

Motor Specifications and Ratings 100V MUMA

50W to 200W Low inertia Small drives

		AC100V		
Motor model	MUMA	5AZP1□	011P1□	021P1□
Applicable driver	Model No.	MKDET1105P	MKDET1110P	MLDET2110P
	Frame symbol	Frame K		Frame L
Power supply capacity (kVA)		0.3	0.4	0.5
Rated output (W)		50	100	200
Rated torque (N·m)		0.16	0.32	0.64
Momentary Max. peak torque (N·m)		0.48	0.95	1.91
Rated current (Arms)		1.0	1.6	2.5
Max. current (Ao-p)		4.3	6.9	11.7
Regenerative brake frequency (times/min) Note)1	Without option	No limit Note)2		
	DV0P2890	No limit Note)2		
Rated rotational speed (r/min)		3000		
Max. rotational speed (r/min)		5000		
Moment of inertia of rotor ($\times 10^{-4}$ kg·m ²)	Without brake	0.021	0.032	0.10
	With brake	0.026	0.036	0.13
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder specifications		2500P/r Incremental		
	Resolution per single turn	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		
Mass (kg), () represents holding brake type		0.4(0.6)	0.5(0.7)	0.96(1.36)

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
Engaging time (ms)		25	50
Releasing time (ms) Note)4		20(30)	15(100)
Exciting current (DC) (A)		0.26	0.36
Releasing voltage		DC 1V or more	
Exciting voltage		DC 24V \pm 10%	

Permissible load			
During assembly	Radial load P-direction (N)	147	392
	Thrust load A-direction (N)	88	147
	Thrust load B-direction (N)	117	196
During operation	Radial load P-direction (N)	68	245
	Thrust load A-direction (N)	58	98
	Thrust load B-direction (N)	58	98

For motor dimensions, refer to page E15, and for the diver, refer to page E23.

Model designation MUMA series, 50W to 200W

e.g.)

M U M A 5 A Z P 1 S

Symbol	Type
MUMA	Ultra low inertia (50W~200W)

Symbol	Rated output
5A	50W
01	100W
02	200W

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

Design order 1 : Standard

Motor structure

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

*Motor with oil seal is manufactured by order. Round shaft is manufactured by order.

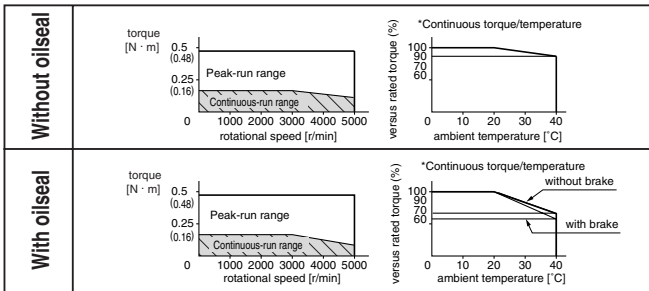
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5

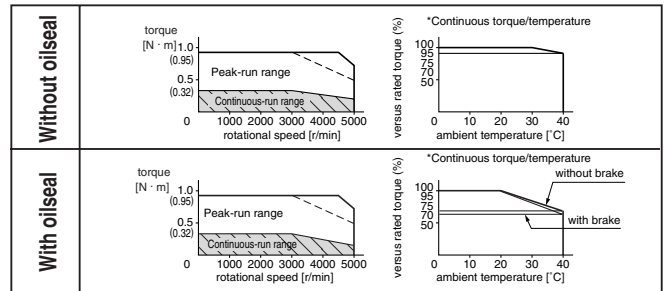
Torque characteristics at AC100V of power voltage

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

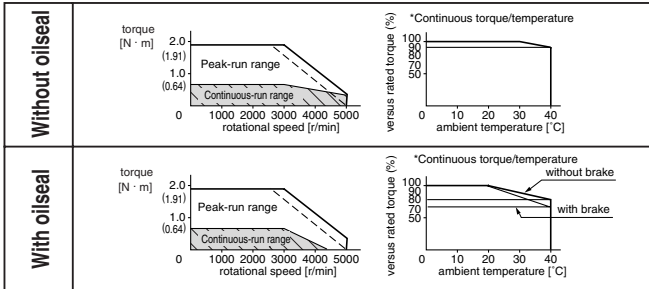
MUMA5AZP1□



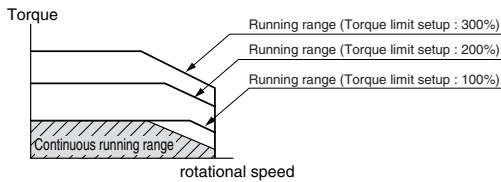
MUMA011P1□



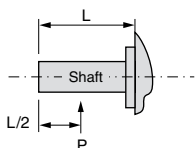
MUMA021P1□



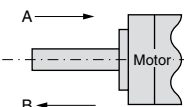
*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



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 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 MUMA

