

Motor Specifications and Ratings **100V** MQMA

100W to 400W Low inertia, Flat, Small Capacity

			AC100V					
Motor model MQMA			011P1□	011S1□	021P1□	021S1□	041P1□	041S1□
Applicable driver	Model No.	A4 series	MADDT1107		MBDDT2110		MCDDT3120	
		A4F series	MADDT1107F		MBDDT2110F		MCDDT3120F	
		A4P series	MADDT1107P		MBDDT2110P		MCDDT3120P	
	Frame symbol		Frame A		Frame B		Frame C	
Power supply capacity (kVA)			0.4		0.5		0.9	
Rated output (W)			100		200		400	
Rated torque (N · m)			0.32		0.64		1.3	
Momentary Max. peak torque (N · m)			0.95		1.91		3.82	
Rated current (Arms)			1.6		2.5		4.4	
Max. current (Ao-p)			6.9		10.5		18.6	
Regenerative brake frequency (times/min) Note)1		Without option	No limit Note)2					
		DV0P4280	No limit Note)2		_____		_____	
		DV0P4282	_____		_____		No limit Note)2	
		DV0P4283	_____		No limit Note)2		_____	
Rated rotational speed (r/min)			3000					
Max. rotational speed (r/min)			5000				4500	
Moment of inertia of rotor (x10 ⁻⁴ kg · m ²)		Without brake	0.09	0.10	0.34	0.35	0.64	0.65
		With brake	0.12	0.13	0.42	0.43	0.72	0.73
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less					
Rotary encoder specifications			2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental
			Resolution per single turn	10000	131072	10000	131072	10000
Protective enclosure rating			IP65 (except rotating portion of output shaft and lead wire end)					
Environment	Ambient temperature		0 to 40°C (free from freezing), Storage : −20 to +65°C (Max.temperature guarantee 80°C for 72 hours <Nomal temperature>)					
	Ambient humidity		85%RH or lower (free from condensing)					
	Installation location		Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust					
	Altitude		1000m or lower					
	Vibration resistance		49m/s ² or less	24m/s ² or less	49m/s ² or less	24m/s ² or less	49m/s ² or less	24m/s ² or less
Mass (kg), () represents holding brake type			0.65 (0.90)	0.75 (1.0)	1.3 (2.0)	1.4 (2.1)	1.8 (2.5)	1.9 (2.6)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)		
Static friction torque (N · m)		0.29
Engaging time (ms)		50
Releasing time (ms) Note)4		15 (100)
Exciting current (DC) (A)		0.29
Releasing voltage		DC1V or more
Exciting voltage		DC 24 V ±5%

Permissible load		
During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117
During operation	Radial load P-direction (N)	68
	Thrust load A-direction (N)	58
	Thrust load B-direction (N)	58

For motor dimensions, refer to page A4-118, and for the diver, refer to pages A4-22, 23, 48, 49, 73 and 74.

Model designation MQMA series, 100W to 400W

e.g.)

M Q M A 0 1 1 S 1 S

Symbol	Type
MQMA	Low inertia (100W-400W)

Symbol	Specifications
1	100V

Design order
1 : Standard

Motor structure

Symbol	Shaft		Holding brake		Oil seal	
	Round	Key-way, center tap	without	with	without	with*
A	●		●		●	
B	●			●	●	
S		●	●		●	
T		●		●	●	

*Motor with oil seal is manufactured by order.

Motor rated output

Symbol	Rated output
01	100W
02	200W
04	400W

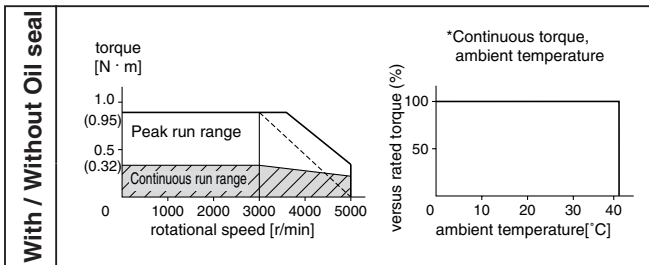
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5
S	Absolute/Incremental	17-bit	131072	7

