

# Sigma-5 rotary servo motors

**The ideal servo family for motion control. Fast response, high speed, and high accuracy.**

- Contributing to machine performance in conjunction with a medium-inertia motor.
- Peak torque 350% of nominal during 3 seconds
- Automatic motor recognition by servo drive
- IP67 and shaft oil seal available
- High resolution encoders
- Absolute multiturn encoder solution
- Compact design and robust construction

**Ratings**

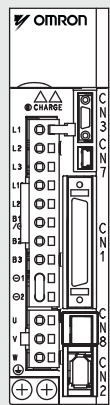
- 230 VAC from 50 W to 1.5 kW (rated torque from 0.159 to 4.77 Nm)
- 400 VAC from 200 W to 5 kW (rated torque from 0.637 Nm to 28.4 Nm)



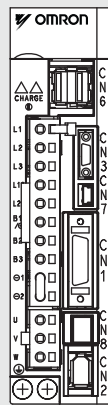
## System configuration

(Refer to servo drive chapter)

Drive options

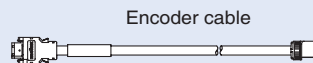


Analog Pulse Models

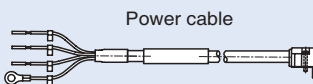


MECHATROLINK-II Models

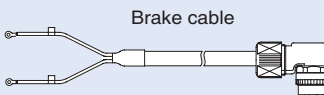
Power, encoder and brake cables



Encoder cable



Power cable



Brake cable

(a separate brake cable to use only for SGMGV and SGMSV servo motors from 850W)

Servo motors



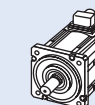
SGMJV Servo Motor  
3000 rpm (50-750 W)



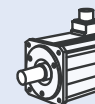
SGMAV Servo Motor  
3000 rpm (50W-1kW)



SGMEV Servo Motor  
3000 rpm (100W-1.5kW)



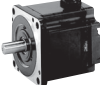

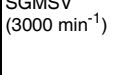


SGMGV Servo Motor  
1500 rpm (300W-4.4 kW)



SGMSV Servo Motor  
3000 rpm (1-5kW)

## Servo motor / servo drive combination

Sigma-5 rotary servo motor					Sigma-5 servo drive			
	Voltage	Rated torque	Capacity	Model	230 V (1-phase) Analog Pulse	200 V (1-phase) MECHATROLINK-II	400 V (3-phase) Analog Pulse	400 V (3-phase) MECHATROLINK-II
	230 V	0.159 Nm	50 W	SGMJV-A5A@	SGDV-A5A01A-OY	SGDV-A5A11A-OY	-	-
		0.318 Nm	100 W	SGMJV-01A@	SGDV-01A01A-OY	SGDV-01A11A-OY	-	-
		0.637 Nm	200 W	SGMJV-02A@	SGDV-02A01A-OY	SGDV-02A11A-OY	-	-
		1.27 Nm	400 W	SGMJV-04A@	SGDV-04A01A-OY	SGDV-04A11A-OY	-	-
		2.39 Nm	750 W	SGMJV-08A@	SGDV-08A01A-OY	SGDV-08A11A-OY	-	-
	230 V	0.159 Nm	50 W	SGMAV-A5A@	SGDV-A5A01A-OY	SGDV-A5A11A-OY	-	-
		0.318 Nm	100 W	SGMAV-01A@	SGDV-01A01A-OY	SGDV-01A11A-OY	-	-
		0.477 Nm	150 W	SGMAV-C2A@	SGDV-02A01A-OY	SGDV-02A11A-OY	-	-
		0.637 Nm	200 W	SGMAV-02A@	SGDV-02A01A-OY	SGDV-02A11A-OY	-	-
		1.27 Nm	400 W	SGMAV-04A@	SGDV-04A01A-OY	SGDV-04A11A-OY	-	-
		1.75 Nm	550 W	SGMAV-06A@	SGDV-08A01A-OY	SGDV-08A11A-OY	-	-
		2.39 Nm	750 W	SGMAV-08A@	SGDV-08A01A-OY	SGDV-08A11A-OY	-	-
		3.18 Nm	1 kW	SGMAV-10A@	SGDV-15A01A-OY-008000	SGDV-15A11A-OY-008000	-	-
	230 V	0.318 Nm	100 W	SGMEV-01A@	SGDV-01A01A-OY	SGDV-01A11A-OY	-	-
		0.637 Nm	200 W	SGMEV-02A@	SGDV-02A01A-OY	SGDV-02A11A-OY	-	-
		1.27 Nm	400 W	SGMEV-04A@	SGDV-04A01A-OY	SGDV-04A11A-OY	-	-
		2.39 Nm	750 W	SGMEV-08A@	SGDV-08A01A-OY	SGDV-08A11A-OY	-	-
		4.77 Nm	1.5 kW	SGMEV-15A@	SGDV-15A01A-OY-008000	SGDV-15A11A-OY-008000	-	-
	400 V	0.637 Nm	200 W	SGMEV-02D@	-	-	SGDV-05D01A-OY	SGDV-05D11A-OY
		0.955 Nm	300 W	SGMEV-03D@	-	-	SGDV-05D01A-OY	SGDV-05D11A-OY
		1.27 Nm	400 W	SGMEV-04D@	-	-	SGDV-05D01A-OY	SGDV-05D11A-OY
		2.07 Nm	650 W	SGMEV-07D@	-	-	SGDV-10D01A-OY	SGDV-10D11A-OY
		2.39 Nm	750 W	SGMEV-08D@	-	-	SGDV-10D01A-OY	SGDV-10D11A-OY
	400 V	1.96 Nm	300 W	SGMGV-03D@	-	-	SGDV-05D01A-OY	SGDV-05D11A-OY
		2.86 Nm	450 W	SGMGV-05D@	-	-	SGDV-05D01A-OY	SGDV-05D11A-OY
		5.39 Nm	850 W	SGMGV-09D@	-	-	SGDV-10D01A-OY	SGDV-10D11A-OY
		8.34 Nm	1.3 kW	SGMGV-13D@	-	-	SGDV-15D01A-OY	SGDV-15D11A-OY
		11.5 Nm	1.8 kW	SGMGV-20D@	-	-	SGDV-20D01A-OY	SGDV-20D11A-OY
		18.6 Nm	2.9 kW	SGMGV-30D@	-	-	SGDV-30D01A-OY	SGDV-30D11A-OY
		28.4 Nm	4.4 kW	SGMGV-44D@	-	-	SGDV-50D01A-OY	SGDV-50D11A-OY
	400 V	3.18 Nm	1 kW	SGMSV-10D@	-	-	SGDV-10D01A-OY	SGDV-10D11A-OY
		4.9 Nm	1.5 kW	SGMSV-15D@	-	-	SGDV-15D01A-OY	SGDV-15D11A-OY
		6.36 Nm	2 kW	SGMSV-20D@	-	-	SGDV-20D01A-OY	SGDV-20D11A-OY
		7.96 Nm	2.5 kW	SGMSV-25D@	-	-	SGDV-30D01A-OY	SGDV-30D11A-OY
		9.8 Nm	3 kW	SGMSV-30D@	-	-	SGDV-30D01A-OY	SGDV-30D11A-OY
		12.6 Nm	4 kW	SGMSV-40D@	-	-	SGDV-50D01A-OY	SGDV-50D11A-OY
		15.8 Nm	5 kW	SGMSV-50D@	-	-	SGDV-50D01A-OY	SGDV-50D11A-OY

- Note:**
1. For servo motor and cables part numbers refer to ordering information at the end of this chapter
  2. Refer to the servo drive chapter for drive options selection and detailed specifications

## Servo motor

# SGMJV - 01 A 1 A 6 S - 0Y

Sigma-5 servo motor type

- SGMJV: Middle-inertia
- SGMAV: Low-inertia and high dynamics
- SGMEV: Flat type
- SGMGV: High-torque type
- SGMSV: Low-inertia and high dynamics

Omron-Yaskawa Motion Control B.V.

### Brake, oil seal specifications

Code	Options	Type				
		SGMJV	SGMAV	SGMEV	SGMGV	SGMSV
1	No brake, no oil/dust seal	●	●	○	○	○
B	90 VDC brake	○	○	○	○	○
C	24 VDC brake	○	○	○	○	○
D	Oil seal + 90 VDC brake	○	○	○	○	○
E	Oil seal + 24 VDC brake	○	○	○	○	○
F	Dust seal	○	○	○	●	●
G	Dust seal + 90 VDC brake	○	○	○	○	○
H	Dust seal + 24 VDC brake	○	○	○	○	○
S	Oil seal	○	○	○	○	○

●: Standard ○: Option

### Capacity (kW)

Code	SGMJV	SGMAV	SGMEV	SGMGV	SGMSV
	3000 min <sup>-1</sup>	3000 min <sup>-1</sup>	3000 min <sup>-1</sup>	1500 min <sup>-1</sup>	3000 min <sup>-1</sup>
A5	0.05	0.05			
01	0.1	0.1	0.1		
C2		0.15			
02	0.2	0.2	0.2		
03			0.3	0.3	
04	0.4	0.4	0.4		
05				0.45	
06		0.55			
07			0.65		
08	0.75	0.75	0.75		
09				0.85	
10		1.0			1.0
13				1.3	
15			1.5		1.5
20				1.8	2.0
25					2.5
30				2.9	3.0
40					4.0
44				4.4	
50					5.0
60					
70					
75					
1A					
1E					

### Shaft end specifications

Code	Shaft end	Type				
		SGMJV	SGMAV	SGMEV	SGMGV	SGMSV
2	Straight, no key	○	○	○	○	○
6	Straight, key, tapped	●	●	●	●	●
8	Straight, no key, tapped	○	○	○	○	○
B	With two flat seats	○	○	○	○	○

●: Standard ○: Option

### Design Revision Order:

- A: Standard
- E: IP67 (SGMEV-01, 02, 04, 08, 15)
- F: Prepared for oil seal mounting (SGMEV-03, 07)

### Serial encoder specifications

Code	Encoder	Type				
		SGMJV	SGMAV	SGMEV	SGMGV	SGMSV
A	13-bit incremental	○	○	○	○	○
D	20-bit incremental	●	●	●	●	●
3	20-bit absolute	○	○	○	○	○

●: Standard ○: Option

### Voltage

Code	Voltage	Type				
		SGMJV	SGMAV	SGMEV	SGMGV	SGMSV
A	230 V	○	○	○	○	○
D	400 V	○	○	○	○	○

