

Ratings and Specifications

Time Rating: Continuous
Vibration Class: V15
Insulation Resistance: 500 VDC, 10 MΩ min.
Ambient Temperature: 0 to 40°C
Excitation: Permanent magnet
Mounting: Flange-mounted
Thermal Class: B

Withstand Voltage: 1500 VAC for one minute
Enclosure: Totally enclosed, self-cooled, IP55
 (except for shaft opening)
Ambient Humidity: 20% to 80% (no condensation)
Drive Method: Direct drive
Rotation Direction: Counterclockwise (CCW) with forward run
 reference when viewed from the load side

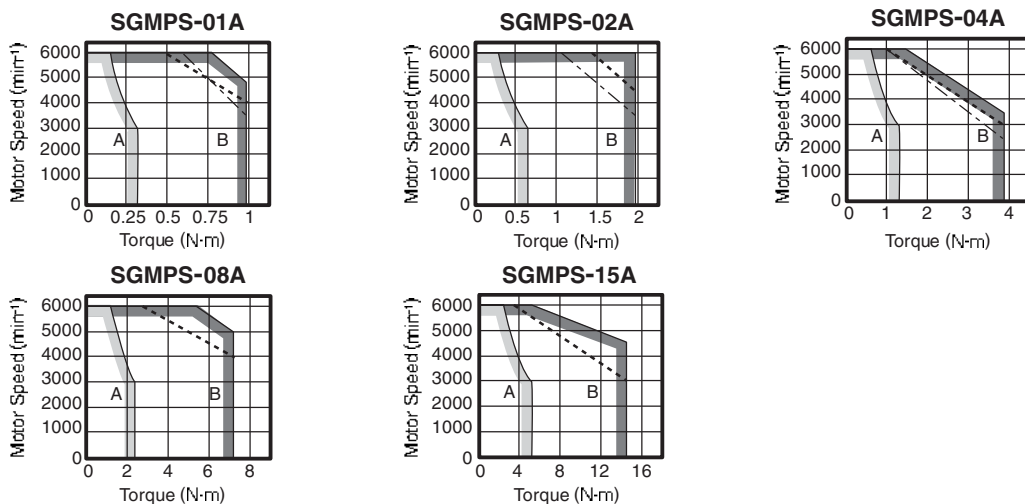
Voltage		200 V				
Servomotor Model: SGMPS-□□□□		01A	02A	04A	08A	15A
Rated Output*1	W	100	200	400	750	1500
Rated Torque*1, *2	N·m	0.318	0.637	1.27	2.39	4.77
Instantaneous Peak Torque*1	N·m	0.955	1.91	3.82	7.16	14.3
Rated Current*1	Arms	0.86	2.0	2.6	5.4	9.2
Instantaneous Max. Current*1	Arms	2.8	6.4	8.4	16.5	28.0
Rated Speed*1	min ⁻¹	3000				
Max. Speed*1	min ⁻¹	6000				
Torque Constant	N·m/Arms	0.401	0.361	0.524	0.476	0.559
Rotor Moment of Inertia	×10 ⁻⁴ kg·m ²	0.0592 (0.0892)	0.263 (0.415)	0.409 (0.561)	2.10 (2.98)	4.02 (4.90)
Rated Power Rate*1	kW/s	17.1	15.4	39.6	27.2	56.6
Rated Angular Acceleration*1	rad/s ²	53700	24200	31100	11400	11900
Applicable SERVOPACK	SGDV-□□□□	R90□	2R8A, 2R1F	2R8□	5R5A	120A

*1: These items and torque-motor speed characteristics quoted in combination with an SGDV SERVOPACK are at an armature winding temperature of 100°C. Other values quoted are at 20°C.

*2: Rated torques are continuous allowable torque values at 40°C with an aluminum heat sink of the following dimensions attached.
 SGMPS-01, 02, 04 : 250 mm×250 mm×6 mm
 SGMPS-08, 15 : 300 mm×300 mm×12 mm

Note: The values in parentheses are for servomotors with holding brakes.

● Torque-Motor Speed Characteristics A: Continuous Duty Zone B: Intermittent Duty Zone



- Notes: 1 The characteristics of the intermittent duty zone differ depending on the supply voltage. The solid, dotted, and dashed-dotted lines of the intermittent duty zone indicate the characteristics when a servomotor runs with the following combinations:
- The solid line: With a three-phase 200 V or a single-phase 230 V SERVOPACK
 - The dotted line: With a single-phase 200 V SERVOPACK
 - The dashed-dotted line: With a single-phase 100 V SERVOPACK
- 2 When the effective torque is within the rated torque, the servomotor can be used within the intermittent duty zone.
- 3 When the main circuit cable length exceeds 20 m, note that the intermittent duty zone of the *Torque-Motor Speed Characteristics* will shrink as the line-to-line voltage drops.

