Motor Specifications and Ratings 100V MSMD 50W to 100W Low inertia Small Capacity

			AC100V			
Motor model	MSMD		5AZP1□	5AZS1□	011P1□	011S1□
Applicable driver	Model No.	A4 series	MADDT1105		MADDT1107	
		A4P series	MADDT1105P		MADDT1107P	
	Frame symbol		Frame A			
Power supply capacity (kVA)			0.5		0.4	
Rated output (W)			50		100	
Rated torque (N · m)			0.16		0.32	
Momentary Max. peak torque (N · m)			0.48		0.95	
Rated current (Arms)			1.1		1.7	
Max. current (Ao-p)			4.7		7.2	
Regenerative brake frequency (times/min) Note)1	Without option		No limit Note)2			
	DV0P4280		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		0.025		0.051	
	With brake		0.027		0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications			2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental
	Resolution per single turn		10000	131072	10000	131072
Protective enclosure rating			IP65 (except shaft through hole and cable end connector)			
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		49m/s^2 or less	
Mass (kg), ( ) represents holding brake type			0.32 (0.53)		0.47 (0.68)	

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)	35
Releasing time (ms) Note)4	20 (–)
Exciting current (DC) (A)	0.30
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 A4-88 , and for the diver, refer to pages A4-22 and 45.

Model designation MSMD series, 50W to 100W

e.g.) M S M D 5 A Z S 1 S

Symbol	Type
MSMD	Low inertia (50W-100W)

Voltage specifications

Symbol	Specifications
1	100V
Z	100/200V (50W only)

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
5A	50W
01	100W

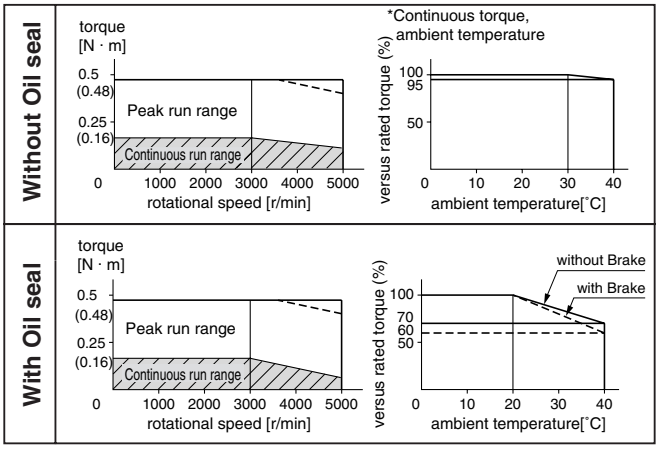
Rotary encoder specifications

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

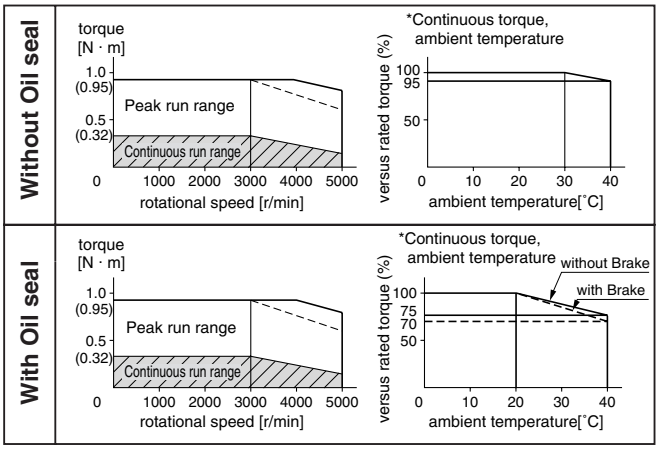
Torque characteristics at AC100V of power voltage

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

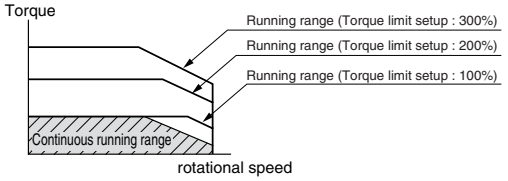
MSMD5AZ□1□



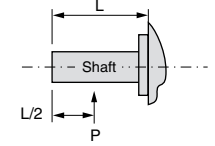
MSMD011□1□



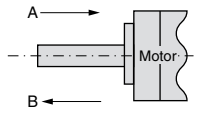
*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



