Model Designations

SGM7A	-	01	A	7	A	2	1
Sigma-7 Series Servomotors: SGM7A		1st + 2nd	3rd	4th	5th	6th	7th digit

1st + 2nd digit - Rated Output

Code	Specifications
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	Specifications
A	200 VAC

4th digit - Serial Encoder

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

5th digit - Design Revision Order

Code	Specifications
A	Initial Design

6th digit - Shaft End

Code	Specifications
2	Straight without key
6	Straight with key and tap
B*1	With two flat seats

7th digit - Options

Code	Specifications
1	Without options
C*2	With holding brake (24 VDC)
E	With oil seal and holding brake (24 VDC)
S	With oil seal

Note:

*1. Code B is not supported for models with a rated output of 1.5 kW or higher.
*2. SGM7A-70A Servomotors with holding brakes are not available.

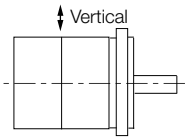
Specifications and Ratings

Specifications

Voltage		200 V	
Model SGM7A-		A5A to 70A	
Time Rating		Continuous	
Thermal Class		Models A5A to 10A: B; Models 15A to 70A: F	
Insulation Resistance		500 VDC, 10 MOhm 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		V15	
Environmental Conditions	Surrounding Air Temperature	0 °C to 40 °C (With derating, usage is possible between 40 °C and 60 °C)	
	Surrounding Air Humidity	20% to 80% relative humidity (non-condensing)	
	Installation Site	• 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 (non-condensing)	
Shock Resistance	Impact Acceleration Rate at Flange	490 m/s²	
	Number of Impacts	2 times	
Vibration Resistance	Vibration Acceleration Rate at Flange	A5A to 50A	49 m/s² (Models 15A to 50A: 24.5 m/s² front to back)
		70A	14.7 m/s
Applicable SERVOPACKS		Refer to section “Combination of Rotary Servomotors and SERVOPACKs” on page 11.	

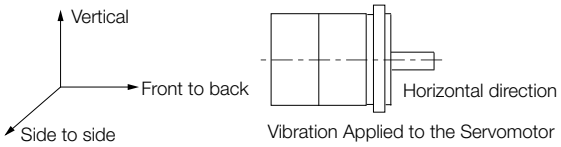
*1 A Vibration class of V15 indicates a vibration amplitude of 15 μm maximum on the Servomotor without a load at the rated motor speed.

*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.



Shock Applied to the Servomotor

*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.



Vibration Applied to the Servomotor

*4 If the surrounding air temperature will exceed 40°C, refer to section “Applications Where the Surrounding Air Temperature of the Servomotor Exceeds 40 °C” on page 38.

*5 If the altitude will exceed 1,000 m, refer to section “Applications Where the Altitude of the Servomotor Exceeds 1,000 m” on page 38.

Ratings

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		Nm	0.159	0.318	0.477	0.637	1.27	1.91	2.39	3.18
Instantaneous Maximum Torque *1		Nm	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		min^{-1}	6000							
Torque Constant		Nm/Arms	0.307	0.387	0.335	0.461	0.582	0.461	0.590	0.547
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	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 (Aluminium)		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	Nm	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	
	With External Regenerative Resistor and Dynamic Brake Resistor								30 times	
Allowable Shaft Load *5	LF	mm	20			25			35	
	Allowable Radial Load	N	78			245			392	
	Allowable Thrust Load	N	54			74			147	

Notes:

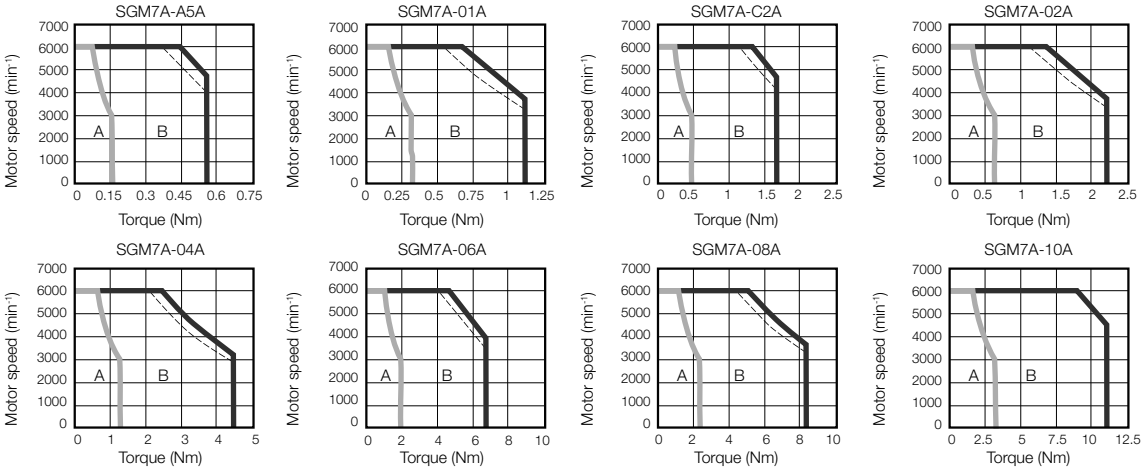
1 The values in parentheses are for Servomotors with Holding Brakes.

2 For footnotes *1 to *5 and *7 refer to chapter Notes for Servomotor Ratings on page 33.

Torque-Motor Speed Characteristics

A : Continuous duty zone
B : Intermittent duty zone

——— (solid lines): With three-phase 200-V or single-phase 230-V input
- - - - - - - - (dotted lines): With single-phase 200-V input



* The characteristics are the same for three-phase 200 V and single-phase 200 V.

Notes:

1 These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100 °C. These are typical values.

2 The characteristics in the intermittent duty zone depend on the power supply voltage.

3 If the effective torque is within the allowable range for the rated torque, the Servomotor can be used within the intermittent duty zone.

4 If you use a Servomotor Main Circuit Cable that exceeds 20 m, the intermittent duty zone in the torquemotor speed characteristics will become smaller because the voltage drop increases.

