

## SIGMA-5

The 5-star servo drive



» Increases machine efficiency, performance & availability

» Save time & cost

» Meets demanding machine requirements

## Sigma-5: the 5-star servo drive...

*It is a primary goal of OMRON YASKAWA to offer customers products and solutions that meet their needs. And the Sigma-5 servo drive offers exactly that. Precise positioning at the highest speed. Smooth and vibration-free operation. And the easiest possible start up. For machine builders this translates into better machine performance to meet exacting machine requirements. It also has a significant impact on increasing machine availability while reducing costs.*

As Sigma-5 belongs to the product portfolio of a global leader in automation, you will have total world-wide service and support throughout the product life cycle. Moreover, ongoing technical developments by Omron will keep your machines in front, giving you an edge, both now and in the future.

### **...value delivered**

- Meets the most demanding machine requirements
- Helps to maximize machine performance
- Minimizes total cost of ownership
- Increases machine availability



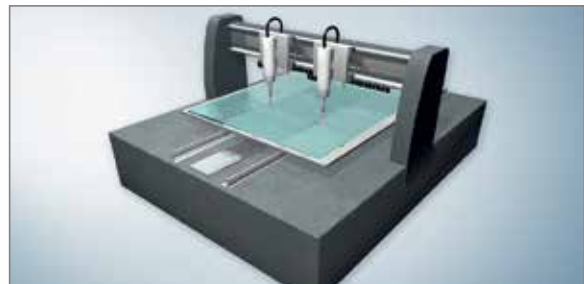
## ...enhance machine efficiency while saving time and costs

The Sigma-5 servo drive excels in even the most demanding axis-control operations and applications, including those in the following industries and applications:

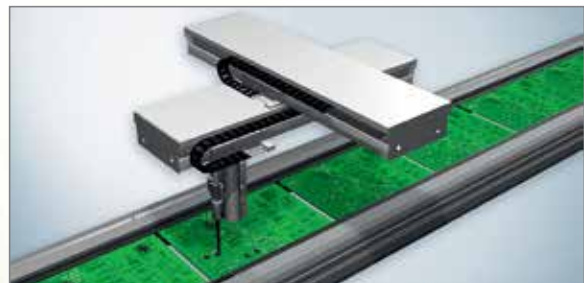
- Electronics
- Semiconductors
- Packaging
- Printing
- Machine tools
- Injection moulding
- Metal forming



Flow wrap machine require various servo axes working in absolute synchronisation. Sigma-5 in combination with Trajexia allows synchronisation over the field proven Mechatrolink bus., greatly simplifying system wiring and reducing the chance on wiring errors.



This glass cutting machine has high demands on continues and smooth movement as each misalignment is directly visible. The Sigma-5 servo in combination with the Trajexia motin control give full control of each movement.

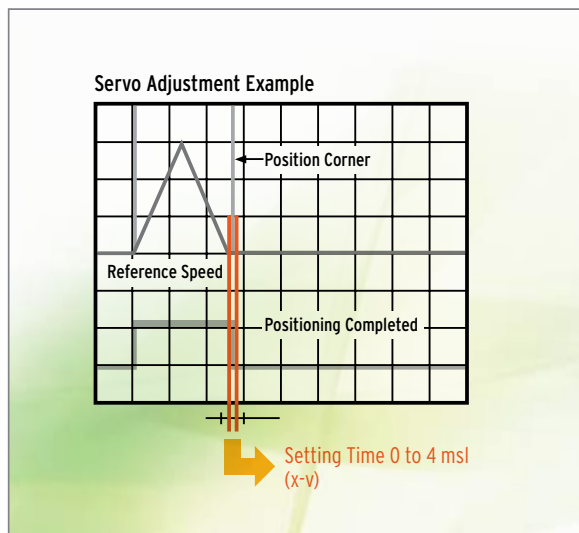


The machine uses picking techniques to place components on PCB's. The procedure must be very accurate, as the component pins must be placed at um accuracy. This is solved using the Sigma-5 series servo system because its dynamic performance.



The chip molding process is another candidate application. In this case the actual chip must be placed in high speed, but also very accurate.

# Five reasons to choose Sigma-5



## Outstanding performance

Sigma-5 delivers the highest performance in the industry, enabling your machinery to operate faster and with higher precision. The frequency response of 1.6 kHz combined with Sigma-5's innovative algorithm results in quicker positioning, smaller following error, very low ripple at low speed, higher accuracy and a settling time close to zero.

Moreover, the drive features mechanical vibration cancellation, which enables it to automatically cancel the vibration on the mechanics and control a huge inertia mismatch ratio range.



## Space saving

The new and compact Sigma-5 design features 30% fewer parts, which helps to save panel space and machine costs.



## Proven quality

An installed base of well over six million units underlines the quality of Sigma-series servos. High reliability increases machine throughput and efficiency by reducing down-time and maintenance costs.

# Quality

Motor portfolio

Performance

Motion network  
Space saving



## Motion network

In addition to support for the Analog/Pulse train reference series, the Mechatrolink-II embedded open field bus option offers flexible communication with motion controllers whilst reducing cabling and installation time.



## Motor portfolio

A wide choice of motors from 0.1 to 15 kW – rotary, linear and direct drive, is available to match any machine requirements. Furthermore, Sigma-5 can also drive the complete rotary Sigma II motor portfolio.



## **Sigma-5 Key features and benefits:**

- Quicker positioning and smooth control
- Safety embedded
- No manual adjustment required
- Optimized auto tuning function
- Automatic filter function to suppress vibrations
- Embedded open field-bus system  
MECHATROLINK-II



## **Trajexia Key features and benefits:**

- Standalone and CJ1 series PLC option (30 axes)
- Each axis can run complex interpolation moves, e-cams and e-gearboxes
- Advanced debugging tools including trace and oscilloscope functions
- Multi-tasking controller capable of running up to 14 tasks simultaneously
- Open-Ethernet built-in, PROFIBUS-DP and DeviceNet as options

# Sigma-5 + Trajexia motion controllers

## The perfect choice

Offering a series of optimized servomotors, high-resolution serial encoders and new, intelligent algorithms, Sigma-5 is just the right servo drive to achieve precise and fast positioning with smooth and vibration-free motion at even the slowest speeds.

In combination with Trajexia motion controllers, Sigma-5 becomes the perfect choice for virtually any industrial application demanding precise control with positional accuracies up to 10nm. The Trajexia platform offers 4, 16 and 30-axes motion coordination over a robust and fast motion link and with a multi-tasking controller that is capable of running 14 tasks simultaneously.

### The complete servo/motion control package

The intuitive and user-friendly software tool accompanying Sigma-5 minimizes commissioning time obtaining the best from the servo for your machine. Furthermore, Trajexia's advanced debugging tools ensure efficient operation and minimum downtime.



### Sigma-5: the star in...

- Performance
- Space saving
- Quality
- Motor portfolio
- Motion network

SGDV-□, SGMJV-□, SGMAV-□, SGMEV-□, SGMGV-□, SGMSV-□

# Sigma-5 servo drive

The High performance servo family for motion control. Compact size, reduced space and integrated MECHATROLINK-II.

- Advance autotuning function
- Enhanced vibration suppression function
- Standard support for analog voltage/pulse train reference series or MECHATROLINK-II communications reference series
- Support for direct drive servomotors, linear servomotors and linear sliders
- Integrated safety stop function
- Oscilloscope available via software tool
- Windows based configuration and commissioning software

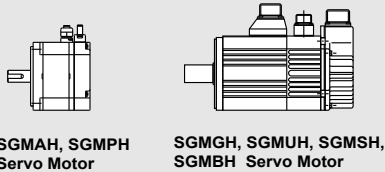


## Ratings

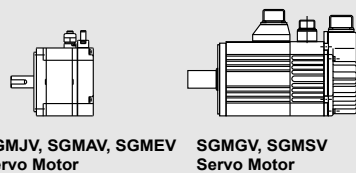
- 230 VAC Single-phase 50 W to 1.5 kW (4.77 Nm)
- 400 VAC Three-phase 500 W to 15 kW (95.4 Nm)

## System configuration

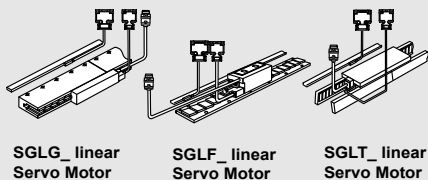
(Refer to chapter Sigma-II rotary motors)



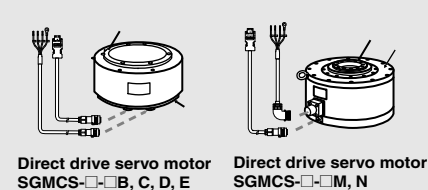
(Refer to chapter Sigma-5 rotary motors)



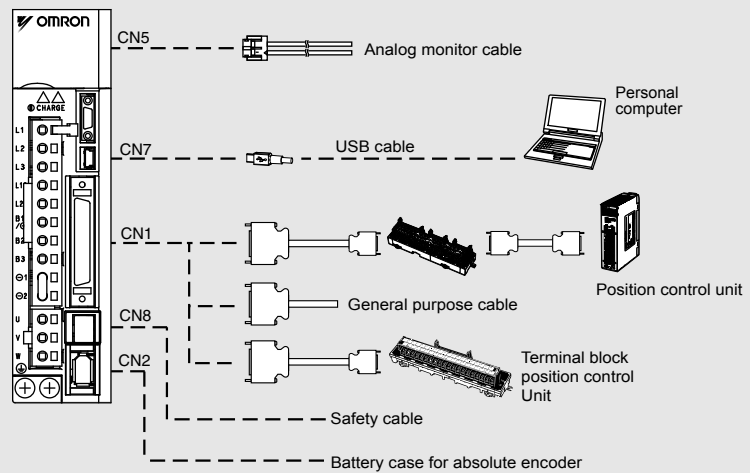
(Refer to chapter Sigma linear motors)



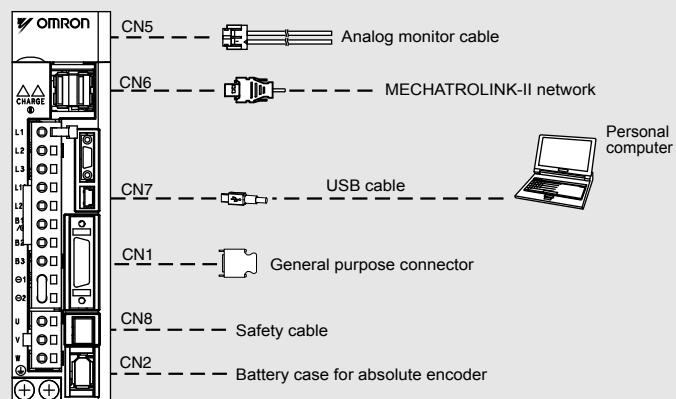
(Refer to chapter Sigma direct drive motors)



### Sigma-5 Analog/Pulse Reference Servo Drive



### Sigma-5 MECHATROLINK-II Servo Drive





**Type designation**

**Servo drive**

**SGDV-1R6A01A-□**

Sigma-5 servo drive

Continuous output current

Voltage	Code	Current
230 V	R70	0.66 Arms
	R90	0.91 Arms
	1R6	1.6 Arms
	2R8	2.8 Arms
	5R5	5.5 Arms
400 V	120	11.6 Arms
	1R9	1.9 Arms
	3R5	3.5 Arms
	5R4	5.4 Arms
	8R4	8.4 Arms
	120	11.9 Arms
	170	16.5 Arms
	210	20.8 Arms
	260	25.4 Arms
	280	28.1 Arms
370	37.2 Arms	

Source voltage

A: 230 V  
D: 400 V

Code	Specifications
Blank	Standard
008000	Servo drive 1.5 kW single-phase 230 V

Design Revision Order: A, B...

