brake	specifications (For details	refer to P.305)	
				AC200 V	/This br	ake will be released when it is e	energized \	
Motor model *1			IP67	MSMF302L1	(Do not	use this for braking the motor in	n motion.	
		Multif	unction type	MFDLTA3SF	Static fri	ction torque (N·m)	12.0 or more	
Applicable	Model No	RS48	5 communication type *2	MFDLNA3SG	Engagin	g time (ms)	80 or less	
driver		Basic	type ^{*2}	MFDLNA3SE	Releasir	ng time (ms) Note)4	15 or less	
	Fram	e sym	loc	F-frame	Exciting	current (DC) (A)	0.81	
Power supply	capacit	у	(kVA)	5.2	Releasir	Releasing voltage (DC) (V)		
Rated output			(W)	3000	Exciting	voltage (DC) (V)	24±2.4	
Rated torque			(N·m)	9.55	• Pormi	• Dormiosible load (Ear dataile, refer to P204)		
Continuous sta	all torqu	ie	(N·m)	11.0	• Fermi		101.304)	
Momentary Ma	ax. pea	k torqu	ie (N·m)	28.6	During	Radial load P-direction (N)	980	
Rated current (A(rms))		18.1	assembly	Thrust load A-direction (N)	588			
Max. current			(A(o-p))	77		Thrust load B-direction (N)		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	490	
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	196	
Rated rotation	al spee	d	(r/min)	3000	For deta	ails of Note)1 to Note)4, refer t	o P.303.	
Max. rotationa	l speed		(r/min)	5000	• Dimens	ions of Driver, refer to P.59.		
Moment of ine	rtia		Without brake	7.04	1 Ir specifi	the motor part number repre	sents the motor	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	7.38	*2 Basic	type and RS485 communicati	on type are	
Recommende ratio of the loa	commended moment of inertia to of the load and the rotor Note)3 15 times or less "Position control type". Detail of model designation, refe		on control type". of model designation, refer to	r to P.22.				
Rotary encode	er speci	ficatio	15 ^{*3}	23-bit Absolute	*3 When	using a rotary encoder as a	an incremental	
	Re	solutio	n per single turn	8388608	a batte	a battery for absolute encoder.		



Dimensions

	Key way shaft/ Round shaft							
Motor specifications		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.131			P.131			
Encoder connector Small size (JN2) type		P.131			P.132			

-76-

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

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

ш Series

Imformation

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

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

Motor Specifications 200 V MSMF 4.0 kW [Low inertia 130 mm sq.]

Specifications

				AC200 V		
Motor model *1			IP67	MSMF402L1		
		Multi	function type	MFDLTB3SF		
Applicable	Model No	RS48	5 communication type *2	MFDLNB3SG		
driver	110.	Basio	c type *2	MFDLNB3SE		
	Fram	e sym	bol	F-frame		
Power supply	capacit	у	(kVA)	6.5		
Rated output			(W)	4000		
Rated torque			(N·m)	12.7		
Continuous sta	all torqu	le	(N·m)	15.2		
Momentary Ma	ax. pea	ue (N·m)	38.2			
Rated current			(A(rms))	19.6		
Max. current			(A(o-p))	83		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/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	14.4		
of rotor (×10 ⁻⁴ kg·m ²)			With brake	15.6		
Recommended moment of in ratio of the load and the rotor			inertia Dr Note)3	15 times or less		
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutio	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) (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					
Releasing voltage (DC) (V)	2 or more					
Exciting voltage (DC) (V)	24±2.4					

• Permissible load (For details, refer to P.304)

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

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Key way shaft/ Round shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	-	P.132		_	P.132			
Encoder connector Small size (JN2) type	_	P.133		—	P.133			

200 V MSMF 5.0 kW [Low inertia 130 mm sq.]

Specifications

					_			
				AC200 V	• Brake	specifications (For details	s, refer t	
Motor model *1			IP67	MSMF502L1	(Do not	use this for braking the motor in	n motior	
		Multif	unction type	MFDLTB3SF	Static fri	ction torque (N·m)	22.0 o	
Applicable	Model No	RS48	5 communication type *2	MFDLNB3SG	Engagin	ig time (ms)	110 c	
driver		Basic	type ^{*2}	MFDLNB3SE	Releasir	ng time (ms) Note)4	50 o	
	Fram	e sym	loc	F-frame	Exciting	current (DC) (A)	0.	
Power supply	capacit	у	(kVA)	7.8	Releasir	ng voltage (DC) (V)	2 or	
Rated output			(W)	5000	Exciting voltage (DC) (V)		24:	
Rated torque (N·m)			(N·m)	15.9	• Dormi	eeible load (For details, refe	r to P3	
Continuous st	all torqu	le	(N·m)	19.1	• Fermi			
Momentary M	ax. pea	k torqu	ie (N·m)	47.7	During	During assembly Thrust load A-direction (N) Thrust load B-direction (N)		
Rated current			(A(rms))	24.0	assembly			
Max. current			(A(o-p))	102	T			
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	78	
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	34	
Rated rotation	al spee	d	(r/min)	3000	 For detail 	ails of Note)1 to Note)4, refer t	o P.303	
Max. rotationa	l speed	l	(r/min)	4500	• Dimens	ions of Driver, refer to P.59.		
Moment of ine	ertia		Without brake	19.0	1 Ir specifi	*1 in the motor part number represents the specifications		
of rotor (×10 ⁻⁴ kg·m ²) With brake		20.2	*2 Basic	*2 Basic type and RS485 communication type ar				
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an increme		
	Re	solutio	n per single turn	8388608	a batte	system (not using multi-turn data), do not co		



Dimensions

Motor specifications	Key way shaft/ Round shaft								
		without brake		with brake					
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal			
Encoder connector Large size (JL10) type	_	P.133		—	P.134				
Encoder connector Small size (JN2) type	_	P.134		—	P.134				

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-77-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

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

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. A6N Series

Specifications

				AC100 V
Motor model *1		MQMF011L1		
Applicable		Multi	function type	MADLT11SF
	Model No	RS48	5 communication type	² MADLN11SG
driver		Basic	c type ^{*2}	MADLN11SE
	Fram	e sym	bol	A-frame
Power supply	capacit	у	(kVA)	0.4
Rated output			(W)) 100
Rated torque			(N·m)	0.32
Continuous sta	all torqu	ie	(N·m)	0.33
Momentary Ma	ax. pea	k torqu	ue (N·m) 1.11
Rated current			(A(rms))) 1.6
Max. current			(A(o-p))) 7.9
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4280	No limit Note)2
Rated rotation	al spee	d	(r/min	3000
Max. rotationa	l speed		(r/min)	6500
Moment of ine	rtia		Without brake	0.15
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²)			0.18
Recommended moment of in ratio of the load and the rotor			inertia Or Note):	20 times or less
Rotary encode	er speci	ficatio	ns ^{⁺3}	23-bit Absolute
	Re	solutic	on per single turn	8388608

• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.) Do not use this for braking the motor in motion

Static friction torque (N·m)	0.39 or more					
Engaging time (ms)	15 or less					
Releasing time (ms) Note)4	20 or less					
Exciting current (DC) (A)	0.30					
Releasing voltage (DC) (V)	1 or more					
Exciting voltage (DC) (V)	24±2.4					

• Permissible load (For details, refer to P.304)

During	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
accombry	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)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft								
		without brake		with brake					
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal			
Leadwire type (IP65)	P.135	P.135	P.135	P.136	P.136	P.136			
Connector type (IP67)	P.137	P.137	P.137	P.138	P.138	P.138			

200 V MQMF 100 W [Middle inertia Flat type 60 mm so

Specifications

					AC200 V
Motor model 1					MQMF012L1
		Multif	function type		MADLT05SF
Applicable	Model No	RS48	5 communication	type [*] 2	MADLN05SG
driver		Basic	type *2		MADLN05SE
	Fram	e syml	bol		A-frame
Power supply	capacit	у	(kVA)	0.5
Rated output				(W)	100
Rated torque (N·m				N∙m)	0.32
Continuous stall torque (N·m)				0.33	
Momentary Ma	ax. pea	k torqu	ie (N∙m)	1.11
Rated current			(A(rms))		1.1
Max. current			(A(o-p))		5.5
Regenerative	brake		Without option		No limit Note)2
frequency (time	es/min)	Note)1	DV0P4281		No limit Note)2
Rated rotation	al spee	d	(r/min)		3000
Max. rotationa	l speed		(r/	/min)	6500
Moment of ine	ertia		Without brake	e	0.15
of rotor (×10 ⁻⁴	kg∙m²)		With brake		0.18
Recommended moment of in ratio of the load and the rotor			nertia or	Note)3	20 times or less
Rotary encode	er speci	ficatio	ns*3		23-bit Absolute
	Re	solutio	n per single tu	rn	8388608



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft								
		without brake		with brake					
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal			
Leadwire type (IP65)	P.135	P.135	P.135	P.136	P.136	P.136			
Connector type (IP67)	P.137	P.137	P.137	P.138	P.138	P.138			

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

-79-

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

Motor Specifications A6 Series

n		
Ч	.1	

Brake specifications	(For details, refer to P.305)
(This brake will be released	when it is energized.)
Do not use this for braking	the motor in motion.

Static friction torque (N·m)	0.39 or more
Engaging time (ms)	15 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.30
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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

- For details of Note)1 to Note)4, refer to P.303.
- · Dimensions of Driver, refer to P.57.
- *1 in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.



A6 Family

Ш Series

100 V MQMF 200 W [Middle inertia Flat type 80 mm sq.]

Specifications

		AC100 V			
Motor model *1				MQMF021L1	
		Multi	function type	MBDLT21SF	
Applicable	Model No	RS48	5 communication type *	² MBDLN21SG	
driver	110.	Basic	c type ^{*2}	MBDLN21SE	
	Fram	e sym	bol	B-frame	
Power supply	capacit	у	(kVA)	0.5	
Rated output			(W)	200	
Rated torque			(N·m)	0.64	
Continuous sta	all torqu	ie	(N·m)	0.76	
Momentary Max. peak torque (N·m)				2.23	
Rated current	Rated current (A(rms			2.1	
Max. current	Max. current (A(o-p))			10.4	
Regenerative brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6500	
Moment of ine	rtia		Without brake	0.50	
of rotor (×10 ⁻⁴ kg·m ²)			With brake	0.59	
Recommender ratio of the loa	d mome d and t	20 times or less			
Rotary encode	er speci	ficatio	ns*3	23-bit Absolute	
Resolution per single turn			8388608		

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized.