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 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 (Z15D271 by Ishizuka Electronic or equivalent). ( ) represents the actually measured value using a diode (200V, 1A or equivalent)

Motor Specifications and Ratings 100V MSMD 200W to 400W Low inertia Small Capacity

			AC100V			
Motor model	MSMD		021P1□	021S1□	041P1□	041S1□
Applicable driver	Model No.	A4 series	MBDDT2110		MCDDT3120	
		A4P series	MBDDT2110P		MCDDT3120P	
	Frame symbol		Frame B		Frame C	
Power supply capacity (kVA)			0.5		0.9	
Rated output (W)			200		400	
Rated torque (N · m)			0.64		1.3	
Momentary Max. peak torque (N · m)			1.91		3.8	
Rated current (Arms)			2.5		4.6	
Max. current (Ao-p)			10.6		19.5	
Regenerative brake frequency (times/min) Note)1	Without option		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			
Moment of inertia of rotor ($x10^{-4}$ kg · m^2)	Without brake		0.14		0.26	
	With brake		0.16		0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications			2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental
	Resolution per single turn		10000	131072	10000	131072
Protective enclosure rating			IP65 (except shaft through hole and cable end connector)			
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			
Mass (kg), ( ) represents holding brake type			0.82 (1.3)		1.2 (1.7)	

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)	1.27
Engaging time (ms)	50
Releasing time (ms) Note)4	15 (–)
Exciting current (DC) (A)	0.36
Releasing voltage	DC1V or more
Exciting voltage	DC 24 V ±5%

Permissible load		
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-direction (N)	98
	Thrust load B-direction (N)	98

For motor dimensions, refer to page A4-89 , and for the diver, refer to pages A4-22,23 and A4-45,46.

Model designation MSMD series, 200W to 400W

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

Symbol	Type
MSMD	Low inertia (200W-400W)

Voltage specifications

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
02	200W
04	400W

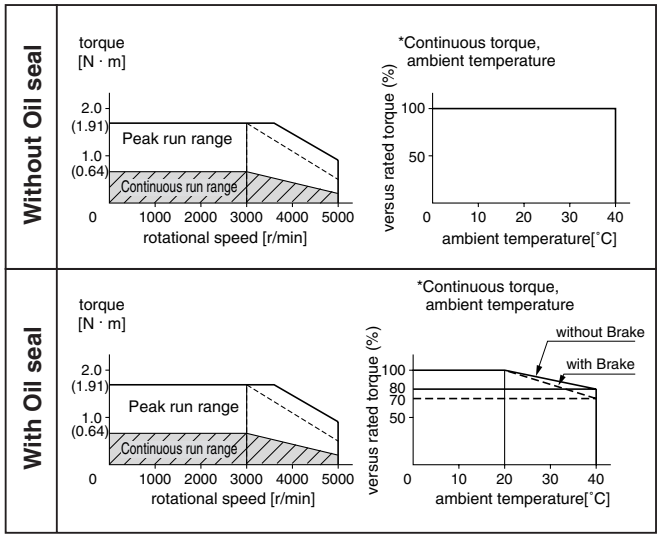
Rotary encoder specifications

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

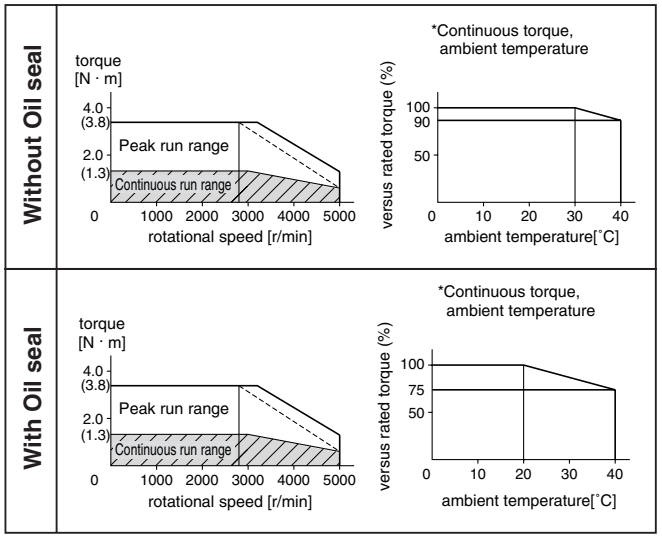
Torque characteristics at AC100V of power voltage