Ratings

Voltage			200 V						
Model SGM7A-			15A	20A	25A	30A	40A	50A	70A
Rated Output *6		W	1.5	2.0	2.5	3.0	4.0	5.0	7.0
Rated Torque *2, *6		Nm	4.90	6.36	7.96	9.80	12.6	15.8	22.3
Instantaneous Maximum Torque *6		Nm	14.7	19.1	23.9	29.4	37.8	47.6	54.0
Rated Current *6		Arms	9.3	12.1	15.6	17.9	25.4	27.6	38.3
Instantaneous Maximum Current *6		Arms	28	42	51	56	77	84	105
Rated Motor Speed *6		min^{-1}	3000						
Maximum Motor Speed *6		min^{-1}	6000						
Torque Constant		Nm/Arms	0.590	0.561	0.538	0.582	0.519	0.604	0.604
Motor Moment of Inertia		$\times 10^{-4}$ kg m^2	2.00 (2.25)	2.47 (2.72)	3.19 (3.44)	7.00 (9.20)	9.60 (11.8)	12.3 (14.5)	12.3
Rated Power Rate *6		kW/s	120 (106)	164 (148)	199 (184)	137 (104)	165 (134)	203 (172)	404
Rated Angular Acceleration Rate *6		rad/s	24500 (21700)	25700 (23300)	24900 (23100)	14000 (10600)	13100 (10600)	12800 (10800)	18100
Derating Rate for Servomotor with Oil Seal		%	n/a						
Heat Sink Size		mm	300 × 300 × 12			400 × 400 × 20			
Protective Structure *3			Totally enclosed, self-cooled, IP67						Totally enclosed, separately cooled (with fan), IP22
Holding Brake Specifications *4	Rated Voltage	V	24 VDC $^{+10\%}_{0}$						-
	Capacity	W	12			10			
	Holding Torque	Nm	7.84		10	20			
	Coil Resistance	Ω (at 20 °C)	48			59			
	Rated Current	A (at 20 °C)	0.5			0.41			
	Time Required to Release Brake	ms	170			100			
	Time Required to Brake	ms	80						
Allowable Load Moment of Inertia (Motor Moment of Inertia Ratio)			10 times			5 times			
	With External Regenerative Resistor and Dynamic Brake Resistor		20 times			15 times			
Allowable Shaft Load *5	LF	mm	45			63			
	Allowable Radial Load	N	686			980	1176		
	Allowable Thrust Load	N	196			392			

Notes:

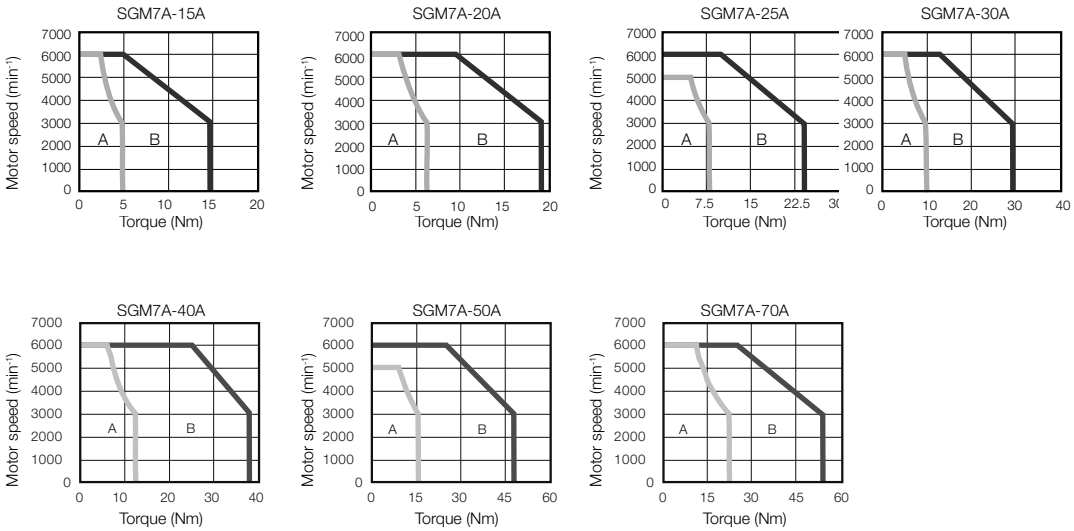
1 The values in parentheses are for Servomotors with Holding Brakes.

2 For footnotes *1 to *5 and *7 refer to chapter Notes for Servomotor Ratings on page 33.

Torque-Motor Speed Characteristics for Three-phase, 200 V

A : Continuous duty zone

B : Intermittent duty zone



Notes:

1 These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 20 °C. These are typical values.

2 The characteristics in the intermittent duty zone depend on the power supply voltage.

3 If the effective torque is within the allowable range for the rated torque, the Servomotor can be used within the intermittent duty zone.

4 If you use a Servomotor Main Circuit Cable that exceeds 20 m, the intermittent duty zone in the torquemotor speed characteristics will become smaller because the voltage drop increases.

Notes for Servomotor Ratings

*1. These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100 °C. The values for other items are at 20 °C. These are typical values.

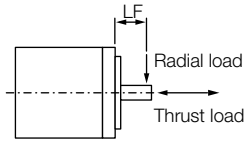
*2. The rated torques are the continuous allowable torque values at a surrounding air temperature of 40 °C with an aluminum heat sink of the dimensions given in the table.

*3. This does not apply to the shaft opening. Protective structure specifications apply only when the special cable is used.

*4. Observe the following precautions if you use a Servomotor with a Holding Brake.

- The holding brake cannot be used to stop the Servomotor.
- The time required to release the brake and the time required to brake depend on which discharge circuit is used. Confirm that the operation delay time is appropriate for the actual equipment.
- The 24-VDC power supply is not provided by Yaskawa.

*5. The allowable shaft loads are illustrated in the following figure. Design the mechanical system so that the thrust and radial loads applied to the Servomotor shaft end during operation do not exceed the values given in the table.



*6. These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 20 °C. These are typical values.

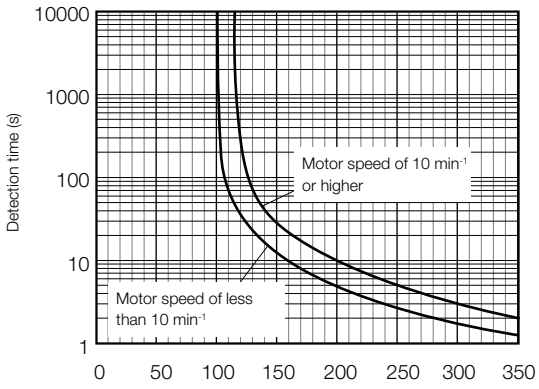
*7. If the heat sink is 250 mm × 250 mm × 6 mm, the rated output is 550 W and the rated torque is 1.75 Nm. Refer to the following section for details.