Do not use this for braking the motor in motion.				
Static friction torque (N·m)	1.6 or more			
Engaging time (ms)	70 or less			
Releasing time (ms) Note)4	20 or less			
Exciting current (DC) (A)	0.36			
Releasing voltage (DC) (V)	1 or more			
Exciting voltage (DC) (V)	24±2.4			

Permissible load (For details, refer to P.304)

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)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	1							
Motor specifications	Round shaft/ Key way, center tap shaft							
	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.139	P.139	P.139	P.140	P.140	P.140		
Connector type (IP67)	P.141	P.141	P.141	P.142	P.142	P.142		

200 V MQMF 200 W [Middle inertia Flat type 80 mm so

Specifications

				AC200 V	Brake	specifications (For details	s, refer to P.305)	
Motor model ⁻¹		MQMF022L1	(This br Do not	(This brake will be released when it is energized. (Do not use this for braking the motor in motion.)				
		Multif	unction type	MADLT15SF	Static fri	ction torque (N·m)	1.6 or more	
Applicable	Model	RS48	5 communication type *2	MADLN15SG	Engagin	Engaging time (ms)		
driver	110.	Basic	type *2	MADLN15SE	Releasir	ng time (ms) Note)4	20 or less	
	Fram	e syml	bol	A-frame	Exciting	current (DC) (A)	0.36	
Power supply	capacit	у	(kVA)	0.5	Releasir	ng voltage (DC) (V)	1 or more	
Rated output			(W)	200	Exciting	voltage (DC) (V)	24±2.4	
Rated torque			(N·m)	0.64	Dermiesible load (For dataile, refer to D204			
Continuous st	all torqu	e	(N·m)	0.76	• Fermi		,1 (0 1 .304)	
Momentary M	ax. pea	k torqu	ie (N·m)	2.23	During	Radial load P-direction (N)	392	
Rated current			(A(rms))	1.4	assembly	Thrust load A-direction (N)	147	
Max. current			(A(o-p))	6.9		Thrust load B-direction (N)	196	
Recenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	245	
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	operation	Thrust load A, B-direction (N)	98	
Rated rotation	al spee	d	(r/min)	3000	For deta	ails of Note)1 to Note)4, refer t	o P.303.	
Max. rotationa	al speed		(r/min)	6500	Dimens	ons of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.50	- *1 🗌 ir	the motor part number repre	sents the motor	
of rotor (×10 ⁻⁴	kg·m²)		With brake	0.59	*2 Basic	specifications.		
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	ns ^{⁺3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa system (not using multi-turn data), do not connec a battery for absolute encoder		
	Re	solutio	n per single turn	8388608	a batte			
L	1							



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.139	P.139	P.139	P.140	P.140	P.140		
Connector type (IP67)	P.141	P.141	P.141	P.142	P.142	P.142		

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

-82-

Motor Specifications A6 Series

		-	
n		I	
Ч	•	1	



A6B Series Special Order Product

m Series

100 V MQMF 400 W [Middle inertia Flat type 80 mm sq.]

Specifications

				AC100 V	
Motor model *1		MQMF041L1			
		Multi	function type	MCDLT31SF	
Applicable	Model No	RS48	5 communication type **	MCDLN31SG	
driver		Basio	c type *2	MCDLN31SE	
	Fram	e sym	bol	C-frame	
Power supply	capacit	у	(kVA)	0.9	
Rated output			(W)	400	
Rated torque			(N·m)	1.27	
Continuous sta	all torqu	ie	(N·m)	1.40	
Momentary Ma	ax. pea	k torqı	ue (N·m)	4.46	
Rated current			(A(rms))	4.1	
Max. current	Max. current (A(o-p))			20.3	
Regenerative	brake		Without option	No limit Note)2	
frequency (time	es/min)	Note)1	DV0P4282	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6500	
Moment of ine	rtia		Without brake	0.98	
of rotor (×10 ⁻⁴ kg·m ²)			With brake	1.06	
Recommended moment of inertia ratio of the load and the rotor Note)3				20 times or less	
Rotary encode	er speci	ficatio	ns ^{∗3}	23-bit Absolute	
	Resolution per single turn			8388608	

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

	/
Static friction torque (N·m)	1.6 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.143	P.143	P.143	P.144	P.144	P.144		
Connector type (IP67)	P.145	P.145	P.145	P.146	P.146	P.146		

200 V MQMF 400 W [Middle inertia Flat type 80 mm so

Specifications

				AC200 V	Brake	specifications (For details	, refer to P.305)	
Motor model ⁻¹		MQMF042L1	(This br Do not	(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)				
		Multif	unction type	MBDLT25SF	Static fri	Static friction torque (N·m)		
Applicable	Model	RS48	5 communication type *2	MBDLN25SG	Engagin	g time (ms)	70 or less	
driver	110.	Basic	type ^{⁺2}	MBDLN25SE	Releasir	ng time (ms) Note)4	20 or less	
	Fram	e sym	ool	B-frame	Exciting	current (DC) (A)	0.36	
Power supply	capacit	у	(kVA)	0.9	Releasir	ng voltage (DC) (V)	1 or more	
Rated output			(W)	400	Exciting	voltage (DC) (V)	24±2.4	
Rated torque (N·m)			1.27	• Permi	• Permissible load (For details, refer to P304)			
Continuous stall torque (N·m)		1.40	- Fermi					
Momentary Max. peak torque (N·m)		4.46	During	Radial load P-direction (N)	392			
Rated current			(A(rms))	2.1	assembly	Thrust load A-direction (N)	147	
Max. current			(A(o-p))	10.4		Thrust load B-direction (N)	196	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	245	
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	operation	Thrust load A, B-direction (N)	98	
Rated rotation	al spee	d	(r/min)	3000	For deta	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	l speed		(r/min)	6500	Dimensi	ons of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.98		*1 in the motor part number represents the mo		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	1.06	*2 Basic	type and RS485 communication	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	าร ^{∗3}	23-bit Absolute	*3 When	using a rotary encoder as a	an incremental	
	Re	solutio	n per single turn	8388608	a batte	n (not using multi-turn data), erv for absolute encoder	ao not connect	
L						., isi abooluto olloodol.		



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.143	P.143	P.143	P.144	P.144	P.144		
Connector type (IP67)	P.145	P.145	P.145	P.146	P.146	P.146		

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

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

-84-

Motor Specifications A6 Series

~	٦	
q	۰J	

A6 Family



A6B Series Special Order Product

m Series

100 V MHMF 50 W [High inertia 40 mm sq.]

Specifications

		AC100 V				
Motor model *1		MHMF5AZL1				
		Multi	function type	MADLT01SF		
Applicable	Model No	RS48	5 communication type *2	MADLN01SG		
driver		Basic	c type *2	MADLN01SE		
	Fram	e sym	bol	A-frame		
Power supply	capacit	у	(kVA)	0.4		
Rated output			(W)	50		
Rated torque			(N·m)	0.16		
Continuous sta	all torqu	le	(N·m)	0.18		
Momentary Ma	ax. pea	k torqı	ue (N·m)	0.56		
Rated current			(A(rms))	1.1		
Max. current			(A(o-p))	5.5		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4280	No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	6500		
Moment of ine	rtia		Without brake	0.038		
of rotor (×10 ⁻⁴ kg·m ²)			With brake	0.042		
Recommende ratio of the loa	d mome d and t	30 times or less				
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutic	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized.

Static friction torque (N·m)	0.38 or more						
Engaging time (ms)	35 or less						
Releasing time (ms) Note)4	20 or less						
Exciting current (DC) (A)	0.30						
Releasing voltage (DC) (V)	1 or more						
Exciting voltage (DC) (V)	24±2.4						

• Permissible load (For details, refer to P.304)

During assembly During operation	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
	Radial load P-direction (N)	68.6
	Thrust load A. B-direction (N)	49

• For details of Note)1 to Note)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.147	P.147	P.147	P.148	P.148	P.148		
Connector type (IP67)	P.149	P.149	P.149	P.150	P.150	P.150		

-85-

200 V MHMF 50 W [High inertia 40 mm sq.]

Specifications

		AC200 V		
Motor model *1	1			MHMF5AZL1
		Multi	function type	MADLT05SF
Applicable	Model No.	RS48	5 communication type *2	MADLN05SG
driver		Basic	c type *2	MADLN05SE
	Fram	e sym	bol	A-frame
Power supply	capacit	у	(kVA)	0.5
Rated output			(W)	50
Rated torque (N·m)				0.16
Continuous st	all torqu	le	(N·m)	0.18
Momentary M	ax. pea	k torqı	ue (N·m)	0.56
Rated current			(A(rms))	1.1
Max. current			(A(o-p))	5.5
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4281	No limit Note)2
Rated rotation	al spee	d	(r/min)	3000
Max. rotationa	al speed	l	(r/min)	6500
Moment of ine	ertia		Without brake	0.038
of rotor (×10 ⁻⁴ kg·m ²)			With brake	0.042
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
	Re	solutio	on per single turn	8388608



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.147	P.147	P.147	P.148	P.148	P.148		
Connector type (IP67)	P.149	P.149	P.149	P.150	P.150	P.150		

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

-86-

Motor Specifications A6 Series

 Brake specifications (For details, refer to P.305)
(This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Static friction torque (N·m)	0.38 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.30
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±2.4

A6 Family

A6N Series

A6B

Series

Ш Series

Imformation

• Permissible load (For details, refer to P.304)

	Radial load P-direction (N)	147
During assembly	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)	49

- For details of Note)1 to Note)4, refer to P.303.
- · Dimensions of Driver, refer to P.57.
- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

Specifications

				AC100 V
Motor model *1	Motor model *1			MHMF011L1
		Multi	function type	MADLT11SF
Applicable	Model No	RS48	5 communication type *2	MADLN11SG
driver		Basio	c type *2	MADLN11SE
	Fram	e sym	bol	A-frame
Power supply	capacit	у	(kVA)	0.4
Rated output			(W)	100
Rated torque			(N·m)	0.32
Continuous sta	all torqu	ie	(N·m)	0.33
Momentary Ma	ax. pea	k torqı	ue (N·m)	1.11
Rated current	Rated current (A(rms))			1.6
Max. current	Max. current (A(o-p))		7.9	
Regenerative brake Without option frequency (times/min) Note)1 DV0P4280		Without option	No limit Note)2	
		Note)1	DV0P4280	No limit Note)2
Rated rotation	al spee	d	(r/min)	3000
Max. rotational speed		(r/min)	6500	
Moment of ine	rtia		Without brake	0.071
of rotor (×10 ⁻⁴ kg⋅m ²)		With brake	0.074	
Recommende ratio of the loa	Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less	
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
Resolution per single turn			8388608	

