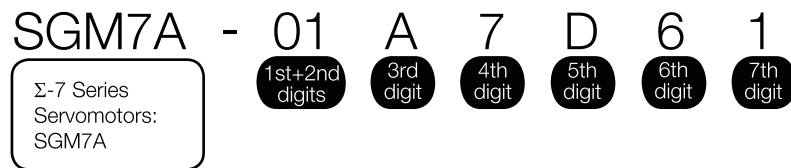


SGM7A

Model Designations



1st+2nd digits Rated Output

Code	Specification
A5	50 W
01	100 W
C2	150 W
02	200 W
04	400 W
06	600 W
08	750 W
10	1.0 kW
15	1.5 kW
20	2.0 kW
25	2.5 kW
30	3.0 kW
40	4.0 kW
50	5.0 kW
70	7.0 kW

3rd digit Power Supply Voltage

Code	Specification
A	200 VAC
D	400 VAC

4th digit Serial Encoder

Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit Design Revision Order

D: Global design revision (200 V)
F: Global design revision (400 V)

■ Non Stock Items

6th digit Shaft End

Code	Specification
2	Straight without key
6	Straight with key and tap
B*	With two flat seats

* Code B is not supported for models with a rated output of 1.5 kW or higher.


7th digit Options

Code	Specification
1	Without options
C	With holding brake (24 VDC)
E	With oil seal and holding brake (24 VDC)
S	With oil seal

Note: SGM7A-70A Servomotors with holding brakes are not available.

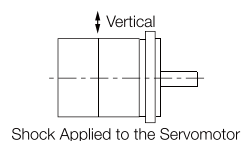
Specifications and Ratings

Specifications (200 V Models)

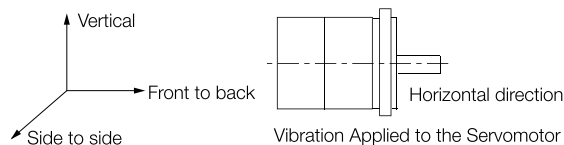
Voltage		200 V	
Model SGM7A-		A5A to 70A	
Time Rating		Continuous	
Thermal Class		A5A to 10A	UL: B, CE: B
		15A to 70A	UL: F, CE: F
Insulation Resistance		500 VDC, 10 M Ω min.	
Withstand Voltage		1,500 VAC for 1 minute	
Excitation		Permanent magnet	
Mounting		Flange-mounted	
Drive Method		Direct drive	
Rotation Direction		Counterclockwise (CCW) for forward reference when viewed from the load side	
Vibration Class* ¹		V15	
Environmental Conditions	Surrounding Air Temperature	0°C to 40°C (With derating, usage is possible between 40°C and 60°C.)* ⁴	
	Surrounding Air Humidity	20% to 80% relative humidity (with no condensation)	
	Installation Site	<ul style="list-style-type: none"> • Must be indoors and free of corrosive and explosive gases. • Must be well-ventilated and free of dust and moisture. • Must facilitate inspection and cleaning. • Must have an altitude of 1,000 m or less. (With derating, usage is possible between 1,000 m and 2,000 m.)*⁵ • Must be free of strong magnetic fields. 	
	Storage Environment	Store the Servomotor in the following environment if you store it with the power cable disconnected. Storage Temperature: -20°C to 60°C (with no freezing) Storage Humidity: 20% to 80% relative humidity (with no condensation)	
Shock Resistance* ²	Impact Acceleration Rate at Flange	490 m/s ²	
	Number of Impacts	2 times	
Vibration Resistance* ³	Vibration Acceleration Rate at Flange	A5A to 50A	49 m/s ² (Models 15A to 50A: 24.5 m/s ² front to back)
		70A	14.7 m/s
Applicable SERVOPACKS		Refer to the following section.  Σ -7 Series Combination (page M-25)	

*1. A vibration class of V15 indicates a vibration amplitude of 15 μ m maximum on the Servomotor without a load at the rated motor speed.


*2. The shock resistance for shock in the vertical direction when the Servomotor is mounted with the shaft in a horizontal position is given in the above table.




*3. The vertical, side-to-side, and front-to-back vibration resistance for vibration in three directions when the Servomotor is mounted with the shaft in a horizontal position is given in the above table. The strength of the vibration that the Servomotor can withstand depends on the application. Always check the vibration acceleration rate that is applied to the Servomotor with the actual equipment.