*8. For the SGM7A-25A or SGM7A-50A, the maximum motor speed for the continuous duty zone is 5,000 min^{-1}. Use the Servomotor within the continuous duty zone for the average motor speed and effective torque.

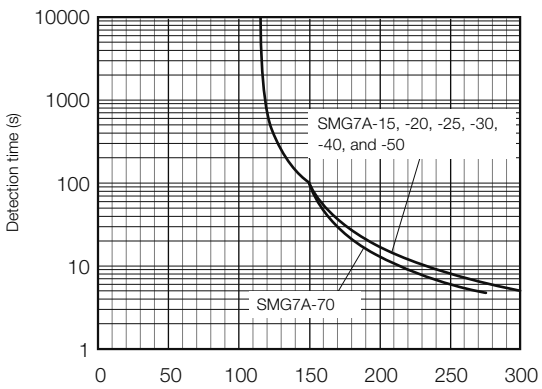
Servomotor Overload Protection Characteristics

The overload detection level is set for hot start conditions with a Servomotor surrounding air temperature of 40 °C.

SGM7A-A5, -01, C2, 02, 04, 06, 08, and -10



SGM7A-15, -20, 25, -30, -40, -50, and -70



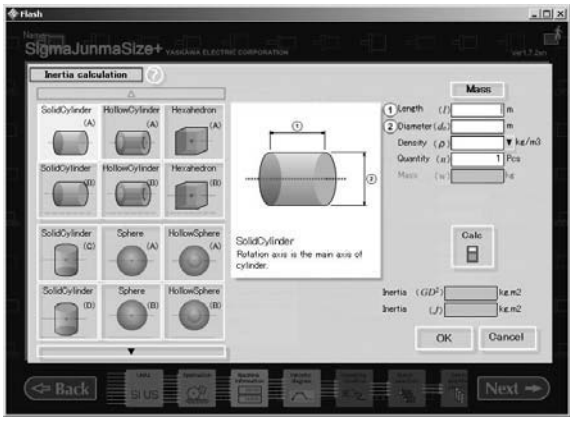
Note:

The above overload characteristics does not give permission to perform continuous duty operation with an output of 100% or higher. Use the Servomotor so that the effective torque remains within the continuous duty zone given in Torque-Motor Speed Characteristics on page 27 or in Torque-Motor Speed Characteristics for Three-phase, 200 V on page 33.

Load Moment of Inertia

The load moment of inertia indicates the inertia of the load. The larger the load moment of inertia, the worse the response. If the moment of inertia is too large, operation will become unstable.

Refer to Servomotor Ratings on page 30. This value is provided strictly as a guideline and results depend on Servomotor driving conditions. Use the SigmaJunmaSize+ AC Servo Drive Capacity Selection Program to check the driving conditions. Contact your YASKAWA representative for information on this program.



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). Perform one of the following steps if this occurs.

- Reduce the torque limit.
- Reduce the deceleration rate.
- Reduce the maximum motor speed.
- Install an External Regenerative Resistor if the alarm cannot be cleared using the above steps.

Regenerative resistors are not built into SERVOPACKs for 400-W Servomotors or smaller Servomotors. Even for SERVOPACKs with built-in regenerative resistors, an External Regenerative Resistor is required if the energy that results from the regenerative driving conditions exceeds the allowable loss capacity (W) of the built-in regenerative resistor.

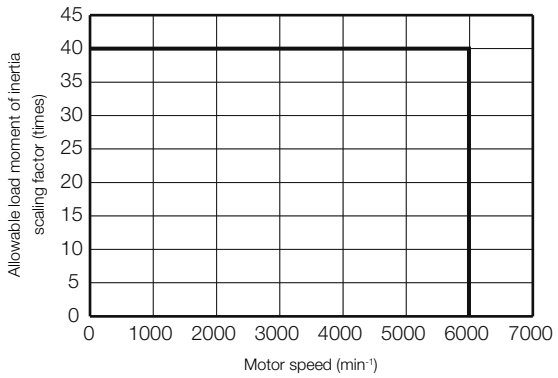
Allowable Load Moment of Inertia Scaling Factor for SERVOPACKs without Built-in Regenative Resistors

The following graphs show the allowable load moment of inertia scaling factor of the motor speed for SERVOPACKs* without built-in regenerative resistors when an External Regenerative Resistor is not connected.

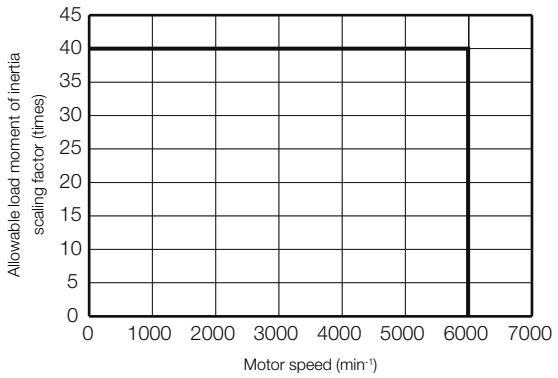
If the Servomotor exceeds the allowable load moment of inertia, an overvoltage alarm may occur in the SERVOPACK.

These graphs provide reference data for deceleration at the rated torque or higher with a 200-VAC power supply input.