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Be not doe this for braking the motor in motori.				
Static friction torque (N·m)	0.38 or more			
Engaging time (ms)	35 or less			
Releasing time (ms) Note)4	20 or less			
Exciting current (DC) (A)	0.30			
Releasing voltage (DC) (V)	1 or more			
Exciting voltage (DC) (V)	24±2.4			

• Permissible load (For details, refer to P.304)

	Radial load P-direction (N)	147
During	Thrust load A-direction (N)	88
accombry	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)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.151	P.151	P.151	P.152	P.152	P.152		
Connector type (IP67)	P.153	P.153	P.153	P.154	P.154	P.154		

200 V MHMF 100 W [High inertia 40 mm sq.]

Specifications

				AC200 V
Motor model ^{*1}				MHMF012L1
	Mul		function type	MADLT05SF
Applicable	Model No.	RS48	5 communication type *2	MADLN05SG
driver		Basic	c type *2	MADLN05SE
	Fram	e sym	bol	A-frame
Power supply	capacit	у	(kVA)	0.5
Rated output			(W)	100
Rated torque			(N·m)	0.32
Continuous st	all torqu	le	(N·m)	0.33
Momentary M	ax. pea	k torqı	ue (N·m)	1.11
Rated current			(A(rms))	1.1
Max. current		(A(o-p))	5.5	
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4281	No limit Note)2
Rated rotation	al spee	d	(r/min)	3000
Max. rotationa	al speed		(r/min)	6500
Moment of ine	ertia		Without brake	0.071
of rotor (×10 ⁻⁴ kg·m ²)		With brake	0.074	
Recommended moment of ratio of the load and the rote			inertia Dr Note)3	30 times or less
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
Resolution p		on per single turn	8388608	



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.151	P.151	P.151	P.152	P.152	P.152		
Connector type (IP67)	P.153	P.153	P.153	P.154	P.154	P.154		

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

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

-88-

Motor Specifications A6 Series

• Brake specifications (For details, refer to	P.305)
(This brake will be released when it is energized Do not use this for braking the motor in motion.)

Static friction torque (N·m)	0.38 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.30
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±2.4

A6 Family

A6N Series

A6B

Series

Ш Series

Imformation

• Permissible load (For details, refer to P.304)

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)4, refer to P.303.
- · Dimensions of Driver, refer to P.57.
- *1 in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

100 V MHMF 200 W [High inertia 60 mm sq.]

Specifications

					AC100 V
Motor model ^{*1}					MHMF021L1
		Multi	function type		MBDLT21SF
Applicable	Model No	RS485 communication type *2		MBDLN21SG	
driver		Basio	c type *2		MBDLN21SE
	Fram	e sym	bol		B-frame
Power supply	capacit	у	(k\	/A)	0.5
Rated output			(W)	200
Rated torque			(N·	m)	0.64
Continuous stall torque			(N·	(N·m) 0.76	
Momentary Max. peak torque			ue (N·	m)	2.23
Rated current			(A(rm	s))	2.1
Max. current			(A(o-p))		10.4
Regenerative	Regenerative brake		Without option		No limit Note)2
frequency (time	es/min)	Note)1	DV0P4283		No limit Note)2
Rated rotation	al spee	d	(r/m	in)	3000
Max. rotationa	l speed		(r/m	in)	6500
Moment of ine	rtia		Without brake		0.29
of rotor (×10 ⁻⁴ kg·m ²)			With brake		0.31
Recommended moment of i ratio of the load and the roto			inertia or No	te)3	30 times or less
Rotary encode	er speci	ficatio	ns *3		23-bit Absolute
	Re	solutio	on per single turn		8388608

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized.

Static friction torque (N·m)	1.6 or more				
Engaging time (ms)	50 or less				
Releasing time (ms) Note)4	20 or less				
Exciting current (DC) (A)	0.36				
Releasing voltage (DC) (V)	1 or more				
Exciting voltage (DC) (V)	24±2.4				

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. • Dimensions of Driver, refer to P.57.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft									
		without brake		with brake						
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal				
Leadwire type (IP65)	P.155	P.155	P.155	P.156	P.156	P.156				
Connector type (IP67)	P.157	P.157	P.157	P.158	P.158	P.158				

200 V MHMF 200 W [High inertia 60 mm sq.]

Specifications

				AC200 V	• Brake	specifications (For details	, refer to P.305)		
Motor model 1				MHMF022L1	(This br (Do not	(Do not use this for braking the motor in motion.)			
		Multif	unction type	MADLT15SF	Static fri	Static friction torque (N·m)			
Applicable	Model No.	RS485 communication type ^{•2} MADLN15SG Engaging time (ms)		Engaging time (ms) 50 or les					
driver		Basic	type *2	MADLN15SE	Releasir	ng time (ms) Note)4	20 or less		
	Fram	e sym	loc	A-frame	Exciting	current (DC) (A)	0.36		
Power supply	capacit	у	(kVA)	0.5	Releasir	ng voltage (DC) (V)	1 or more		
Rated output			(W)	200	Exciting voltage (DC) (V) 24±2.4		24±2.4		
Rated torque (N·m)		0.64	• Permi	• Permissible load (For details, refer to P 304)					
Continuous stall torque (N·m)		0.76			202				
Momentary Max. peak torque (N·m)		2.23	Durina	Radial load P-direction (N)	392				
Rated current (A(rms))		1.4	assembly	Thrust load A-direction (N)	147				
Max. current			(A(o-p))	6.9	Thrust load B-direction (N		196		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	245		
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	operation	Thrust load A, B-direction (N)	98		
Rated rotation	al spee	d	(r/min)	3000	For deta	uils of Note)1 to Note)4, refer to	o P.303.		
Max. rotationa	l speed	l	(r/min)	6500	• Dimensi	ons of Driver, refer to P.57.			
Moment of ine	rtia		Without brake	0.29		*1 in the motor part number represents the mot specifications			
of rotor (×10 ⁻⁴ kg·m ²) With brake		0.31	*2 Basic	*2 Basic type and RS485 communication type are "Position control type". Detail of model designation, refer to P.22.					
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less	"Positi Detail						
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa system (not using multi-turn data), do not connec a battery for absolute encoder.			
	Re	solutio	n per single turn	8388608	a batte				



Dimensions

	Round shaft/ Key way, center tap shaft									
Motor specifications		without brake		with brake						
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal				
Leadwire type (IP65)	P.155	P.155	P.155	P.156	P.156	P.156				
Connector type (IP67)	P.157	P.157	P.157	P.158	P.158	P.158				

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

-89-

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

-90-

Motor Specifications A6 Series

Static friction torque (N·m)	1.6 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±2.4

A6 Family

A6N Series

A6B Series Special Order Product

m Series

Specifications

Motor model ¹ MHMF041L1 Applicable driver Model No. Multifunction type MCDLT31S RS485 communication type ¹² Basic type ¹² MCDLN31S Basic type ¹² MCDLN31S MCDLN31S Frame symbol C-frame Power supply capacity (kVA) 0.9 Rated output (W) 400 Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	1
Applicable driver Model No. Multifunction type MCDLT31S RS485 communication type '2 MCDLN31S Basic type '2 MCDLN31S Frame symbol C-frame Power supply capacity (kVA) 0.9 Rated output (W) 400 Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	
Applicable driver Model No. RS485 communication type ⁻² MCDLN31S Basic type ⁻² MCDLN31S Frame symbol C-frame Power supply capacity (kVA) 0.9 Rated output (W) 400 Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	\$F
driver Basic type *2 MCDLN31S Frame symbol C-frame Power supply capacity (kVA) 0.9 Rated output (W) 400 Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	G
Frame symbolC-framePower supply capacity(kVA)0.9Rated output(W)400Rated torque(N·m)1.27Continuous stall torque(N·m)1.40	SE .
Power supply capacity (kVA) 0.9 Rated output (W) 400 Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	
Rated output (W) 400 Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	
Rated torque (N·m) 1.27 Continuous stall torque (N·m) 1.40	
Continuous stall torque (N·m) 1.40	
• • • •	
Momentary Max. peak torque (N·m) 4.46	
Rated current (A(rms)) 4.1	
Max. current (A(o-p)) 20.3	
Regenerative brake Without option No limit Note	:)2
frequency (times/min) Note)1 DV0P4282 No limit Note)2
Rated rotational speed (r/min) 3000	
Max. rotational speed (r/min) 6500	
Moment of inertia Without brake 0.56	
of rotor ($\times 10^{-4}$ kg·m ²) With brake 0.58	
Recommended moment of inertia ratio of the load and the rotor Note)3 30 times or le	ess
Rotary encoder specifications ³ 23-bit Absolu	ute
Resolution per single turn 8388608	

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Static friction torque (N·m)	1.6 or more				
Engaging time (ms)	50 or less				
Releasing time (ms) Note)4	20 or less				
Exciting current (DC) (A)	0.36				
Releasing voltage (DC) (V)	1 or more				
Exciting voltage (DC) (V)	24±2.4				

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft									
		without brake		with brake						
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal				
Leadwire type (IP65)	P.159	P.159	P.159	P.160	P.160	P.160				
Connector type (IP67)	P.161	P.161	P.161	P.162	P.162	P.162				

200 V MHMF 400 W [High inertia 60 mm sq.]

Specifications

				AC200 V	• Brake	specifications (For details	, refer to P.305)	
Motor model ^{*1}		MHMF042L1	(This br Do not	(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)				
		Multif	unction type	MBDLT25SF	Static fri	Static friction torque (N·m)		
Applicable	Model No	RS485	communication type *2	MBDLN25SG	Engagin	Engaging time (ms)		
driver		Basic	type *2	MBDLN25SE	Releasir	ng time (ms) Note)4	20 or less	
	Frame	e syml	lool	B-frame	Exciting	current (DC) (A)	0.36	
Power supply	capacity	/	(kVA)	0.9	Releasir	ng voltage (DC) (V)	1 or more	
Rated output	lated output (W) 400 Exciting voltage (DC) (V)		voltage (DC) (V)	24±2.4				
Rated torque (N·m)		1.27	• Permi	• Permissible load (For details, refer to P.304)				
Continuous stall torque (N·m)		1.40						
Momentary Max. peak torque (N·m)		4.46	During	Radial load P-direction (IN)	392			
Rated current (A(rms))		2.1	assembly	Thrust load A-direction (N)	147			
Max. current	rrent (A(o-p))		(A(o-p))	10.4		Thrust load B-direction (N)	196	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	245	
frequency (time	es/min)	Note)1	DV0P4283	No limit Note)2	operation	Thrust load A, B-direction (N)	98	
Rated rotation	al spee	d	(r/min)	3000	For deta	ails of Note)1 to Note)4, refer t	o P.303.	
Max. rotationa	l speed		(r/min)	6500	• Dimensi	ions of Driver, refer to P.57.		
Moment of ine	ertia		Without brake	0.56	1 Ir specifi	*1 [] In the motor part number represents the more specifications		
of rotor (×10 ⁻⁴ kg·m ²) With brake		0.58	*2 Basic	*2 Basic type and RS485 communication type are "Position control type". Detail of model designation, refer to P.22.				
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less	"Positi Detail					
Rotary encode	er specif	icatio	1S ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa		
	Resolution per single turn			8388608	a batte	system (not using multi-turn data), do not connec a battery for absolute encoder.		