Interface

Code	Specifications
01	Analog voltage/pulse train reference type (for rotary servomotors)
05	Analog voltage/pulse train reference type (for linear servomotors)
11	MECHATROLINK-II comms reference type (for rotary servomotors)
15	MECHATROLINK-II comms reference type (for linear servomotors)

**Servo drive specifications**

**Single-phase, 230 V**

Servo drive type	SGDV-□	R70A□□A	R90A□□A	1R6A□□A	2R8A□□A	5R5A□□A	120A□□A008000
Applicable servo motor	SGMAH-□	A3A□/A5A□	01A□	02A□	04A□	08A□	-
	SGMPH-□	-	01A□	02A□	04A□	08A□	15A□
	SGMJV-□	A5A□	01A□	02A□	04A□	08A□	-
	SGMAV-□	A5A□	01A□	C2A□/02A□	04A□	06A□/08A□	10A□
	SGMEV-□	-	01A□	02A□	04A□	08A□	15A□
	SGMSV-□	-	01A□	02A□	04A□	08A□	15A□
Max. applicable motor capacity	W	50	100	200	400	750	1500
Continuous output current	Arms	0.66	0.91	1.6	2.8	5.5	11.6
Max. output current	Arms	2.1	2.9	6.5	9.3	16.9	28
Input power	Main circuit	Single-phase, 200 to 230 VAC + 10 to -15% (50/60 Hz)					
	Control circuit	Single-phase, 200 to 230 VAC + 10 to -15% (50/60 Hz)					
Control method	Single phase full-wave rectification / IGBT / PWM / sine-wave current drive method						
Feedback	Serial encoder (incremental/absolute)						
Conditions	Usage/storage temperature	0 to +55 °C / -20 to 85 °C					
	Usage/storage humidity	90%RH or less (non-condensing)					
	Altitude	1000m or less above sea level					
	Vibration/shock resistance	4.9 m/s <sup>2</sup> / 19.6 m/s <sup>2</sup>					
Configuration	Base mounted						
Approx. weight	Kg		0.9		1.0	1.5	2.8

**Three-phase, 400 V**

Servo drive type	SGDV-□	1R9D□□A	3R5D□□A	5R4D□□A	8R4D□□A	120D□□A	170D□□A	210D□□A	260D□□A	280D□□A	370D□□A
Applicable servo motor	SGMAH-□	03D□	07D□	-	-	-	-	-	-	-	-
	SGMPH-□	02D□/04D□	08D□	15D□	-	-	-	-	-	-	-
	SGMGH-□	05D□	09D□	13D□	20D□	30D□	44D□	55D□	75D□	1AD□	1ED□
	SGMSH-□	-	10D□	15D□	20D□	30D□	40D□/50D□	-	-	-	-
	SGMUH-□	-	10D□	15D□	-	30D□	40D□	-	-	-	-
	SGMEV-□	02/03/04D□	07D□/08D□	15D□	-	-	-	-	-	-	-
	SGMGV-□	03D□/05D□	09D□	13D□	20D□	30D□	44D□	55D□	75D□	1AD□	1ED□
SGMSV-□	-	10D□	15D□	20D□	25D□	40D□/50D□	-	-	-	-	
Max. applicable motor capacity	kW	0.5	1.0	1.5	2.0	3.0	5.0	6.0	7.5	11	15
Continuous output current	Arms	1.9	3.5	5.4	8.4	11.9	16.5	20.8	25.4	28.1	37.2
Max. output current	Arms	5.5	8.5	14	20	28	42	55	65	70	85
Input power	Main circuit	Three-phase, 380 to 480 VAC + 10 to -15% (50/60Hz)									
	Control circuit	24 VDC +/-15%									
Control method	Three phase full-wave rectification / IGBT / PWM / sine-wave current drive method										
Feedback	Serial encoder (incremental/absolute)										
Conditions	Usage/storage temperature	0 to +55 °C / -20 to +85 °C									
	Usage/storage humidity	90%RH or less (non-condensing)									
	Altitude	1000 m or less above sea level									
	Vibration/shock resistance	4.9 m/s <sup>2</sup> / 19.6 m/s <sup>2</sup>									
Configuration	Base mounted										
Approx. weight	Kg		2.7		3.7		5.6		11.3		16.2

**Sigma-5 Analog/Pulse Reference Servo Drive**

**General specifications**

Speed/torque control mode	Performance	Speed control range	1:5000	
		Speed variance	Load variance	During 0 to 100% load $\pm 0.01\%$ max. (at rated speed)
			Voltage variance	Rated voltage $\pm 10\%:0\%$ (at rated speed)
			Temperature variance	$25 \pm 25$ °C: $\pm 0.1\%$ max. (at rated speed)
	Frequency characteristics	1.6 kHz		
	Torque control accuracy (Repeatability)	$\pm 1\%$		
	Soft start time setting	0 to 10 s (acceleration, deceleration can each be set.)		
	Input signal	Speed reference input	Reference voltage	$\pm 6$ VDC (forward motor rotation if positive reference) at rated speed: Set at delivery Variable setting range: $\pm 2$ to $\pm 10$ VDC at rated speed/ max. input voltage: $\pm 12$ V
			Input impedance	Approx. 14 k $\Omega$
			Circuit time constant	Approx. 30 $\mu$ s
Torque reference input		Reference voltage	$\pm 3$ VDC (forward rotation if positive reference) at rated torque: Set at delivery Variable setting range $\pm 1$ to $\pm 10$ VDC at rated torque reference, max. input voltage: $\pm 12$ V	
		Input impedance	Approx. 14 k $\Omega$	
		Circuit time constant	Approx. 30 $\mu$ s	
Position control mode	Performance	Feedforward compensation	0 to 100% (setting resolution: 1%)	
		Position completed width setting	0 to 1073741824 command units (setting resolution: 1 command unit)	
	Input signal	Command pulse	Input pulse type	Sign + pulse train, 90° phase displacement 2-phase pulse (A-phase+ B-phase) or CCW/CW pulse train
		Input pulse form	Input pulse form	Non-insulated line driver (+5 V level), open collector.
			Input pulse frequency	0 to 4 Mpps (200 Kpps max. at open collector)
Control signal	Clears error pulse by external signal			
I/O signal	Position signal output	A-phase, B.phase, C-phase: line driver output.		
	Sequence input signal	Servo ON, P control (or control mode switching, forward/reverse motor rotation by internal speed setting, zero clamp, command pulse inhibit), forward/reverse run prohibit, forward/reverse current limit (or internal speed switching), alarm reset.		
	Sequence output signal	Servo alarm, alarm codes (3-bit output): CN1 output terminal is fixed It is possible to output three types of signal form incl.: positioning complete, speed coincidence detection, servo-motor rotation detection, servo ready, current limit detection, speed limit detection, brake release, warning, NEAR.		
Integrated functions	USB Communications	Interface	Personal computer	
		Communications standard	Compliant with USB1.1 standard (12 Mbps)	
		Function	Status display, parameter settings, adjustment functions, utility functions, alarm traceback display, JOG run/autotuning operations and graphing functions for speed/torque command signal, etc	
	Automatic load inertia detection	Automatic motor parameter setting. One parameter rigidity setting.		
	Dynamic brake (DB)	Operates during main power OFF, servo alarm, servo OFF or overtravel		
	Regenerative processing	Internal resistor included in models from 500 W to 5 kW. Regenerative resistor externally mounted (option).		
	Overtravel (OT) prevention function	DB stop, deceleration stop or coast to stop during P-OT, N-OT operation		
	Encoder divider function	Optional division pulses possible		
	Electronic gearing	0,01< Numerator/Denominator<100		
	Internal speed setting function	3 speeds may be set internally		
	Protective functions	Overcurrent, overvoltage, low voltage, overload, regenerative error		
	Analog monitor functions for supervision	Integrates analog monitor connector for supervision of the speed and torque reference signals, etc. Number of channels: 2 (Output voltage: +/-10V DC)		
	Panel operator	Display functions	CHARGE, 7-segments LEDx5	
		Panel operator keys	Used to set parameters (4 keys)	
	Safety functions	Hard wire base block signal and status monitor (fixed output) of safety circuit		
Others	Reverse connection, zero search, automatic motor discrimination function, and DC reactor connection terminal for high frequency power suppression function.			

**Sigma-5 MECHATROLINK-II Servo Drive**

**General specifications**

Position/speed/torque control mode	Speed control range		1:5000
	Speed variance	Load variance	During 0 to 100% load $\pm 0.01\%$ max. (at rated speed)
		Voltage variance	Rated voltage $\pm 10\%:0\%$ (at rated speed)
		Temperature variance	$25 \pm 25$ °C: $\pm 0.1\%$ max. (at rated speed)
	Frequency characteristics		1.6 kHz
Torque control accuracy (Repeatability)		$\pm 1\%$	
Soft start time setting		0 to 10 s (acceleration, deceleration can each be set.)	
Command input	MECHATROLINK Communication		MECHATROLINK-II commands (for sequence, motion, data setting/reference, monitor, adjustment and other commands)
I/O signal	Position signal output		A-phase, B-phase, C-phase: line driver output.
	Sequence input signal		Homing deceleration limit switch, forward/reverse run prohibited, external latch signals, forward/reverse current limit.
	Sequence output signal		It is possible to output three types of signal form incl.: positioning complete, speed coincidence detection, servo-motor rotation detection, servo ready, current limit detection, speed limit detection, brake release, warning, NEAR.
Communications	USB Communications	Interface	Personal computer
		Communications standard	Compliant with USB1.1 standard (12 Mbps)
		Function	Status display, parameter setting, adjusting functions, utility functions, alarm traceback display, JOG run/autotuning operations and graphing functions for speed/torque command signal, etc
	Mechatrolink Communications	Communications protocol	MECHATROLINK-II
		Station Address	41H to 5FH (max. number of slaves: 30)
		Transmission Speed	10 Mbps
		Transmission Cycle	250 $\mu$ s, 0.5 to 4.0 ms (multiple of 0.5 ms)
	Data length	17-bytes and 32-bytes	
Integrated functions	Automatic load inertia detection		Automatic motor parameter setting. One parameter rigidity setting.
	Dynamic brake (DB)		Operates during main power OFF, servo alarm, servo OFF or overtravel
	Regenerative processing		Internal resistor included in models from 500 W to 5 kW. Regenerative resistor externally mounted (option).
	Overtravel (OT) prevention function		DB stop, deceleration stop or coast to stop during P-OT, N-OT operation
	Encoder divider function		Optional division pulses possible
	Electronic gearing		$0,01 < \text{Numerator/Denominator} < 100$
	Internal speed setting function		3 speeds may be set internally
	Protective functions		Overcurrent, overvoltage, low voltage, overload, regeneration error
	Analog monitor functions for supervision		Integrates analog monitor connectors for supervision of the speed and torque reference signals, etc. Number of channels: 2 (Output voltage: $\pm 10V$ DC).
	Panel operator	Display functions	CHARGE, 7-segments LEDX1
		Switches	Rotary switch: MECHATROLINK-II station address setting (16 channels) DIP switch: MECHATROLINK-II communications setting (4 channels)
	Safety functions		Hard wire base block signal and status monitor (fixed output) of safety circuit
	Others		Reverse connection, zero search, automatic motor discrimination function, and DC reactor connection terminal for high frequency power suppression function.