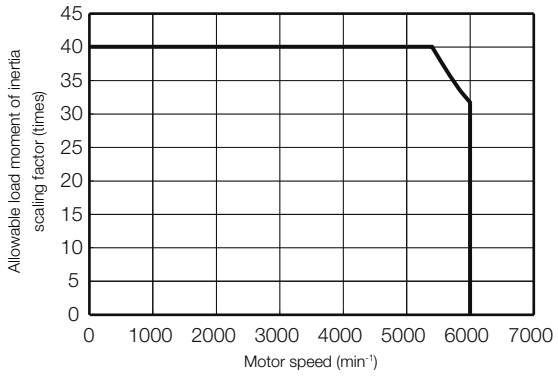
SGM7A-A5A



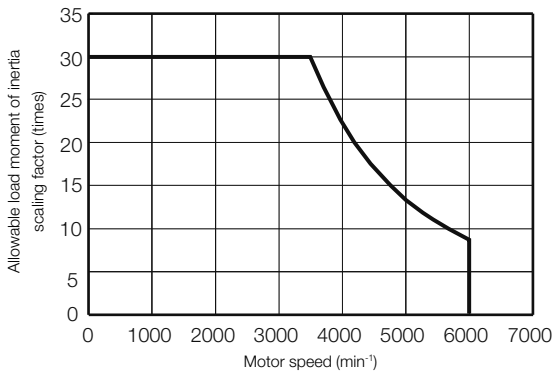
SGM7A-01A



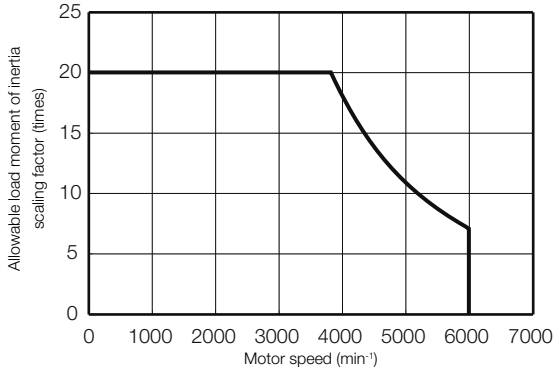
SGM7A-C2A



SGM7A-02A



SGM7A-04A



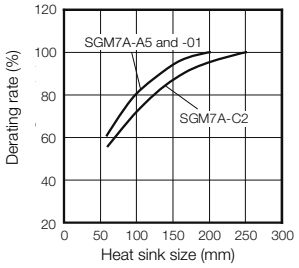
* Applicable SERVOPACK models: SGD7S-R70A, -R90A, -1R6A, or -2B8A.

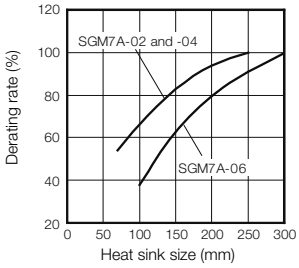
Servomotor Heat Dissipation Conditions

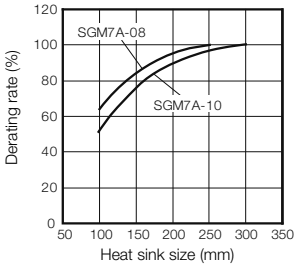
The Servomotor ratings are the continuous allowable values at a surrounding air temperature of 40 °C when a heat sink is installed on the Servomotor. If the Servomotor is mounted on a small device component, the Servomotor temperature may rise considerably because the surface for heat dissipation becomes smaller. Refer to the following graphs for the relation between the heat sink size and derating rate.

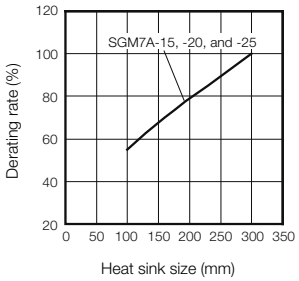
Note: The derating rates are applicable only when the average motor speed is less than or equal to the rated motor speed. If the average motor speed exceeds the rated motor speed, consult with your Yaskawa representative.

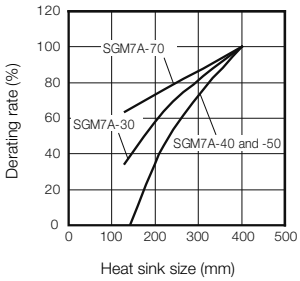
Important: The actual temperature rise depends on how the heat sink (i.e., the Servomotor mounting section) is attached to the installation surface, what material is used for the Servomotor mounting section, and the motor speed. Always check the Servomotor temperature with the actual equipment.







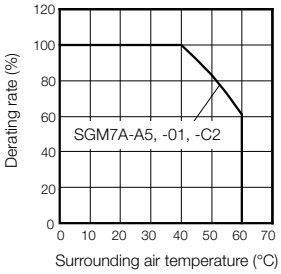


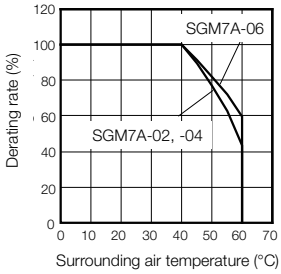


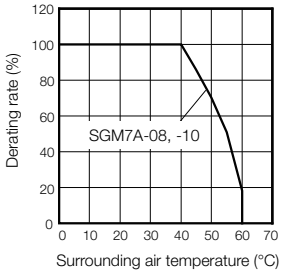
Applications Where the Surrounding Air Temperature of the Servomotor Exceeds 40 °C

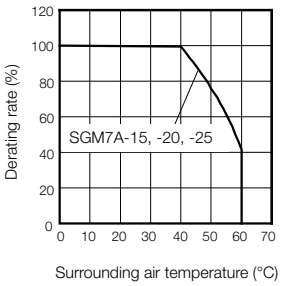
The Servomotor ratings are the continuous allowable values at a surrounding air temperature of 40 °C. If you use a Servomotor at a surrounding air temperature that exceeds 40 °C (60 °C max.), apply a suitable derating rate from the following graphs.

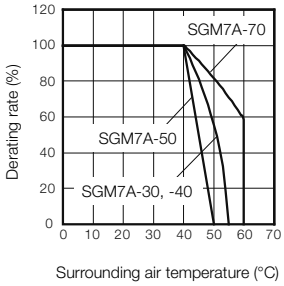
Note: The derating rates are applicable only when the average motor speed is less than or equal to the rated motor speed. If the average motor speed exceeds the rated motor speed, consult with your Yaskawa representative.