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Leadwire type (IP65)	P.159	P.159	P.159	P.160	P.160	P.160		
Connector type (IP67)	P.161	P.161	P.161	P.162	P.162	P.162		

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

-91-

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

-92-

Motor Specifications A6 Series

Static friction torque (N·m)	1.6 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±2.4

A6 Family

A6N Series

A6B Series Special Order Product

m Series

Motor Specifications 200 V MHMF 750 W [High inertia 80 mm sq.]

Specifications

				AC200 V		
Motor model *1		MHMF082L1				
		Multi	function type	MCDLT35SF		
Applicable	Model No	RS48	5 communication type *2	MCDLN35SG		
driver		Basic	c type *2	MCDLN35SE		
	Fram	e sym	bol	C-frame		
Power supply	capacit	у	(kVA)	1.8		
Rated output			(W)	750		
Rated torque			(N·m)	2.39		
Continuous stall torque (N·m)				2.86		
Momentary Max. peak torque (N·m)				8.36		
Rated current			(A(rms))	3.8		
Max. current			(A(o-p))	18.8		
Regenerative brake		Without option	No limit Note)2			
frequency (time	es/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	1.56		
of rotor (×10 ⁻⁴ kg·m ²)			With brake	1.66		
Recommended moment of inertia ratio of the load and the rotor			inertia Dr Note)3	20 times or less		
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutic	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Static friction torque (N·m)	3.8 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±2.4					

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft							
		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
	Leadwire type (IP65)	P.163	P.163	P.163	P.164	P.164	P.164	
(Connector type (IP67)	P.165	P.165	P.165	P.166	P.166	P.166	

200 V MHMF 1000 W [High inertia 80 mm sq.]

Specifications

				AC200 V	Brake	specifications (For details	, refer to P.305)	
Motor model ^{*1}			MHMF092L1	(This br Do not	(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)			
Multifunction type		unction type	MDDLT55SF	MDDLT55SF Static friction torque (N·m)		3.8 or more		
Applicable	Model No.	RS48	5 communication type *2	MDDLN55SG	Engagin	Engaging time (ms)		
driver		Basic	type *2	MDDLN55SE	Releasir	Releasing time (ms) Note)4		
	Fram	e sym	loc	D-frame	Exciting	current (DC) (A)	0.42	
Power supply	capacit	y	(kVA)	2.4	Releasir	ng voltage (DC) (V)	1 or more	
Rated output			(W)	1000	Exciting voltage (DC) (V) 24±2		24±2.4	
Rated torque			(N·m)	3.18	• Permi	• Dermissible load (For details, refer to P30)		
Continuous stall torque (N·m)		3.34						
Momentary Max. peak torque (N·m)		11.1	Durina	Radial load P-direction (N)	080			
Rated current (A(rms))		(A(rms))	5.7	assembly	Thrust load A-direction (N)	294		
Max. current			(A(o-p))	28.2		Thrust load B-direction (N)	392	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	392	
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2	operation	Thrust load A, B-direction (N)	147	
Rated rotation	al spee	d	(r/min)	3000	For deta	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	al speed	1	(r/min)	6000	Dimensi	ions of Driver, refer to P.58.		
Moment of ine	ertia		Without brake	2.03	1 ∐_ Ir specifi	*1 [] in the motor part number represents the mot		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	2.13	*2 Basic	type and RS485 communication	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	15 ^{*3}	23-bit Absolute	*3 When	using a rotary encoder as a	an incremental	
	Re	solutio	n per single turn	8388608	a batte	system (not using multi-turn data), do not connect a battery for absolute encoder.		



Dimensions

Motor specifications	Round shaft/ Key way, center tap shaft								
		without brake		with brake					
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal			
Leadwire type (IP65)	P.167	P.167	P.167	P.168	P.168	P.168			
Connector type (IP67)	P.169	P.169	P.169	P.170	P.170	P.170			

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

-93-

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

-94-

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

m Series

Motor Specifications 200 V MHMF 1.0 kW [High inertia 130 mm sq.]

Specifications

				AC200 V	
Motor model *1			IP67	MHMF102L1	
		Multi	function type	MDDLT45SF	
Applicable	Model	RS48	5 communication type *2	MDDLN45SG	
driver	140.	Basic	type ^{*2}	MDDLN45SE	
	Fram	e sym	bol	D-frame	
Power supply	capacit	у	(kVA)	2.4	
Rated output			(W)	1000	
Rated torque			(N·m)	4.77	
Continuous stall torque (N·m)				5.25	
Momentary Max. peak torque (N·m)				14.3	
Rated current			(A(rms))	5.2	
Max. current			(A(o-p))	22	
Regenerative brake			Without option	No limit Note)2	
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia		Without brake	22.9	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	24.1	
Recommended moment of i ratio of the load and the roto			inertia Dr Note)3	5 times or less	
Rotary encode	er speci	ficatio	ns⁺³	23-bit Absolute	
	Re	solutic	on per single turn	8388608	

• Brake specifications (For details, refer to P.305) /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					
Releasing voltage (DC) (V)	2 or more					
Exciting voltage (DC) (V)	24±2.4					

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Key way shaft/ Round shaft						
	without brake			with brake			
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
Encoder connector Large size (JL10) type		P.171			P.	171	
Encoder connector Small size (JN2) type	_	P.171		_	P.	172	

-95-

200 V MHMF 1.5 kW [High inertia 130 mm sq.]

Specifications

				AC200 V	Brake	specifications (For details	s, refe		
Motor model *1			IP67	MHMF152L1	(This br Do not	ake will be released when it is e use this for braking the motor ir	energiz n motic		
		Multif	unction type	MDDLT55SF	Static fri	Static friction torque (N·m)			
Applicable	Model	RS48	5 communication type *2	MDDLN55SG	Engagin	ig time (ms)	100		
driver	NO.	Basic	type *2	MDDLN55SE	Releasir	ng time (ms) Note)4	50		
	Fram	e sym	lool	D-frame	Exciting	current (DC) (A)	(
Power supply	capacit	y	(kVA)	2.9	Releasir	ng voltage (DC) (V)	2 o		
Rated output			(W)	1500	Exciting	voltage (DC) (V)	24		
Rated torque			(N·m)	7.16	• Pormi	Dormiccible load (Ear dataile refer to P3			
Continuous sta	all torqu	е	(N·m)	7.52	• Fermi		1 10 1 .		
Momentary Max. peak torque (N·m)		21.5	During	Radial load P-direction (N)					
Rated current (A(rms))		8.0	assembly	Thrust load A-direction (N)					
Max. current			(A(o-p))	34		Thrust load B-direction (N)			
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)			
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2	operation	Thrust load A, B-direction (N)			
Rated rotation	al spee	d	(r/min)	2000	For deta	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	3000	Dimensi	Dimensions of Driver, refer to P.58.			
Moment of ine	rtia		Without brake	33.4	- *1 Ir	*1 in the motor part number represents th			
of rotor (×10 ⁻⁴	kg∙m²)		With brake	34.6	*2 Basic	type and RS485 communication	on typ		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.					
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an increme			
	Re	solutio	n per single turn	8388608	a batte	a battery for absolute encoder.			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.172			P.172			
Encoder connector Small size (JN2) type		P.173			P.173			

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

-96-

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

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

A6N Series



ш Series

Motor Specifications 200 V MHMF 2.0 kW [High inertia 176 mm sq.]

Specifications

				AC200 V		
Motor model *1			IP67	MHMF202L1		
		Multi	function type	MEDLT83SF		
Applicable	Model	RS48	5 communication type *2	MEDLN83SG		
driver	140.	Basic	type ^{*2}	MEDLN83SE		
	Fram	e sym	bol	E-frame		
Power supply	capacit	у	(kVA)	3.8		
Rated output			(W)	2000		
Rated torque			(N·m)	9.55		
Continuous sta	all torqu	ie	(N·m)	11.5		
Momentary Ma	ax. pea	ue (N·m)	28.6			
Rated current			(A(rms))	12.5		
Max. current			(A(o-p))	53		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4285	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	55.7		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	61.0		
Recommended moment of i ratio of the load and the roto			inertia Dr Note)3	5 times or less		
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutic	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Static friction torque (N·m)	25.0 or more				
Engaging time (ms)	80 or less				
Releasing time (ms) Note)4	25 or less				
Exciting current (DC) (A)	1.29				
Releasing voltage (DC) (V)	2 or more				
Exciting voltage (DC) (V)	24±2.4				

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications		Key way shaft/ Round shaft						
	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	-	P.173		_	P.174			
Encoder connector Small size (JN2) type	-	P.174		—	P.174			

200 V MHMF 3.0 kW [High inertia 176 mm sq.]

Specifications

		AC200 V	• Brake	Brake specifications (For details, refer to P.30 (This brake will be released when it is energized.)					
Motor model *1			IP67	MHMF302L1	(Do not	(Do not use this for braking the motor in motion.			
		Multif	unction type	MFDLTA3SF	Static fri	Static friction torque (N·m)			
Applicable	Model No	RS48	5 communication type *2	MFDLNA3SG	Engagin	g time (ms)	80 or less		
driver		Basic	type *2	MFDLNA3SE	Releasir	ng time (ms) Note)4	25 or less		
	Fram	e sym	loc	F-frame	Exciting	current (DC) (A)	1.29		
Power supply	capacit	у	(kVA)	5.2	Releasir	ng voltage (DC) (V)	2 or more		
Rated output			(W)	3000	Exciting	voltage (DC) (V)	24±2.4		
Rated torque			(N·m)	14.3	• Pormi	Bormissible load (For datails, refer to P304)			
Continuous sta	all torqu	le	(N·m)	17.2	• Fermi				
Momentary Max. peak torque (N·m)		ie (N·m)	43.0	During	Radial load P-direction (N)	1666			
Rated current (A(rms))		17.0	assembly	Thrust load A-direction (N)	784				
Max. current			(A(o-p))	72		Thrust load B-direction (N)	980		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	784		
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	343		
Rated rotation	al spee	d	(r/min)	2000	For deta	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	3000	• Dimensi	ons of Driver, refer to P.59.			
Moment of ine	rtia		Without brake	85.3	- ^1 ∟∟ Ir specifi	the motor part number repre	sents the moto		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	90.7	*2 Basic	type and RS485 communicati	on type are		
Recommended moment of inertia ratio of the load and the rotor Note)3		nertia Dr Note)3	5 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	15 ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incremen			
	Re	solutio	n per single turn	8388608	a batte	a battery for absolute encoder.			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.175			P.175			
Encoder connector Small size (JN2) type	_	P.175		_	P.176			

-98-

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

-97-

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

ш Series

Imformation

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

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

Motor Specifications 200 V MHMF 4.0 kW [High inertia 176 mm sq.]