## Type designation

### Servo motor

# SGMJV - 01 A 1 A 6 S

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

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
55				5.5	
70					
75				7.5	
1A				11	
1E				15	

Voltage

Code	Voltage	Type				
		SGMJV	SGMAV	SGMEV	SGMGV	SGMSV
A	230 V	○	○	○		
D	400 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 + 24 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

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

**Servo motor specifications**

**Type SGMJV, 230 V**

**Ratings and specifications**

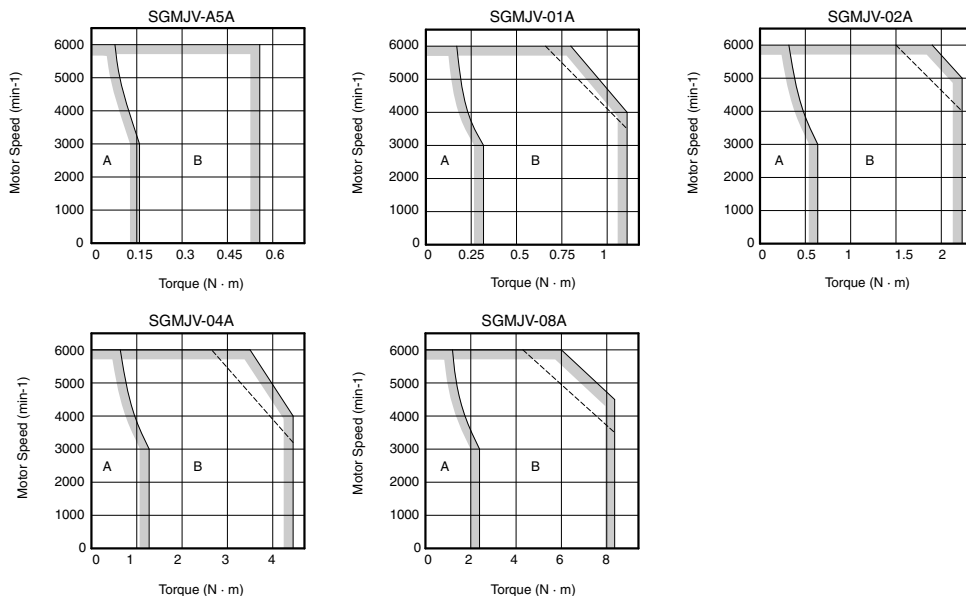
Applied voltage		230 V					
Servo motor model SGMJV-□		A5A□	01A□	02A□	04A□	08A□	
Rated output <sup>*1</sup>	W	50	100	200	400	750	
Rated torque <sup>*1, *2</sup>	N·m	0.159	0.318	0.637	1.27	2.39	
Instantaneous peak torque <sup>*1</sup>	N·m	0.557	1.11	2.23	4.46	8.36	
Rated current <sup>*1</sup>	A (rms)	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

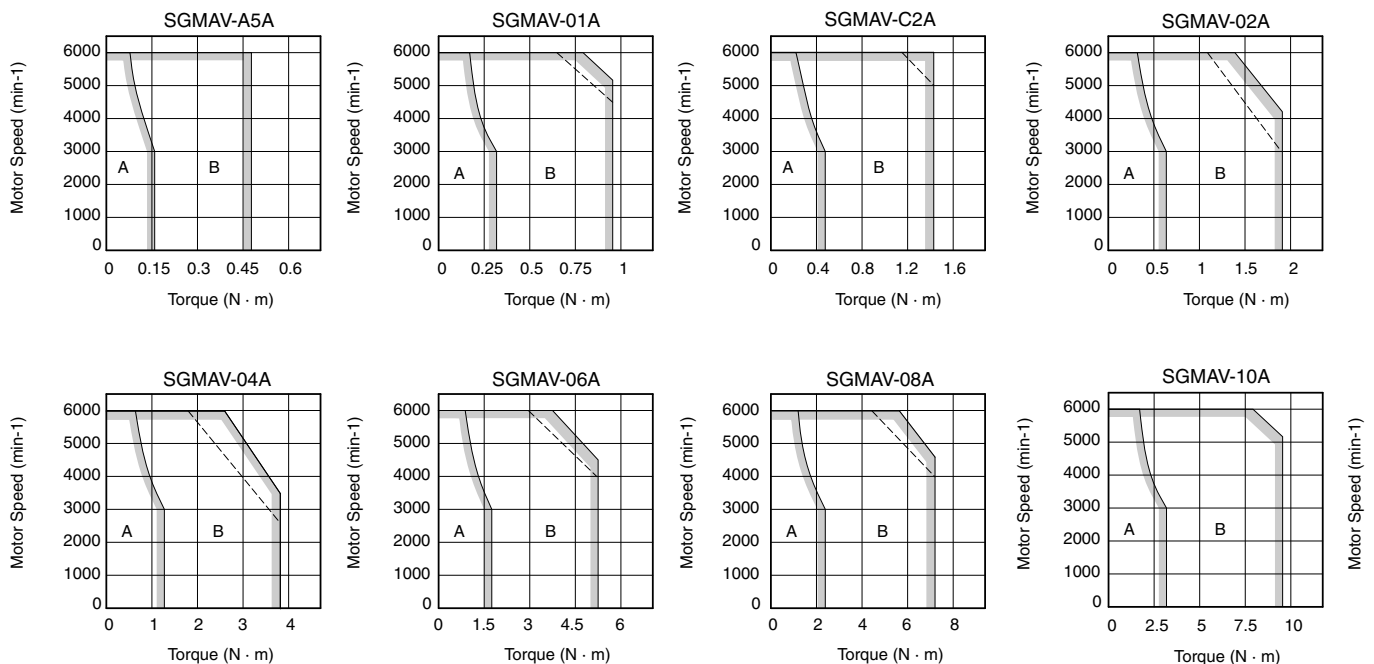
### Ratings and specifications

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	ms (max)								
	Release time	ms (max)							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 V 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



Type SGMEV, 230 V/400 V

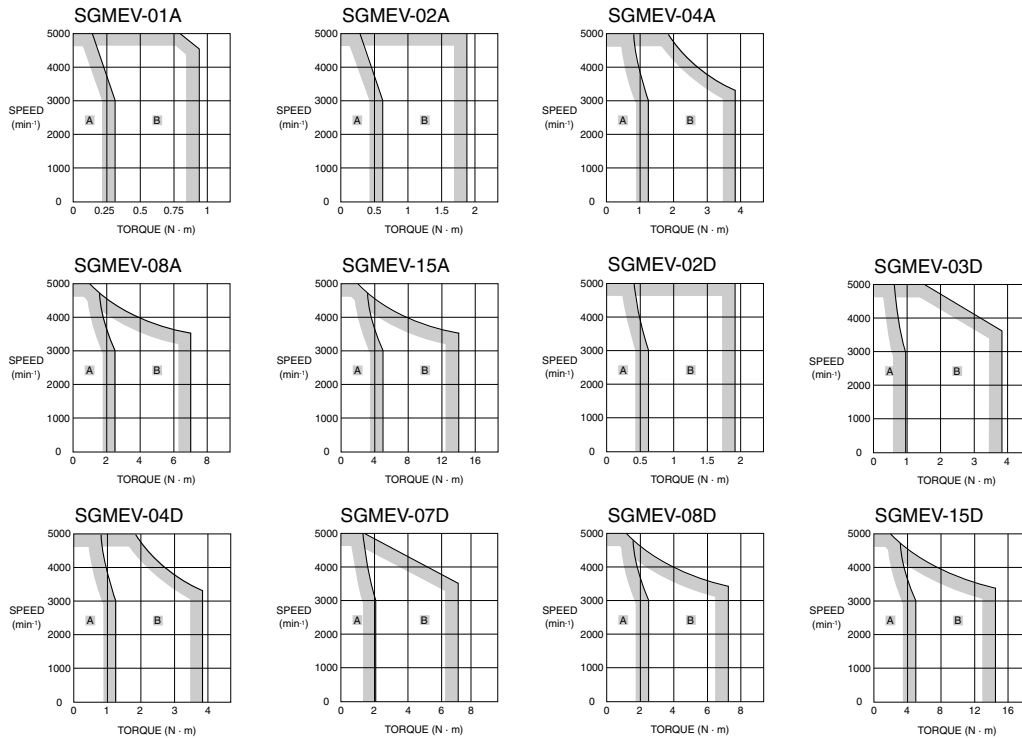
Ratings and specifications

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□	55D□	75D□	1AD□	1ED□		
Rated output <sup>1)</sup>	kW	0.3	0.45	0.85	1.3	1.8	2.9	4.4	5.5	7.5	11	15		
Rated torque <sup>1)</sup>	N·m	1.96	2.86	5.39	8.34	11.5	18.6	28.4	35.0	48.0	70.0	95.4		
Instantaneous peak torque <sup>1)</sup>	N·m	5.88	8.92	13.8	23.3	28.7	45.1	71.1	87.6	119	175	224		
Rated current <sup>1)</sup>	A (rms)	1.4	1.9	3.5	5.4	8.4	11.9	16.5	20.8	25.7	28.1	37.2		
Instantaneous max. current <sup>1)</sup>	A (rms)	4	5.5	8.5	14	20	28	40.5	52	65	70	85		
Rated speed <sup>1)</sup>	min <sup>-1</sup>	1500												
Max. speed <sup>1)</sup>	min <sup>-1</sup>	3000										2000		
Torque constant	N·m/A (rms)	1.55	1.71	1.72	1.78	1.50	1.70	1.93	1.80	1.92	2.64	2.74		
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	89.0	125	242	303		
	kg·m <sup>2</sup> ×10 <sup>-4</sup> (with brake)	2.69	3.54	16	22	28.1	54.5	76	97.5	134	261	322		
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	138	184	202	300		
	kW/s (with brake)	14.3	23.1	18.2	31.6	47.1	63.5	106	126	172	188	283		
Rated angular acceleration <sup>1)</sup>	rad/s <sup>2</sup> (without brake)	7900	8590	3880	4190	4420	4040	4210	3930	3840	2890	3150		
	rad/s <sup>2</sup> (with brake)	7290	8080	3370	3790	4090	3410	3740	3590	3580	2680	2960		
Encoder	Standard	Incremental encoder (20 bits)												
	Option	Absolute encoder (20 bits)												
Allowable radial load	N	490			686	980	1470			1764		4998		
Allowable thrust load	N	98			343	392	490			588		2156		
Approx. mass	Kg (without brake)	2.6	3.2	5.5	7.1	8.6	13.4	17.5	21.5	29.5	57	67		
	Kg (with brake)	4.5	5.0	7.5	9.0	11.0	19.5	23.5	27.5	35	65	85		
Brake specifications	Rated voltage	24 / 90 VDC												
	Power consumption (at 20°C)	W (24 VDC)	10			9.8		18.5			25		32	35
		W (90 VDC)	10			10.1		18.5			25		32	35
	Current consumption (at 20°C)	A (24 VDC)	0.42			0.41		0.77			1.05		1.33	1.46
		A (90 VDC)				0.11		0.21			0.28		0.36	0.39
	Holding torque	N·m	4.5		12.7	19.6		43.1			72.6		84.3	114.6
	Rise time for holding torque	ms (max)	80					100 (24 V), 80 (90 V)			80			
Release time	ms (max)	100					170							

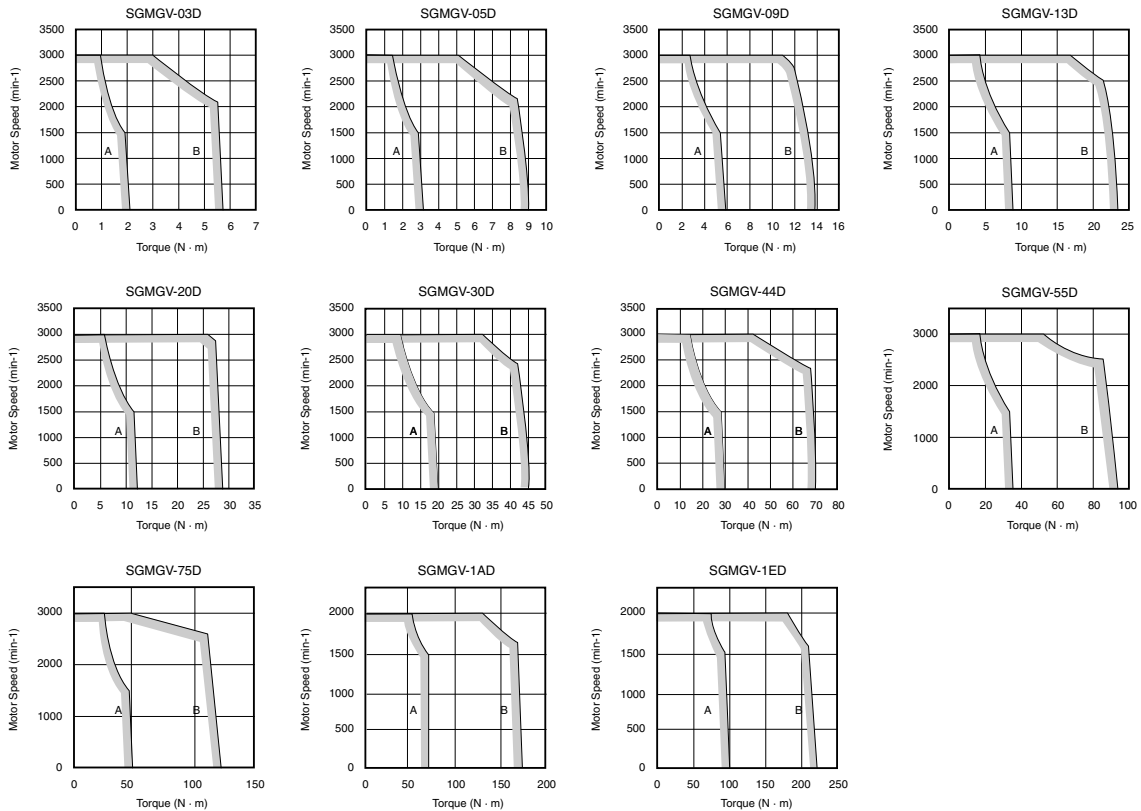


Applied voltage		400 V										
Servo motor model SGMGV-□		03D□	05D□	09D□	13D□	20D□	30D□	44D□	55D□	75D□	1AD□	1ED□
Basic specifications	Time rating	Continuous										
	Thermal class	Class F										
	Usage/ storage temperature	0 to +40 °C/ -20 to 60 °C without freezing										
	Usage/ storage humidity	20 to 80% RH (non-condensing)										
	Insulation resistance	500 VDC, 10 MOhm min.										
	Withstand voltage	1800 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										