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

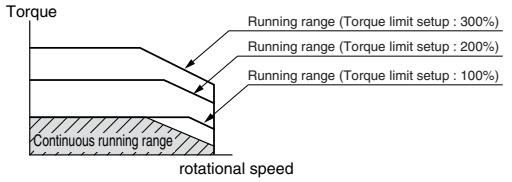
MSMD021□1□

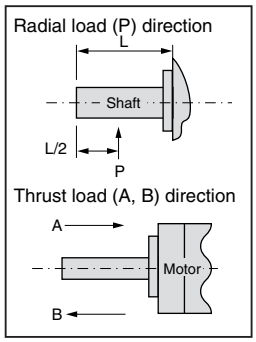


MSMD041□1□



*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 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 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 (Z15D271 by Ishizuka Electronic or equivalent). ( ) represents the actually measured value using a diode (200V, 1A or equivalent)

Motor Specifications and Ratings 200V MSMD 50W to 100W Low inertia Small Capacity

			AC200V			
Motor model	MSMD		5AZP1□	5AZS1□	012P1□	012S1□
Applicable driver	Model No.	A4 series	MADDT1205			
		A4P series	MADDT1205P			
	Frame symbol		Frame A			
Power supply capacity (kVA)			0.5		0.5	
Rated output (W)			50		100	
Rated torque (N · m)			0.16		0.32	
Momentary Max. peak torque (N · m)			0.48		0.95	
Rated current (Arms)			1.1			
Max. current (Ao-p)			4.7			
Regenerative brake frequency (times/min) Note)1		Without option	No limit Note)2			
		DV0P4281	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	0.025		0.051	
		With brake	0.027		0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications			2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental
	Resolution per single turn		10000	131072	10000	131072
Protective enclosure rating			IP65 (except shaft through hole and cable end connector)			
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		49m/s^2 or less	
Mass (kg), ( ) represents holding brake type			0.32(0.53)		0.47(0.68)	

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)	35
Releasing time (ms) Note)4	20 (–)
Exciting current (DC) (A)	0.30
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 A4-88 , and for the diver, refer to pages A4-22 and 45.

Model designation MSMD series, 50W to 100W

e.g.) M S M D 5 A Z S 1 S

Symbol	Type
MSMD	Low inertia (50W-100W)

Voltage specifications

Symbol	Specifications
2	200V
Z	100/200V (50W only)