Specifications

				AC200 V		
Motor model *1			IP67	MHMF402L1		
		Multi	function type	MFDLTB3SF		
Applicable	Model	RS48	5 communication type *2	MFDLNB3SG		
driver	110.	Basic	c type *2	MFDLNB3SE		
	Fram	e sym	bol	F-frame		
Power supply	capacit	у	(kVA)	6.5		
Rated output			(W)	4000		
Rated torque			(N·m)	19.1		
Continuous sta	all torqu	ie	(N·m)	22.0		
Momentary Ma	ax. pea	k torqı	ue (N·m)	57.3		
Rated current			(A(rms))	20		
Max. current			(A(o-p))	85		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia		Without brake	104		
of rotor (×10 ⁻⁴ kg·m ²)			With brake	110		
Recommende ratio of the loa	d mome d and t	ent of he rote	inertia Dr Note)3	5 times or less		
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutio	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Static friction torque (N·m)	25.0 or more				
Engaging time (ms)	80 or less				
Releasing time (ms) Note)4	25 or less				
Exciting current (DC) (A)	1.29				
Releasing voltage (DC) (V)	2 or more				
Exciting voltage (DC) (V)	24±2.4				

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Key way shaft/ Round shaft						
	without brake			with brake			
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
Encoder connector Large size (JL10) type		P.176			P.176		
Encoder connector Small size (JN2) type		P.177			P.177		

200 V MHMF 5.0 kW [High inertia 176 mm sq.]

Specifications

				AC200 V	• Brake	• Brake specifications (For details, refer to P.305		
Motor model 1 IP67		MHMF502L1	(Do not	(Do not use this for braking the motor in motion.)				
		Multifunction type		MFDLTB3SF	Static fri	Static friction torque (N·m)		
Applicable	Model No	RS48	5 communication type *2	MFDLNB3SG	Engagin	Engaging time (ms)		
driver		Basic	type *2	MFDLNB3SE	Releasir	Releasing time (ms) Note)4 30		
	Fram	e syml	loc	F-frame	Exciting	current (DC) (A)	1.29	
Power supply	capacit	у	(kVA)	7.8	Releasir	ng voltage (DC) (V)	2 or more	
Rated output			(W)	5000	Exciting	voltage (DC) (V)	24±2.4	
Rated torque			(N·m)	23.9	• Pormi	Dormicsible load (For details, refer to P304)		
Continuous sta	all torqu	ie	(N·m)	26.3	• Ferrin		(10 F.304)	
Momentary Max. peak torque (N·m)		71.6	During	Radial load P-direction (N)	1666			
Rated current (A(rms))		23.3	assembly	Thrust load A-direction (N)	784			
Max. current			(A(o-p))	99		Thrust load B-direction (N)	980	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	784	
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	343	
Rated rotation	al spee	d	(r/min)	2000	For deta	 For details of Note)1 to Note)4, refer to P.303. Dimensions of Driver, refer to P.59. 		
Max. rotationa	l speed		(r/min)	3000	• Dimensi			
Moment of ine	rtia		Without brake	146		n the motor part number repre	sents the motor	
of rotor ($\times 10^{-4}$	kg∙m²)		With brake	151	*2 Basic	type and RS485 communication	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa system (not using multi-turn data), do not connec a battery for absolute encoder.		
	Re	solutio	n per single turn	8388608	a batte			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications		without brake		with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.177			P.178			
Encoder connector Small size (JN2) type		P.178			P.178			

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

-99-

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

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

E Series

Imformation

Motor Specifications 200 V MHMF 7.5 kW [High inertia 176 mm sq.]

Specifications

				AC200 V		
Motor model *1			IP67	MHMF752L1		
		Multi	function type	MGDLTC3SF		
Applicable	Model	RS48	5 communication type *2	_		
driver	140.	Basic	c type *2	—		
	Fram	e sym	bol	G-frame		
Power supply	capacit	у	(kVA)	11		
Rated output			(W)	7500		
Rated torque			(N·m)	47.8		
Continuous sta	all torqu	ie	(N·m)	47.8		
Momentary Ma	ax. pea	k torqı	ue (N·m)	125		
Rated current			(A(rms))	40.2		
Max. current			(A(o-p))	154		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4285×3	No limit Note)2		
Rated rotation	al spee	d	(r/min)	1500		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia		Without brake	272		
of rotor (×10 ⁻⁴ kg·m ²)			With brake	279		
Recommende ratio of the loa	d mome d and t	5 times or less				
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutic	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.) Do not use this for braking the motor in motion

(Be not dee the for braning the motor in motorit.)						
Static friction torque (N·m)	63.0 or more					
Engaging time (ms)	200 or less					
Releasing time (ms) Note)4	80 or less					
Exciting current (DC) (A)	1.29					
Releasing voltage (DC) (V)	2 or more					
Exciting voltage (DC) (V)	15 or less					

• Permissible load (For details, refer to P.304)

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

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.60.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

		Round shaft/ Key way, center tap shaft							
Motor specifications	Motor specifications		without brake		with brake				
		without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
	Encoder connector Large size (JL10) type		P.179	_		P.179	_		
	Encoder connector Small size (JN2) type	_	P.179	—	_	P.180	_		

200 V MDMF 1.0 kW [Middle inertia 130 mm sq.]

Specifications

				AC200 V	• Brake	specifications (For details	, refer to P.305)	
Motor model *1			IP67	MDMF102L1	(Do not	(Do not use this for braking the motor in motion.)		
		Multif	unction type	MDDLT45SF	Static fri	Static friction torque (N·m) 13		
Applicable	Model No	RS48	5 communication type *2	MDDLN45SG	Engagin	Engaging time (ms) 10		
driver		Basic	type *2	MDDLN45SE	Releasir	Releasing time (ms) Note)4 50 o		
	Fram	e syml	loc	D-frame	Exciting	current (DC) (A)	0.79	
Power supply	capacit	у	(kVA)	2.4	Releasir	ng voltage (DC) (V)	2 or more	
Rated output			(W)	1000	Exciting	voltage (DC) (V)	24±2.4	
Rated torque			(N·m)	4.77	• Dermi	• Dermissible load (For details, refer to P304)		
Continuous sta	all torqu	le	(N·m)	5.25	- remi			
Momentary Max. peak torque (N·m)		14.3	During	Radial load P-direction (N)	980			
Rated current (A(rms))		(A(rms))	5.2	assembly	Thrust load A-direction (N)	588		
Max. current			(A(o-p))	22		Thrust load B-direction (N)	686	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	490	
frequency (time	es/min)	Note)1	DV0P4284	No limit Note)2	operation	Thrust load A, B-direction (N)	196	
Rated rotation	al spee	d	(r/min)	2000	For deta	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	l speed		(r/min)	3000	Dimensi	ons of Driver, refer to P.58.		
Moment of ine	rtia		Without brake	6.18	- ^1 ∟∟ ır specifi	the motor part number repre	sents the motor	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	7.40	*2 Basic	type and RS485 communicati	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3			nertia Dr Note)3	10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.		
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa system (not using multi-turn data), do not connec a battery for absolute encoder		
	Re	solutio	n per single turn	8388608	a batte			
L								



Dimensions

	Key way shaft/ Round shaft							
Motor specifications		without brake		with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.180			P.180			
Encoder connector Small size (JN2) type		P.181			P.181			

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

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

ш Series

Imformation

Motor Specifications 200 V MDMF 1.5 kW [Middle inertia 130 mm sq.]

Specifications

					AC200 V		
Motor model *1			IP67		MDMF152L1		
		Multi	function type		MDDLT55SF		
Applicable	Model No	RS48	5 communication ty	pe *2	MDDLN55SG		
driver		Basic	type *2		MDDLN55SE		
	Fram	e sym	bol		D-frame		
Power supply	capacit	у	(k)	VA)	2.9		
Rated output			((W)	1500		
Rated torque			(N	·m)	7.16		
Continuous sta	all torqu	ie	(N	·m)	7.52		
Momentary Ma	ax. pea	k torqı	Je (N	·m)	21.5		
Rated current			(A(rm	(A(rms)) 8.0			
Max. current		(A(o-p))		34			
Regenerative	brake		Without option		No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4284		No limit Note)2		
Rated rotation	al spee	d	(r/m	nin)	2000		
Max. rotationa	l speed		(r/m	nin)	3000		
Moment of ine	rtia		Without brake		9.16		
of rotor (×10 ⁻⁴ kg·m ²)			With brake		10.4		
Recommended moment of inertia ratio of the load and the rotor Note)3					10 times or less		
Rotary encode	er speci	ficatio	ns*3		23-bit Absolute		
	Re	solutic	on per single turn	1	8388608		

• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.) Do not use this for braking the motor in motion

Be not doe this for braking the motor in motor.						
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					
Releasing voltage (DC) (V)	2 or more					
Exciting voltage (DC) (V)	24±2.4					

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.181			P.182			
Encoder connector Small size (JN2) type	_	P.182		_	P.182			