**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.

**Torque-speed characteristics**

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



## Type SGMSV, 400 V

### 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 (rms)	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							

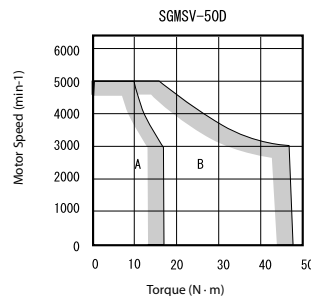
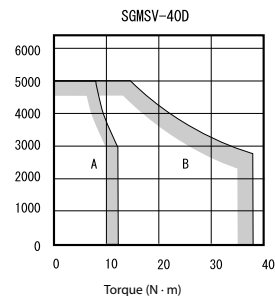
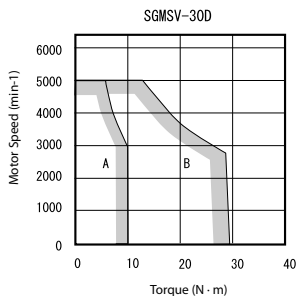
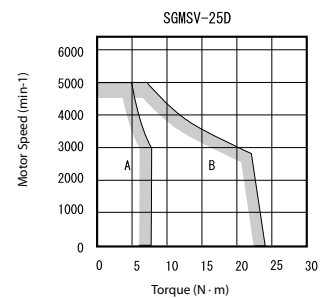
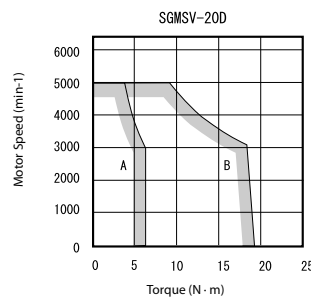
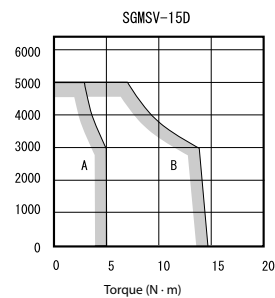
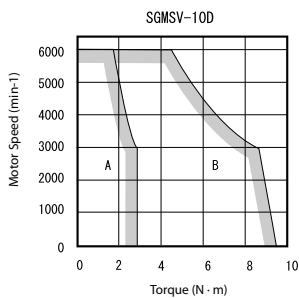
**Note: 1.** These items and torque/speed characteristics quoted in combination with an SGD servo drive are at an armature winding temperature of 20°C.

**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

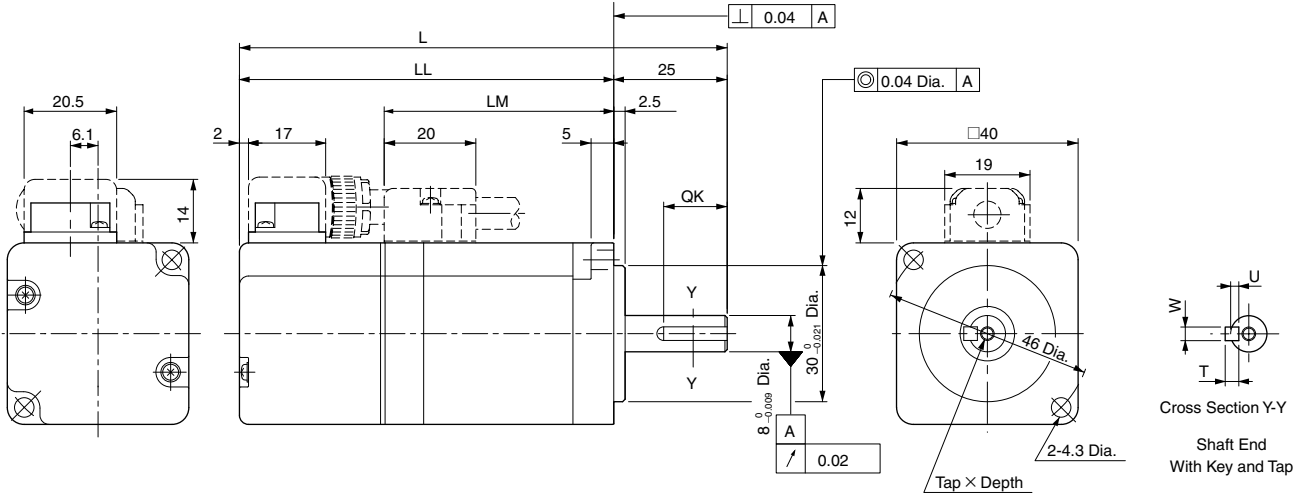


**Dimensions**

**Servomotors**

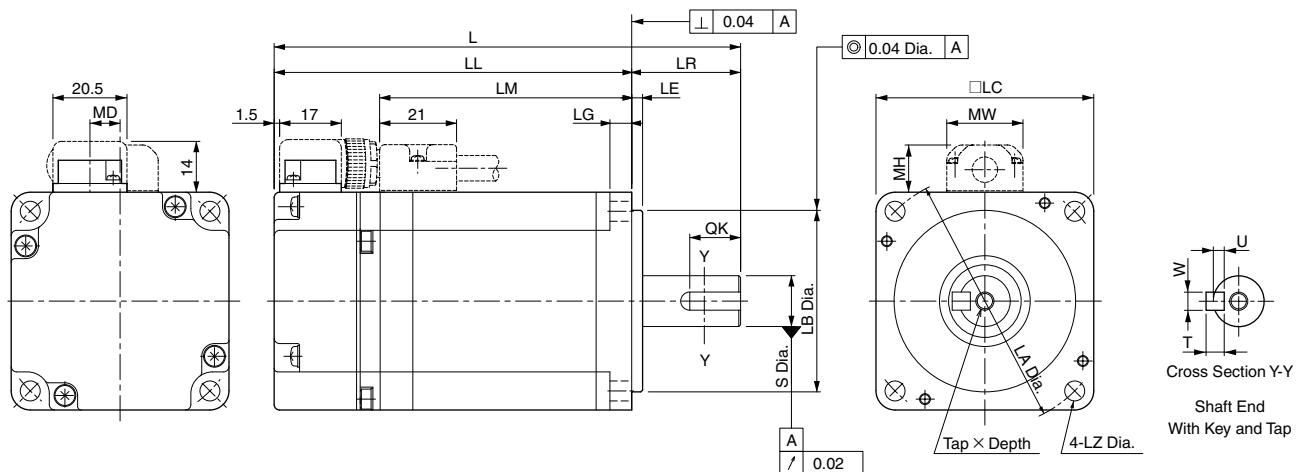
**Type SGMJV (230 V, 50 - 100 W)**

Dimensions (mm) Model	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□	94	69	139	114	37	M3 x 6L	14	1.8	3	3	0.3	0.6
SGMJV-01A□A6□	107.5	82.5	152.5	127.5	50.5						0.4	0.7



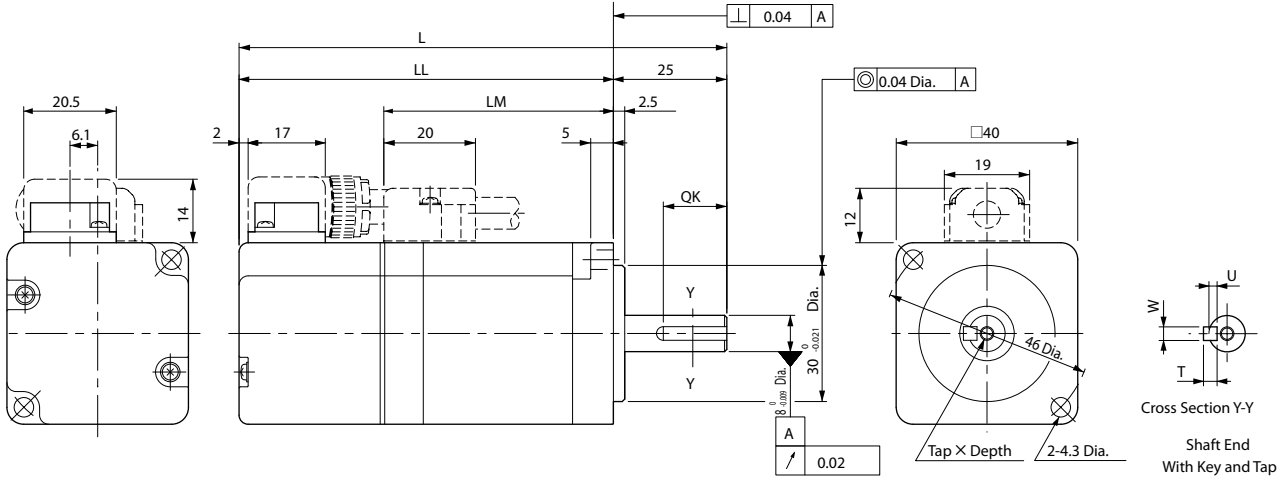
**Type SGMJV (230 V, 200 - 750 W)**

Dimensions (mm) Model	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□	110	80	150	120	51	30	3	6	60	70	50 <sup>U</sup> -0.025	5.5	14 <sup>U</sup> -0.011	M5x8L	14	3	5	5	8.3	21	13	0.9	1.5
SGMJV-04A□A6□	128.5	98.5	168.5	138.5	69.5																	1.3	1.9
SGMJV-08A□A6□	155	115	200	160	85	40		8	80	90	70 <sup>U</sup> -0.030	7	19 <sup>U</sup> -0.013	M6x10L	22	3.5	6	6	13.8	27	15	2.3	3.2



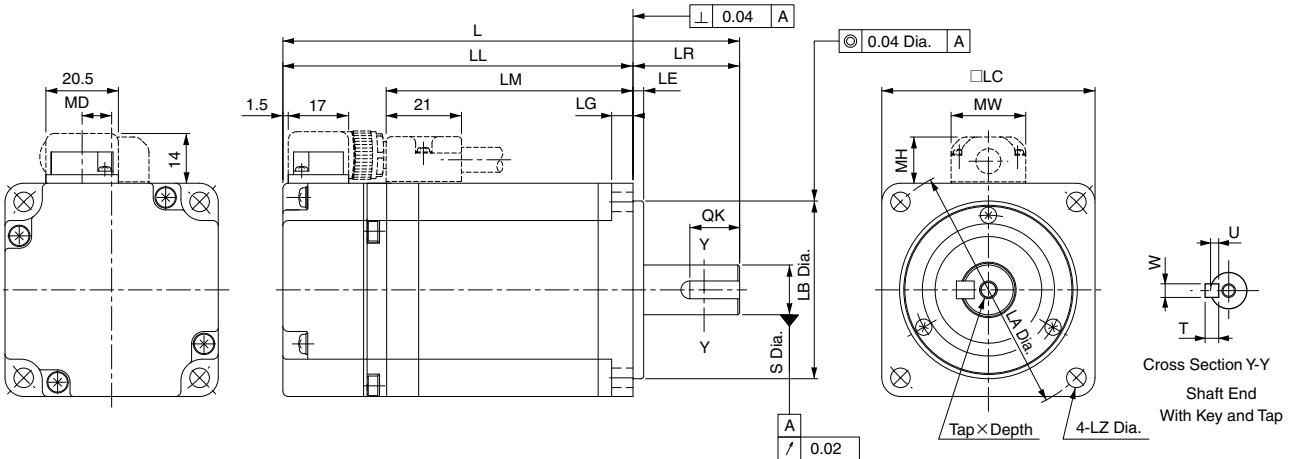
Type SGMAV (230 V, 50 - 150 W)