# Servo motor specifications

## Type SGMJV, 230 V

### Ratings and specifications

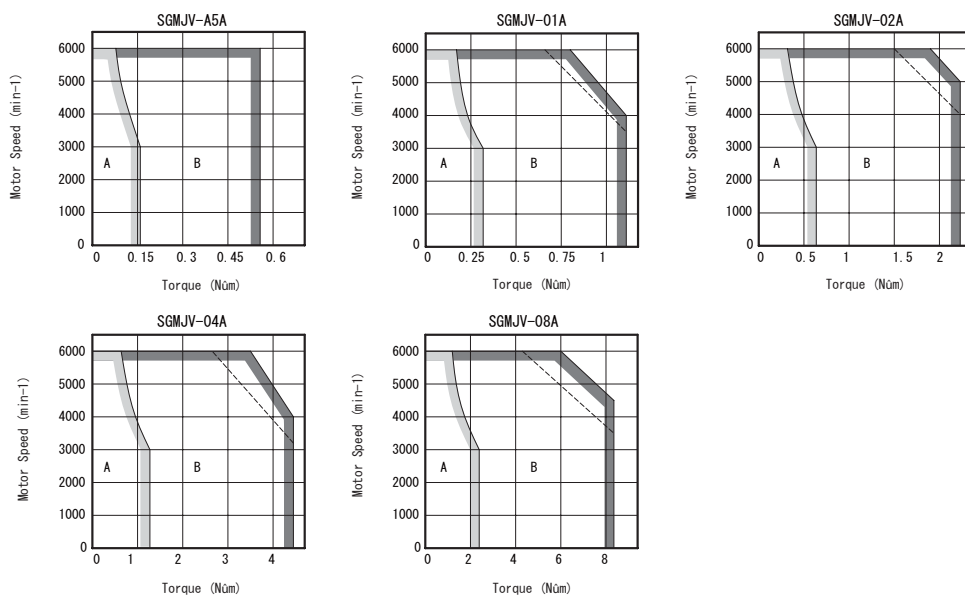
Applied voltage		230 V					
Servo motor model SGMJV- @		A5A@	01A@	02A@	04A@	08A@	
Rated output <sup>*1</sup>	W	50	100	200	400	750	
Rated torque <sup>*1,*2</sup>	N·m	0.159	0.318	0.637	1.27	2.39	
Instantaneous peak torque <sup>*1</sup>	N·m	0.557	1.11	2.23	4.46	8.36	
Rated current <sup>*1</sup>	A (rms)	0.61	0.84	1.6	2.7	4.7	
Instantaneous max. current <sup>*1</sup>	A (rms)	2.1	2.9	5.8	9.3	16.9	
Rated speed <sup>*1</sup>	min <sup>-1</sup>	3000					
Max. speed <sup>*1</sup>	min <sup>-1</sup>	6000					
Torque constant	N·m/A (rms)	0.285	0.413	0.435	0.512	0.544	
Rotor moment of inertia (JM)	kg·m <sup>2</sup> ×10 <sup>-4</sup> (without brake)	0.0414	0.0665	0.259	0.442	1.57	
	kg·m <sup>2</sup> ×10 <sup>-4</sup> (with brake)	0.0489	0.0740	0.323	0.506	1.74	
Allowable load moment of inertia (JL)	Multiple of (JM)	15			10		
Rated power rate <sup>*1</sup>	kW/s	6.11	15.2	15.7	36.5	36.3	
Rated angular acceleration <sup>*1</sup>	rad/s <sup>2</sup>	38400	47800	24600	28800	15200	
Encoder	Standard	Incremental encoder (20 bits)					
	Option	Incremental encoder (13 bits)/ Absolute encoder (20 bits)					
Allowable radial load	N	78		245		392	
Allowable thrust load	N	54		74		147	
Approx. mass	Kg (without brake)	0.3	0.4	0.9	1.3	2.7	
	Kg (with brake)	0.6	0.7	1.5	1.9	3.6	
Brake specifications	Rated voltage	24 VDC					
	Power consumption (at 20°C)	W	6		6.9		7.7
	Current consumption (at 20°C)	A	0.25		0.29		0.32
	Holding torque	N·m	0.159	0.318	0.637	1.27	2.39
	Rise time for holding torque	ms (max)	100				
	Release time	ms (max)	60				80
Basic specifications	Time rating	Continuous					
	Thermal class	Class B					
	Usage/ storage temperature	0 to +40 °C/ -20 to 60 °C without freezing					
	Usage/ storage humidity	20 to 80% RH (non-condensing)					
	Vibration class	15 µm or below					
	Insulation resistance	500 VDC, 10 MOhm min.					
	Withstand voltage	1500 VAC for one minute					
	Enclosure	Totally-enclosed, self-cooled, IP65 (excluding shaft opening)					
	Vibration resistance	Vibration acceleration 49 m/s <sup>2</sup>					
	Altitude	1000 m or less above sea level					
Mounting	Flange-mounted						

**Note:** \*1. These items and torque/speed characteristics quoted in combination with an SGD servo drive are at an armature winding temperature of 100°C. Other values quoted are at 20°C.

\*2. The rated torques listed here are the values for the continuous allowable torque at 40°C with an aluminium heatsink of the following dimensions attached:  
SGMJV-A5/01: 200 mm x 200 mm x 6 mm, SGMJV-02/04/08: 250 mm x 250 mm x 6 mm

### Torque-speed characteristics

( A : Continuous duty zone B : Intermittent duty zone )



# Type SGMAV, 230 V

## Ratings and specifications

Applied voltage		230 V							
Servo motor model SGMAV- @		A5A@	01A@	C2A@	02A@	04A@	06A@	08A@	10A@
Rated output <sup>*1</sup>	W	50	100	150	200	400	550	750	1000
Rated torque <sup>*1,2</sup>	N·m	0.159	0.318	0.477	0.637	1.27	1.75	2.39	3.18
Instantaneous peak torque <sup>*1</sup>	N·m	0.477	0.955	1.43	1.91	3.82	5.25	7.16	9.55
Rated current <sup>*1</sup>	A (rms)	0.66	0.91	1.3	1.5	2.6	3.8	5.3	7.4
Instantaneous max. current <sup>*1</sup>	A (rms)	2.1	2.8	4.2	5.3	8.5	12.2	16.6	23.9
Rated speed <sup>*1</sup>	min <sup>-1</sup>	3000							
Max. speed <sup>*1</sup>	min <sup>-1</sup>	6000							
Torque constant	N·m/A (rms)	0.265	0.375	0.381	0.450	0.539	0.496	0.487	0.467
Rotor moment of inertia (JM)	kg·m <sup>2</sup> ×10 <sup>-4</sup> (without brake)	0.0242	0.0380	0.0531	0.116	0.190	0.326	0.769	1.2
	kg·m <sup>2</sup> ×10 <sup>-4</sup> (with brake)	0.0312	0.0450	0.0601	0.180	0.254	0.390	0.940	1.41
Allowable load moment of inertia (JL)	Multiple of (JM)	30				20			10
Rated power rate <sup>*1</sup>	kW/s	10.4	26.6	42.8	35.0	84.9	93.9	74.1	84.3
Rated angular acceleration <sup>*1</sup>	rad/s <sup>2</sup>	65800	83800	89900	54900	67000	53700	31000	26500
Encoder	Standard	Incremental encoder (20 bits)							
	Option	Absolute encoder (20 bits)							
Allowable radial load	N	68	78		245			392	
Allowable thrust load	N	54			74			147	
Approx. mass	Kg (without brake)	0.3	0.4	0.5	0.9	1.2	1.7	2.3	3.6
	Kg (with brake)	0.6	0.7	0.8	1.5	1.8	2.4	3.2	4.6
Brake specifications	Rated voltage	24 VDC							
	Power consumption (at 20°C)	6			6.9		8.7	7.7	7
	Current consumption (at 20°C)	0.25			0.29		0.36	0.32	0.29
	Holding torque	0.159	0.318	0.477	0.637	1.27	1.75	2.39	3.18
	Rise time for holding torque	100							
Release time	60							80	
Basic specifications	Time rating	Continuous							
	Thermal class	Class B							
	Usage/ storage temperature	0 to +40 °C/ -20 to 60 °C without freezing							
	Usage/ storage humidity	20 to 80% RH (non-condensing)							
	Vibration class	15 µm or below							
	Insulation resistance	500 VDC, 10 MOhm min.							
	Withstand voltage	1500 VAC for one minute							
	Enclosure	Totally-enclosed, self-cooled, IP65 (excluding shaft opening)							
	Vibration resistance	Vibration acceleration 49 m/s <sup>2</sup>							
	Altitude	1000 m or less above sea level							
Mounting	Flange-mounted								

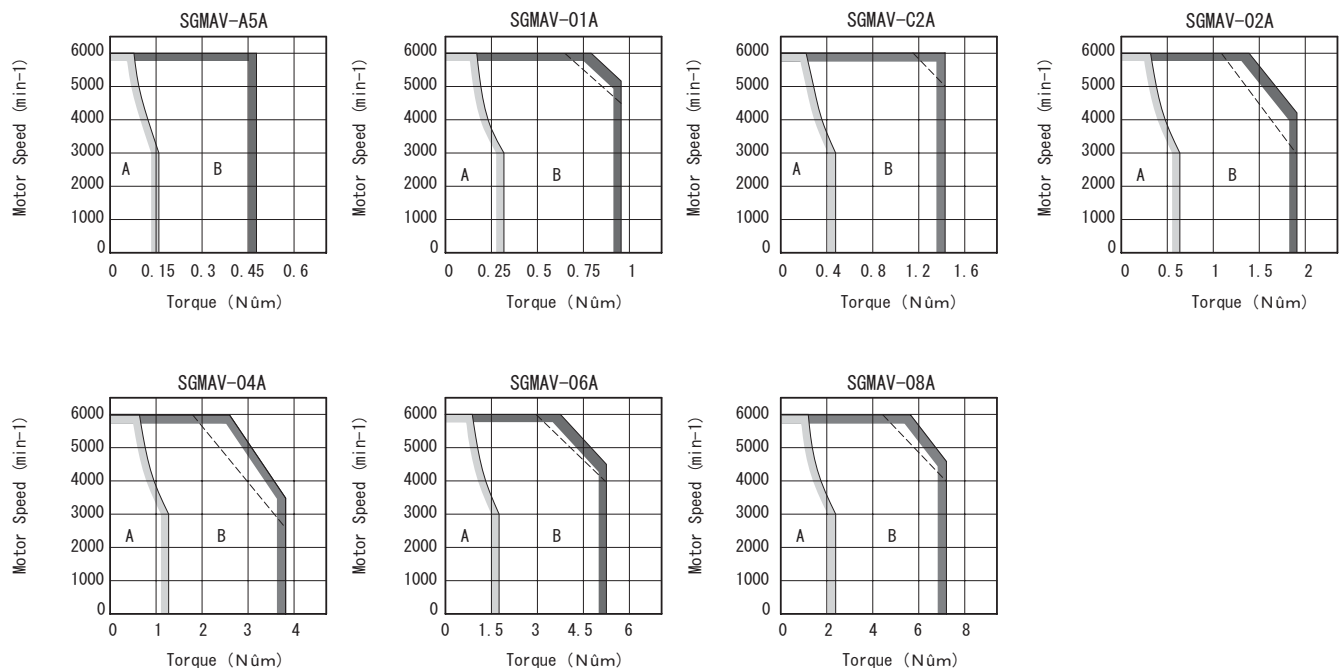
AC Servo systems

**Note:** \*1. These items and torque/speed characteristics quoted in combination with an SGD servo drive are at an armature winding temperature of 100°C. Other values quoted are at 20°C.

\*2. The rated torques listed here are the values for the continuous allowable torque at 40°C with an aluminium heatsink of the following dimensions attached (SGMJV-A5/01:200 mm x 200 mm x 6 mm, SGMJV-02/04/08:250 mm x 250 mm x 6 mm).

### Torque-speed characteristics

( A : Continuous duty zone B : Intermittent duty zone)



Ratings and specifications

Applied voltage		230 V					400 V					
Servo motor model SGMEV- @		01A@	02A@	04A@	08A@	15A@	02D@	03D@	04D@	07D@	08D@	15D@
Rated output <sup>*1</sup>	W	100	200	400	750	1500	200	300	400	650	750	1500
Rated torque <sup>*1,2</sup>	N·m	0.318	0.637	1.27	2.39	4.77	0.637	0.955	1.27	2.07	2.39	4.77
Instantaneous peak torque <sup>*1</sup>	N·m	0.955	1.91	3.82	7.16	14.3	0.191	3.82	3.82	7.16	7.16	14.3
Rated current <sup>*1</sup>	A (rms)	0.89	2.0	2.6	4.1	7.5	1.4	1.3	1.4	2.2	2.6	4.5
Instantaneous max. current <sup>*1</sup>	A (rms)	2.8	6.5	8.5	13.9	23.0	4.5	5.1	4.4	8.4	7.8	13.7
Rated speed <sup>*1</sup>	min <sup>-1</sup>	3000										
Max. speed <sup>*1</sup>	min <sup>-1</sup>	5000										
Torque constant	N·m/A (rms)	0.392	0.349	0.535	0.641	0.687	0.481	0.837	0.963	1.02	0.994	1.135
Rotor moment of inertia (JM)	kg·m <sup>2</sup> ×10 <sup>-4</sup> (without brake)	0.049	0.193	0.331	2.1	4.02	0.193	0.173	0.331	0.672	2.1	4.02
	kg·m <sup>2</sup> ×10 <sup>-4</sup> (with brake)	0.078	0.302	0.440	2.975	4.895	0.302	0.231	0.440	0.812	2.975	4.895
Allowable load moment of inertia (JL)	Multiple of (JM)	25	15	7	5		15	20	7	20	5	
Rated power rate <sup>*1</sup>	kW/s	20.6	21.0	49.0	27.1	56.7	21	52.9	49.0	63.8	27.1	56.7
Rated angular acceleration <sup>*1</sup>	rad/s <sup>2</sup>	64800	33000	38500	11400	11900	33000	55300	38500	30800	11400	11900
Encoder	Standard	Incremental encoder (20 bits)										
	Option	Absolute encoder (20 bits)										
Allowable radial load	N	78	245		392	490	245	345	245	392		490
Allowable thrust load	N	49	68		147		68	74	68	147		
Approx. mass	Kg (without brake)	0.7	1.4	2.1	4.2	6.6	1.4	1.7	2.1	3.4	4.2	6.6
	Kg (with brake)	0.9	1.9	2.6	5.7	8.1	1.9	2.2	2.6	4.3	5.7	8.1
Holding brake moment of inertia J	kg·m <sup>2</sup> ×10 <sup>-4</sup>	0.029	0.109		0.875		0.109	0.058	0.109	0.140	0.875	
Basic specifications	Time rating	Continuous										
	Thermal class	Class B										
	Usage/ storage temperature	0 to +40 °C/ -20 to 60 °C without freezing										
	Usage/ storage humidity	20 to 80% RH (non-condensing)										
	Vibration class	15 µm or below										
	Insulation resistance	500 VDC, 10 MOhm min.										
	Withstand voltage	1500 VAC for one minute										
	Enclosure	Totally-enclosed, self-cooled, IP55 <sup>*3</sup>										
	Vibration resistance	Vibration acceleration xx m/s <sup>2</sup>										
	Altitude	1000 m or less above sea level										
Mounting	Flange-mounted											