*4. If the surrounding air temperature will exceed 40°C, refer to the following section.

 Applications Where the Surrounding Air Temperature of the Servomotor Exceeds 40 °C (page 45)

*5. If the altitude will exceed 1,000 m, refer to the following section.


 Applications Where the Altitude of the Servomotor Exceeds 1,000 m (page 46)

Ratings of Servomotors (200 V Models -A5A to -10A)

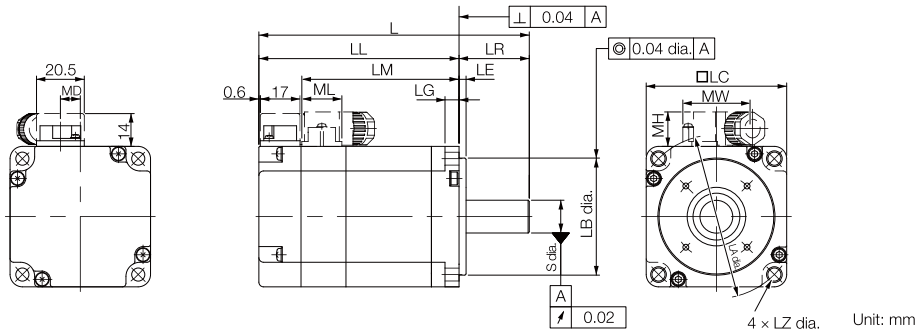
Voltage		200 V								
Model SGM7A-		A5A	01A	C2A	02A	04A	06A	08A	10A	
Rated Output* ¹	W	50	100	150	200	400	600	750	1000	
Rated Torque* ^{1, *2}	N•m	0.159	0.318	0.477	0.637	1.27	1.91	2.39	3.18	
Instantaneous Maximum Torque* ¹	N•m	0.557	1.11	1.67	2.23	4.46	6.69	8.36	11.1	
Rated Current* ¹	Arms	0.57	0.89	1.5	1.5	2.4	4.5	4.4	6.4	
Instantaneous Maximum Current* ¹	Arms	2.1	3.2	5.6	5.9	9.3	16.9	16.8	23.2	
Rated Motor Speed* ¹	min ⁻¹	3000								
Maximum Motor Speed* ¹	min ⁻¹	6000								
Torque Constant	N•m/Arms	0.304	0.384	0.332	0.458	0.576	0.456	0.584	0.541	
Motor Moment of Inertia	$\times 10^{-4}$ kg•m ²	0.0217 (0.0297)	0.0337 (0.0417)	0.0458 (0.0538)	0.139 (0.209)	0.216 (0.286)	0.315 (0.385)	0.775 (0.955)	0.971 (1.15)	
Rated Power Rate* ¹	kW/s	11.7 (8.51)	30.0 (24.2)	49.7 (42.2)	29.2 (19.4)	74.7 (56.3)	115 (94.7)	73.7 (59.8)	104 (87.9)	
Rated Angular Acceleration Rate* ¹	rad/s ²	73200 (53500)	94300 (76200)	104000 (88600)	45800 (30400)	58700 (44400)	60600 (49600)	30800 (25000)	32700 (27600)	
Derating Rate for Servomotor with Oil Seal	%	80	90			95				
Heat Sink Size (Aluminum)	mm	200 × 200 × 6		250 × 250 × 6			300 × 300 × 12* ⁷	250 × 250 × 6	300 × 300 × 12	
Protective Structure* ³	Totally enclosed, self-cooled, IP67									
Holding Brake Specifications* ⁴	Rated Voltage	V	24 VDC±10%							
	Capacity	W	5.5			6		6.5		
	Holding Torque	N•m	0.159	0.318	0.477	0.637	1.27	1.91	2.39	3.18
	Coil Resistance	Ω (at 20°C)	104.8±10%			96±10%		88.6±10%		
	Rated Current	A (at 20°C)	0.23			0.25		0.27		
	Time Required to Release Brake	ms	60					80		
	Time Required to Brake	ms	100							
Allowable Load Moment of Inertia (Motor Moment of Inertia Ratio)		40 times			30 times	20 times		20 times		
Allowable Shaft Loads* ⁵	LF	mm	20			25		35		
	Allowable Radial Load	N	78			245		392		
	Allowable Thrust Load	N	54			74		147		

Note: 1. The values in parentheses are for Servomotors with Holding Brakes.

