HG-MR Series (Ultra-Low Inertia, Small Capacity) Specifications

Rotary servo motor model		HG-MR	053(B)	13(B)	23(B)	43(B)	73(B)
Compatible servo amplifier model		MR-J4- / MR-J4W_-	Refer to "Combinations of Rotary Servo Motor and Servo Amplifier" on p. 2-4 in this catalog.				
Power supply capacity *1		[kVA]	0.3	0.3	0.5	0.9	1.3
Continuous running duty (Note 6)	Rated output	[W]	50	100	200	400	750
	Rated torque (Note 3)	[N•m]	0.16	0.32	0.64	1.3	2.4
Maximum torque		[N•m]	0.48	0.95	1.9	3.8	7.2
Rated speed (Note 6)		[r/min]	3000				
Maximum speed (Note 6)		[r/min]	6000				
Permissible instantaneous speed		[r/min]	6900				
Power rate at continuous rated torque	Standard	[kW/s]	15.6	33.8	46.9	114.2	97.3
	With electromagnetic brake	[kW/s]	11.3	28.0	37.2	98.8	82.1
Rated current		[A]	1.0	0.9	1.5	2.6	5.8
Maximum current		[A]	3.1	2.5	5.3	9.0	20
Regenerative braking frequency *2	MR-J4-	[times/min]	(Note 4)	(Note 4)	1180	713	338
	MR-J4W_-	[times/min]	7310	3620	1170	710	846
Moment of inertia J	Standard	[× 10^{-4} kg•m^2]	0.0162	0.0300	0.0865	0.142	0.586
	With electromagnetic brake	[× 10^{-4} kg•m^2]	0.0224	0.0362	0.109	0.164	0.694
Recommended load to motor inertia ratio (Note 1)			35 times or less	32 times or less			
Speed/position detector			Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)				
Oil seal			None	None (Servo motors with oil seal are available. (HG-MR_J))			
Thermistor			None				
Insulation class			130 (B)				
Structure			Totally enclosed, natural cooling (IP rating: IP65) (Note 2)				
Environment *3	Ambient temperature		Operation: 0 °C to 40 °C (non-freezing), storage: -15 °C to 70 °C (non-freezing)				
	Ambient humidity		Operation: 10 %RH to 80 %RH (non-condensing), storage: 10 %RH to 90 %RH (non-condensing)				
	Ambience		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Altitude		2000 m or less above sea level (Note 5)				
	Vibration resistance *4		X: 49 m/s^2 Y: 49 m/s^2				
Vibration rank			V10 *6				
Compliance with global standards			Refer to "Compliance with Global Standards and Regulations" on p. 55 in this catalog.				
Permissible load for the shaft *5	L	[mm]	25	25	30	30	40
	Radial	[N]	88	88	245	245	392
	Thrust	[N]	59	59	98	98	147
Mass	Standard	[kg]	0.34	0.54	0.91	1.4	2.8
	With electromagnetic brake	[kg]	0.54	0.74	1.3	1.8	3.8

Notes: 1. Contact your local sales office if the load to motor inertia ratio exceeds the value in the table.
2. The shaft-through portion is excluded. Refer to the asterisk 7 of "Annotations for Rotary Servo Motor Specifications" on p. 2-41 in this catalog for the shaft-through portion.
3. When unbalanced torque is generated, such as in a vertical lift machine, keep the unbalanced torque of the machine under 70% of the servo motor rated torque.
4. When the servo motor decelerates to a stop from the rated speed, the regenerative frequency will not be limited if the effective torque is within the rated torque range.
When the servo motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the following requirements are met.
• HG-MR053(B): The load to motor inertia ratio is 24 times or less, and the effective torque is within the rated torque range.
• HG-MR13(B): The load to motor inertia ratio is 12 times or less, and the effective torque is within the rated torque range.
5. Refer to "Servo Motor Instruction Manual (Vol. 3)" for the restrictions when using the servo motors at altitude exceeding 1000 m and up to 2000 m above sea level.
6. The continuous running duty and the speed are not guaranteed when the power supply voltage is dropped.

Refer to "Annotations for Rotary Servo Motor Specifications" on p. 2-41 in this catalog for the asterisks 1 to 6.