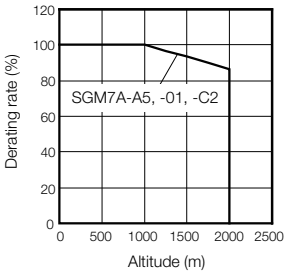


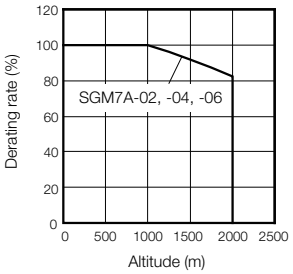


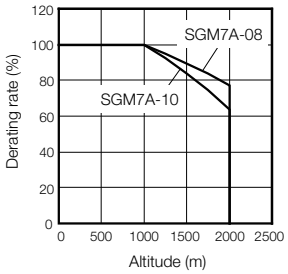
Applications Where the Altitude of the Servomotor Exceeds 1,000 m

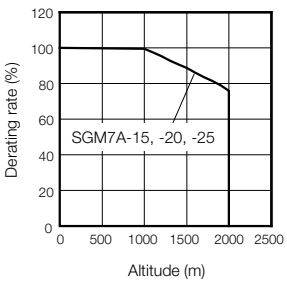
The Servomotor ratings are the continuous allowable values at an altitude of 1,000 m or less. If you use a Servomotor at an altitude that exceeds 1,000 m (2,000 m max.), the heat dissipation effect of the air is reduced. Apply the appropriate derating rate from the following graphs.

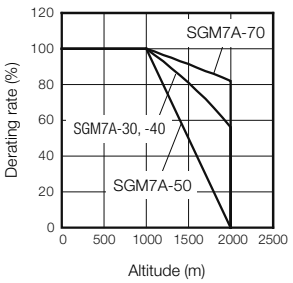
Note: The derating rates are applicable only when the average motor speed is less than or equal to the rated motor speed. If the average motor speed exceeds the rated motor speed, consult with your Yaskawa representative.







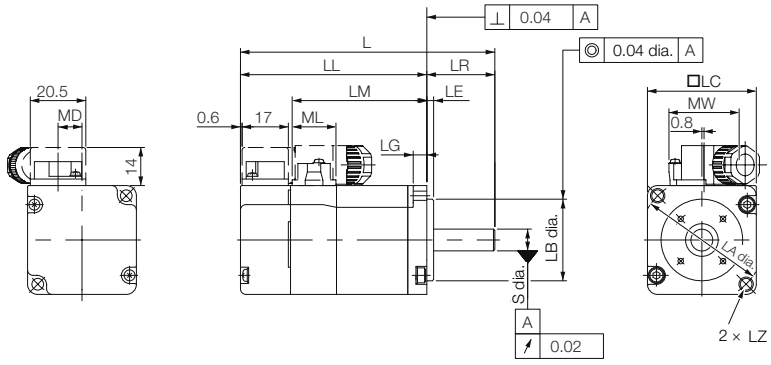




External Dimensions

Servomotors

SGM7A-A5, -01, -C2



Model SMG7A	L	LL	LM	Flange Dimensions							S
				LR	LE	LG	LC	LA	LB	LZ	
A5A□A2□	81.5 (122)	56.5 (97)	37.9	25	2.5	5	40	46	$30^{0}_{-0.021}$	4.3	$8^{0}_{-0.009}$
01A□A2□	93.5 (134)	68.5 (109)	49.9	25	2.5	5	40	46	$30^{0}_{-0.021}$	4.3	$8^{0}_{-0.009}$
C2A□A2□	105.5 (153.5)	80.5 (128.5)	61.9	25	2.5	5	40	46	$30^{0}_{-0.021}$	4.3	$8^{0}_{-0.009}$

Model SMG7A	MD	MW	ML	Approx. Mass [kg]
A5A□A2□	8.8	25.8	16.1	0.3 (0.6)
01A□A2□	8.8	25.8	16.1	0.4 (0.7)
C2A□A2□	8.8	25.8	16.1	0.5 (0.8)

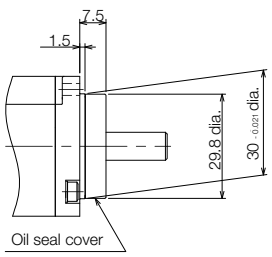
Notes:

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

2 For detailed shaft end specifications refer to chapter Shaft End Specifications for SGM7A-A5 to -10 on page 41.

Specification of Options

Oil Seal

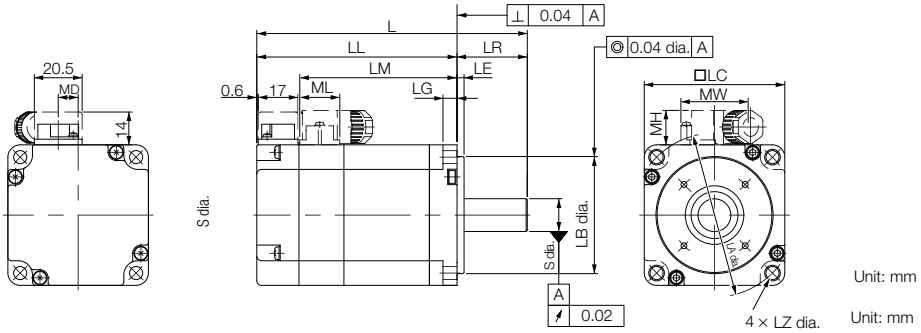


Unit: mm

External Dimensions

Servomotors

SGM7A-02 to -10



Unit: mm

Model SMG7A	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)	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 SMG7A	MD	MW	ML	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)

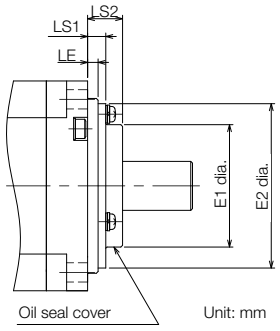
Notes:

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

2 For detailed shaft end specifications refer to chapter Shaft End Specifications for SGM7A-A5 to -10 on page 41.

Specification of Options

Oil Seal

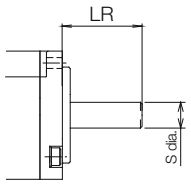
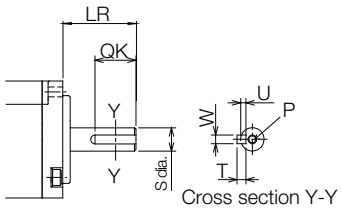
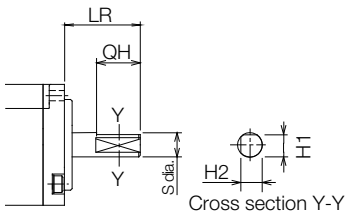


Model SMG7A	Dimensions with Oil Seal			
	E1	E2	LS1	LS2
02A, 04A, 06A	35	47	5.2	10
08A, 10A	47	61	5.5	11