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
5A	50W
01	100W

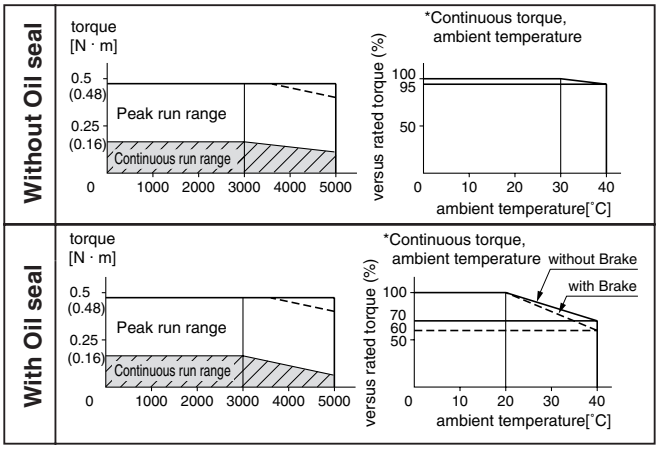
Rotary encoder specifications

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

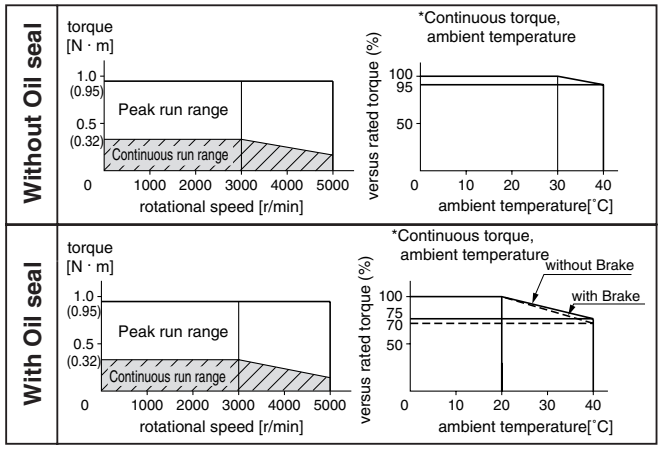
Torque characteristics at AC200V of power voltage

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

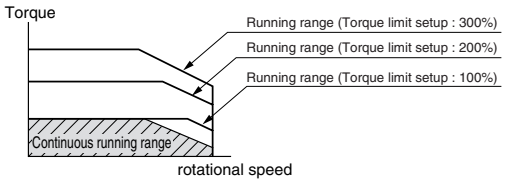
MSMD5AZ□1□



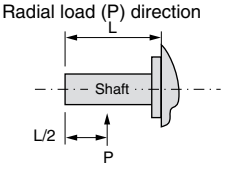
MSMD012□1□



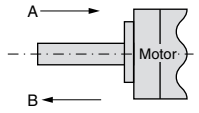
*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



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 (Z15D271 by Ishizuka Electronic or equivalent). ( ) represents the actually measured value using a diode (200V, 1A or equivalent)

Motor Specifications and Ratings 200V MSMD 200W to 750W Low inertia Small Capacity

			AC200V					
Motor model	MSMD		022P1□	022S1□	042P1□	042S1□	082P1□	082S1□
Applicable driver	Model No.	A4 series	MADDT1207		MBDDT2210		MCDDT3520	
		A4P series	MADDT1207P		MBDDT2210P		MCDDT3520P	
	Frame symbol		Frame A		Frame B		Frame C	
Power supply capacity (kVA)			0.5		0.9		1.3	
Rated output (W)			200		400		750	
Rated torque (N · m)			0.64		1.3		2.4	
Momentary Max. peak torque (N · m)			1.91		3.8		7.1	
Rated current (Arms)			1.6		2.6		4.0	
Max. current (Ao-p)			6.9		11.0		17.0	
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				4500	
Moment of inertia of rotor ($x10^{-4}$ kg · m^2)	Without brake		0.14		0.26		0.87	
	With brake		0.16		0.28		0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less				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	131072
Protective enclosure rating			IP65 (except shaft through hole and cable end connector)					
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					
Mass (kg), ( ) represents holding brake type			0.82 (1.3)		1.2 (1.7)		2.3 (3.1)	

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)	1.27	2.45
Engaging time (ms)	50	70
Releasing time (ms) Note)4	15 (–)	20 (–)
Exciting current (DC) (A)	0.36	0.42
Releasing voltage	DC1V or more	
Exciting voltage	DC 24 V ±5%	

Permissible load			
During assembly	Radial load P-direction (N)	392	686
	Thrust load A-direction (N)	147	294
	Thrust load B-direction (N)	196	392
During operation	Radial load P-direction (N)	245	392
	Thrust load A-direction (N)	98	147
	Thrust load B-direction (N)	98	147

For motor dimensions, refer to page A4-89 , and for the diver, refer to pages A4-22,23 and A4-45,46.