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□	95.5	70.5	140.5	115.5	38.5	M3x6L	14	1.8	3	3	0.3	0.6
SGMAV-01A□A6□	107.5	82.5	152.5	127.5	50.5						0.4	0.7
SGMAV-C2A□A6□	119.5	94.5	164.5	139.5	62.5						0.5	0.8



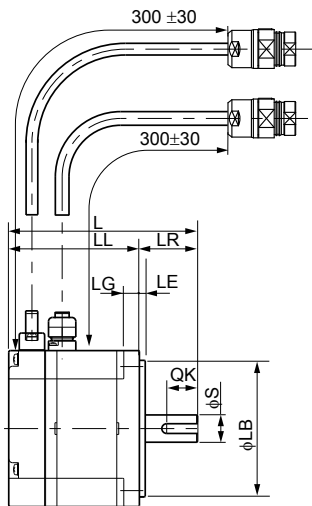
Type SGMAV (230 V, 200 - 750 W)

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□	110	80	150	120	51	30	3	6	60	70	50 <sup>0</sup> <sub>-0.025</sub>	5.5	14 <sup>0</sup> <sub>-0.011</sub>	M5x8L	20	3	5	5	8.5	21	13	0.9	1.5
SGMAV-04A□A6□	128.5	98.5	168.5	138.5	69.5	40	8	80	90	70 <sup>0</sup> <sub>-0.030</sub>	7	19 <sup>0</sup> <sub>-0.013</sub>	M6x10L	22	3.5	6	6	13.8	27	15	1.2	1.9	
SGMAV-06A□A6□	154.5	124.5	200.5	170.5	95.5																1.7	2.4	
SGMAV-08A□A6□	155	115	200	160	85																2.3	3.2	
SGMAV-10A□A6□	185	145	235	195	115	3.6	4.6																

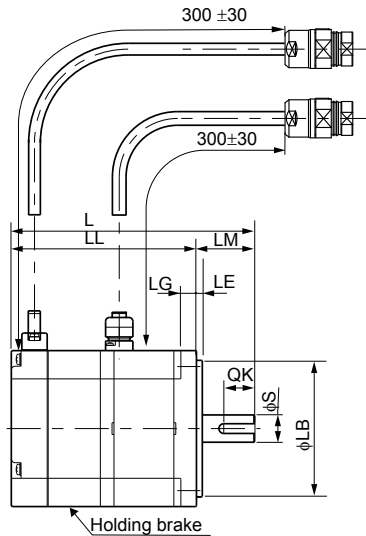


Type SGMEV (230/400 V, 100 - 1500 W)

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□	87	62	116	91	25	70	50 <sup>0</sup> <sub>-0.030</sub>	60	3	6	5.5	8 <sup>0</sup> <sub>-0.011</sub>	14	3	3	1.8	M3 x 6L	0.7	0.9
SGMEV-02A□A6□	97	67	128.5	98.5	30	90	70 <sup>0</sup> <sub>-0.030</sub>	80	3	8	7	14 <sup>0</sup> <sub>-0.011</sub>	16	5	5	3	M5 x 8L	1.4	1.9
SGMEV-02D□A6□																		2.1	2.6
SGMEV-04A□A6□	117	87	148.5	118.5	40	145	110 <sup>0</sup> <sub>-0.035</sub>	120	3.5	10	10	16 <sup>0</sup> <sub>-0.011</sub>	22	6	6	3.5	M6 x 10L	4.2	4.7
SGMEV-04D□A6□																		6.6	8.1
SGMEV-08A□A6□	126.5	86.5	160	120	40	145	110 <sup>0</sup> <sub>-0.035</sub>	120	3.5	10	10	16 <sup>0</sup> <sub>-0.011</sub>	22	6	6	3.5	M6 x 10L	4.2	4.7
SGMEV-08D□A6□																		6.6	8.1
SGMEV-15A□A6□	154.5	114.5	188	148	40	145	110 <sup>0</sup> <sub>-0.035</sub>	120	3.5	10	10	16 <sup>0</sup> <sub>-0.011</sub>	22	6	6	3.5	M6 x 10L	4.2	4.7
SGMEV-15D□A6□																		6.6	8.1



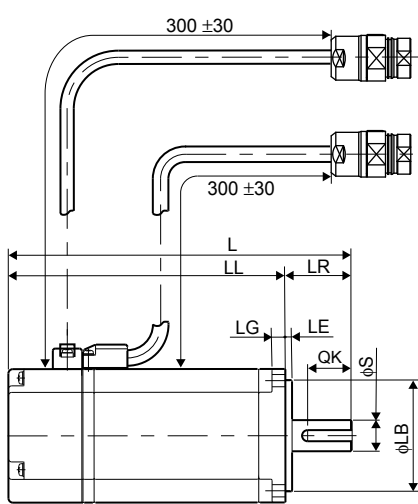
Models without Brake



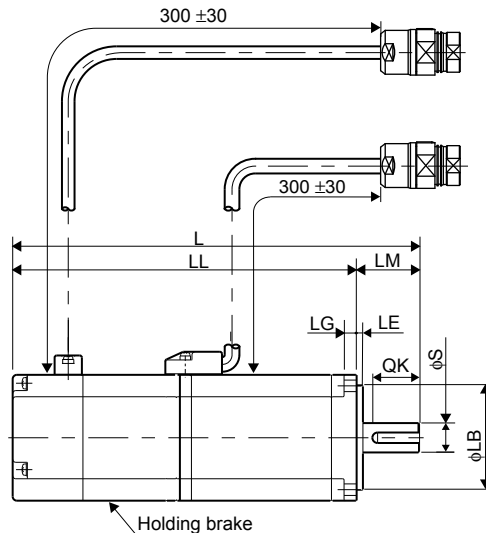
Models with Brake

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□	154.5	124.5	194	164	30	70	50 <sup>0</sup> <sub>-0.025</sub>	60	3	6	5.5	14 <sup>0</sup> <sub>-0.011</sub>	20	5	5	3	M5 x 8L	1.7	2.2
SGMEV-07D□A6□	185	145	229.5	189.5	40	90	70 <sup>0</sup> <sub>-0.030</sub>	80	3	8	70	16 <sup>0</sup> <sub>-0.011</sub>	30				M5 x 8L	3.4	4.3



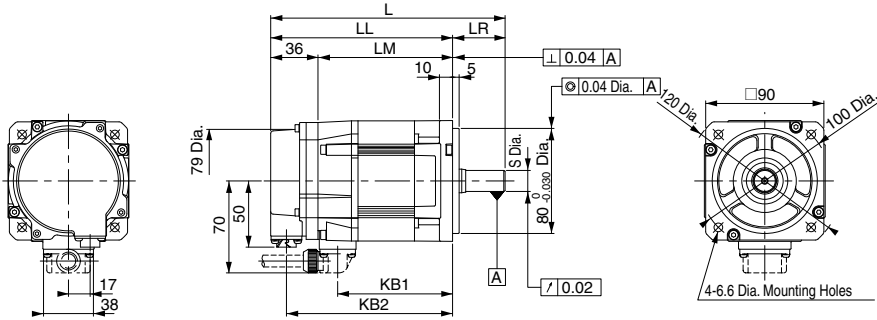
Models without Brake



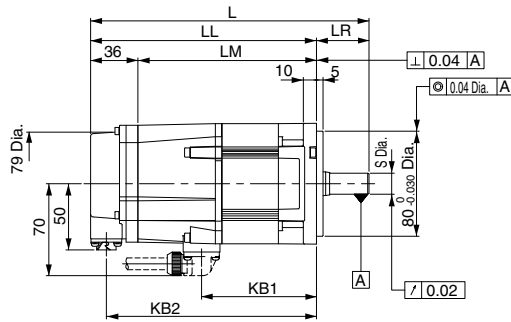
Models with Brake

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

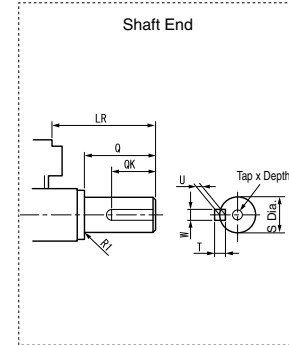
Dimensions (mm)	Without brake				With brake				LR	KB1	Shaft End Dimensions							Approx. Mass (Kg)	
	L	LL	LM	KB2	L	LL	LM	KB2			S	Q	QK	W	T	U	Tap x Depth	Without brake	With brake
SGMGV-03D□A6□	163	126	90	114	196	159	123	147	37	75	14 <sup>0</sup> <sub>-0.011</sub>	25	15	5	5	3	M4 x 10L	2.6	3.6
SGMGV-05D□A6□	179	139	103	127	212	172	136	160	40	88	16 <sup>0</sup> <sub>-0.011</sub>	30	20				M4 x 12L	3.2	4.2



Models without brake

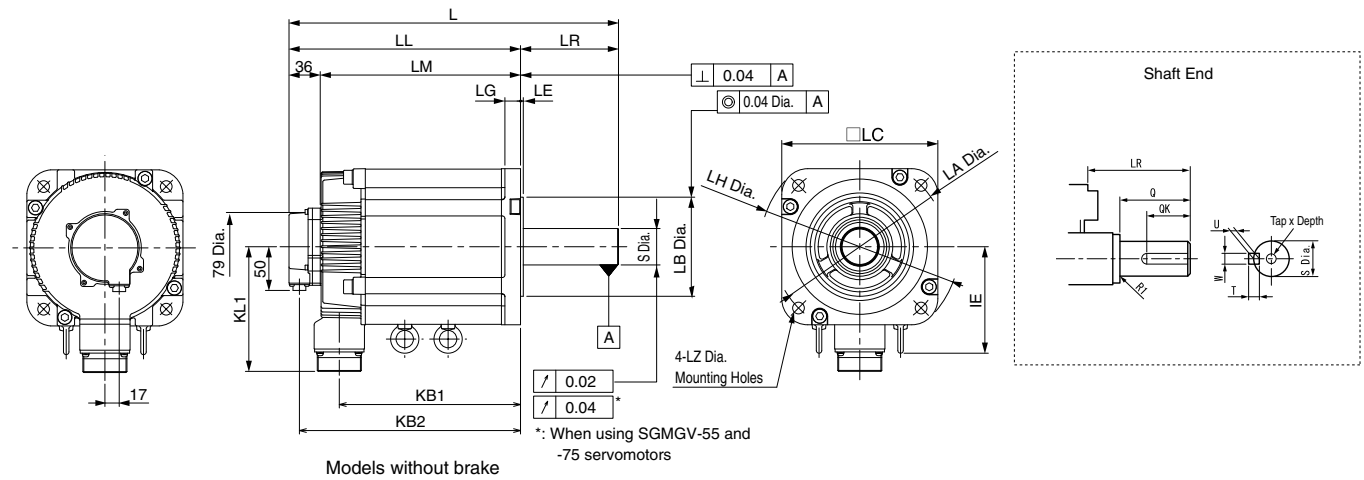


Models with brake

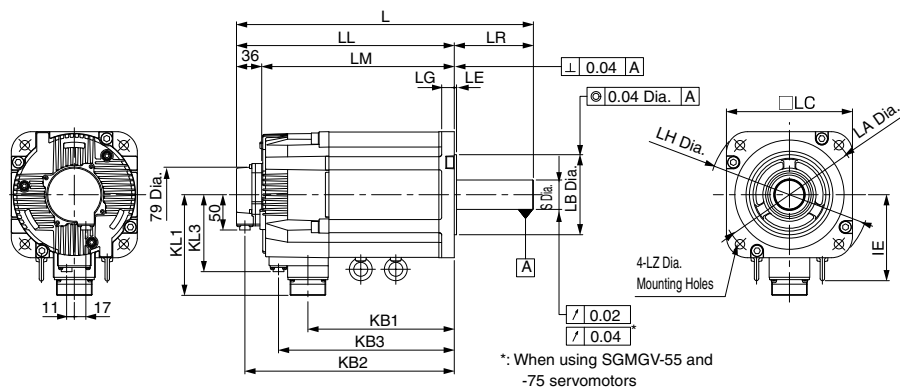


Type SGMGV (400 V, 850 W- 7.5 kW)