Shaft End Specifications for SGM7A-A5 to -10

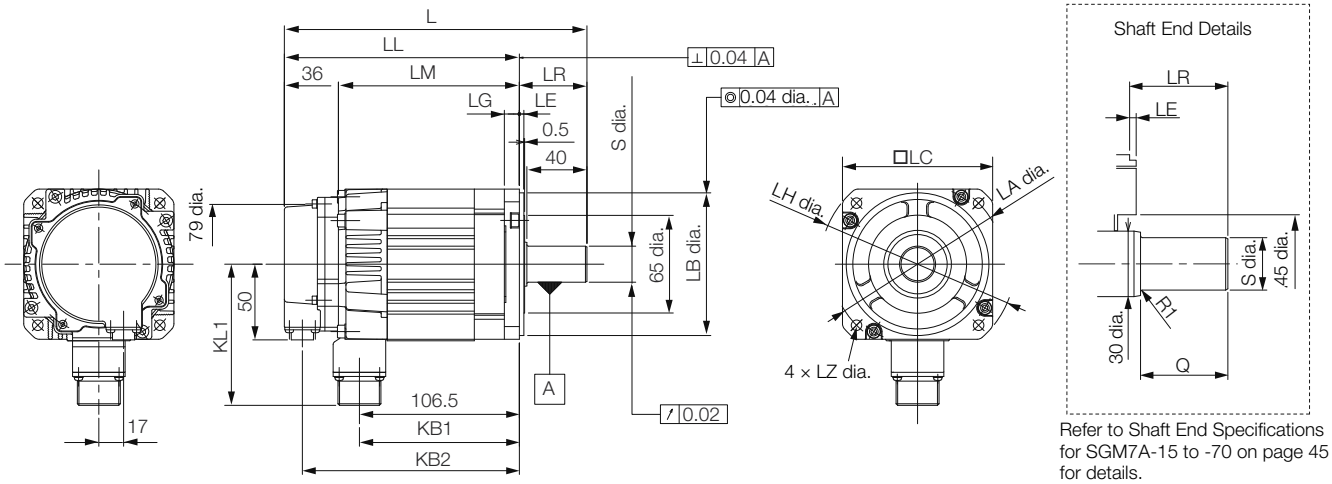
SGM7A-□□□□□□□

Code	Specification
2	Straight without key
6	Straight with key and tap (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	$8^{0}_{-0.009}$			$14^{0}_{-0.009}$			$19^{0}_{-0.013}$	
	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	

Servomotors without Holding Brakes

SGM7A-15, -20, and -25



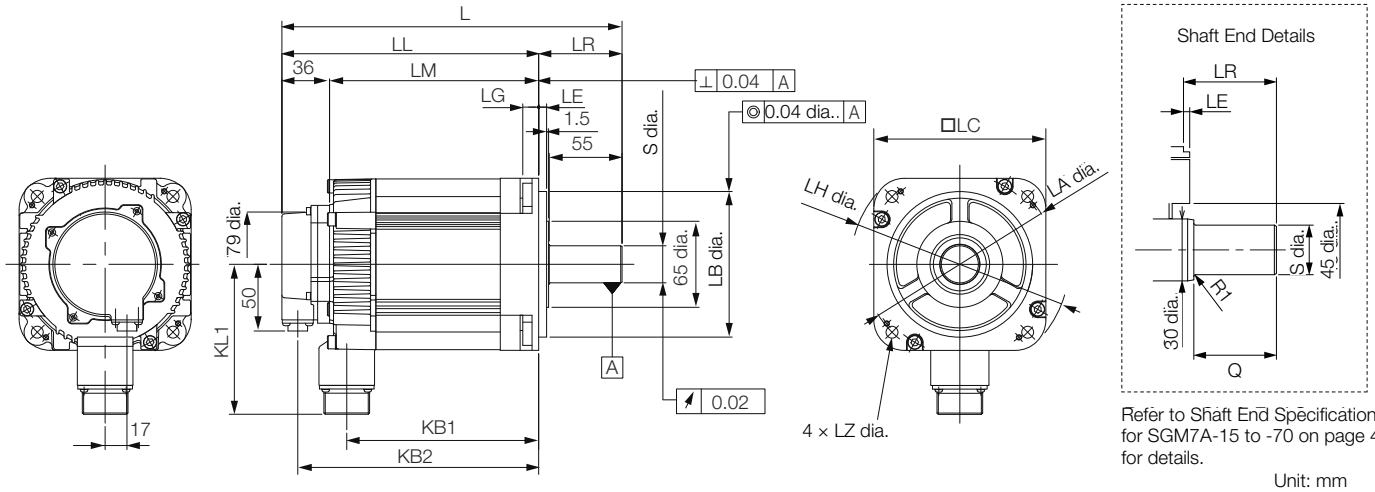
Refer to Shaft End Specifications for SGM7A-15 to -70 on page 45 for details.

Unit: mm

Model SGM7A-	L	LL	LM	LR	KB1	KB2	KL1
15A□A21	202	157	121	45	107	145	94
20A□A21	218	173	137	45	123	161	94
25A□A21	241	196	160	45	146	184	94

Model SGM7A-	Flange Dimensions							Shaft End Dimensions		Approx. Mass[kg]
	LA	LB	LC	LE	LG	LH	LZ	S	Q	
15A□A21	115	$95^{0}_{-0.035}$	100	3	10	130	7	$24^{0}_{-0.013}$	40	4.6
20A□A21	115	$95^{0}_{-0.035}$	100	3	10	130	7	$24^{0}_{-0.013}$	40	5.4
25A□A21	115	$95^{0}_{-0.035}$	100	3	10	130	7	$24^{0}_{-0.013}$	40	6.8