200 V MDMF 2.0 kW [Middle inertia 130 mm sq.]

Specifications

					_				
				AC200 V	• Brake	specifications (For details	, refer to P.305)		
Motor model *1			IP67	MDMF202L1	(Do not	(Do not use this for braking the motor in motion.)			
		Multifunction type		MEDLT83SF	Static fri	Static friction torque (N·m) 13			
Applicable	Model No.	RS48	5 communication type *2	MEDLN83SG	Engagin	g time (ms)	100 or less		
driver		Basic	type *2	MEDLN83SE	Releasir	ng time (ms) Note)4	50 or less		
	Fram	e sym	loc	E-frame	Exciting	current (DC) (A)	0.79		
Power supply	capacit	у	(kVA)	3.8	Releasir	ng voltage (DC) (V)	2 or more		
Rated output			(W)	2000	Exciting	voltage (DC) (V)	24±2.4		
Rated torque			(N·m)	9.55	• Dermi	• Permissible load (For details, refer to P304)			
Continuous sta	all torqu	ie	(N·m)	10.0	· r crim		1 10 1 .004)		
Momentary Max. peak torque (N·m)		ie (N·m)	28.6	During	Radial load P-direction (N)	980			
Rated current (A(rms))		(A(rms))	9.9	assembly	Thrust load A-direction (N)	588			
Max. current (A(o-p))		(A(o-p))	42		Thrust load B-direction (N)	686			
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	490		
frequency (time	es/min)	Note)1	DV0P4285	No limit Note)2	operation	Thrust load A, B-direction (N)	196		
Rated rotation	al spee	d	(r/min)	2000	For deta	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	3000	• Dimensi	Dimensions of Driver, refer to P.59.			
Moment of ine	rtia		Without brake	12.1	- ^1 ∐∐ Ir specifi	the motor part number repre-	sents the motor		
of rotor ($\times 10^{-4}$	kg∙m²)		With brake	13.3	*2 Basic	type and RS485 communication	on type are		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.					
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa			
	Re	solutio	n per single turn	8388608	a batte	system (not using multi-turn data), do not connec a battery for absolute encoder.			
	·					,			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications		without brake		with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.183			P.183			
Encoder connector Small size (JN2) type		P.183			P.184			

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

Panasonic Corporation Electromechanical Control Business Division -103industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

E Series

Imformation

Motor Specifications 200 V MDMF 3.0 kW [Middle inertia 130 mm sq.]

Specifications

				AC200 V	
Motor model *1			IP67	MDMF302L1	
		Multi	function type	MFDLTA3SF	
Applicable	Model	RS48	5 communication type *2	MFDLNA3SG	
driver	140.	Basic	c type *2	MFDLNA3SE	
	Fram	e sym	bol	F-frame	
Power supply	capacit	у	(kVA)	5.2	
Rated output			(W)	3000	
Rated torque			(N·m)	14.3	
Continuous sta	all torqu	ie	(N·m)	15.0	
Momentary Ma	ax. pea	k torqı	ue (N·m)	43.0	
Rated current			(A(rms))	16.4	
Max. current			(A(o-p))	70	
Regenerative	brake		Without option	No limit Note)2	
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia		Without brake	18.6	
of rotor (×10 ⁻⁴ kg·m ²)			With brake	19.6	
Recommende ratio of the loa	d mome d and t	ent of i	inertia Dr Note)3	10 times or less	
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute	
	Re	solutic	on per single turn	8388608	

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

	/
Static friction torque (N·m)	22.0 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Key way shaft/ Round shaft						
	without brake			with brake			
		without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal
L	Encoder connector arge size (JL10) type		P.184			P.184	
S	Encoder connector Small size (JN2) type		P.185			P.185	

200 V MDMF 4.0 kW [Middle inertia 176 mm sq.]

Specifications

				AC200 V	• Brake	specifications (For details	, refer to P.305)		
Motor model *1			IP67	MDMF402L1	(Do not	(Do not use this for braking the motor in motion.)			
		Multifunction type		MFDLTB3SF	Static fri	Static friction torque (N·m)			
Applicable	Model No	RS48	5 communication type *2	MFDLNB3SG	Engagin	Engaging time (ms)			
driver		Basic	type *2	MFDLNB3SE	Releasir	Releasing time (ms) Note)4 25			
	Fram	e syml	loc	F-frame	Exciting	current (DC) (A)	1.29		
Power supply	capacit	у	(kVA)	6.5	Releasir	ng voltage (DC) (V)	2 or more		
Rated output			(W)	4000	Exciting	voltage (DC) (V)	24±2.4		
Rated torque			(N·m)	19.1	• Pormi	• Permissible load (For details, refer to P304)			
Continuous sta	all torqu	e	(N·m)	22.0	· F CIIII		1 (0 1 .004)		
Momentary Max. peak torque (N·m)		ıe (N·m)	57.3	During	Radial load P-direction (N)	1666			
Rated current (A(rms))		20.0	assembly	Thrust load A-direction (N)	784				
Max. current			(A(o-p))	85		Thrust load B-direction (N)	980		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	784		
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	343		
Rated rotation	al spee	d	(r/min)	2000	For deta	 For details of Note)1 to Note)4, refer to P.303. Dimensions of Driver, refer to P.59. 			
Max. rotationa	l speed		(r/min)	3000	• Dimensi				
Moment of ine	rtia		Without brake	46.9	n r 	the motor part number repre	sents the motor		
of rotor ($\times 10^{-4}$	kg∙m²)		With brake	52.3	*2 Basic	type and RS485 communication	on type are		
Recommended moment of inertia ratio of the load and the rotor Note)3		nertia Dr Note)3	10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incremen			
	Re	solutio	n per single turn	8388608	a batte	system (not using multi-turn data), do not connec a battery for absolute encoder.			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications		without brake		with brake				
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.185			P.186			
Encoder connector Small size (JN2) type		P.186			P.186			

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

Panasonic Corporation Electromechanical Control Business Division -105industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

ш Series

Imformation

Motor Specifications 200 V MDMF 5.0 kW [Middle inertia 176 mm sq.]

Specifications

				AC200 V
Motor model *1		MDMF502L1		
		Multi	function type	MFDLTB3SF
Applicable	Model No	RS48	5 communication type *	² MFDLNB3SG
driver	140.	Basic	type ^{*2}	MFDLNB3SE
	Fram	e sym	bol	F-frame
Power supply	capacit	у	(kVA)	7.8
Rated output			(W)	5000
Rated torque			(N·m)	23.9
Continuous sta	all torqu	ie	(N·m)	26.3
Momentary Ma	ax. pea	k torqu	ue (N·m)	71.6
Rated current			(A(rms))	23.3
Max. current			(A(o-p))	99
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2
Rated rotation	al spee	d	(r/min)	2000
Max. rotationa	l speed		(r/min)	3000
Moment of ine	rtia		Without brake	58.2
of rotor (×10 ⁻⁴ kg·m ²)			With brake	63.0
Recommende ratio of the loa	d mome d and t	ent of i	inertia Dr Note)S	10 times or less
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute
	Re	solutic	on per single turn	8388608

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

	/
Static friction torque (N·m)	44.1 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	30 or less
Exciting current (DC) (A)	1.29
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.187			P.187			
Encoder connector Small size (JN2) type		P.187			P.188			

200 V MDMF 7.5 kW [Middle inertia 176 mm sq.]

Specifications

			1007		• Brake	• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.)			
Notor model			IP67		\Do not	Do not use this for braking the motor in moti			
		Multif	unction type	MGDLTC3SF	Static fri	ction torque (N·m)	63.0 or more		
Applicable	No.	RS48	5 communication type *2	_	Engagin	g time (ms)	200 or less		
driver		Basic	type ^{*2}	_	Releasin	ng time (ms) Note)4	80 or less		
	Fram	e sym	lool	G-frame	Exciting	current (DC) (A)	1.29		
Power supply	capacit	у	(kVA)	11	Releasin	ng voltage (DC) (V)	2 or more		
Rated output			(W)	7500	Exciting	voltage (DC) (V)	15 or less		
Rated torque			(N·m)	47.8	• Permi	Dormiosible load (Ear datails, refer to P204)			
Continuous sta	all torqu	ie	(N·m)	47.8	• Fermi		(i i i i i i i i i i i i i i i i i i i		
Momentary Max. peak torque (N·m)		ie (N·m)	125	During	Radial load P-direction (N)	2058			
Rated current (A(rms))		40.2	assembly	Thrust load A-direction (N)	980				
Max. current			(A(o-p))	154		Thrust load B-direction (N)	1176		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	1176		
frequency (time	es/min)	Note)1	DV0P4285×3	No limit Note)2 operation		Thrust load A, B-direction (N)	490		
Rated rotation	al spee	d	(r/min)	1500	For deta	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	3000	• Dimensi	ons of Driver, refer to P.60.			
Moment of ine	rtia		Without brake	122		a the motor part number repre	sents the motor		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	127	*2 Basic t	type and RS485 communicati	on type are		
Recommended moment of inertia ratio of the load and the rotor Note)3		nertia Dr Note)3	10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.			
	Re	solutio	n per single turn	8388608	a batte				



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.188	_		P.188			
Encoder connector Small size (JN2) type		P.189	_		P.189			

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

Panasonic Corporation Electromechanical Control Business Division -107industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

A6 Family

A6N Series

A6B

Series

ш Series

Imformation

Motor Specifications 200 V MDMF 11.0 kW [Middle inertia 220 mm sq.]

