Motor Specifications and Ratings 200V MAMA

100W to 750W Ultra low inertia Small capacity

			AC200V							
Motor model		MAMA	012P1□	012S1□	022P1□	022S1□	042P1□	042S1□	082P1□	082S1□
Applicable driver	Model No.	A4 series	MADDT1207		MBDDT2210		MCDDT3520		MDDDT5540	
		A4F series	MADDT1207F		MBDDT2210F		MCDDT3520F		MDDDT5540F	
		A4P series	MADDT1207P		MBDDT2210P		MCDDT3520P		MDDDT5540P	
	Frame symbol		Frame A		Frame B		Frame C		Frame D	
Power supply capacity (kVA)			0.3		0.5		0.9		1.6	
Rated output (W)			100		200		400		750	
Rated torque (N · m)			0.19		0.38		0.76		1.43	
Momentary Max. peak torque (N · m)			0.95		1.91		3.82		7.16	
Rated current (Arms)			0.9		1.54		3.1		5.1	
Max. current (Ao-p)			6.3		10.9		21.7		36.0	
Regenerative brake frequency (times/min) Note)1	Without option		No limit Note)2							
	DV0P4283		No limit Note)2						———	
	DV0P4284		———						No limit Note)2	
Rated rotational speed (r/min)			5000							
Max. rotational speed (r/min)			6000							
Moment of inertia of rotor ($\times 10^{-4}$ kg · m^2)	Without brake		0.025	0.035	0.078	0.088	0.14	0.15	0.50	0.51
	With brake		0.029	0.039	0.11	0.12	0.17	0.18	0.58	0.59
Recommended moment of inertia ratio of the load and the rotor Note)3			15 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	2500P/r Incremental	17-bit Absolute/ Incremental
	Resolution per single turn		10000	131072	10000	131072	10000	131072	10000	131072
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	49m/s^2 or less	24m/s^2 or less
Mass (kg), ( ) represents holding brake type			0.65 (0.85)	0.71 (0.91)	1.1 (1.5)	1.2 (1.6)	1.5 (1.9)	1.6 (2.0)	3.3 (4.0)	3.4 (4.1)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)			
Static friction torque (N · m)	0.29	1.27	2.45
Engaging time (ms)	35	50	70
Releasing time (ms) Note)4	10 (60)	10 (100)	20 (–)
Exciting current (DC) (A)	0.25	0.30	0.35
Releasing voltage	DC2V or more		
Exciting voltage	DC 24 V ±5%		

Permissible load				
During assembly	Radial load P-direction (N)	147	392	686
	Thrust load A-direction (N)	88	147	294
	Thrust load B-direction (N)	117.6	196	392
During operation	Radial load P-direction (N)	68.6	245	392
	Thrust load A-direction (N)	49	68.6	68.6
	Thrust load B-direction (N)	49	68.6	68.6

For motor dimensions, refer to page A4-115, and for the diver, refer to pages A4-22, 23, 48, 49, 73 and 74.

Model designation MAMA series, 100W to 750W

e.g.) M A M A 0 1 2 S 1 A

Symbol	Type
MAMA	Ultra low inertia (100W-750W)

Voltage specifications

Symbol	Specifications
2	200V

Design order
1 : Standard

Motor structure

Symbol	Shaft		Holding brake		Oil seal	
	Round	Key-way	without	with	without	with
A	●		●		●	
B	●			●	●	
E		●	●		●	
F		●		●	●	

Motor rated output

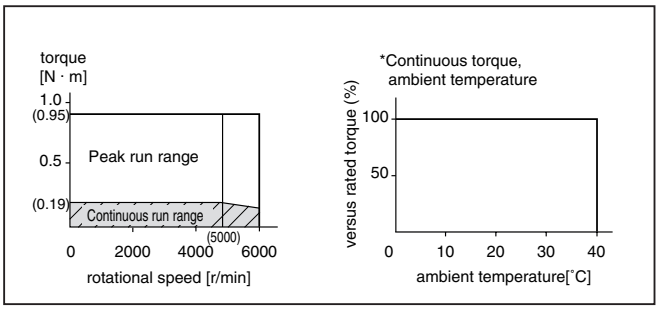
Symbol	Rated output
01	100W
02	200W
04	400W
08	750W

Rotary encoder specifications

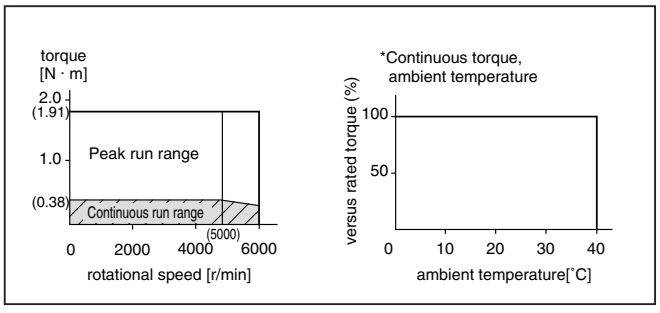
Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5
S	Absolute/Incremental	17-bit	131072	7

Torque characteristics at AC200V of power voltage

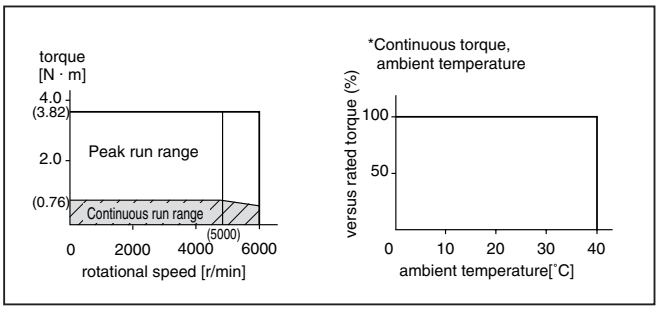
MAMA012□1□



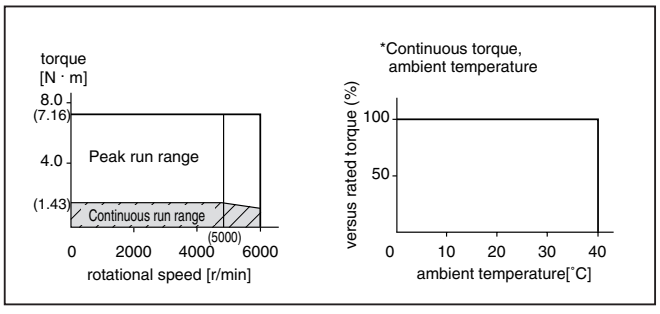
MAMA022□1□



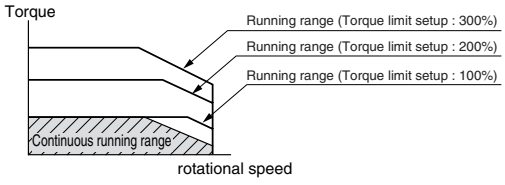
MAMA042□1□



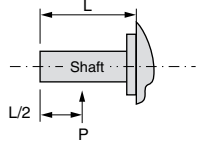
MAMA082□1□



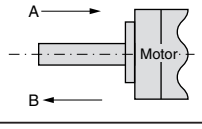
*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



Radial load (P) direction



Thrust load (A, B) direction



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 defines as 1/(m+1), where m=load moment of inertia/rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is 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 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)