SGM7A-30, -40, and -50



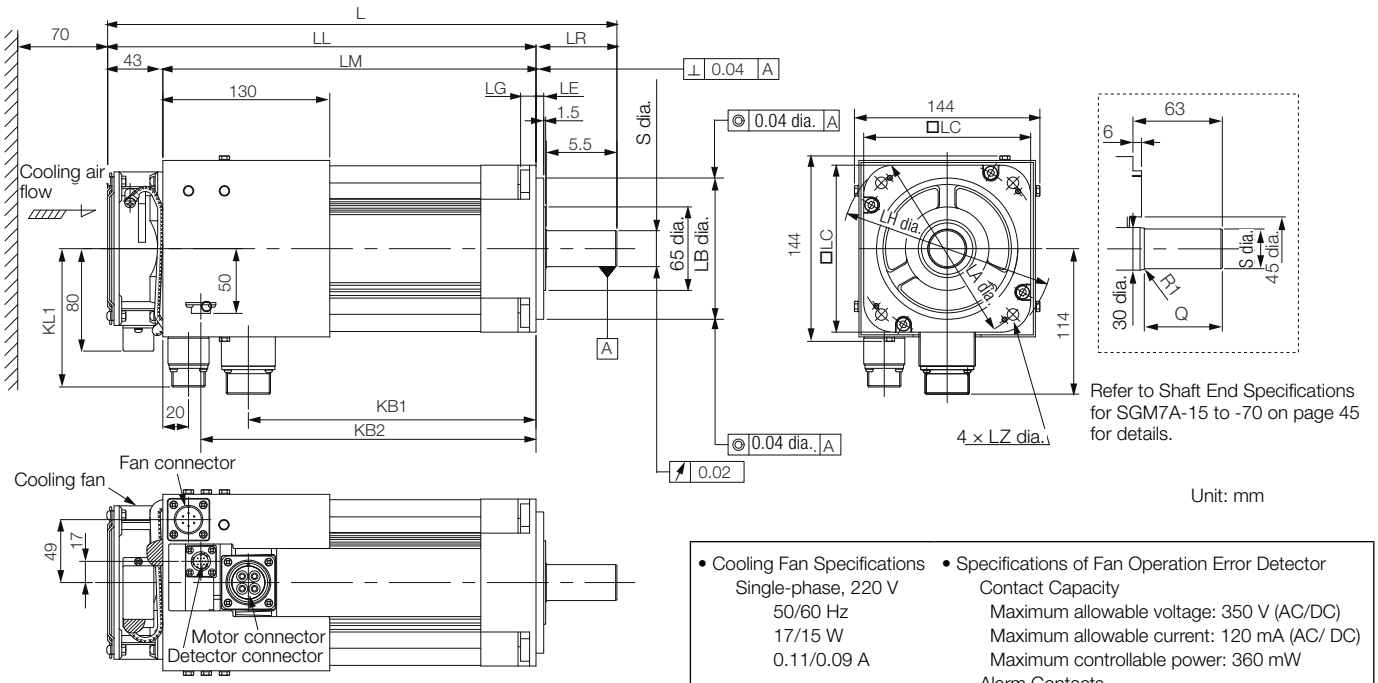
Refer to Shaft End Specifications for SGM7A-15 to -70 on page 45 for details.

Unit: mm

Model SGM7A-	L	LL	LM	LR	KB1	KB2	KL1
30A□A21	257	194	158	63	145	182	114
40A□A21	296	233	197	63	184	221	114
50A□A21	336	273	237	63	224	261	114

Model SGM7A-	Flange Dimensions							Shaft End Dimensions		Approx. Mass[kg]
	LA	LB	LC	LE	LG	LH	LZ	S	Q	
30A□A21	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	10.5
40A□A21	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	13.5
50A□A21	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	16.5

SGM7A-70



Refer to Shaft End Specifications for SGM7A-15 to -70 on page 45 for details.

Unit: mm

- Cooling Fan Specifications
  - Single-phase, 220 V
  - 50/60 Hz
  - 17/15 W
  - 0.11/0.09 A
- Specifications of Fan Operation Error Detector
  - Contact Capacity
    - Maximum allowable voltage: 350 V (AC/DC)
    - Maximum allowable current: 120 mA (AC/ DC)
    - Maximum controllable power: 360 mW
  - Alarm Contacts
    - ON for normal fan rotation.
    - OFF at 1,680 ± 100 min^{-1} max.
    - OFF for 3 seconds at startup.

Model SGM7A-	L	LL	LM	LR	KB1	KB2	KL1
70A□A21	397	334	291	63	224	261	108

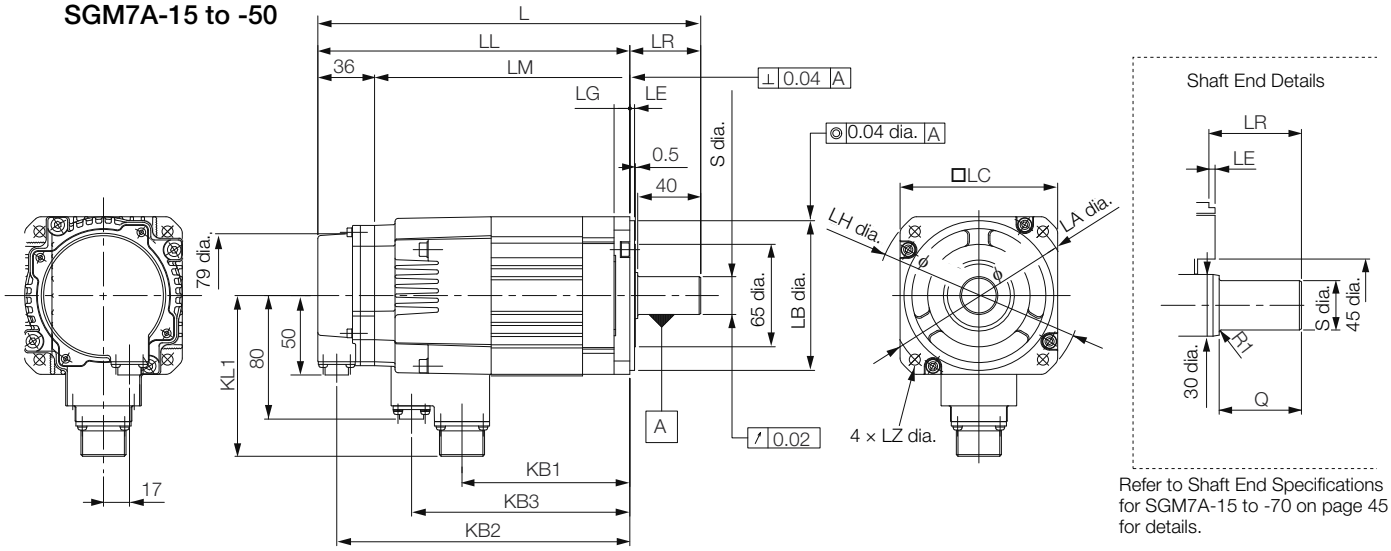
Model SGM7A-	Flange Dimensions							Shaft End Dimensions		Approx. Mass [kg]
	LA	LB	LC	LE	LG	LH	LZ	S	Q	
70A□A21	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	18.5

Notes: Leave a minimum space of 70 mm around the Servomotor from walls and other equipment to allow for a sufficient amount of cooling air.
Servomotors with Oil Seals have the same dimensions.