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● Derating Rate for Servomotor Fitted with an Oil Seal

When a motor is fitted with an oil seal, use the following derating rate because of the higher friction torque.

Servomotor Model SGMPS-	01A	02A	04A	08A	15A
Derating Rate %	90			95	

● Holding Brake Electrical Specifications

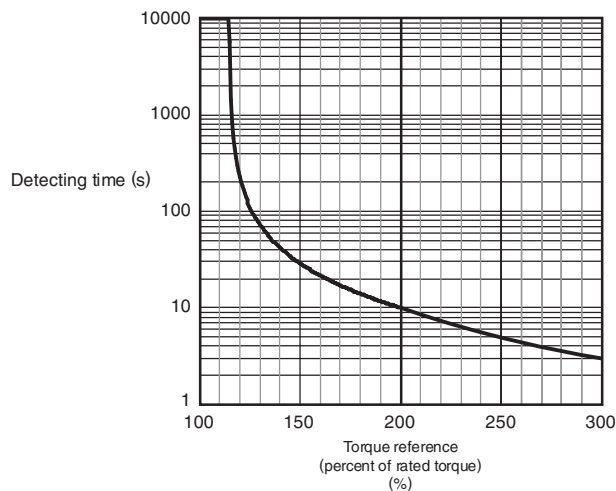
Holding Brake Rated Voltage	Servomotor Model	Servomotor Rated Output W	Holding Brake Specifications					
			Capacity W	Holding Torque N·m	Coil Resistance Ω (at 20°C)	Rated Current A(at 20°C)	Brake Release Time ms	Brake Operation Time ms
24 VDC ^{+10%} ₀	SGMPS-01A	100	7.8	0.318	71.6	0.34	20	100
	SGMPS-02A	200	7.6	0.637	74.2	0.32	40	100
	SGMPS-04A	400	8.2	1.27	70.9	0.32	40	100
	SGMPS-08A	750	7.5	2.39	58	0.31	20	100
	SGMPS-15A	1500	10	4.77	57.6	0.31	20	100

Notes: 1 The holding brake is only used to hold the load and cannot be used to stop the servomotor.

2 The holding brake open time and holding brake operation time vary depending on which discharge circuit is used. Make sure holding brake open time and holding brake operation time are correct for your servomotor.

● Overload Characteristics

The overload detection level is set under hot start conditions at a servomotor ambient temperature of 40°C.



Note: Overload characteristics shown above do not guarantee continuous duty of 100% or more output. Use a servomotor with effective torque within the continuous duty zone of *Torque-Motor Speed Characteristics*.

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● Allowable Load Moment of Inertia at the Motor Shaft

The rotor moment of inertia ratio is the value for a servomotor without a gear and a holding brake.

Servomotor Model		Servomotor Rated Output	Allowable Load Moment of Inertia (Rotor Moment of Inertia Ratio)
SGMPS-	01	100 W	25 times
	02	200 W	15 times
	04	400 W	7 times
	08	750 W	5 times
	15	1500 W	

● Load Moment of Inertia

The larger the load moment of inertia, the worse the movement response.

The allowable load moment of inertia (J_L) depends on the motor capacity, as shown above. This value is provided strictly as a guideline and results may vary depending on servomotor drive conditions.

Use the AC servo drive capacity selection program SigmaJunmaSize+ to check the operation conditions.

The program can be downloaded for free from our web site (<http://www.e-mechatronics.com/>).

An overvoltage alarm (A.400) is likely to occur during deceleration if the load moment of inertia exceeds the allowable load moment of inertia. SERVOPACKs with a built-in regenerative resistor may generate a regenerative overload alarm (A.320). Take one of the following steps if this occurs.

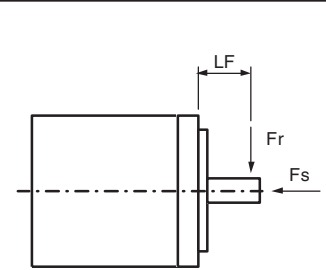
- Reduce the torque limit.
- Reduce the deceleration rate.
- Reduce the maximum speed.
- Install an external regenerative resistor if the alarm cannot be cleared using the steps above. Refer to *Regenerative Resistors* on page 391.

Regenerative resistors are not built into SERVOPACKs for 400 W motors or less.

External regenerative resistors are required when this condition is exceeded or if the allowable loss capacity (W) of the built-in regenerative resistor is exceeded due to regenerative drive conditions when a regenerative resistor is already built in.

● Allowable Radial and Thrust Loads

Design the mechanical system so thrust and radial loads applied to the servomotor shaft end during operation fall within the ranges shown in the table.

Servomotor Model		Allowable Radial Load (F_r) N	Allowable Thrust Load (F_s) N	LF mm	Reference Diagram
SGMPS-	01A	78	49	20	
	02A	245	68	25	
	04A				
	08A	392	147	35	
	15A	490	147	35	