Specifications

				AC200 V		
Motor model *1			IP67	MDMFC12L1		
		Multi	function type	MHDLTE3SF		
Applicable	Model	RS48	5 communication type *2	_		
driver	110.	Basic	c type *2	—		
	Fram	e sym	bol	H-frame		
Power supply	capacit	у	(kVA)	15		
Rated output			(W)	11000		
Rated torque			(N·m)	70.0		
Continuous sta	all torqu	ie	(N·m)	70.0		
Momentary Ma	ax. pea	k torqı	ue (N·m)	175		
Rated current			(A(rms))	57.1		
Max. current			(A(o-p))	209		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4285×6	No limit Note)2		
Rated rotation	al spee	d	(r/min)	1500		
Max. rotationa	l speed		(r/min)	2000		
Moment of ine	rtia		Without brake	205		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	214		
Recommended moment of ratio of the load and the rote			inertia Dr Note)3	10 times or less		
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute		
	Re	solutic	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) /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				
Releasing voltage (DC) (V)	2 or more				
Exciting voltage (DC) (V)	15 or less				

• Permissible load (For details, refer to P.304)

	Radial load P-direction (N)	4508
During	Thrust load A-direction (N)	1470
assembly _	Thrust load B-direction (N)	2646
During	Radial load P-direction (N)	2254
operation	Thrust load A. B-direction (N)	686

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.61.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	—	P.189	_		P.190	_		
Encoder connector Small size (JN2) type	—	P.190	_	_	P.190	_		

200 V MDMF 15.0 kW [Middle inertia 220 mm sq.]

Specifications

opeenioadene									
				AC200 V	Brake	specifications (For details	, refer to P.305)		
Motor model *1			IP67	MDMFC52L1	(This bra (Do not	ake will be released when it is e use this for braking the motor ir	nergized.		
Applicable		Multif	unction type	MHDLTE3SF	Static friction torque (N·m) 100 o		100 or more		
	Model	RS485	communication type *2	_	Engaging	g time (ms)	300 or less		
driver	140.	Basic	type *2	_	Releasin	g time (ms) Note)4	140 or less		
	Fram	e syml	lool	H-frame	Exciting	current (DC) (A)	1.08		
Power supply	capacit	y	(kVA)	20	Releasin	g voltage (DC) (V)	2 or more		
Rated output			(W)	15000	Exciting	Exciting voltage (DC) (V) 15 or			
Rated torque			(N·m)	95.5	• Dormi	• Permissible load (For details, refer to P304)			
Continuous st	all torqu	е	(N·m)	95.5	- Ferrina		/ 10 1 .00+)		
Momentary Max. peak torque (N·m)		224	During	Radial load P-direction (N)	4508				
Rated current (A(rms))		65.8	assembly	Thrust load A-direction (N)	1470				
Max. current			(A(o-p))	225		Thrust load B-direction (N)	2646		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	2254		
frequency (time	es/min)	Note)1	DV0P4285×6	No limit Note)2	operation	Thrust load A, B-direction (N)	686		
Rated rotation	al spee	d	(r/min)	1500	 For deta 	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	2000	• Dimensi	Dimensions of Driver, refer to P.61.			
Moment of ine	rtia		Without brake	280	n n	the motor part number repre	sents the motol		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	289	*2 Basic t	*2 Basic type and RS485 communication type are			
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less	"Positio Detail o	"Position control type". Detail of model designation, refer to P.22.					
Rotary encode	er speci	fication	າຣ ^{*3}	23-bit Absolute	*3 When	using a rotary encoder as	an incrementa		
	Re	solutio	n per single turn	8388608	system (not using multi-turn data), do not connect a battery for absolute encoder.				
						.,			

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



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications		without brake		with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	_	P.191	_		P.191	_		
Encoder connector Small size (JN2) type	_	P.191	—	_	P.192	_		

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

Panasonic Corporation Electromechanical Control Business Division -109industrial.panasonic.com/ac/e/

Motor Specifications A6 Series

A6 Family

A6N Series

A6B Series Special Order Product

E Series

Motor Specifications 200 V MDMF 22.0 kW [Middle inertia 220 mm sq.]

Specifications

				AC200 V		
Motor model *1			IP44	MDMFD22L1		
		Multi	function type	MHDLTF3SF		
Applicable	Model	RS48	5 communication type *2	_		
driver	140.	Basic	type ^{*2}	—		
	Fram	e sym	bol	H-frame		
Power supply	capacit	y	(kVA)	28		
Rated output			(W)	22000		
Rated torque			(N·m)	140		
Continuous sta	all torqu	e	(N·m)	140		
Momentary Ma	ax. pea	< torqu	ue (N·m)	350		
Rated current			(A(rms))	80.9		
Max. current			(A(o-p))	294		
Regenerative	brake		Without option	No limit Note)2		
frequency (time	es/min)	Note)1	DV0P4285×6	No limit Note)2		
Rated rotation	al spee	d	(r/min)	1500		
Max. rotationa	l speed		(r/min)	2000		
Moment of ine	rtia		Without brake	431		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	455		
Recommended moment of ratio of the load and the rote			inertia Dr Note)3	10 times or less		
Rotary encode	er speci	ficatio	ns *3	23-bit Absolute		
	Re	solutic	on per single turn	8388608		

• Brake specifications (For details, refer to P.305) /This brake will be released when it is energized. Do not use this for braking the motor in motion

Static friction torque (N·m)	200 or more				
Engaging time (ms)	300 or less				
Releasing time (ms) Note)4	150 or less				
Exciting current (DC) (A)	1.72				
Releasing voltage (DC) (V)	2 or more				
Exciting voltage (DC) (V)	15 or less				

• Permissible load (For details, refer to P.304)

During	Radial load P-direction (N)	4508
During	Thrust load A-direction (N)	ad P-direction (N)4508ad A-direction (N)1470ad B-direction (N)2646ad P-direction (N)2254ad A B-direction (N)686
assembly	Thrust load B-direction (N)	2646
During	Radial load P-direction (N)	2254
operation	Thrust load A. B-direction (N)	686

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.61.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Round shaft/ Key way, center tap shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	_	P.192	—		P.192	—		
Encoder connector Small size (JN2) type	_	P.193	_		P.193	—		

-111-

[Middle inertia Low speed/High torque type] 200 V MGMF 0.85 kW 130 mm sq.

Specifications

				AC200 V	• Brake	• Brake specifications (For details, refer to P.305			
Motor model *1	IP67			MGMF092L1	(This bi (Do not	use this for braking the motor in	n motion.		
Applicable		Multif	unction type	MDDLT45SF Static friction torque (N·m)		13.7 or more			
	Model	RS485	5 communication type *2	MDDLN45SG	Engagir	ng time (ms)	100 or less		
driver	110.	Basic	type ^{*2}	MDDLN45SE	Releasi	ng time (ms) Note)4	50 or less		
	Frame	e syml	ool	D-frame	Exciting	current (DC) (A)	0.79		
Power supply	capacity	/	(kVA)	2.0	Releasi	ng voltage (DC) (V)	2 or more		
Rated output			(W)	850	Exciting	voltage (DC) (V)	24±2.4		
Rated torque			(N·m)	5.41		• Dermine ihle Lood (Ferreleteilte referete D004)			
Continuous st	all torqu	е	(N·m)	5.41	• Perm	ISSIDIE IOAU (For details, reit	91 10 P.304)		
Momentary Max, peak torque (N·m)		ie (N·m)	14.3	During	Radial load P-direction (N)	980			
Rated current			(A(rms))	5.9	assembly	Thrust load A-direction (N)	588		
Max. current			(A(o-p))	22	-	Thrust load B-direction (N)	686		
Regenerative	hrake		Without option	No limit Note)2	During	Radial load P-direction (N)	686		
frequency (time	es/min) M	Note)1	1 DV0P4284 No limit Note)2		operation	Thrust load A, B-direction (N)	196		
Rated rotation	al speed	d	(r/min)	1500	• For deta	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	3000	• Dimens	Dimensions of Driver, refer to P.58.			
Moment of ine	ertia		Without brake	6.18		n the motor part number repre	sents the moto		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	7.40	*2 Basic	*2 Basic type and RS485 communication type are			
Recommended moment of inertia ratio of the load and the rotor Note)3			nertia Dr Note)3	10 times or less	"Posit Detail	"Position control type". Detail of model designation, refer to P.22.			
Rotary encode	er specif	icatior	າຣ ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa			
	Res	solutio	n per single turn	8388608	- Syster	n (not using multi-lum data),	uo not connec		



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.193			P.1	194		
Encoder connector Small size (JN2) type		P.194			P.1	194		

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Motor Specifications

A6 Family

A6N Series

A6B Series Special Order Product

E Series

Imformation

200 V MGMF 1.3 kW

[Middle inertia Low speed/High torque type] 130 mm sq.

Specifications

		AC200 V			
Motor model *1			IP67		MGMF132L1
		Multi	function type		MDDLT55SF
Applicable	Model No	RS48	5 communication typ	e *2	MDDLN55SG
driver	110.	Basic	c type ^{*2}		MDDLN55SE
	Fram	e sym	bol		D-frame
Power supply	capacit	у	(kV	A)	2.6
Rated output			()	N)	1300
Rated torque			(N·ı	m)	8.28
Continuous st	all torqu	le	(N·ı	m)	8.28
Momentary M	ax. pea	k torqı	ue (N·i	m)	23.3
Rated current			(A(rms	s))	9.3
Max. current			(A(o-p	c))	37
Regenerative	brake		Without option		No limit Note)2
frequency (time	es/min)	Note)1	DV0P4284		No limit Note)2
Rated rotation	al spee	d	(r/mi	in)	1500
Max. rotationa	l speed		(r/mi	in)	3000
Moment of ine	ertia		Without brake		9.16
of rotor (×10 ⁻⁴ kg·m ²)			With brake		10.4
Recommended moment of inertia ratio of the load and the rotor Note)3					10 times or less
Rotary encode	er speci	ficatio	ns*3		23-bit Absolute
	Re	solutic	on per single turn		8388608

• Brake specifications (For details, refer to P.305) /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
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.58.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Key way shaft/ Round shaft						
Motor specifications	without brake			with brake			
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
Encoder connector Large size (JL10) type		P.195			P. ⁻	195	
Encoder connector Small size (JN2) type		P.195			P. ⁻	196	

Middle inertia Low speed/High torque type 200 V MGMF 1.8 kW 130 mm sq.

Specifications

opcomo		5						
		AC200 V	• Brake specifications (For details, refer to P.305)					
Motor model *1			IP67	MGMF182L1	(This br	(Do not use this for braking the motor in motion.)		
		Multi	iunction type	MEDLT83SF	Static friction torque (N·m)		13.7 or more	
Applicable	Model No	RS48	5 communication type *2	MEDLN83SG	Engagin	g time (ms)	100 or less	
driver		Basic	type *2	MEDLN83SE	Releasin	ig time (ms) Note)4	50 or less	
	Fram	e sym	lod	E-frame	Exciting	current (DC) (A)	0.79	
Power supply	capacit	у	(kVA)	3.4	Releasin	ig voltage (DC) (V)	2 or more	
Rated output			(W)	1800	Exciting	voltage (DC) (V)	24±2.4	
Rated torque			(N·m)	11.5	• Pormi	Bormionible load (Ear dataile refer to P204)		
Continuous st	all torqu	ie	(N·m)	11.5	• Permi		F 10 F.304)	
Momentary Max. peak torque (N·m)		ıe (N·m)	28.7	During	Radial load P-direction (N)	980		
Rated current	-		(A(rms))	11.8	assembly	Thrust load A-direction (N)	588	
Max. current			(A(o-p))	42		Thrust load B-direction (N)	686	
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	686	
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	196	
Rated rotation	al spee	d	(r/min)	1500	 For detail 	For details of Note)1 to Note)4, refer to P.303.		
Max. rotationa	l speed		(r/min)	3000	• Dimensi	ons of Driver, refer to P.59.	aanta tha matar	
Moment of ine	ertia		Without brake	12.1	specifi	cations.	sents the motor	
of rotor (×10 ⁻⁴	kg∙m²)		With brake	13.3	*2 Basic t	type and RS485 communicati	on type are	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.				
Rotary encode	er speci	ficatio	ns*3	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incremental		
Resolution per single turn			n per single turn	8388608	system (not using multi-turn data), do not connect a battery for absolute encoder.			