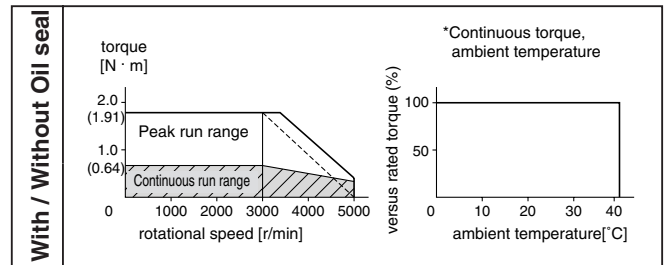
Torque characteristics at AC100V of power voltage

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

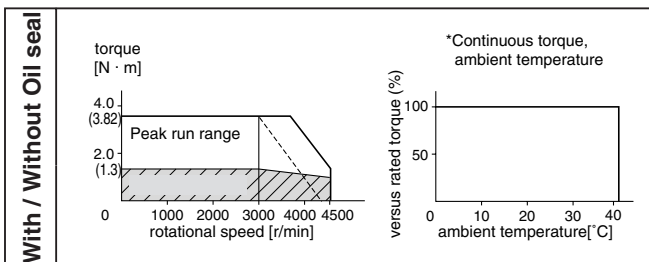
MQMA011 □ 1 □



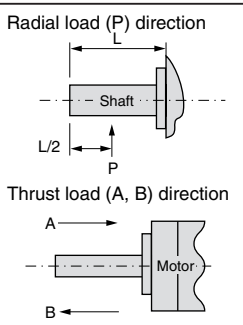
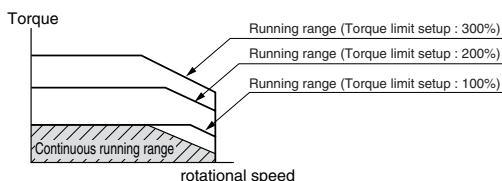
MQMA021 □ 1 □



MQMA041 □ 1 □



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 · If the load is connected, frequency will be defined as $1/(m+1)$, where m =load moment of inertia/rotor moment of inertia.
 · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
 · Power supply voltage is AC115V (at 100V of the main voltage).
 If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
 · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 2. If the effective torque is within the rated torque, there is no limit in generative brake.
 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by Ishizuka Electronic or equivalent).
 () represents the actually measured value using a diode (200V, 1A or equivalent)

Motor Specifications and Ratings **200V** MQMA

100W to 400W Low inertia, Flat, Small Capacity

			AC200V					
Motor model MQMA			012P1□	012S1□	022P1□	022S1□	042P1□	042S1□
Applicable driver	Model No.	A4 series	MADDT1205		MADDT1207		MBDDT2210	
		A4F series	MADDT1205F		MADDT1207F		MBDDT2210F	
		A4P series	MADDT1205P		MADDT1207P		MBDDT2210P	
	Frame symbol		Frame A				Frame B	
Power supply capacity (kVA)			0.3		0.5		0.9	
Rated output (W)			100		200		400	
Rated torque (N · m)			0.32		0.64		1.3	
Momentary Max. peak torque (N · m)			0.95		1.91		3.82	
Rated current (Arms)			1.0		1.6		2.5	
Max. current (Ao-p)			4.3		6.8		10.5	
Regenerative brake frequency (times/min) Note)1		Without option	No limit Note)2					
		DV0P4283	No limit Note)2					
Rated rotational speed (r/min)			3000					
Max. rotational speed (r/min)			5000					
Moment of inertia of rotor (x10 ⁻⁴ kg · m ²)		Without brake	0.090	0.100	0.340	0.350	0.640	0.650
		With brake	0.120	0.130	0.420	0.430	0.720	0.730
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less					
Rotary encoder specifications			2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental
			Resolution per single turn	10000	131072	10000	131072	10000
Protective enclosure rating			IP65 (except rotating portion of output shaft and lead wire end)					
Environment	Ambient temperature		0 to 40℃ (free from freezing), Storage : -20 to +65℃ (Max.temperature guarantee 80℃ for 72 hours <Nomal temperature>)					
	Ambient humidity		85%RH or lower (free from condensing)					
	Installation location		Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust					
	Altitude		1000m or lower					
	Vibration resistance		49m/s ² or less	24m/s ² or less	49m/s ² or less	24m/s ² or less	49m/s ² or less	24m/s ² or less
Mass (kg), () represents holding brake type			0.65 (0.90)	0.75 (1.0)	1.3 (2.0)	1.4 (2.1)	1.8 (2.5)	1.9 (2.6)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)		
Static friction torque (N · m)		0.29
Engaging time (ms)		50
Releasing time (ms) Note)4		15 (100)
Exciting current (DC) (A)		0.29
Releasing voltage		DC1V or more
Exciting voltage		DC 24 V $\pm 10\%$