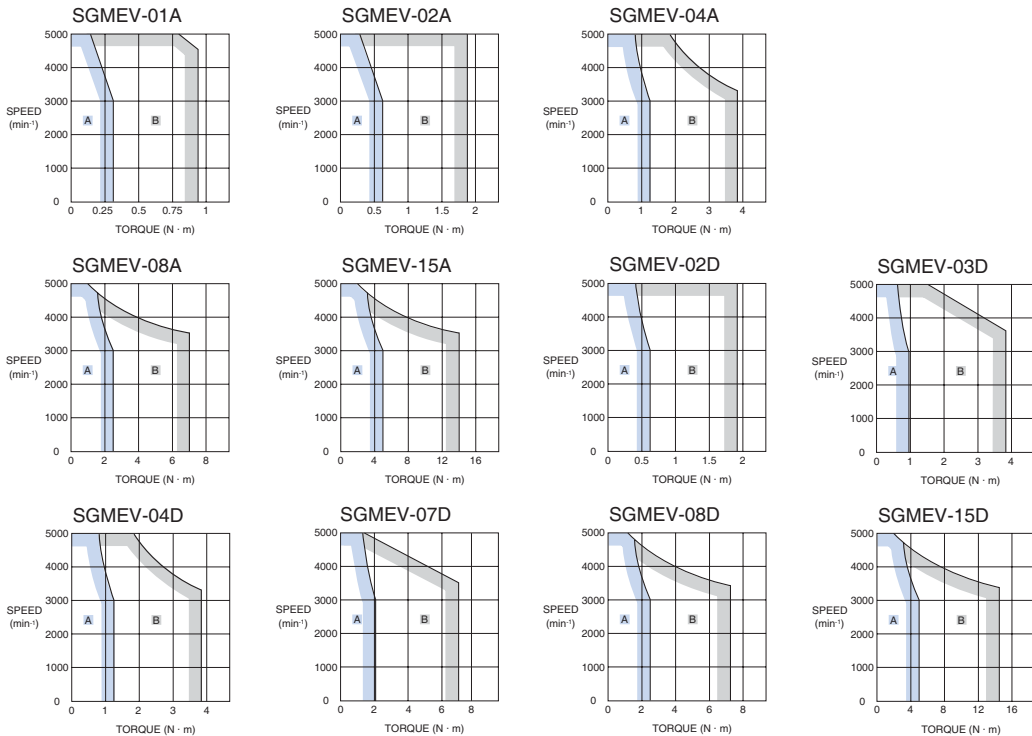
**Note:** \*1. These items and torque/speed characteristics quoted in combination with an SGD servo drive are at an armature winding temperature of 100°C. Other values quoted are at 20°C.

\*2. The rated torques listed here are the values for the continuous allowable torque at 40°C with an aluminium heatsink of the following dimensions attached (SGMEV-01A/02A/04A/02D/03D/04D/07D: 250 mm x 250 mm x 6 mm, SGMEV-08A/15A/08D/15D: 300 mm x 300 mm x 12 mm)

\*3. IP55 in case of standard cable attaching. IP67 is possible unless SGMEV-03D/07D servomotors.

Torque-speed characteristics

( A : Continuous Duty Zone B : Intermittent Duty Zone)



# Type SGMGV, 400 V

## Ratings and specifications

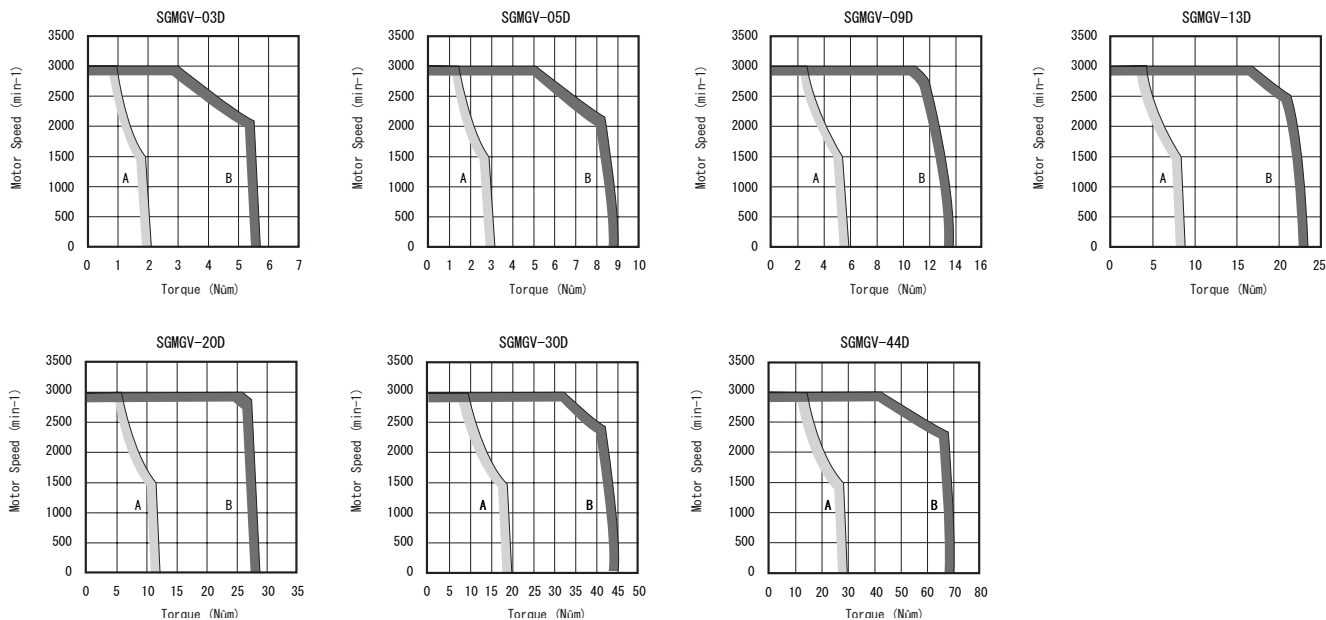
Applied voltage		400 V							
Servo motor model SGMGV- @		03D@	05D@	09D@	13D@	20D@	30D@	44D@	
Rated output <sup>*1</sup>	kW	0.3	0.45	0.85	1.3	1.8	2.9	4.4	
Rated torque <sup>*1</sup>	N·m	1.96	2.86	5.39	8.34	11.5	18.6	28.4	
Instantaneous peak torque <sup>*1</sup>	N·m	5.88	8.92	13.8	23.3	28.7	45.1	71.1	
Rated current <sup>*1</sup>	A (rms)	1.4	1.9	3.5	5.4	8.4	11.9	16.5	
Instantaneous max. current <sup>*1</sup>	A (rms)	4	5.5	8.5	14	20	28	40.5	
Rated speed <sup>*1</sup>	min <sup>-1</sup>	1500							
Max. speed <sup>*1</sup>	min <sup>-1</sup>	3000							
Torque constant	N·m/A (rms)	1.55	1.71	1.72	1.78	1.50	1.70	1.93	
Rotor moment of inertia (JM)	kg·m <sup>2</sup> ×10 <sup>-4</sup> (without brake)	2.48	3.33	13.9	19.9	26	46	67.5	
	kg·m <sup>2</sup> ×10 <sup>-4</sup> (with brake)	2.69	3.54	16	22	28.1	54.5	76	
Allowable load moment of inertia (JL)	Multiple of (JM)	5							
Rated power rate <sup>*1</sup>	kW/s (without brake)	15.5	24.6	20.9	35.0	50.9	75.2	119	
	kW/s (with brake)	14.3	23.1	18.2	31.6	47.1	63.5	106	
Rated angular acceleration <sup>*1</sup>	rad/s <sup>2</sup> (without brake)	7900	8590	3880	4190	4420	4040	4210	
	rad/s <sup>2</sup> (with brake)	7290	8080	3370	3790	4090	3410	3740	
Encoder	Standard	Incremental encoder (20 bits)							
	Option	Absolute encoder (20 bits)							
Allowable radial load	N	490			686	980	1470		
Allowable thrust load	N	98			343	392	490		
Approx. mass	Kg (without brake)	2.6	3.2	5.5	7.1	8.6	13.4	17.5	
	Kg (with brake)	4.5	5.0	7.5	9.0	11.0	19.5	23.5	
Brake specifications	Rated voltage	24 /90 VDC							
	Power consumption (at 20°C)	W (24 VDC)	10			9.8		18.5	
		W (90 VDC)	10			10.1		18.5	
	Current consumption (at 20°C)	A (24 VDC)	0.42			0.41		0.77	
		A (90 VDC)				0.11		0.21	
	Holding torque	N·m	4.5		12.7	19.6			
	Rise time for holding torque	ms (max)				80	100 (24 V), 80 (90 V)		
Release time	ms (max)				100	170			
Basic specifications	Time rating	Continuous							
	Thermal class	Class F							
	Usage/ storage temperature	0 to +40 °C/ -20 to 60 °C without freezing							
	Usage/ storage humidity	20 to 80% RH (non-condensing)							
	Insulation resistance	500 VDC, 10 MOhm min.							
	Withstand voltage	1500 VAC for one minute							
	Vibration class	15 µm or below							
	Enclosure	Totally-enclosed, self-cooled, IP67 (excluding shaft opening)							
	Vibration resistance	Vibration acceleration 24.5 m/s <sup>2</sup>							
	Altitude	1000 m or less above sea level							
Mounting	Flange-mounted								

AC Servo systems

**Note:** \*1. These items and torque/speed characteristics quoted in combination with an SGDv servo drive are at an armature winding temperature of 20°C.

### Torque-speed characteristics

( A : Continuous duty zone B : Intermittent duty zone)