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



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type		P.196			P.1	96		
Encoder connector Small size (JN2) type		P.197			P.1	197		

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/ -114-

Motor Specifications A6 Series

A6N Series

[Middle inertia Low speed/High torque type] 176 mm sq.

Specifications

				AC200 V
Motor model *1			IP67	MGMF242L1
		Multi	function type	MEDLT93SF
Applicable	Model No	RS48	5 communication type *2	MEDLN93SG
driver	110.	Basio	c type *2	MEDLN93SE
	Fram	e sym	bol	E-frame
Power supply	capacit	у	(kVA)	4.5
Rated output			(W)	2400
Rated torque			(N·m)	15.3
Continuous sta	all torqu	ie	(N·m)	15.3
Momentary Ma	ax. pea	k torqı	ue (N·m)	45.2
Rated current			(A(rms))	16.0
Max. current			(A(o-p))	67
Regenerative	brake		Without option	No limit Note)2
frequency (time	es/min)	Note)1	DV0P4285×2	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	46.9
of rotor (×10 ⁻⁴	kg∙m²)		With brake	52.3
Recommende ratio of the loa	d mome d and t	10 times or less		
Rotary encode	er speci	ficatio	ns ^{⁺3}	23-bit Absolute
	Re	solutio	on per single turn	8388608

• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.)

(Do not use this for braking the motor in motion.)				
Static friction torque (N·m)	25.0 or more			
Engaging time (ms)	80 or less			
Releasing time (ms) Note	25 or less			

Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.29
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.304)

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

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

Motor specifications	Key way shaft/ Round shaft							
	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
	Encoder connector Large size (JL10) type		P.197			P.198		
	Encoder connector Small size (JN2) type		P.198		_	P.198		

200 V MGMF 2.9 kW	[Middle inertia Low speed/High t 176 mm sq.
-------------------	--

Specifications

				AC200 V	• Brake	• Brake specifications (For details, refer to P.305)			
Motor model ^{*1} IP67			IP67	MGMF292L1	(This br	(Do not use this for braking the motor in motion.)			
		Multi	function type	MFDLTB3SF	Static fri	Static friction torque (N·m)			
Applicable	Model No.	RS48	5 communication type *2	MFDLNB3SG	Engagin	g time (ms)	80 or less		
driver		Basic	type *2	MFDLNB3SE	Releasin	ig time (ms) Note)4	25 or less		
	Fram	e sym	bol	F-frame	Exciting	current (DC) (A)	1.29		
Power supply	capacit	y	(kVA)	5.0	Releasin	ig voltage (DC) (V)	2 or more		
Rated output			(W)	2900	Exciting	voltage (DC) (V)	24±2.4		
Rated torque			(N·m)	18.5	• Dormi	Bormissible load (For details, refer to P304)			
Continuous sta	all torqu	е	(N·m)	18.5	• Fermi		FILO F.304)		
Momentary Ma	ax. peal	< torqu	ue (N·m)	45.2	During	Radial load P-direction (N)	1666		
Rated current (A(rms))			(A(rms))	19.3	assembly	Thrust load A-direction (N)	784		
Max. current			(A(o-p))	67		Thrust load B-direction (N)	980		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	1176		
frequency (time	es/min)	Note)1	DV0P4285×2	No limit Note)2	operation	Thrust load A, B-direction (N)	490		
Rated rotation	al spee	d	(r/min)	1500	 For detail 	For details of Note)1 to Note)4, refer to P.303.			
Max. rotationa	l speed		(r/min)	3000	• Dimensi	 Dimensions of Driver, refer to P.59. *1 in the motor part number represents the motor specifications. 			
Moment of ine	rtia		Without brake	46.9					
of rotor (×10 ⁻⁴	kg∙m²)		With brake	52.3	*2 Basic t	type and RS485 communicati	on type are		
Recommended moment of inertia ratio of the load and the rotor Note)3			inertia Dr Note)3	10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.			
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute	*3 When	*3 When using a rotary encoder as an incrementa			
	Re	solutio	on per single turn	8388608	a batte	a battery for absolute encoder.			



Dimensions

	Key way shaft/ Round shaft							
Motor specifications	without brake			with brake				
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal		
Encoder connector Large size (JL10) type	_	P.199			P.199			
Encoder connector Small size (JN2) type		P.199			P.200			

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

Motor Specifications A6 Series

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

A6N Series

200 V MGMF 4.4 kW

[Middle inertia Low speed/High torque type] 176 mm sq.

Specifications

		AC200 V			
Motor model *1			IP67	MGMF442L1	
		Multi	function type	MFDLTB3SF	
Applicable	Model	RS48	5 communication type **	MFDLNB3SG	
driver	110.	Basic	c type *2	MFDLNB3SE	
	Fram	e sym	bol	F-frame	
Power supply	capacit	у	(kVA)	7.0	
Rated output			(W)	4400	
Rated torque			(N·m)	28.0	
Continuous sta	all torqu	ie	(N·m)	28.0	
Momentary Ma	ax. pea	k torqı	ue (N·m)	70.0	
Rated current			(A(rms))	27.2	
Max. current			(A(o-p))	96	
Regenerative	brake		Without option	No limit Note)2	
frequency (time	es/min)	Note)1	DV0P4285×2	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	58.2	
of rotor (×10 ⁻⁴ kg·m ²)			With brake	63.0	
Recommende ratio of the loa	d mome d and t	10 times or less			
Rotary encode	er speci	ficatio	ns ^{*3}	23-bit Absolute	
	Re	solutic	on per single turn	8388608	

• Brake specifications (For details, refer to P.305) (This brake will be released when it is energized.)

Do not use this for braking the motor in motion.						
Static friction torque (N·m)	44.1 or more					
Engaging time (ms)	150 or less					
Releasing time (ms) Note)4	30 or less					
Exciting current (DC) (A)	1.29					

2 or more

24±2.4

• Permissible load (For details, refer to P.304)

Releasing voltage (DC) (V)

Exciting voltage (DC) (V)

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)	1470
	Thrust load A B-direction (N)	490

• For details of Note)1 to Note)4, refer to P.303. · Dimensions of Driver, refer to P.59.

- *1 [] in the motor part number represents the motor specifications.
- *2 Basic type and RS485 communication type are "Position control type".
- Detail of model designation, refer to P.22.
- *3 When using a rotary encoder as an incremental system (not using multi-turn data), do not connect a battery for absolute encoder.

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



Dimensions

	Key way shaft/ Round shaft						
Motor specifications	without brake			with brake			
	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal	
Encoder connector Large size (JL10) type		P.200			P.200		
Encoder connector Small size (JN2) type		P.201			P.201		

Middle inertia Low speed/High torque type 200 V MGMF 5.5 kW 176 mm sq.

Specifications									
				AC200 V	• Brake	• Brake specifications (For details, refer to P.305)			
Motor model *1			IP67	MGMF552L1	(Inis br Do not	(Do not use this for braking the motor in motion.)			
		Multif	unction type	MGDLTC3SF	Static fri	ction torque (N·m)	63.0 or more		
Applicable	Model No.	RS48	5 communication type *2	—	Engagin	Engaging time (ms) 200 or			
driver		Basic	type ^{*2}	—	Releasir	ng time (ms) Note)4	80 or less		
	Fram	e sym	loc	G-frame	Exciting	current (DC) (A)	1.29		
Power supply	capacit	y	(kVA)	8.5	Releasir	ng voltage (DC) (V)	2 or more		
Rated output			(W)	5500	Exciting	voltage (DC) (V)	15 or less		
Rated torque			(N·m)	35.0	• Pormi	Dormissible load (For details, refer to P304)			
Continuous sta	all torqu	е	(N·m)	35.0	• Fermi		(1 to 1 .304)		
Momentary Ma	ax. peal	< torqu	ie (N·m)	102	During	Radial load P-direction (N)	2058		
Rated current			(A(rms))	39.8	assembly	Thrust load A-direction (N)	980		
Max. current			(A(o-p))	164		Thrust load B-direction (N)	1176		
Regenerative	brake		Without option	No limit Note)2	During	Radial load P-direction (N)	1176		
frequency (time	es/min)	Note)1	DV0P4285×3	No limit Note)2	operation	Thrust load A, B-direction (N)	490		
Rated rotation	al spee	d	(r/min)	1500	 For detail 	 For details of Note)1 to Note)4, refer to P.303. 			
Max. rotationa	l speed		(r/min)	3000	• Dimens	ons of Driver, refer to P.60.			
Moment of ine	rtia		Without brake	83.0		cations.	sents the motor		
of rotor (×10 ⁻⁴	kg∙m²)		With brake	88.0	*2 Basic	type and RS485 communication	on type are		
Recommended moment of inertia ratio of the load and the rotor Note)3			nertia Dr Note)3	10 times or less	"Positi Detail	"Position control type". Detail of model designation, refer to P.22.			
Rotary encode	er speci	ficatio	rs ^{*3}	23-bit Absolute	*3 When	using a rotary encoder as a	an incremental		
	Re	Resolution per single turn		8388608	a batte	a battery for absolute encoder.			

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



Dimensions

	Round shaft/ Key way, center tap shaft								
Motor specifications	without brake			with brake					
·	without oil seal	with oil seal	with protective lip/ with oil seal	without oil seal	with oil seal	with protective lip/ with oil seal			
Encoder connector Large size (JL10) type		P.201	_		P.202				
Encoder connector Small size (JN2) type		P.202			P.202				

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

Panasonic Corporation Electromechanical Control Business Division industrial.panasonic.com/ac/e/

Panasonic Corporation Electromechanical Control Business Division -118industrial.panasonic.com/ac/e/

Motor Specifications A6 Series