50W to 400W Low inertia Small drives

		AC200V			
Motor model	MUMA	5AZP1□	012P1□	022P1□	042P1□
Applicable driver	Model No.	MKDET1505P		MKDET1310P	MLDET2310P
	Frame symbol	Frame K		Frame K	Frame L
				Frame L	
Power supply capacity (kVA)		0.3	0.3	0.5	0.9
Rated output (W)		50	100	200	400
Rated torque (N · m)		0.16	0.32	0.64	1.3
Momentary Max. peak torque (N · m)		0.48	0.95	1.91	3.8
Rated current (Arms)		1.0	1.0	1.6	2.5
Max. current (Ao-p)		4.3	4.3	7.5	11.7
Regenerative brake frequency (times/min) Note)1	Without option	No limit Note)2			
	DV0P2891 x 1	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	0.021	0.032	0.10	0.17
	With brake	0.026	0.036	0.13	0.20
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications		2500P/r Incremental			
	Resolution per single turn	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			
Mass (kg), () represents holding brake type		0.4(0.6)	0.5(0.7)	0.96(1.36)	1.5(1.9)

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
Engaging time (ms)	25	50
Releasing time (ms) Note)4	20(30)	15(100)
Exciting current (DC) (A)	0.26	0.36
Releasing voltage	DC 1V or more	
Exciting voltage	DC 24V ±10%	

Permissible load			
During assembly	Radial load P-direction (N)	147	392
	Thrust load A-direction (N)	88	147
	Thrust load B-direction (N)	117	196
During operation	Radial load P-direction (N)	68	245
	Thrust load A-direction (N)	58	98
	Thrust load B-direction (N)	58	98

For motor dimensions, refer to page E15 , and for the diver, refer to page E23.

Note) Driver for 50W and 100W has a common power supply of single phase and 3-phase 200V.

Driver for 200W, the upper row is the power supply of 3-phase 200V, and lower is the power supply of single-phase 200V.

Driver for 400W, the upper row is the power supply of 3-phase 200V, and lower is the common power supply of single-phase and 3-phase 200V.

Model designation MUMA series, 50W to 400W

e.g.)

M U M A 5 A Z P 1 S

Symbol	Type
MUMA	Ultra low inertia (50W to 400W)

Symbol	Rated output
5A	50W
01	100W
02	200W
04	400W

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

Design order 1 : Standard

Motor structure

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

*Motor with oil seal is manufactured by order. Round shaft is manufactured by order.

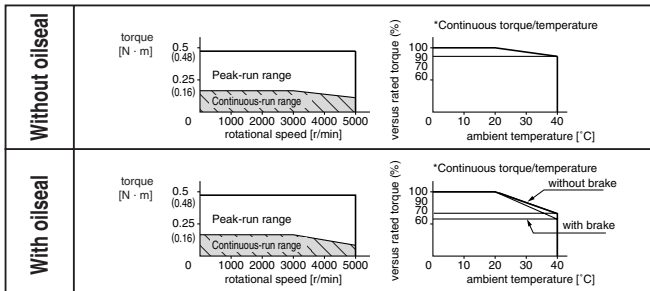
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5

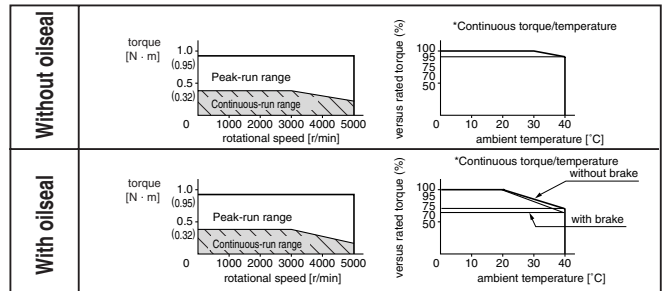
Torque characteristics at AC200V of power voltage

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

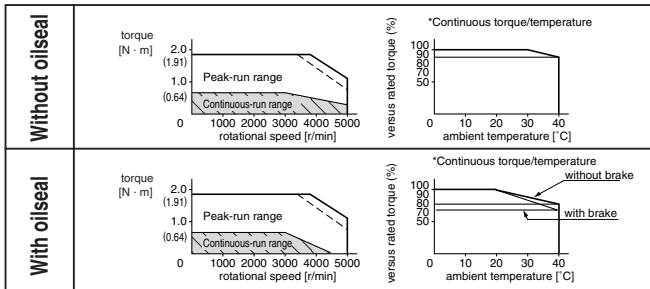
MUMA5AZP1 □



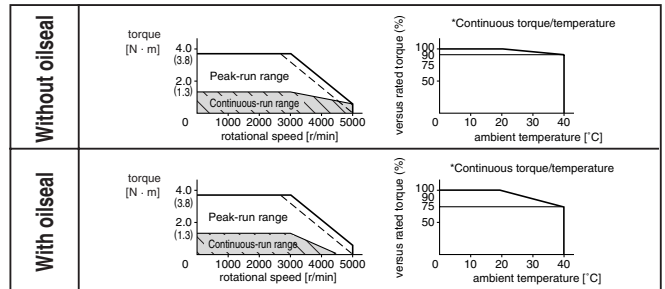
MUMA012P1 □



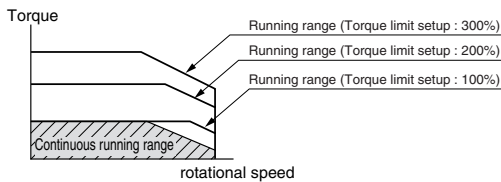
MUMA022P1 □



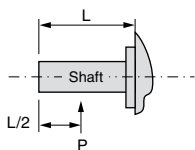
MUMA042P1 □



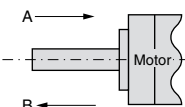
*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



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 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 AC240V (at 200V of the main voltage).

If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.

-When regeneration occurs 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)