Refer to the following section for information on connectors or SGM7A-70 without Holding Brakes on page 46.

Servomotors with Holding Brakes

SGM7A-15 to -50



Refer to Shaft End Specifications for SGM7A-15 to -70 on page 45 for details.

Unit: mm

Model SGM7A-	L	LL	LM	LR	KB1	KB2	KB3	KL1
15A□A2C	243	198	162	45	107	186	139	102
20A□A2C	259	214	178	45	123	202	155	102
25A□A2C	292	247	211	45	156	235	188	102
30A□A2C	295	232	196	63	145	220	181	119
40A□A2C	332	269	233	63	184	257	220	119
50A□A2C	372	309	273	63	224	297	260	119

Model SGM7A-	Flange Dimensions							Shaft End Dimensions		Approx. Mass[kg]
	LA	LB	LC	LE	LG	LH	LZ	S	Q	
15A□A2C	115	$95^{0}_{-0.035}$	100	3	10	130	7	$24^{0}_{-0.013}$	40	6.0
20A□A2C	115	$95^{0}_{-0.035}$	100	3	10	130	7	$24^{0}_{-0.013}$	40	6.8
25A□A2C	115	$95^{0}_{-0.035}$	100	3	10	130	7	$24^{0}_{-0.013}$	40	8.7
30A□A2C	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	13
40A□A2C	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	16
50A□A2C	145	$110^{0}_{-0.035}$	130	6	12	165	9	$28^{0}_{-0.013}$	55	19

Note:

Servomotors with Oil Seals have the same dimensions.

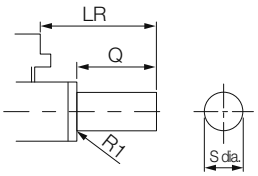
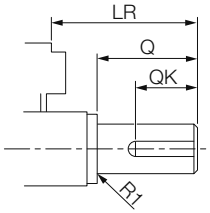
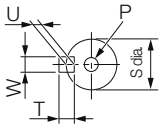
Refer to the following section for information on connectors or SGM7A-15 to -50 with Holding Brakes on page 46.

Shaft End Specifications for SGM7A-15 to -70

SGM7A-□□□□□□□

Code	Specification
2	Straight without key
6	Straight with key and tap (Key slot is JIS B1301-1996 fastening type.)

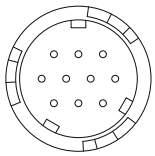
Unit: mm

Shaft End Details		Servomotor Model SGM7A-						
		15	20	25	30	40	50	70
Code: 2 (Straight without Key)								
	LR	45			63			
	Q	40			55			
	S	$24^{0}_{-0.013}$			$28^{0}_{-0.013}$			
Code: 6 (Straight with Key and Tap)								
	LR	45			63			
	Q	40			55			
	QK	32			50			
	S	$24^{0}_{-0.013}$			$28^{0}_{-0.013}$			
	W	8						
	T	7						
	U	4						
	P	M8 screw, Depth: 16						

Connector Specifications

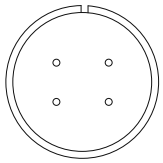
SGM7A-15 to -50 without Holding Brakes

- Encoder Connector Specifications (24-bit Encoder)



Receptacle: CM10-R10P-D
Applicable plug: Not provided by Yaskawa
Plug: CM10-AP10S-□-D for Right-angle Plug
CM10-SP10S-□-D for Straight Plug
(□ depends on the applicable cable size.
Manufacturer: DDK Ltd.

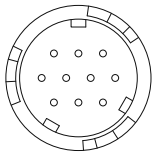
- Servomotor Connector Specifications



Manufacturer: DDK Ltd.

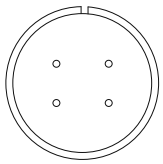
SGM7A-70 without Holding Brakes

- Encoder Connector Specifications (24-bit Encoder)



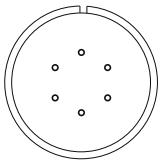
Receptacle: CM10-R10P-D
Applicable plug: Not provided by Yaskawa
Plug: CM10-AP10S-□-D for Right-angle Plug
CM10-SP10S-□-D for Straight Plug
(□ depends on the applicable cable size.
Manufacturer: DDK Ltd.

- Servomotor Connector Specifications



Manufacturer: DDK Ltd.

- FanConnectorSpecifications



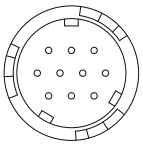
Receptacle: MS3102A14S-6P
Applicable Plug
Plug: MS3108B14S-6S
Cable Clamp: MS3057-6A

Note:

The Servomotor Connector (receptacle) is RoHS compliant.
Contact the connector manufacturer for RoHS-compliant cable-side connectors (not provided by Yaskawa).

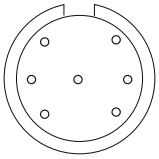
SGM7A-15 to -50 with Holding Brakes

- Encoder Connector Specifications (24-bit Encoder)



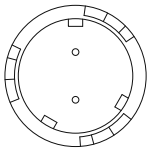
Receptacle: CM10-R10P-D
Applicable plug: Not provided by Yaskawa
Plug: CM10-AP10S-□-D for Right-angle Plug
CM10-SP10S-□-D for Straight Plug
(□ depends on the applicable cable size.
Manufacturer: DDK Ltd.

- Servomotor Connector Specifications



Manufacturer: DDK Ltd.

- Brake Connector Specifications



Receptacle: CM10-R2P-D
Applicable plug: Not provided by Yaskawa.
Plug: CM10-AP2S-□-D for Right-angle Plug
CM10-SP2S-□-D for Straight Plug
(□ depends on the applicable cable size.)
Manufacturer: DDK Ltd.