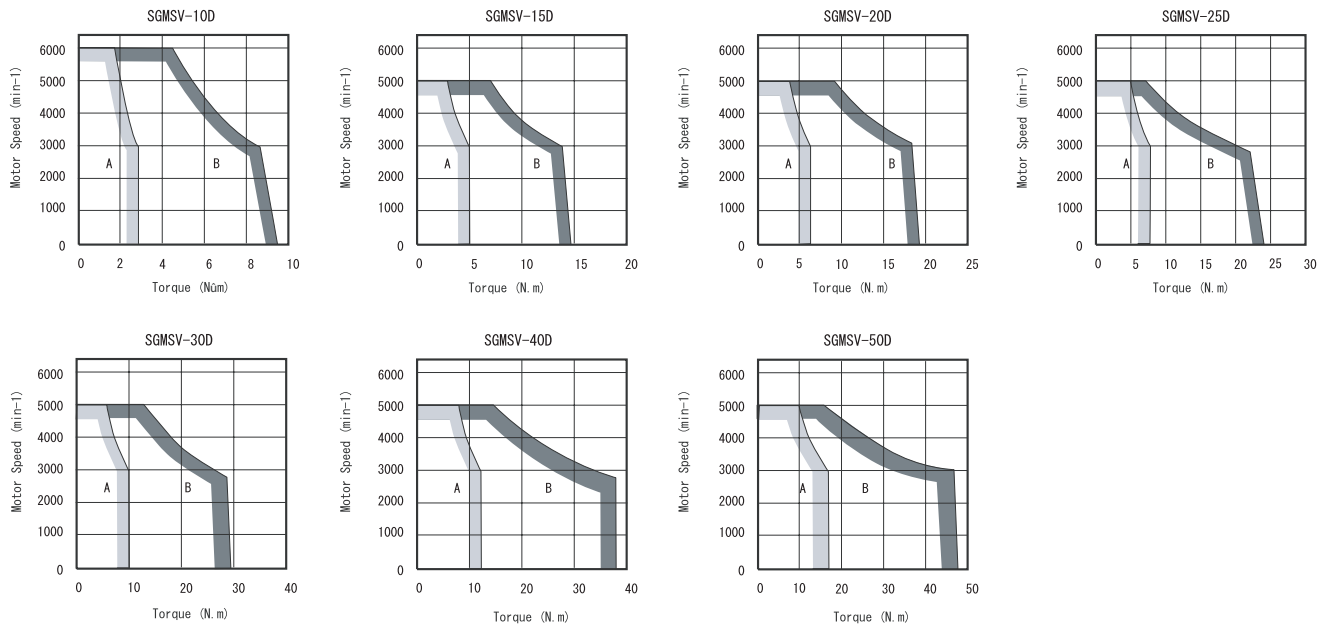
Ratings and specifications

Applied voltage		400 V							
Servo motor model SGMSV- @		10D@	15D@	20D@	25D@	30D@	40D@	50D@	
Rated output <sup>1</sup>	kW	1.0	1.5	2.0	2.5	3.0	4.0	5.0	
Rated torque <sup>*1,2</sup>	N·m	3.18	4.9	6.36	7.96	9.8	12.6	15.8	
Instantaneous peak torque <sup>1</sup>	N·m	9.54	14.7	19.1	23.9	29.4	37.8	47.6	
Rated current <sup>1</sup>	A	2.8	4.7	6.1	7.4	8.9	12.5	13.8	
Instantaneous max. current <sup>1</sup>	A (rms)	8.5	14	19.5	22.3	28	38	42	
Rated speed <sup>1</sup>	min <sup>-1</sup>	3000							
Max. speed <sup>1</sup>	min <sup>-1</sup>	6000	5000						
Torque constant	N·m/A (rms)	1.27	1.15	1.12	1.15	1.16	1.06	1.21	
Rotor moment of inertia (JM)	kg·m <sup>2</sup> ×10 <sup>-4</sup> (without brake)	1.74	2.0	2.47	3.19	7.0	9.60	12.3	
	kg·m <sup>2</sup> ×10 <sup>-4</sup> (with brake)	1.99	2.25	2.72	3.44	9.2	11.8	14.5	
Allowable load moment of inertia (JL)	Multiple of (JM)	5							
Rated power rate <sup>1</sup>	kW/s	57.9	97.2	127	199	137	165	203	
Rated angular acceleration <sup>1</sup>	rad/s <sup>2</sup>	18300	24500	25700	25000	14000	13100	12800	
Encoder	Standard	Incremental encoder (20 bits)							
	Option	Absolute encoder (20 bits)							
Allowable radial load	N	686				980	1176		
Allowable thrust load	N	196				392			
Approx. mass	Kg (without brake)	4.6	5.1	5.8	7.0	11	14	17	
	Kg (with brake)	5.5	6	6.8	8.7	13	16	19	
Basic specifications	Time rating	Continuous							
	Thermal class	Class F							
	Usage/ storage temperature	0 to +40 °C/ -20 to 60°C without freezing							
	Usage/ storage humidity	20 to 80% RH (non-condensing)							
	Vibration class	15 µm or below							
	Insulation resistance	500 VDC, 10 MOhm min.							
	Withstand voltage	1500 VAC for one minute							
	Enclosure	Totally-enclosed, self-cooled, IP67 (excluding shaft opening)							
	Vibration resistance	Vibration acceleration xx.x m/s <sup>2</sup>							
	Altitude	1000 m or less above sea level							
Mounting	Flange-mounted								

**Note:** \*1. These items and torque/speed characteristics quoted in combination with an SGD servo drive are at an armature winding temperature of 20°C.  
 \*2. The rated torques listed here are the values for the continuous allowable torque value with an aluminium heatsink of the following dimensions attached (SGMSV-10/15/20/25: 300 mm x 300 mm x 12 mm, SGMSV-30/40/50: 400 mm x 400 mm x 20 mm ).

Torque-speed characteristics

A : Continuous Duty Zone B : Intermittent Duty Zone

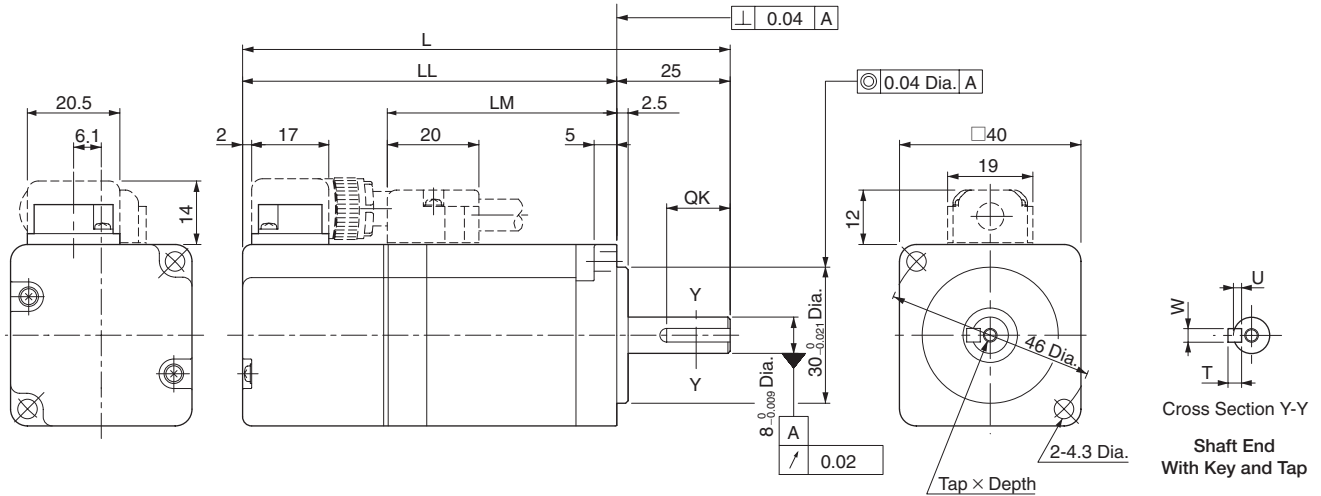


# Dimensions

## Servomotors

### Type SGMJV (230 V, 50 - 100 W)

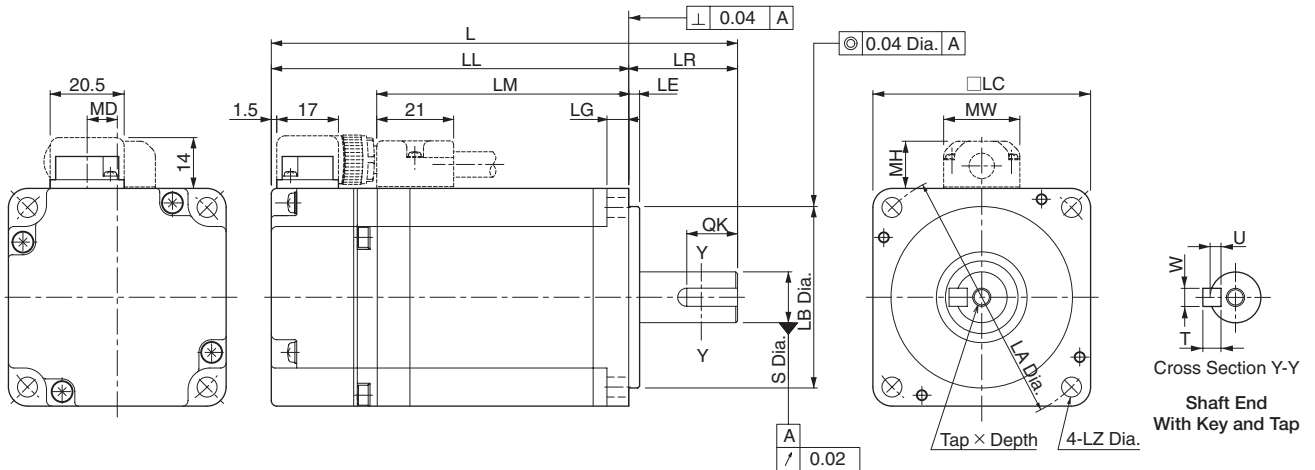
Dimensions (mm)	Without brake		With brake		LM	Shaft End Dimensions					Approx. Mass (Kg)	
	L	LL	L	LL		Tap × Depth	QK	U	W	T	Without brake	With brake
SGMJV-A5A@A6@-OY	94	69	139	114	37	M3 x 6L	14	1.8	3	3	0.3	0.6
SGMJV-01A@A6@-OY	107.5	82.5	152.5	127.5	50.5						0.4	0.7



AC Servo systems

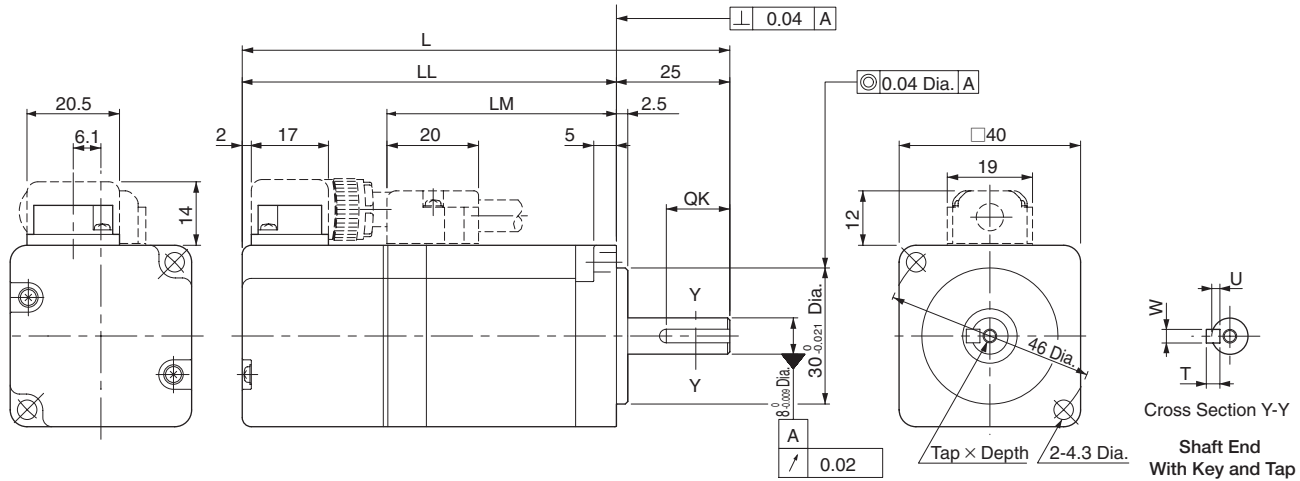
### Type SGMJV (230 V, 200 - 750 W)

Dimensions (mm)	Without brake		With brake		LM	Flange Face Dimensions						Shaft End Dimensions					MD	MW	MH	Approx. Mass Kg			
	L	LL	L	LL		LR	LE	LG	LC	LA	LB	LZ	S	Tap × Depth	QK	U				W	T	Without brake	With brake
SGMJV-02A@A6@-OY	110	80	150	120	51	30	3	6	60	70	50 <sup>0</sup>	5.5	14 <sup>0</sup>	M5x8L	14	3	5	5	8.3	21	13	0.9	1.5
SGMJV-04A@A6@-OY	128.5	98.5	168.5	138.5	69.5						-0.025		-0.011									1.3	1.9
SGMJV-08A@A6@-OY	155	115	200	160	85	40		8	80	90	70 <sup>0</sup>	7	19 <sup>0</sup>	M6x10L	22	3.5	6	6	13.8	27	15	2.3	3.2



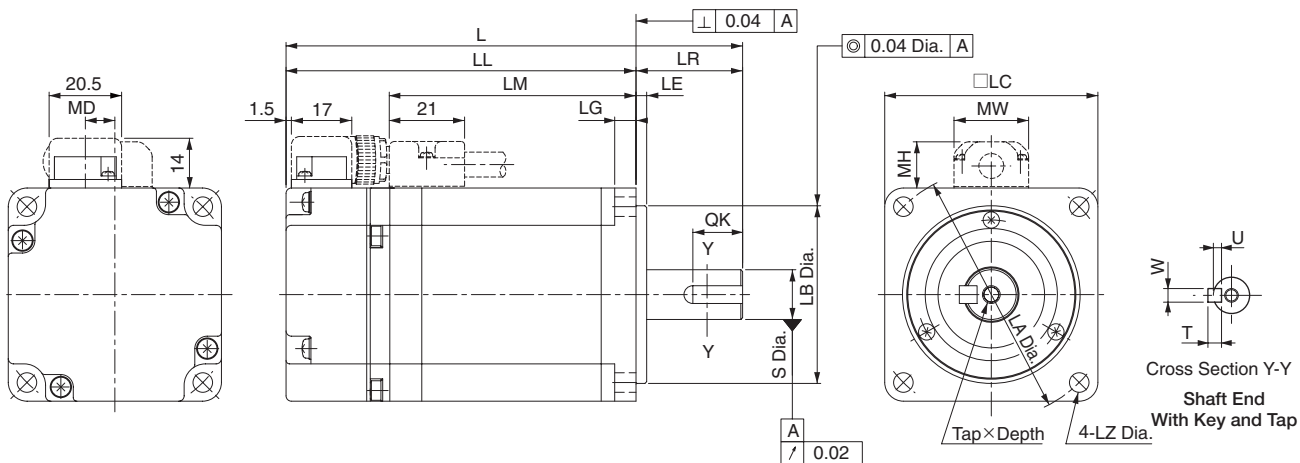
### Type SGMAV (230 V, 50 - 150 W)