Di- men- sions (mm)	Without brake				With brake					LR	KB1	IE	KL1	Flange Face Dimensions						Shaft End Dimensions						Approx. Mass (Kg)						
	L	LL	LM	KB 2	L	LL	LM	KB2	KB 3					KL 3	LA	LB	LC	LE	LG	LH	LZ	S	Q	Q K	W	T	U	Tap x Depth	With- out brak- e	Wit h brake		
SGM GV- 09D□ A6□	195	137	101	125	231	173	137	161	115	80	58	83	-	104	145	110 <sup>0</sup> <sub>-0.035</sub>	130	6	12	165	9	19 <sup>0</sup> <sub>-0.013</sub>	40	25	5	5	3	M5 x 12L	5.5	7.5		
SGM GV- 13D□ A6□	211	153	117	141	247	189	153	177	131			99	-																			
SGM GV- 20D□ A6□	229	171	135	159	265	207	171	195	149			117	-																			
SGM GV- 30D□ A6□	239	160	124	148	287	208	172	196	148	110	79	108	-	134	200	114.3 <sup>0</sup> <sub>-0.025</sub>	180	3.2	18	230	13.5	35 <sup>+0.01</sup> <sub>0</sub>	76	60	10	8	5	M12 x 25L	13.4	19.5		
SGM GV- 44D□ A6□	263	184	148	172	311	232	196	220	172			132	-																			
SGM GV- 55D□ A6□	334	221	185	209	378	265	229	253	205			113	163	123	144																	
SGM GV- 75D□ A6□	380	267	231	255	424	311	275	299	251			209	-																			



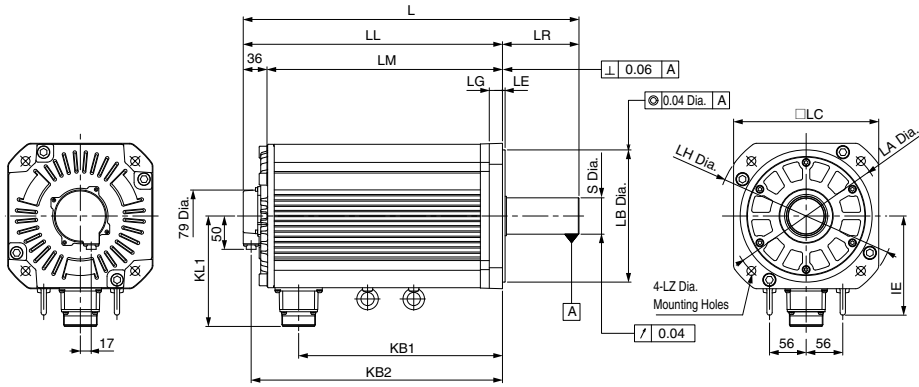
Models without brake



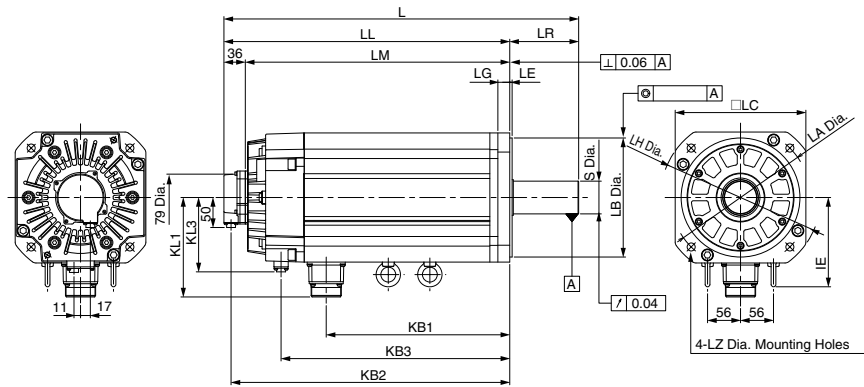
Models with brake

## Type SGMGV (400 V, 11 - 15 kW)

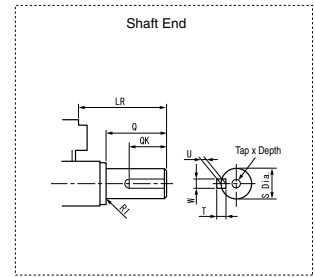
Dimensions (mm)	Without brake				With brake					LR	KB 1	IE	KL1	Flange Face Dimensions							Shaft End Dimensions						Approx. Mass (Kg)			
	L	LL	LM	KB 2	L	LL	LM	KB 2	KB 3					KL 3	LA	LB	LC	LE	LG	LH	LZ	S	Q	QK	W	T	U	Tap x Depth	Without brake	With brake
SGMGV-1AD□A6 □	447	331	295	319	498	382	346	370	315	125	116	247	150	168	235	200 <sup>U</sup> <sub>-0.046</sub>	220	4	20	270	13.5	42 <sup>U</sup> <sub>-0.016</sub>	110	90	12	8	5	M16 x 32L	57	65
SGMGV-1ED□A6 □	509	393	357	381	598	482	446	470	385			309																		



Models without brake



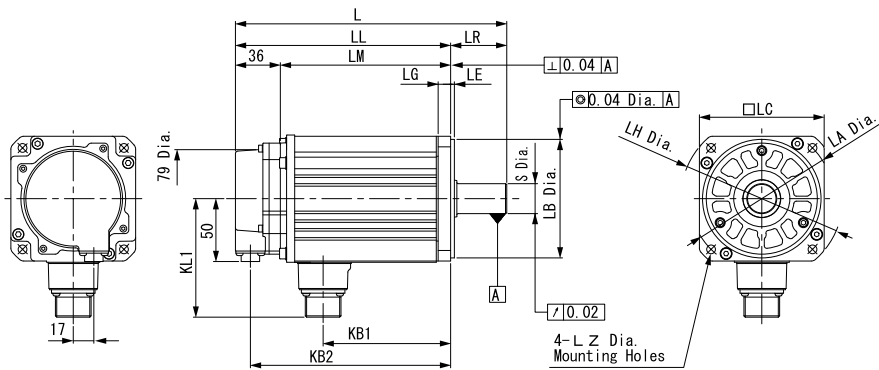
Models with brake



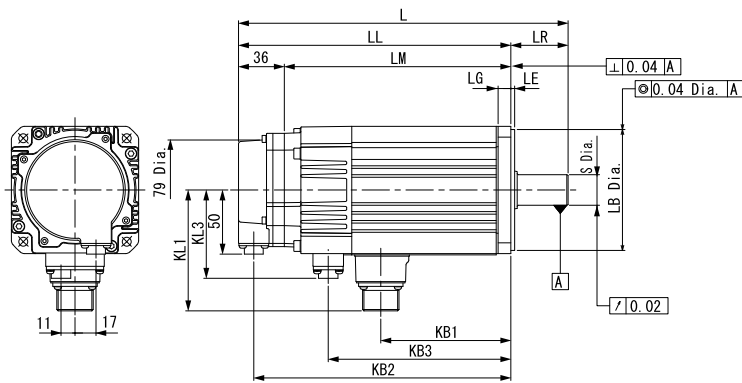
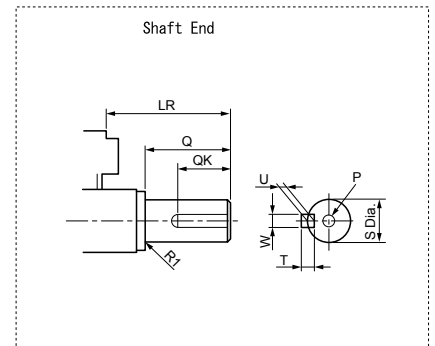


Type SGMSV (400 V, 1 - 5 kW)

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	With out brake	With brake
SGMSV-10D□A2□	192	147	111	45	135	233	188	152	45	118	176	69	76	96	115	95 <sup>0</sup> <sub>-0.035</sub>	100	3	3	10	130	7	24 <sup>0</sup> <sub>-0.013</sub>	40	32	8	7	4	M8 x 16L	4.1	5.5
SGMSV-15D□A2□	211	153	117	58	141	243	198	162	45	128	186		99																	4.6	6
SGMSV-20D□A2□	229	171	135	58	159	259	214	178	45	144	202		117																	5.4	6.8
SGMSV-25D□A2□	239	160	124	79	148	292	247	211	45	177	225		108																	6.8	8.7
SGMSV-30D□A2□	259	196	160	63	184	295	232	196	63	176	220	81	124	114	145	110 <sup>0</sup> <sub>-0.035</sub>	130	6	6	12	165	9	28 <sup>0</sup> <sub>-0.013</sub>	55	50					10.5	13
SGMSV-40D□A2□	296	233	197	63	221	332	269	233	63	213	257		161																	13.5	16
SGMSV-50D□A2□	336	273	237	63	261	372	309	273	63	253	297		201																	16.5	19