Permissible load		
During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117
During operation	Radial load P-direction (N)	68
	Thrust load A-direction (N)	58
	Thrust load B-direction (N)	58

For motor dimensions, refer to page A4-118, and for the diver, refer to pages A4-22, 48 and 73.

Model designation MQMA series, 100W to 400W

e.g.)

M Q M A 0 1 2 S 1 S

Symbol	Type
MQMA	Low inertia (100W-400W)

Voltage specifications	
Symbol	Specifications
2	200V

Design order
1 : Standard

Motor structure

Symbol	Shaft		Holding brake		Oil seal	
	Round	Key-way, center tap	without	with	without	with*
A	●		●		●	
B	●			●	●	
S		●	●		●	
T		●		●	●	

* Motor with oil seal is manufactured by order.

Motor rated output

Symbol	Rated output
01	100W
02	200W
04	400W

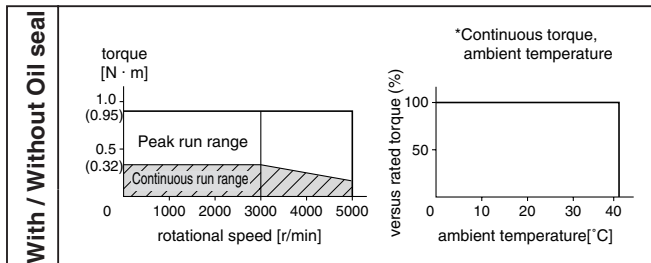
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5
S	Absolute/Incremental	17-bit	131072	7

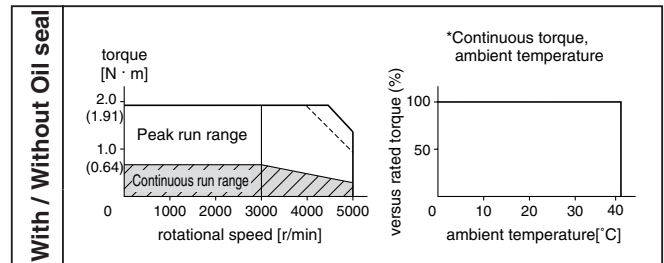
Torque characteristics at AC200V of power voltage

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

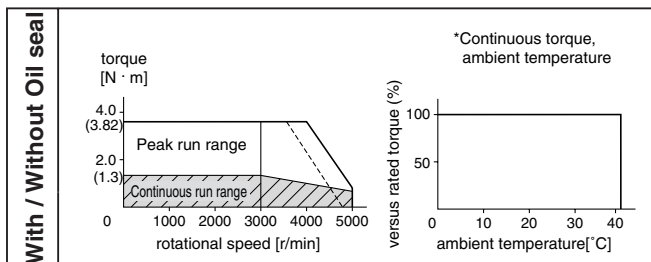
MQMA012□1□



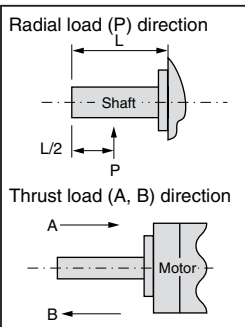
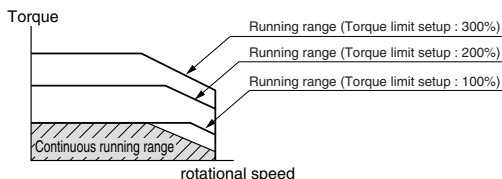
MQMA022□1□



MQMA042□1□



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
- If the load is connected, frequency will be defined as $1/(m+1)$, where m =load moment of inertia/rotor moment of inertia.
 - When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
 - Power supply voltage is AC230V (at 200V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
 - When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
2. If the effective torque is within the rated torque, there is no limit in regenerative brake.
3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by Ishizuka Electronic or equivalent).
- () represents the actually measured value using a diode (200V, 1A or equivalent)