Dimensions (mm)	Without brake		With brake		LM	Shaft End Dimensions					Approx. Mass (Kg)	
	L	LL	L	LL		Tap x Depth	QK	U	W	T	Without brake	With brake
SGMAV-A5A@A6@-OY	95.5	70.5	140.5	115.5	38.5	M3x6L	14	1.8	3	3	0.3	0.6
SGMAV-01A@A6@-OY	107.5	82.5	152.5	127.5	50.5						0.4	0.7
SGMAV-C2A@A6@-OY	119.5	94.5	164.5	139.5	62.5						0.5	0.8



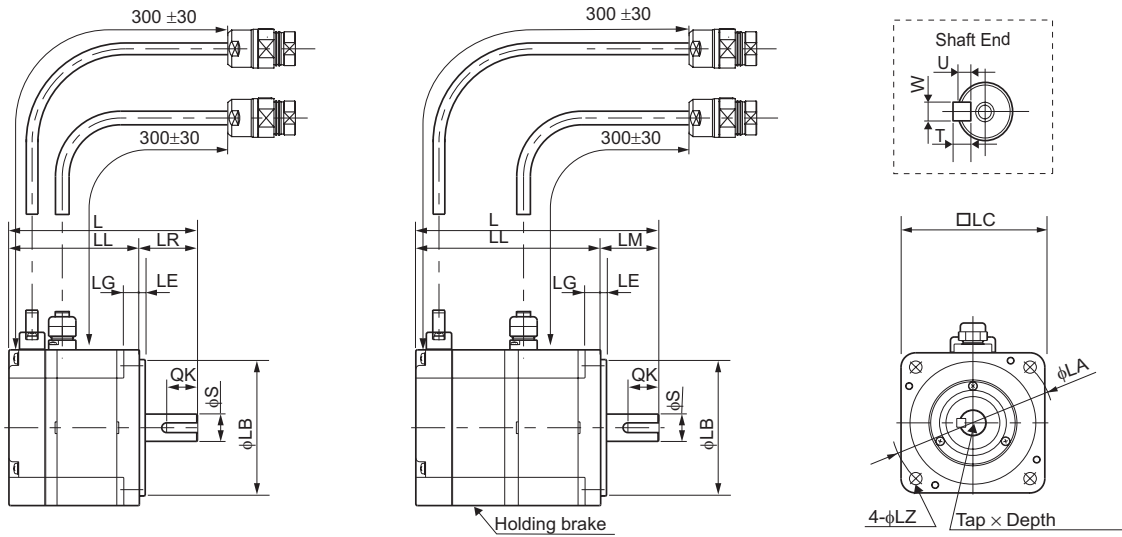
### Type SGMAV (230 V, 200 - 750 W)

Dimensions (mm)	Without brake		With brake		LM	Flange Face Dimensions							Shaft End Dimensions					MD	MW	MH	Approx. Mass (Kg)		
	L	LL	L	LL		LR	LE	LG	LC	LA	LB	LZ	S	Tap x Depth	QK	U	W				T	Without brake	With brake
SGMAV-02A@A6@-OY	110	80	150	120	51	30	3	6	60	70	50 <sup>U</sup>	5.5	14 <sup>U</sup>	M5x8L	20	3	5	5	8.5	21	13	0.9	1.5
SGMAV-04A@A6@-OY	128.5	98.5	168.5	138.5	69.5						-0.025		-0.011		14							1.2	1.9
SGMAV-06A@A6@-OY	154.5	124.5	200.5	170.5	95.5																	1.7	2.4
SGMAV-08A@A6@-OY	155	115	200	160	85	40		8	80	90	70 <sup>U</sup>	7	19 <sup>U</sup>	M6x10L	22	3.5	6	6	13.8	27	15	2.3	3.2
SGMAV-10A@A6@-OY	185	145	235	195	115						-0.030		-0.013									3.6	4.6



**Type SGMEV (230/400 V, 100 - 1500 W)**

Dimensions (mm)	Without brake		With brake		LM	Flange Face Dimensions						Shaft End Dimensions					Approx. Mass (Kg)			
	L	LL	L	LL		LA	LB	LC	LE	LG	LZ	S	QK	W	T	U	Tap x Depth	Without brake	With brake	
SGMEV-01A@A6@-OY	87	62	116	91	25	70	50 <sup>U</sup> -0.030	60	3	6		8 <sup>U</sup> -0.011	14	3	3	1.8	M3 x 6L	0.7	0.9	
SGMEV-02A@A6@-OY	97	67	128.5	98.5	30	90	70 <sup>U</sup> -0.030	80		8	7	14 <sup>U</sup> -0.011	16	5	5	3	M5 x 8L	1.4	1.9	
SGMEV-02D@A6@-OY																		2.1	2.6	
SGMEV-04A@A6@-OY	117	87	148.5	118.5	40	145	110 <sup>U</sup> -0.035	120	3.5	10	10	16 <sup>U</sup> -0.011	22	6	6	3.5	M6 x 10L	4.2	4.7	
SGMEV-04D@A6@-OY												19 <sup>U</sup> -0.013						6.6	8.1	
SGMEV-08A@A6@-OY	126.5	86.5	160	120																
SGMEV-08D@A6@-OY	154.5	114.5	188	148																
SGMEV-15A@A6@-OY																				
SGMEV-15D@A6@-OY																				

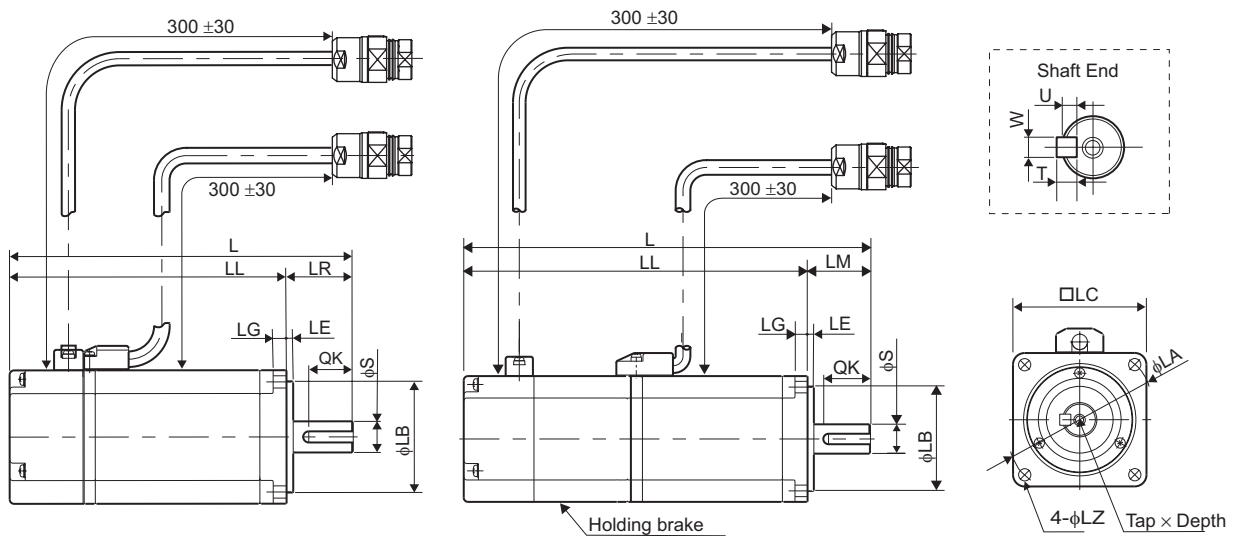


Models without Brake

Models with Brake

**Type SGMEV (400 V, 300 - 650 W)**

Dimensions (mm)	Without brake		With brake		LM	Flange Face Dimensions						Shaft End Dimensions					Approx. Mass (Kg)		
	L	LL	L	LL		LA	LB	LC	LE	LG	LZ	S	QK	W	T	U	Tap x Depth	Without brake	With brake
SGMEV-03D@A6@-OY	154.5	124.5	194	164	30	70	50 <sup>U</sup> -0.025	60	3	6	5.5	14 <sup>U</sup> -0.011	20	5	5	3	M5 x 8L	1.7	2.2
SGMEV-07D@A6@-OY	185	145	229.5	189.5	40	90	70 <sup>U</sup> -0.030	80	3	8	70	16 <sup>U</sup> -0.011	30					3.4	4.3

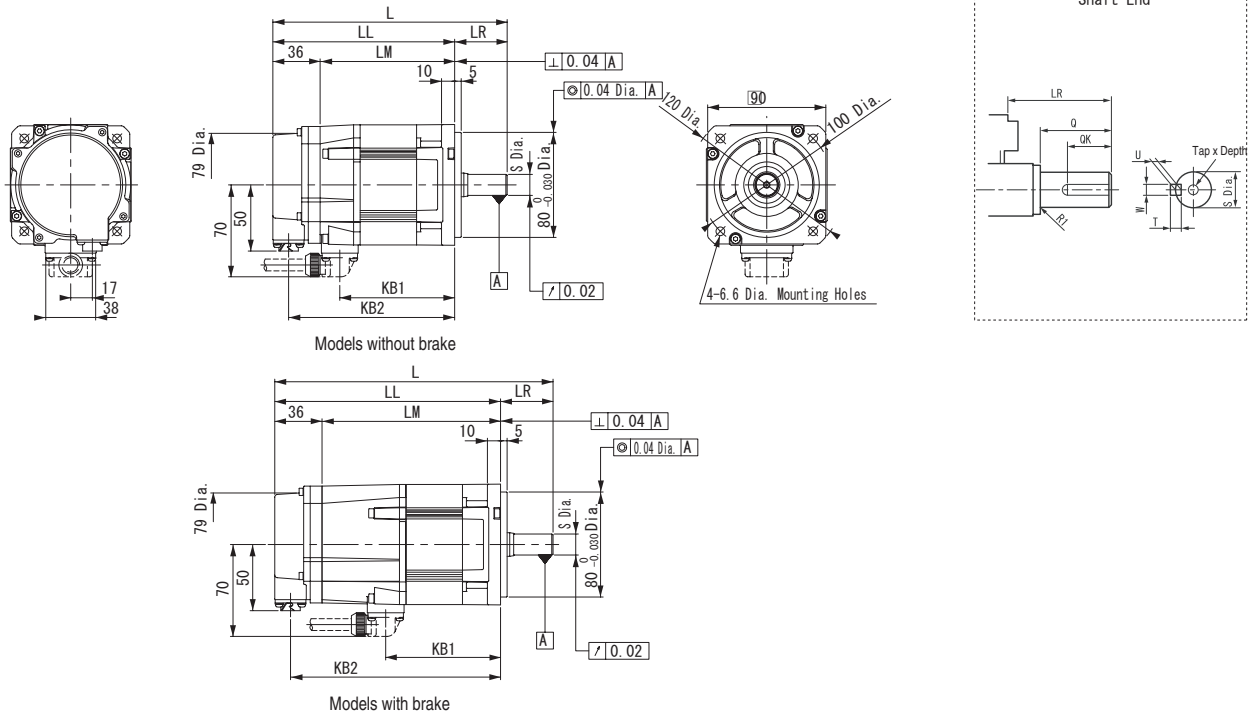


Models without Brake

Models with Brake

## Type SGMGV (400 V, 300 - 450 W)

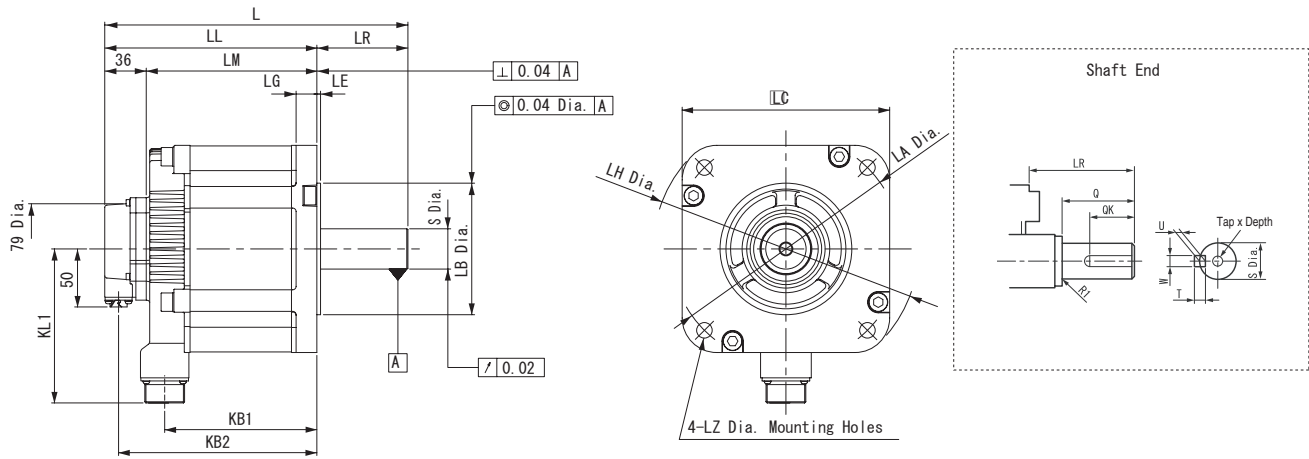
Dimensions (mm)	Without brake				With brake				LR	KB1	Shaft End Dimensions							Approx. Mass (Kg)	
	L	LL	LM	KB2	L	LL	LM	KB2			S	Q	QK	W	T	U	Tap x Depth	Without brake	With brake
SGMGV-03D@A6@-OY	163	126	90	114	196	159	123	147	37	75	14 <sup>U</sup> <sub>-0.011</sub>	25	15	5	5	3	M4 x 10L	2.6	4.5
SGMGV-05D@A6@-OY	179	139	103	127	212	172	136	160	40	88	14 <sup>U</sup> <sub>-0.011</sub>	30	20				M4 x 12L	3.2	5.0