Model designation MSMD series, 200W to 750W

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

Symbol	Type
MSMD	Low inertia (200W-750W)

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
02	200W
04	400W
08	750W

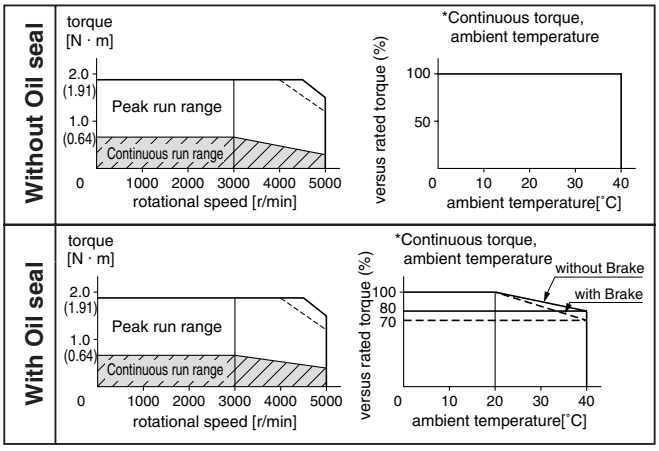
Rotary encoder specifications

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

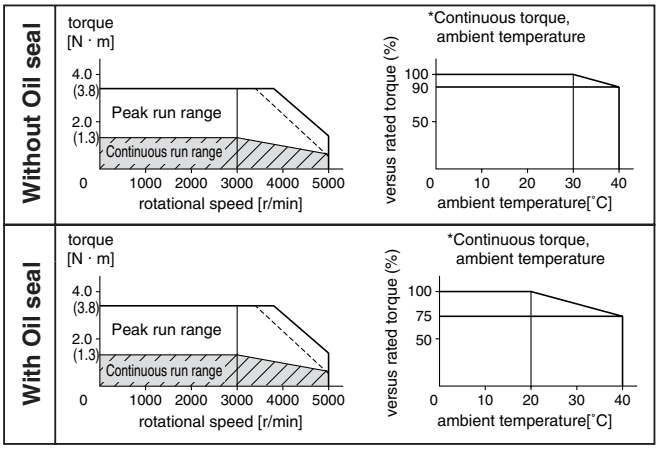
Torque characteristics at AC200V of power voltage

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

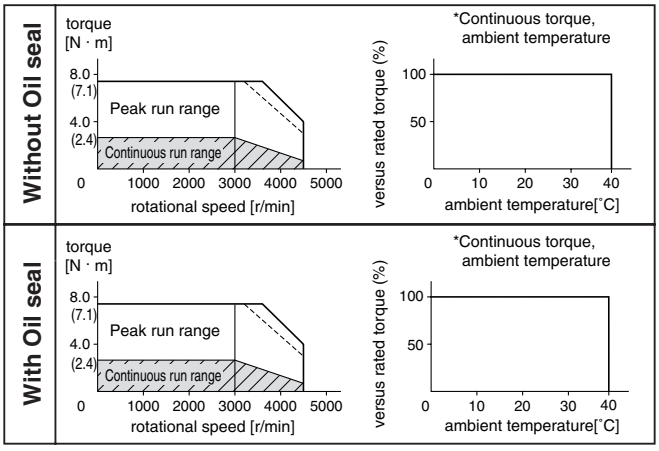
MSMD022□1□

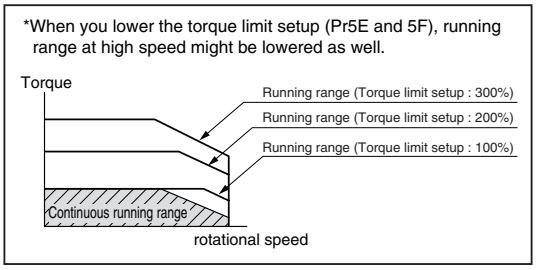


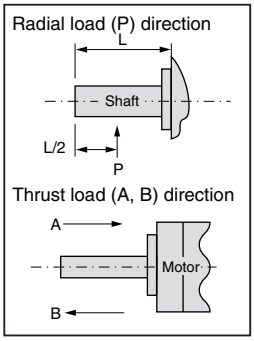
MSMD042□1□



MSMD082□1□







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 (Z15D271 by Ishizuka Electronic or equivalent). ( ) represents the actually measured value using a diode (200V, 1A or equivalent)