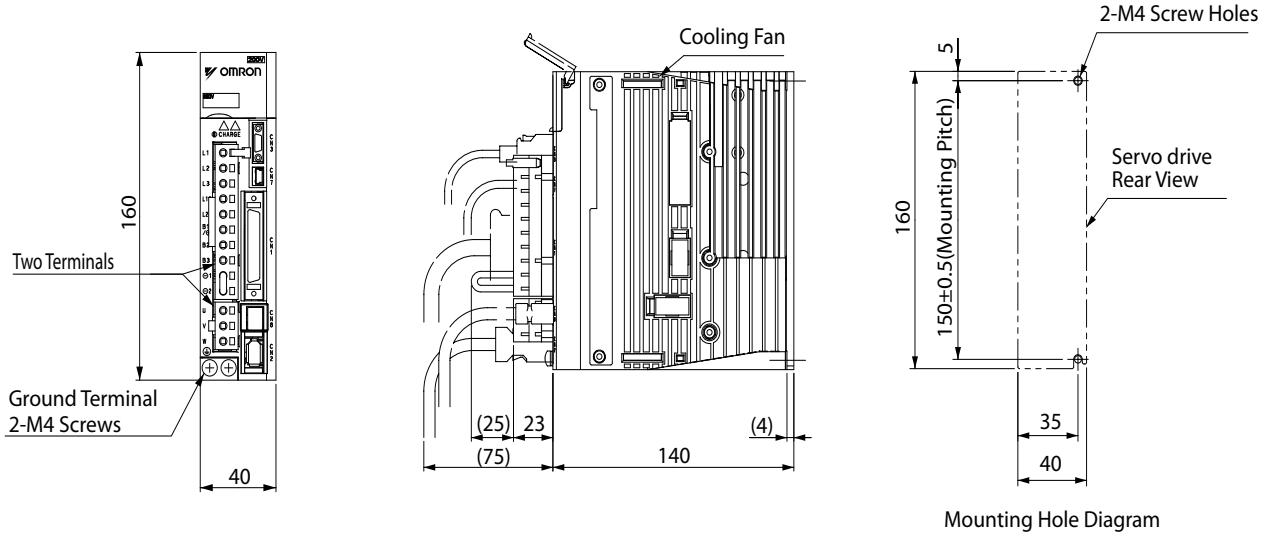
Models without brake



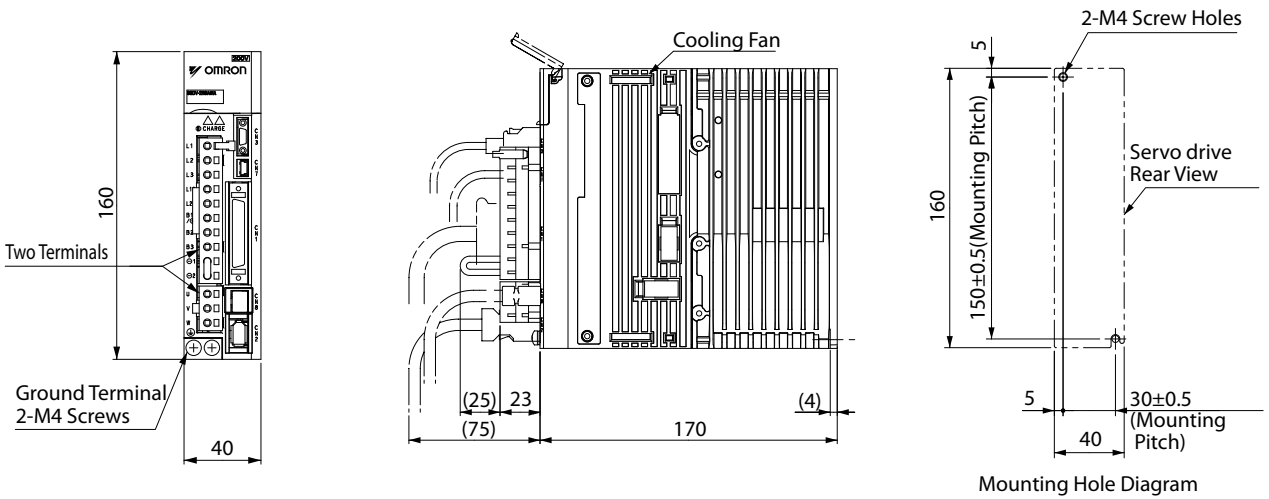
Models with brake

## Sigma-5 Servo Drive

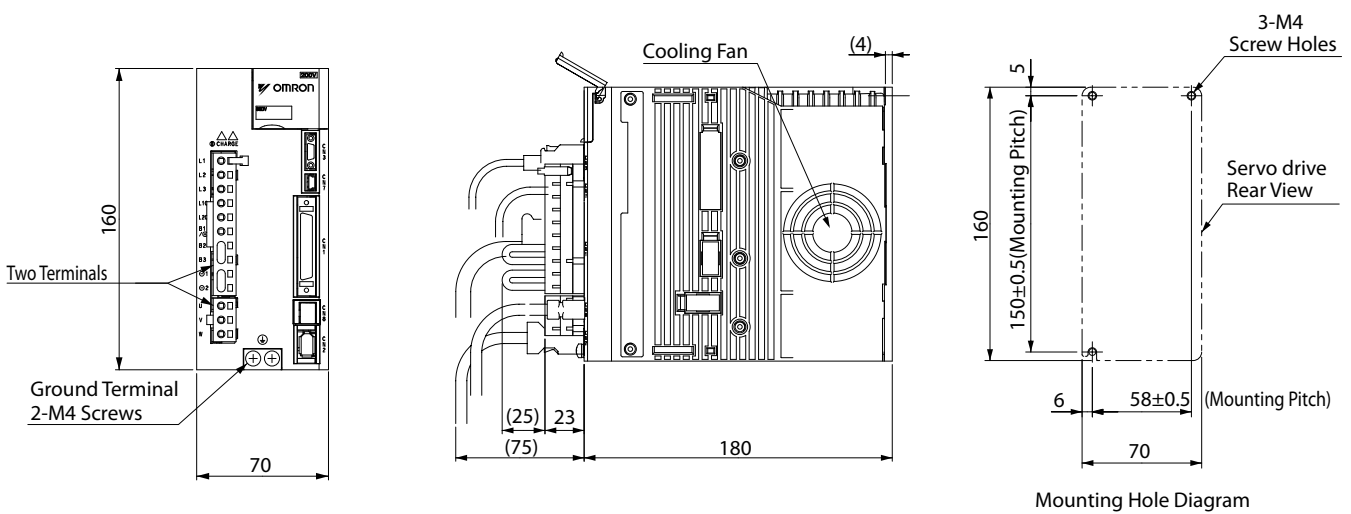
SGDV-R70A□□A to -1R6A□□A (230 V, 50 to 200 W)



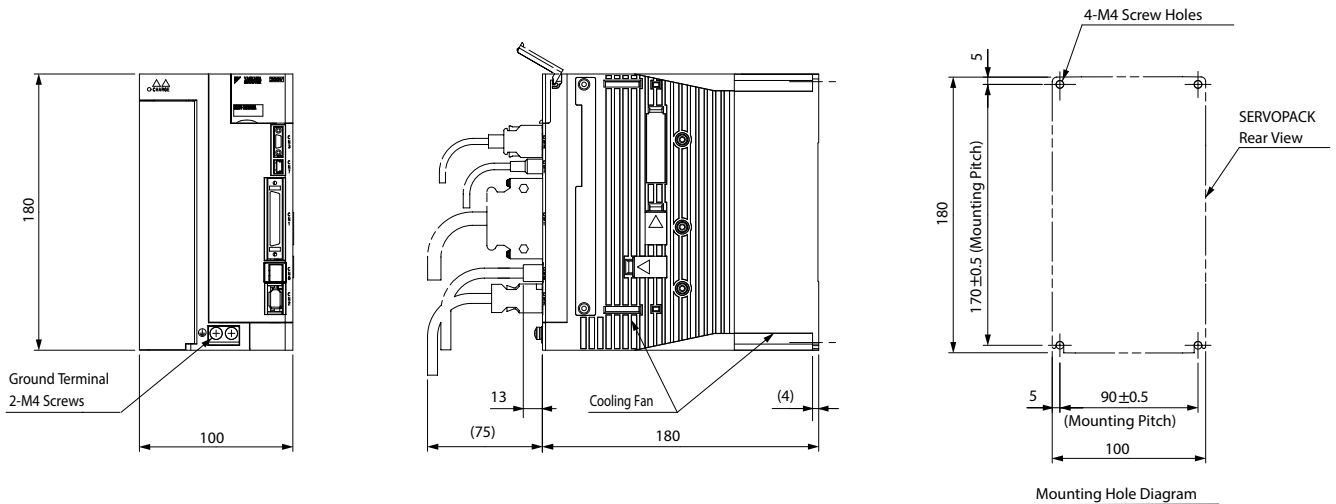
## SGDV-2R8A□□A (230 V, 400 W)



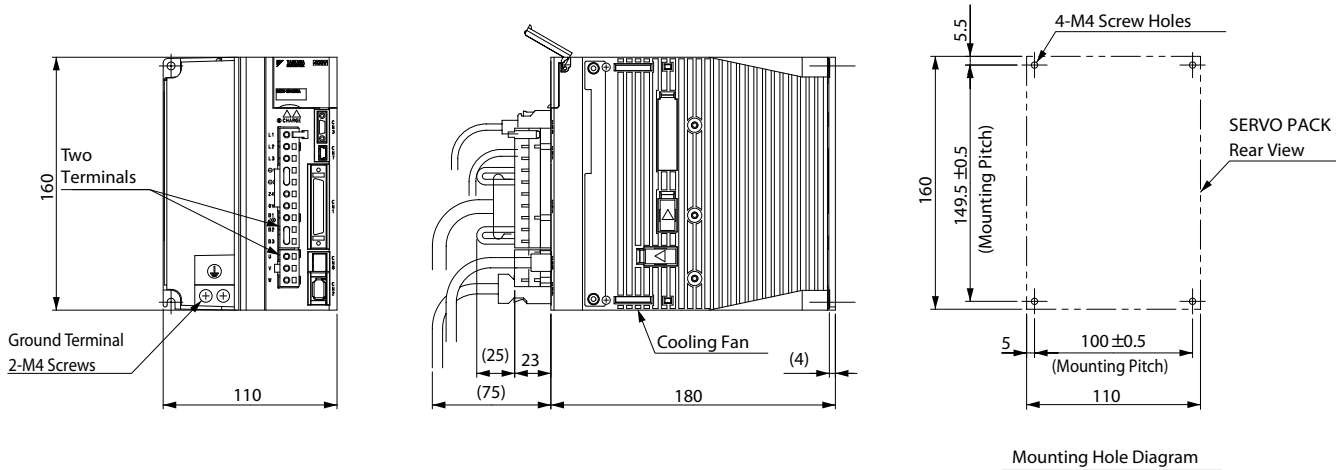
## SGDV-5R5A□□A (230 V, 750 W)



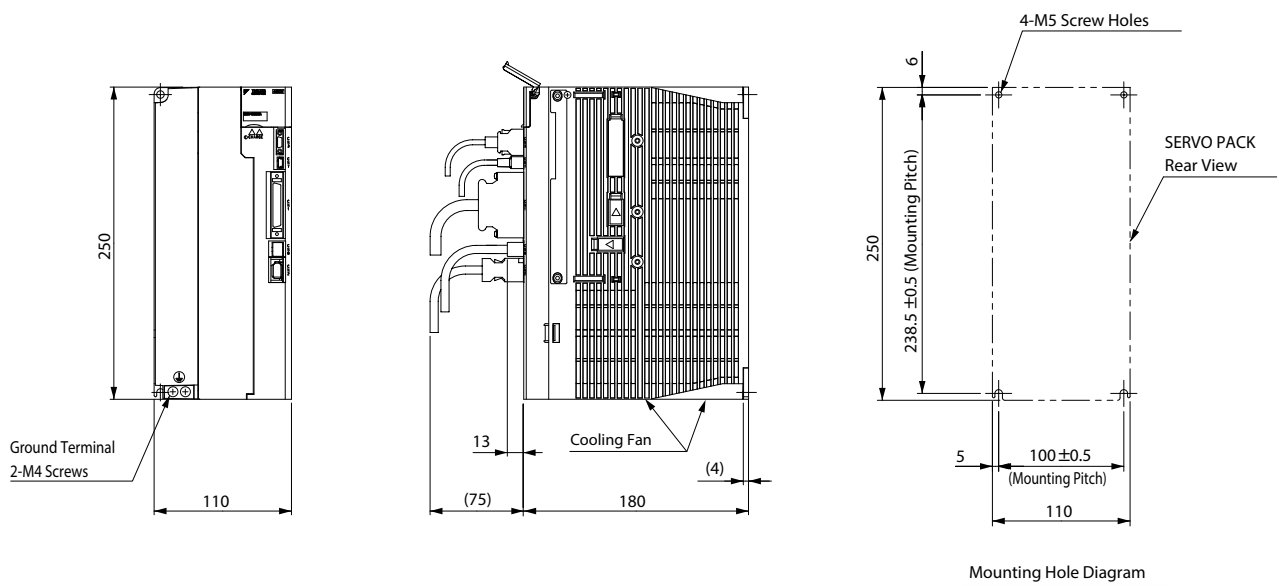
**SGDV-120A□□A008000 (230 V, 1.5 kW)**



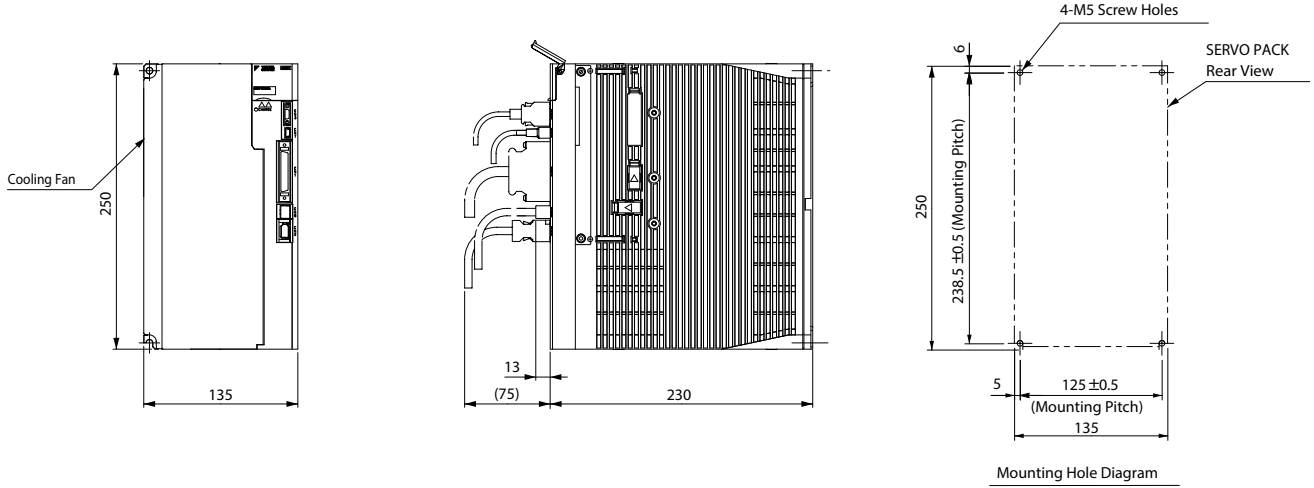
**SGDV-1R9D□□A to -5R4D□□A (400 V, 0.5 to 1.5 kW)**