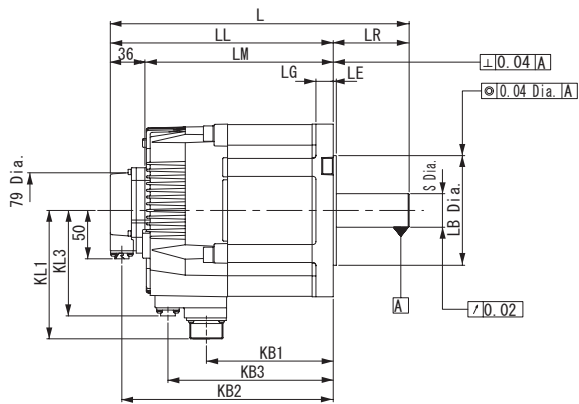
Type SGMGV (400 V, 850 W- 4.4 kW)

Dimensions (mm)	Without brake				With brake					LR	KB1	KL1	Flange Face Dimensions						Shaft End Dimensions						Approx. Mass (Kg)				
	L	LL	LM	KB2	L	LL	LM	KB2	KB3				KL3	LA	LB	LC	LE	LG	LH	LZ	S	Q	QK	W	T	U	Tap x Depth	Without brake	With brake
SGMGV-09D@A6@-OY	195	137	101	125	231	173	137	161	115	80	58	83	104	145	110 <sup>U</sup> -0.035	130	6	12	165	9	19 <sup>U</sup> -0.013	40	25	5	5	3	M5 x 12L	5.5	7.5
SGMGV-13D@A6@-OY	211	153	117	141	247	189	153	177	131			99									22 <sup>U</sup> -0.013			6	6	3.5		7.1	9.0
SGMGV-20D@A6@-OY	229	171	135	159	265	207	171	195	149			117									24 <sup>U</sup> -0.013			8	7	4		8.6	11.0
SGMGV-30D@A6@-OY	239	160	124	148	287	208	172	196	148	110	79	108	134	200	114.3 <sup>U</sup> -0.025	180	3.2	18	230	13.5	35 <sup>+0.01</sup> 0	76	60	10	8	5	M12 x 25L	13.4	19.5
SGMGV-44D@A6@-OY	263	184	148	172	311	232	196	220	172			132															17.5	23.5	

AC Servo systems



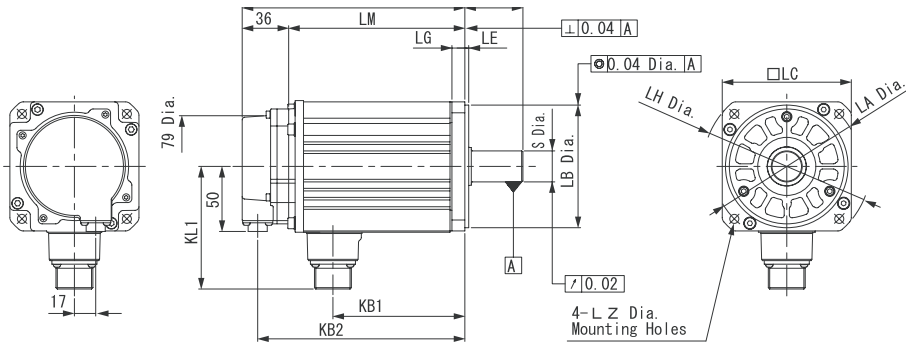
Models without brake



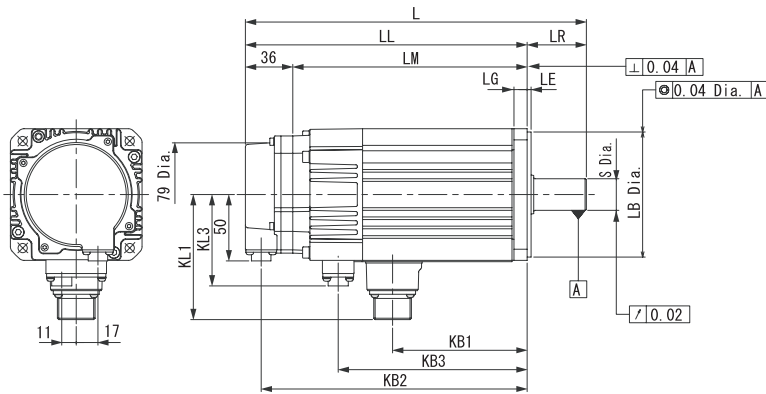
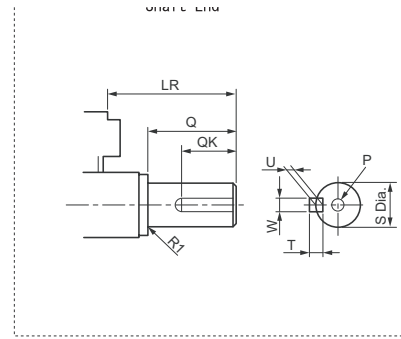
Models with brake

# Type SGMSV (400 V, 1 - 5 kW)

Dimensions (mm)	Without brake					With brake							KB1	KL1	Flange Face Dimensions								Shaft End Dimensions							Approx. Mass (Kg)	
	L	LL	LM	LR	KB2	L	LL	LM	LR	KB2	KB3	KL2			LA	LB	LC	LE	LF	LG	LH	LZ	S	Q	QK	W	T	U	Tap x Depth	Without brake	With brake
SGMSV-10D@A2@-OY	192	147	111	45	135	233	188	152	45	118	176	69	76	96	115	95 <sup>0</sup> -0.035	100	3	3	10	130	7	24 <sup>0</sup> -0.013	40	32	8	7	4	M8 x 16L	4.1	5.5
SGMSV-15D@A2@-OY	211	153	117	58	141	243	198	162	45	128	186		99																	4.6	6
SGMSV-20D@A2@-OY	229	171	135	58	159	259	214	178	45	144	202		117																	5.4	6.8
SGMSV-25D@A2@-OY	239	160	124	79	148	292	247	211	45	177	225		108																	6.8	8.7
SGMSV-30D@A2@-OY	259	196	160	63	184	295	232	196	63	176	220	81	124	114	145	110 <sup>0</sup> -0.035	130	6	6	12	165	9	28 <sup>0</sup> -0.013	55	50					10.5	13
SGMSV-40D@A2@-OY	296	233	197	63	221	332	269	233	63	213	257		161																	13.5	16
SGMSV-50D@A2@-OY	336	273	237	63	261	372	309	273	63	253	297		201																	16.5	19



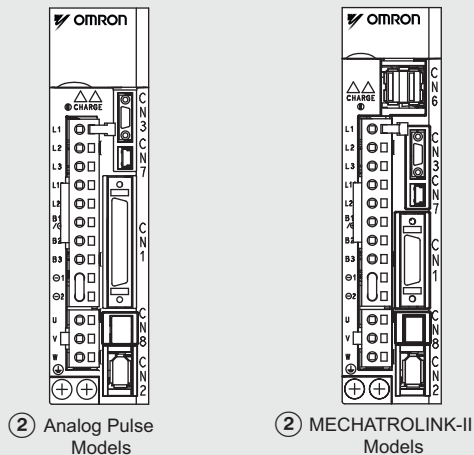
Models without brake



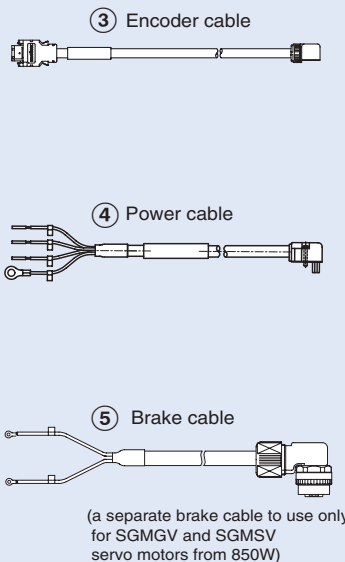
Models with brake

(Refer to servo drive chapter)

## Drive options



## Power, encoder and brake cables



## Servo motors

- ① SGMJV Servo Motor  
3000 rpm (50-750 W)
- ① SGMAV Servo Motor  
3000 rpm (50W-1kW)
- ① SGMEV Servo Motor  
3000 rpm (100W-1.5kW)
- ① SGMGV Servo Motor  
1500 rpm (300W-4.4 kW)
- ① SGMSV Servo Motor  
3000 rpm (1-5kW)

**Note:** The symbols ①②③... show the recommended sequence to select the servo motor and cables


### Servo motor

- ① Select motor from families SGMJV, SGMAV, SGMEV, SGMGV, SGMSV using motor tables in next pages.


### Servo drive

- ② Refer to Sigma-5 servo drive chapter for detailed drive specifications and selection of drive accessories.

SGMJV - servo motors 3000 r/min (50 - 750 W)


Symbol	Specifications				Servo motor model	Compatible servo drives (2)	
	Voltage	Encoder and design		Rated torque			Capacity
① 	230 V	Incremental encoder (13 bit)	Without brake	0.159 Nm	50 W	SGMJV-A5AAA61-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMJV-01AAA61-OY	SGDV-01A@1A-OY
				0.637 Nm	200 W	SGMJV-02AAA61-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMJV-04AAA61-OY	SGDV-04A@1A-OY
				2.39 Nm	750 W	SGMJV-08AAA61-OY	SGDV-08A@1A-OY
				2.39 Nm	750 W	SGMJV-08AAA61-OY	SGDV-08A@1A-OY
			With brake	0.159 Nm	50 W	SGMJV-A5AAA6C-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMJV-01AAA6C-OY	SGDV-01A@1A-OY
				0.637 Nm	200 W	SGMJV-02AAA6C-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMJV-04AAA6C-OY	SGDV-04A@1A-OY
				2.39 Nm	750 W	SGMJV-08AAA6C-OY	SGDV-08A@1A-OY
				2.39 Nm	750 W	SGMJV-08AAA6C-OY	SGDV-08A@1A-OY
		Incremental encoder (20 bit)	Without brake	0.159 Nm	50 W	SGMJV-A5ADA61-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMJV-01ADA61-OY	SGDV-01A@1A-OY
				0.637 Nm	200 W	SGMJV-02ADA61-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMJV-04ADA61-OY	SGDV-04A@1A-OY
				2.39 Nm	750 W	SGMJV-08ADA61-OY	SGDV-08A@1A-OY
				2.39 Nm	750 W	SGMJV-08ADA61-OY	SGDV-08A@1A-OY
			With brake	0.159 Nm	50 W	SGMJV-A5ADA6C-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMJV-01ADA6C-OY	SGDV-01A@1A-OY
				0.637 Nm	200 W	SGMJV-02ADA6C-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMJV-04ADA6C-OY	SGDV-04A@1A-OY
				2.39 Nm	750 W	SGMJV-08ADA6C-OY	SGDV-08A@1A-OY
				2.39 Nm	750 W	SGMJV-08ADA6C-OY	SGDV-08A@1A-OY
Absolute encoder (20 bit)	Without brake	0.159 Nm	50 W	SGMJV-A5A3A61-OY	SGDV-A5A@1A-OY		
		0.318 Nm	100 W	SGMJV-01A3A61-OY	SGDV-01A@1A-OY		
		0.637 Nm	200 W	SGMJV-02A3A61-OY	SGDV-02A@1A-OY		
		1.27 Nm	400 W	SGMJV-04A3A61-OY	SGDV-04A@1A-OY		
		2.39 Nm	750 W	SGMJV-08A3A61-OY	SGDV-08A@1A-OY		
		2.39 Nm	750 W	SGMJV-08A3A61-OY	SGDV-08A@1A-OY		
	With brake	0.159 Nm	50 W	SGMJV-A5A3A6C-OY	SGDV-A5A@1A-OY		
		0.318 Nm	100 W	SGMJV-01A3A6C-OY	SGDV-01A@1A-OY		
		0.637 Nm	200 W	SGMJV-02A3A6C-OY	SGDV-02A@1A-OY		
		1.27 Nm	400 W	SGMJV-04A3A6C-OY	SGDV-04A@1A-OY		
		2.39 Nm	750 W	SGMJV-08A3A6C-OY	SGDV-08A@1A-OY		
		2.39 Nm	750 W	SGMJV-08A3A6C-OY	SGDV-08A@1A-OY		