2. Refer to the following section for footnotes *1 to *5 and *7.

 ■ Notes for Ratings of Servomotor (page 39)

◆ SGM7A-02A to -10A (200 V Models)



Model SGM7A-	L	LL	LM	Flange Dimensions							S
				LR	LE	LG	LC	LA	LB	LZ	
02A□A2□	99.5 (140)	69.5 (110)	51.2	30	3	6	60	70	50 ⁰ _{-0.025}	5.5	14 ⁰ _{-0.011}
04A□A2□	115.5 (156)	85.5 (126)	67.2	30	3	6	60	70	50 ⁰ _{-0.025}	5.5	14 ⁰ _{-0.011}
06A□A2□	137.5 (191.5)	107.5 (161.5)	89.2	30	3	6	60	70	50 ⁰ _{-0.025}	5.5	14 ⁰ _{-0.011}
08A□A2□	137 (184)	97 (144)	78.5	40	3	8	80	90	70 ⁰ _{-0.030}	7	19 ⁰ _{-0.013}
10A□A2□	162 (209)	122 (169)	103.5	40	3	8	80	90	70 ⁰ _{-0.030}	7	19 ⁰ _{-0.013}

Model SGM7A-	MD	MW	MH	ML	Approx. Mass [kg]
02A□A2□	8.5	28.7	14.7	17.1	0.8 (1.4)
04A□A2□	8.5	28.7	14.7	17.1	1.2 (1.8)
06A□A2□	8.5	28.7	14.7	17.1	1.6 (2.2)
08A□A2□	13.6	38	14.7	19.3	2.3 (2.9)
10A□A2□	13.6	38	14.7	19.3	3.1 (3.7)

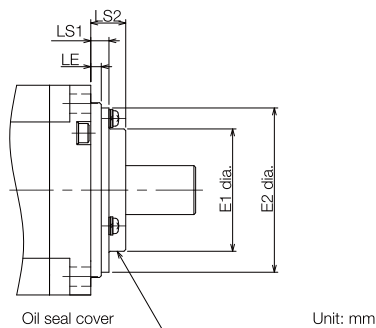
Note: 1. The values in parentheses are for Servomotors with Holding Brakes.

2. Refer to the following section for detailed shaft end specifications.

🔗 [Shaft End Specifications for SGM7A-A5 to -10 \(200 V Models\) \(page 49\)](#)

■ Specifications of Options

- Oil Seal



Model SGM7A-	Dimensions with Oil Seal			
	E1	E2	LS1	LS2
02A, 04A, 06A	35	47	5.2	10
08A, 10A	47	61	5.5	11

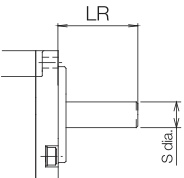
Shaft End Specifications for SGM7A-A5 to -10 (200 V Models)

◆ SGM7A-□□□□□□□□

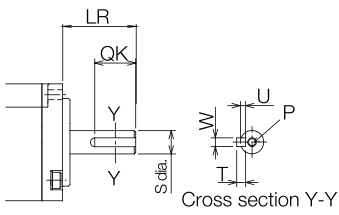
Code	Specification
2	Straight without key
6	Straight with key and tap for one location (Key slot is JIS B1301-1996 fastening type.)
B	With two flat seats

Shaft End Details	Servomotor Model SGM7A-							
	A5	01	C2	02	04	06	08	10

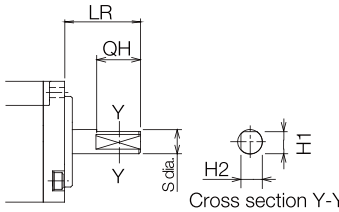
Code: 2 (Straight without Key)

	LR	25	30	40
	S	$8^{0}_{-0.009}$	$14^{0}_{-0.011}$	$19^{0}_{-0.013}$

Code: 6 (Straight with Key and Tap)

	LR	25	30	40
	QK	14	14	22
	S	$8^{0}_{-0.009}$	$14^{0}_{-0.011}$	$19^{0}_{-0.013}$
	W	3	5	6
	T	3	5	6
	U	1.8	3	3.5
	P	M3 × 6L	M5 × 8L	M6 × 10L

Code: B (with Two Flat Seats)

	LR	25	30	40
	QH	15	15	22
	S	$8^{0}_{-0.009}$	$14^{0}_{-0.011}$	$19^{0}_{-0.013}$
	H1	7.5	13	18
	H2	7.5	13	18