SGMAV - servo motors 3000 r/min (50 - 750 W)

Symbol	Specifications				Servo motor model	Compatible servo drives (2)	
	Voltage	Encoder and design		Rated torque			Capacity
① 	230 V	Incremental encoder (20 bit)	Without brake	0.159 Nm	50 W	SGMAV-A5ADA61-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMAV-01ADA61-OY	SGDV-01A@1A-OY
				0.477 Nm	150 W	SGMAV-C2ADA61-OY	SGDV-02A@1A-OY
				0.637 Nm	200 W	SGMAV-02ADA61-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMAV-04ADA61-OY	SGDV-04A@1A-OY
				1.75 Nm	550 W	SGMAV-06ADA61-OY	SGDV-08A@1A-OY
				2.39 Nm	750 W	SGMAV-08ADA61-OY	SGDV-08A@1A-OY
				3.18 Nm	1 kW	SGMAV-10ADA61-OY	SGDV-15A@1A-OY-008000
				3.18 Nm	1 kW	SGMAV-10ADA61-OY	SGDV-15A@1A-OY-008000
			With brake	0.159 Nm	50 W	SGMAV-A5ADA6C-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMAV-01ADA6C-OY	SGDV-01A@1A-OY
				0.477 Nm	150 W	SGMAV-C2ADA6C-OY	SGDV-02A@1A-OY
				0.637 Nm	200 W	SGMAV-02ADA6C-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMAV-04ADA6C-OY	SGDV-04A@1A-OY
				1.75 Nm	550 W	SGMAV-06ADA6C-OY	SGDV-08A@1A-OY
				2.39 Nm	750 W	SGMAV-08ADA6C-OY	SGDV-08A@1A-OY
				3.18 Nm	1 kW	SGMAV-10ADA6C-OY	SGDV-15A@1A-OY-008000
				3.18 Nm	1 kW	SGMAV-10ADA6C-OY	SGDV-15A@1A-OY-008000
		Absolute encoder (20 bit)	Without brake	0.159 Nm	50 W	SGMAV-A5A3A61-OY	SGDV-A5A@1A-OY
				0.318 Nm	100 W	SGMAV-01A3A61-OY	SGDV-01A@1A-OY
				0.477 Nm	150 W	SGMAV-C2A3A61-OY	SGDV-02A@1A-OY
				0.637 Nm	200 W	SGMAV-02A3A61-OY	SGDV-02A@1A-OY
				1.27 Nm	400 W	SGMAV-04A3A61-OY	SGDV-04A@1A-OY
				1.75 Nm	550 W	SGMAV-06A3A61-OY	SGDV-08A@1A-OY
With brake	Without brake	2.39 Nm	750 W	SGMAV-08A3A61-OY	SGDV-08A@1A-OY		
		3.18 Nm	1 kW	SGMAV-10A3A61-OY	SGDV-15A@1A-OY-008000		
		0.159 Nm	50 W	SGMAV-A5A3A6C-OY	SGDV-A5A@1A-OY		
		0.318 Nm	100 W	SGMAV-01A3A6C-OY	SGDV-01A@1A-OY		
		0.477 Nm	150 W	SGMAV-C2A3A6C-OY	SGDV-02A@1A-OY		
		0.637 Nm	200 W	SGMAV-02A3A6C-OY	SGDV-02A@1A-OY		
With brake	With brake	1.27 Nm	400 W	SGMAV-04A3A6C-OY	SGDV-04A@1A-OY		
		1.75 Nm	550 W	SGMAV-06A3A6C-OY	SGDV-08A@1A-OY		
		2.39 Nm	750 W	SGMAV-08A3A6C-OY	SGDV-08A@1A-OY		
		3.18 Nm	1 kW	SGMAV-10A3A6C-OY	SGDV-15A@1A-OY-008000		
		3.18 Nm	1 kW	SGMAV-10A3A6C-OY	SGDV-15A@1A-OY-008000		
		3.18 Nm	1 kW	SGMAV-10A3A6C-OY	SGDV-15A@1A-OY-008000		



**SGMGV - servo motors 1500 r/min (300 W - 4.4 kW)**

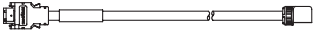

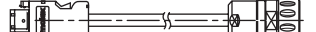
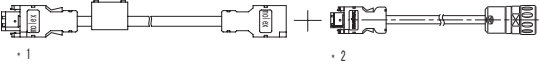

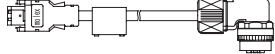
Symbol	Specifications				Servo motor model	Compatible servo drives <sup>(2)</sup>	
	Voltage	Encoder and design	Rated torque	Capacity			
① 	400 V	<b>Incremental encoder (20 bit)</b> Straight shaft with key and tap	Without brake	1.96 Nm	300 W	SGMGV-03DDA6F-OY	SGDV-05D@1A-OY
				2.86 Nm	450 W	SGMGV-05DDA6F-OY	SGDV-05D@1A-OY
				5.39 Nm	850 W	SGMGV-09DDA6F-OY	SGDV-10D@1A-OY
				8.34 Nm	1.3 kW	SGMGV-13DDA6F-OY	SGDV-15D@1A-OY
				11.5 Nm	1.8 kW	SGMGV-20DDA6F-OY	SGDV-20D@1A-OY
				18.6 Nm	2.9 kW	SGMGV-30DDA6F-OY	SGDV-30D@1A-OY
			28.4 Nm	4.4 kW	SGMGV-44DDA6F-OY	SGDV-50D@1A-OY	
			With brake	1.96 Nm	300 W	SGMGV-03DDA6H-OY	SGDV-05D@1A-OY
				2.86 Nm	450 W	SGMGV-05DDA6H-OY	SGDV-05D@1A-OY
				5.39 Nm	850 W	SGMGV-09DDA6H-OY	SGDV-10D@1A-OY
				8.34 Nm	1.3 kW	SGMGV-13DDA6H-OY	SGDV-15D@1A-OY
				11.5 Nm	1.8 kW	SGMGV-20DDA6H-OY	SGDV-20D@1A-OY
		18.6 Nm		2.9 kW	SGMGV-30DDA6H-OY	SGDV-30D@1A-OY	
		<b>Absolute encoder (20 bit)</b> Straight shaft with key and tap	Without brake	1.96 Nm	300 W	SGMGV-03D3A6F-OY	SGDV-05D@1A-OY
				2.86 Nm	450 W	SGMGV-05D3A6F-OY	SGDV-05D@1A-OY
				5.39 Nm	850 W	SGMGV-09D3A6F-OY	SGDV-10D@1A-OY
				8.34 Nm	1.3 kW	SGMGV-13D3A6F-OY	SGDV-15D@1A-OY
				11.5 Nm	1.8 kW	SGMGV-20D3A6F-OY	SGDV-20D@1A-OY
				18.6 Nm	2.9 kW	SGMGV-30D3A6F-OY	SGDV-30D@1A-OY
			28.4 Nm	4.4 kW	SGMGV-44D3A6F-OY	SGDV-50D@1A-OY	
			With brake	1.96 Nm	300 W	SGMGV-03D3A6H-OY	SGDV-05D@1A-OY
				2.86 Nm	450 W	SGMGV-05D3A6H-OY	SGDV-05D@1A-OY
				5.39 Nm	850 W	SGMGV-09D3A6H-OY	SGDV-10D@1A-OY
				8.34 Nm	1.3 kW	SGMGV-13D3A6H-OY	SGDV-15D@1A-OY
11.5 Nm	1.8 kW			SGMGV-20D3A6H-OY	SGDV-20D@1A-OY		
18.6 Nm	2.9 kW	SGMGV-30D3A6H-OY		SGDV-30D@1A-OY			
28.4 Nm	4.4 kW	SGMGV-44D3A6H-OY	SGDV-50D@1A-OY				

**SGMSV - servo motors 6000 r/min (1 - 5 kW)**

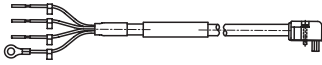
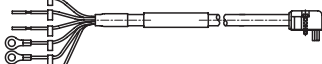
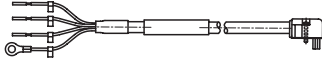
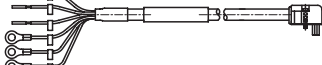
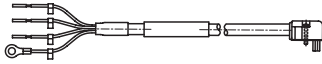
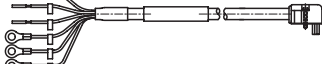

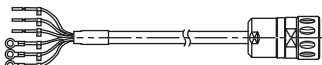

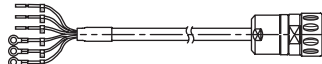
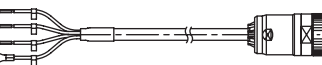

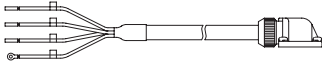
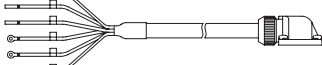
Symbol	Specifications				Servo motor model	Compatible servo drives <sup>(2)</sup>	
	Voltage	Encoder and design	Rated torque	Capacity			
①	400 V	<b>Incremental encoder (20 bit)</b> Straight shaft with key and tap	Without brake	3.18 Nm	1 kW	SGMSV-10DDA6F-OY	SGDV-10D@1A-OY
				4.9 Nm	1.5 kW	SGMSV-15DDA6F-OY	SGDV-15D@1A-OY
				6.36 Nm	2 kW	SGMSV-20DDA6F-OY	SGDV-20D@1A-OY
				7.96 Nm	2.5 kW	SGMSV-25DDA6F-OY	SGDV-30D@1A-OY
				9.8 Nm	3 kW	SGMSV-30DDA6F-OY	SGDV-30D@1A-OY
				12.6 Nm	4 kW	SGMSV-40DDA6F-OY	SGDV-50D@1A-OY
			15.8 Nm	5 kW	SGMSV-50DDA6F-OY	SGDV-50D@1A-OY	
			With brake	3.18 Nm	1 kW	SGMSV-10DDA6H-OY	SGDV-10D@1A-OY
				4.9 Nm	1.5 kW	SGMSV-15DDA6H-OY	SGDV-15D@1A-OY
				6.36 Nm	2 kW	SGMSV-20DDA6H-OY	SGDV-20D@1A-OY
				7.96 Nm	2.5 kW	SGMSV-25DDA6H-OY	SGDV-30D@1A-OY
				9.8 Nm	3 kW	SGMSV-30DDA6H-OY	SGDV-30D@1A-OY
		12.6 Nm		4 kW	SGMSV-40DDA6H-OY	SGDV-50D@1A-OY	
		15.8 Nm	5 kW	SGMSV-50DDA6H-OY	SGDV-50D@1A-OY		
		<b>Absolute encoder (20 bit)</b> Straight shaft with key and tap	Without brake	3.18 Nm	1 kW	SGMSV-10D3A6F-OY	SGDV-10D@1A-OY
				4.9 Nm	1.5 kW	SGMSV-15D3A6F-OY	SGDV-15D@1A-OY
				6.36 Nm	2 kW	SGMSV-20D3A6F-OY	SGDV-20D@1A-OY
				7.96 Nm	2.5 kW	SGMSV-25D3A6F-OY	SGDV-30D@1A-OY
				9.8 Nm	3 kW	SGMSV-30D3A6F-OY	SGDV-30D@1A-OY
				12.6 Nm	4 kW	SGMSV-40D3A6F-OY	SGDV-50D@1A-OY
			15.8 Nm	5 kW	SGMSV-50D3A6F-OY	SGDV-50D@1A-OY	
			With brake	3.18 Nm	1 kW	SGMSV-10D3A6H-OY	SGDV-10D@1A-OY
				4.9 Nm	1.5 kW	SGMSV-15D3A6H-OY	SGDV-15D@1A-OY
				6.36 Nm	2 kW	SGMSV-20D3A6H-OY	SGDV-20D@1A-OY
7.96 Nm	2.5 kW			SGMSV-25D3A6H-OY	SGDV-30D@1A-OY		
9.8 Nm	3 kW			SGMSV-30D3A6H-OY	SGDV-30D@1A-OY		
12.6 Nm	4 kW	SGMSV-40D3A6H-OY		SGDV-50D@1A-OY			
15.8 Nm	5 kW	SGMSV-50D3A6H-OY	SGDV-50D@1A-OY				

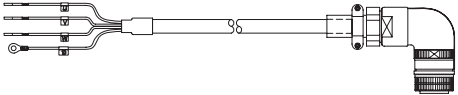
## Encoder Cables

### for sigma-5 servo drive

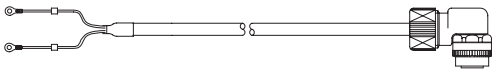
Symbol	Specifications	Model	Appearance	
③	Sigma-5 incremental encoder cable for SGMJV/AV Servo motors SGMJV-@@ADA@@-OY, SGMJV-@@AAA@@-OY, SGMAV-@@ADA@@-OY	3 m	JZSP-CSP21-03-E-G1	
		5 m	JZSP-CSP21-05-E-G1	
		10 m	JZSP-CSP21-10-E-G1	
		15 m	JZSP-CSP21-15-E-G1	
		20 m	JZSP-CSP21-20-E-G1	
	Sigma-5 absolute encoder cable (with a battery case) for SGMJV/AV Servo motors SGMJV-@@A3A@@-OY SGMAV-@@A3A@@-OY	3 m	JZSP-CSP25-03-G1	
		5 m	JZSP-CSP25-05-G1	
		10 m	JZSP-CSP25-10-G1	
		15 m	JZSP-CSP25-15-G1	
		20 m	JZSP-CSP25-20-G1	
	Sigma-5 incremental encoder cable for SGMEV Servo motors	3 m	R88A-CRWA003C-DE	
		5 m	R88A-CRWA005C-DE	
		10 m	R88A-CRWA010C-DE	
		15 m	R88A-CRWA015C-DE	
		20 m	R88A-CRWA020C-DE	
	Sigma-5 absolute encoder cable extension with a battery case for SGMEV Servo motors	0.3 m	JZSP-CSP12	
	Sigma-5 incremental encoder cable for SGMGV/SV Servo motors SGMGV-@@DDA@@-OY SGMSV-@@DDA@@-OY	3 m	JZSP-CVP12-03-E-G1	
		5 m	JZSP-CVP12-05-E-G1	
		10 m	JZSP-CVP12-10-E-G1	
		15 m	JZSP-CVP12-15-E-G1	
20 m		JZSP-CVP12-20-E-G1		
Sigma-5 absolute encoder cable (with a battery case) for SGMGV/SV Servo motors SGMGV-@@D3A@@-OY SGMSV-@@D3A@@-OY	3 m	JZSP-CVP27-03-G1		
	5 m	JZSP-CVP27-05-G1		
	10 m	JZSP-CVP27-10-G1		
	15 m	JZSP-CVP27-15-G1		
	20 m	JZSP-CVP27-20-G1		

**Power cables**



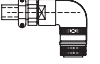








Symbol	Specifications	Model	Appearance	
④	For 200 V servo motors without brake SGMJV-(A5/01)A@A@1-OY SGMAV-(A5/01/C2)A@A@1-OY	3 m	JZSP-CSM21-03-E-G1	
		5 m	JZSP-CSM21-05-E-G1	
		10 m	JZSP-CSM21-10-E-G1	
		15 m	JZSP-CSM21-15-E-G1	
		20 m	JZSP-CSM21-20-E-G1	
	For 200 V servo motors with brake SGMJV-(A5/01)A@A@C-OY SGMAV-(A5/01/C2)A@A@C-OY	3 m	JZSP-CSM31-03-E-G1	
		5 m	JZSP-CSM31-05-E-G1	
		10 m	JZSP-CSM31-10-E-G1	
		15 m	JZSP-CSM31-15-E-G1	
		20 m	JZSP-CSM31-20-E-G1	
	For 200 V servo motors without brake SGMJV-(02/04)A@A@1-OY SGMAV-(02/04/06)A@A@1-OY	3 m	JZSP-CSM22-03-E-G1	
		5 m	JZSP-CSM22-05-E-G1	
		10 m	JZSP-CSM22-10-E-G1	
		15 m	JZSP-CSM22-15-E-G1	
		20 m	JZSP-CSM22-20-E-G1	
	For 200 V servo motors with brake SGMJV-(02/04)A@A@C-OY SGMAV-(02/04/06)A@A@C-OY	3 m	JZSP-CSM32-03-E-G1	
		5 m	JZSP-CSM32-05-E-G1	
		10 m	JZSP-CSM32-10-E-G1	
		15 m	JZSP-CSM32-15-E-G1	
		20 m	JZSP-CSM32-20-E-G1	
	For 200 V servo motors without brake SGMJV-08A@A@1-OY SGMAV-08A@A@1-OY SGMAV-10A@A@1-OY	3 m	JZSP-CSM23-03-E-G1	
		5 m	JZSP-CSM23-05-E-G1	
		10 m	JZSP-CSM23-10-E-G1	
		15 m	JZSP-CSM23-15-E-G1	
		20 m	JZSP-CSM23-20-E-G1	
	For 200 V servo motors with brake SGMJV-08A@A@C-OY SGMAV-08A@A@C-OY SGMAV-10A@A@C-OY	3 m	JZSP-CSM33-03-E-G1	
		5 m	JZSP-CSM33-05-E-G1	
		10 m	JZSP-CSM33-10-E-G1	
		15 m	JZSP-CSM33-15-E-G1	
		20 m	JZSP-CSM33-20-E-G1	
	For 200 V servo motors without brake SGMEV-(01/02/04/08)A@A@1-OY	3 m	R88A-CAWA003S-DE	
		5 m	R88A-CAWA005S-DE	
		10 m	R88A-CAWA010S-DE	
		15 m	R88A-CAWA015S-DE	
		20 m	R88A-CAWA020S-DE	
	For 200 V servo motors with brake SGMEV-(01/02/04/08)A@A@C-OY	3 m	R88A-CAWA003B-DE	
		5 m	R88A-CAWA005B-DE	
		10 m	R88A-CAWA010B-DE	
		15 m	R88A-CAWA015B-DE	
		20 m	R88A-CAWA020B-DE	
	For 200 V servo motors without brake SGMEV-15A@A@1-OY	3 m	R88A-CAWB003S-DE	
		5 m	R88A-CAWB005S-DE	
		10 m	R88A-CAWB010S-DE	
		15 m	R88A-CAWB015S-DE	
		20 m	R88A-CAWB020S-DE	
	For 200 V servo motors with brake SGMEV-15A@A@C-OY	3 m	R88A-CAWB003B-DE	
		5 m	R88A-CAWB005B-DE	
		10 m	R88A-CAWB010B-DE	
15 m		R88A-CAWB015B-DE		
20 m		R88A-CAWB020B-DE		
For 400 V servo motors without brake SGMEV-(02/03/04/07/08/15)D@A@1-OY	3 m	R88A-CAWK003S-DE		
	5 m	R88A-CAWK005S-DE		
	10 m	R88A-CAWK010S-DE		
	15 m	R88A-CAWK015S-DE		
	20 m	R88A-CAWK020S-DE		
For 400 V servo motors without brake SGMEV-(02/03/04/07/08/15)D@A@C-OY	3 m	R88A-CAWK003B-DE		
	5 m	R88A-CAWK005B-DE		
	10 m	R88A-CAWK010B-DE		
	15 m	R88A-CAWK015B-DE		
	20 m	R88A-CAWK020B-DE		
For 400 V servo motors without brake SGMGV-(03/05)D@A@1-OY	3 m	JZSP-VVM21-03-E		
	5 m	JZSP-VVM21-05-E		
	10 m	JZSP-VVM21-10-E		
	15 m	JZSP-VVM21-15-E		
	20 m	JZSP-VVM21-20-E		
For 400 V servo motors with brake SGMGV-(03/05)D@A@C-OY	3 m	JZSP-VVM41-03-E		
	5 m	JZSP-VVM41-05-E		
	10 m	JZSP-VVM41-10-E		
	15 m	JZSP-VVM41-15-E		
	20 m	JZSP-VVM41-20-E		

Symbol	Specifications	Model	Appearance	
	For 400 V servo motors SGMGV-09D@A@@-OY SGMSV-10D@A@@-OY	3 m	JZSP-CVMCA11-03-E-G1	
		5 m	JZSP-CVMCA11-05-E-G1	
		10 m	JZSP-CVMCA11-10-E-G1	
	For servomotors with brake, a separate cable (JZSP-CVB12-@@-E-G1) is needed	15 m	JZSP-CVMCA11-15-E-G1	
		20 m	JZSP-CVMCA11-20-E-G1	
		3 m	JZSP-CVMCA12-03-E-G1	
	For 400 V servo motors SGMGV-(13/20)D@A@@-OY SGMSV-(15/20/25)D@A@@-OY	5 m	JZSP-CVMCA12-05-E-G1	
		10 m	JZSP-CVMCA12-10-E-G1	
		15 m	JZSP-CVMCA12-15-E-G1	
	For servomotors with brake, a separate cable (JZSP-CVB12-@@-E-G1) is needed	20 m	JZSP-CVMCA12-20-E-G1	
		3 m	JZSP-CVMCA13-03-E-G1	
		5 m	JZSP-CVMCA13-05-E-G1	
For 400 V servo motors SGMGV-(30/44)D@A@@-OY SGMSV-(30/40/50)D@A@@-OY	10 m	JZSP-CVMCA13-10-E-G1		
	15 m	JZSP-CVMCA13-15-E-G1		
	20 m	JZSP-CVMCA13-20-E-G1		
	For servomotors with brake, a separate cable (JZSP-CVB12-@@-E-G1) is needed	3 m	JZSP-CVMCA13-03-E-G1	
		5 m	JZSP-CVMCA13-05-E-G1	
		10 m	JZSP-CVMCA13-10-E-G1	
		15 m	JZSP-CVMCA13-15-E-G1	
		20 m	JZSP-CVMCA13-20-E-G1	

**Brake cable (for SGMGV-09/13/20/30/44 Motors)**

Symbol	Specifications	Model	Appearance	
⑤	Brake cable only. For 400 V servo motors with brake SGMGV-(09/13/20/30/44)D@A@C-OY SGMSV-(10/15/20/25/30/40/50)D@A@C-OY	3 m	JZSP-CVB12-03-E-G1	
		5 m	JZSP-CVB12-05-E-G1	
		10 m	JZSP-CVB12-10-E-G1	
		15 m	JZSP-CVB12-15-E-G1	
		20 m	JZSP-CVB12-20-E-G1	

## Connectors for power and encoder cables

Description		Applicable Servo motor	Manufacturer	Model	Appearance
Power connector kit	Servomotor side	SGMJV-(A5/01)@, SGMV-(A5/01)@, SGMV-C2@	J.S.T.	JZSP-CSM9-1-E-G1	
		SGMJV-(02/04)@, SGMV-(02/04/06)@	J.S.T.	JZSP-CSM9-2-E-G1	
		SGMJV-08@, SGMV-(08/10)@	J.S.T.	JZSP-CSM9-3-E-G1	
		SGMGV-(03/05)@	Japan Aviation Electronics Industry, Ltd	JZSP-VVM9-1-E	
		SGMGV-(09/13/20)@, SGMSV-(10/15/20/25)@	DDK	CE-05-8A18-10SD-D-BAS	
		SGMGV-(30/44)@, SGMSV-(30/40/50)@	DDK	CE-05-8A22-22SD-D-BAS	
		SGMEV-@@A@	Hypertac	SPOC-06K-FSDN169	
		SGMEV-@@D@	Hypertac	LPRA-06B-FRBN170	
Brake connector kit	Servomotor side	SGMGV-(09/13/20/30/44)@, SGMSV-(10/15/20/25/30/40/50)@	DDK	CM10-AP2S-S-D	
Encoder connector kit	Servo drive side	SGMJV-@, SGMV-@, SGMV-@, SGMEV-@	Molex	JZSP-CMP9-1-E-G1	
	Servomotor side	SGMJV-@, SGMV-@	Molex	JZSP-CSP9-2-E-G1	
		SGMGV-@, SGMSV-@	DDK	CM10-AP10S-M-D	
		SGMEV-@	Hypertac	SPOC-17H-FRON169	
Power connector kit - spare part connector male -	Servomotor side (connector included with 200 V models SGMEV motors)	SGMEV-@@A@	Hypertac	SRUC-06J-MSCN236	
Power connector kit - spare part connector male -	Servomotor side (connector included with 400 V models SGMEV motors)	SGMEV-@@D@	Hypertac	LRRA-06A-MRPN182	
Encoder connector kit - spare part connector male -	Servomotor side (connector included with SGMEV motors)	SGMEV-@	Hypertac	SRUC-17G-MRWN087	

**Note:** all connectors and cables listed have IP67 protection.  
A crimping tool is required

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.