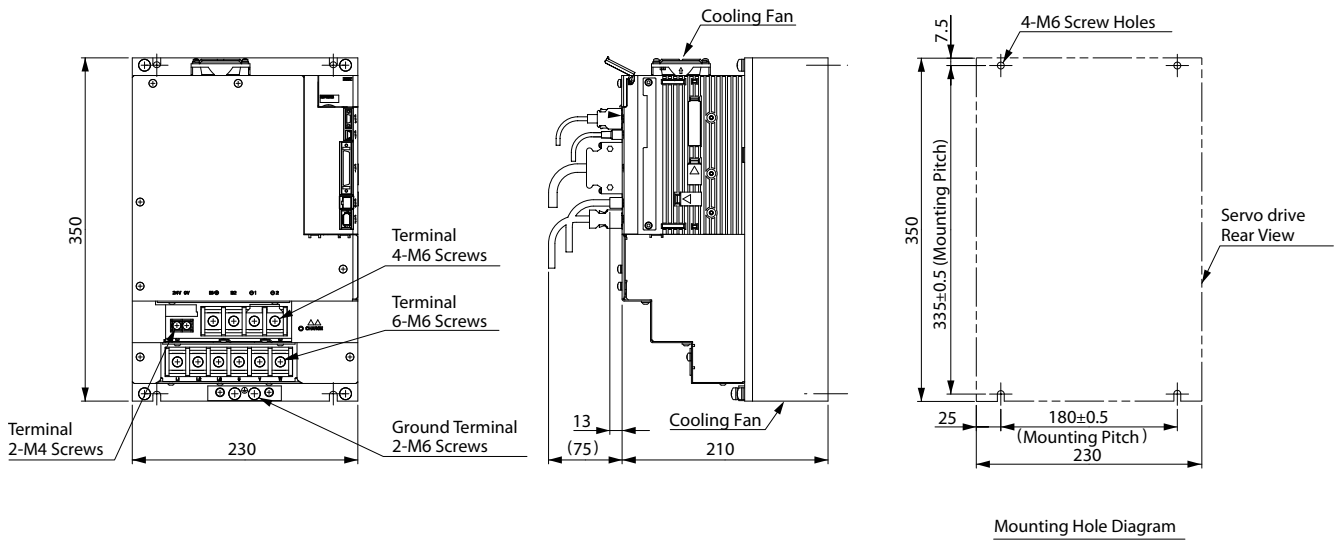
**SGDV-8R4D□□A to -120D□□A (400 V, 2 to 3 kW)**



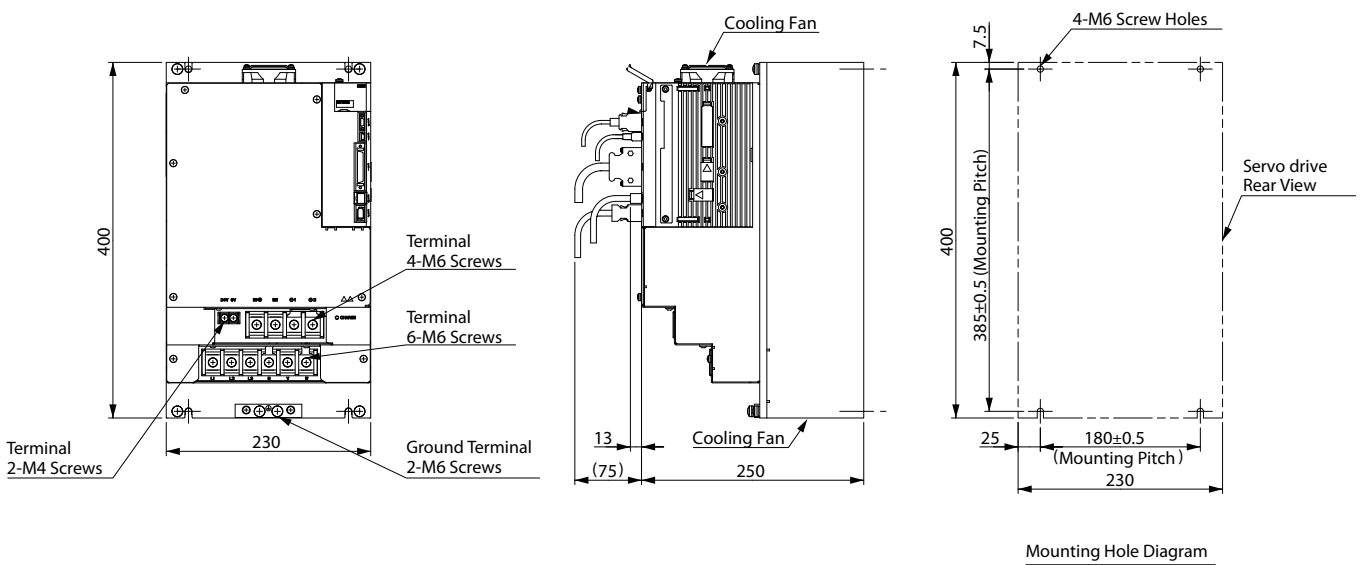
SGDV-170D□□A (400 V, 5 kW)



SGDV-210D□1A to 260D□1A (400 V, 6 to 7.5 kW)



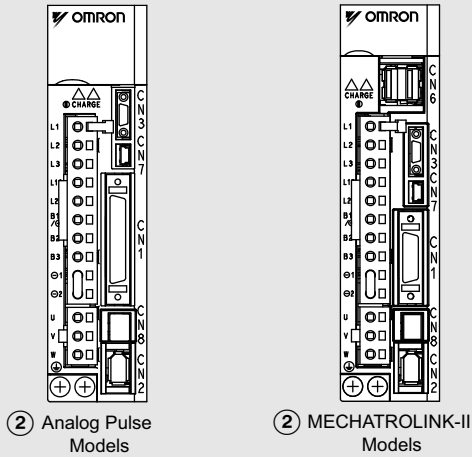
SGDV-280D□1A to 370D□1A (400 V, 11 to 15 kW)



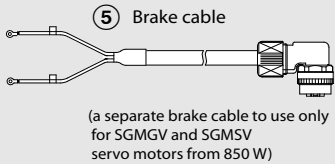
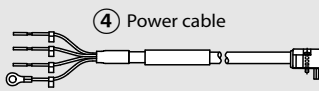
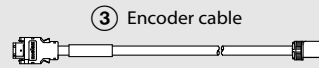
**Ordering information**

(Refer to servo drive chapter)

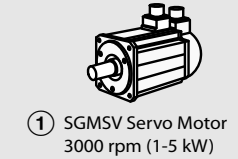
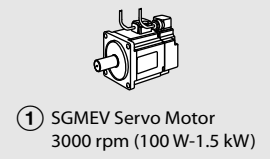
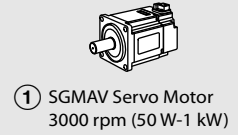
Drive options



**Power, encoder and brake cables**



**Servo motors**



**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			Sigma-5
	230 V	Incremental encoder (13 bit) Straight shaft with key and tap	Without brake	0.159 Nm	50 W	SGMJV-A5AAA61	SGDV-R70A□1A
				0.318 Nm	100 W	SGMJV-01AAA61	SGDV-R90A□1A
				0.637 Nm	200 W	SGMJV-02AAA61	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMJV-04AAA61	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMJV-08AAA61	SGDV-5R5A□1A
				2.39 Nm	750 W	SGMJV-08AAA61	SGDV-5R5A□1A
			With brake	0.159 Nm	50 W	SGMJV-A5AAA6C	SGDV-R70A□1A
				0.318 Nm	100 W	SGMJV-01AAA6C	SGDV-R90A□1A
				0.637 Nm	200 W	SGMJV-02AAA6C	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMJV-04AAA6C	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMJV-08AAA6C	SGDV-5R5A□1A
				2.39 Nm	750 W	SGMJV-08AAA6C	SGDV-5R5A□1A
		Incremental encoder (20 bit) Straight shaft with key and tap	Without brake	0.159 Nm	50 W	SGMJV-A5ADA61	SGDV-R70A□1A
				0.318 Nm	100 W	SGMJV-01ADA61	SGDV-R90A□1A
				0.637 Nm	200 W	SGMJV-02ADA61	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMJV-04ADA61	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMJV-08ADA61	SGDV-5R5A□1A
				2.39 Nm	750 W	SGMJV-08ADA61	SGDV-5R5A□1A
			With brake	0.159 Nm	50 W	SGMJV-A5ADA6C	SGDV-R70A□1A
				0.318 Nm	100 W	SGMJV-01ADA6C	SGDV-R90A□1A
				0.637 Nm	200 W	SGMJV-02ADA6C	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMJV-04ADA6C	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMJV-08ADA6C	SGDV-5R5A□1A
				2.39 Nm	750 W	SGMJV-08ADA6C	SGDV-5R5A□1A
Absolute encoder (20 bit) Straight shaft with key and tap	Without brake	0.159 Nm	50 W	SGMJV-A5A3A61	SGDV-R70A□1A		
		0.318 Nm	100 W	SGMJV-01A3A61	SGDV-R90A□1A		
		0.637 Nm	200 W	SGMJV-02A3A61	SGDV-1R6A□1A		
		1.27 Nm	400 W	SGMJV-04A3A61	SGDV-2R8A□1A		
		2.39 Nm	750 W	SGMJV-08A3A61	SGDV-5R5A□1A		
		2.39 Nm	750 W	SGMJV-08A3A61	SGDV-5R5A□1A		
	With brake	0.159 Nm	50 W	SGMJV-A5A3A6C	SGDV-R70A□1A		
		0.318 Nm	100 W	SGMJV-01A3A6C	SGDV-R90A□1A		
		0.637 Nm	200 W	SGMJV-02A3A6C	SGDV-1R6A□1A		
		1.27 Nm	400 W	SGMJV-04A3A6C	SGDV-2R8A□1A		
		2.39 Nm	750 W	SGMJV-08A3A6C	SGDV-5R5A□1A		
		2.39 Nm	750 W	SGMJV-08A3A6C	SGDV-5R5A□1A		


SGMAV - servo motors 3000 r/min (50 W - 1 kW)

Symbol	Specifications				Servo motor model	Compatible servo drives (2)		
	Voltage	Encoder and design	Rated torque	Capacity			Sigma-5	
	230 V	Incremental encoder (20 bit) Straight shaft with key and tap	Without brake	0.159 Nm	50 W	SGMAV-A5ADA61	SGDV-R70A□1A	
				0.318 Nm	100 W	SGMAV-01ADA61	SGDV-R90A□1A	
				0.477 Nm	150 W	SGMAV-C2ADA61	SGDV-1R6A□1A	
				0.637 Nm	200 W	SGMAV-02ADA61	SGDV-1R6A□1A	
				1.27 Nm	400 W	SGMAV-04ADA61	SGDV-2R8A□1A	
				1.75 Nm	550 W	SGMAV-06ADA61	SGDV-5R5A□1A	
				2.39 Nm	750 W	SGMAV-08ADA61	SGDV-5R5A□1A	
				3.18 Nm	1 kW	SGMAV-10ADA61	SGDV-120A□1A008000	
				With brake	0.159 Nm	50 W	SGMAV-A5ADA6C	SGDV-R70A□1A
					0.318 Nm	100 W	SGMAV-01ADA6C	SGDV-R90A□1A
					0.477 Nm	150 W	SGMAV-C2ADA6C	SGDV-1R6A□1A
					0.637 Nm	200 W	SGMAV-02ADA6C	SGDV-1R6A□1A
			1.27 Nm		400 W	SGMAV-04ADA6C	SGDV-2R8A□1A	
			1.75 Nm		550 W	SGMAV-06ADA6C	SGDV-5R5A□1A	
			Absolute encoder (20 bit) Straight shaft with key and tap	Without brake	0.159 Nm	50 W	SGMAV-A5A3A61	SGDV-R70A□1A
					0.318 Nm	100 W	SGMAV-01A3A61	SGDV-R90A□1A
					0.477 Nm	150 W	SGMAV-C2A3A61	SGDV-1R6A□1A
					0.637 Nm	200 W	SGMAV-02A3A61	SGDV-1R6A□1A
					1.27 Nm	400 W	SGMAV-04A3A61	SGDV-2R8A□1A
					1.75 Nm	550 W	SGMAV-06A3A61	SGDV-5R5A□1A
				With brake	0.159 Nm	50 W	SGMAV-A5A3A6C	SGDV-R70A□1A
					0.318 Nm	100 W	SGMAV-01A3A6C	SGDV-R90A□1A
					0.477 Nm	150 W	SGMAV-C2A3A6C	SGDV-1R6A□1A
					0.637 Nm	200 W	SGMAV-02A3A6C	SGDV-1R6A□1A
		1.27 Nm			400 W	SGMAV-04A3A6C	SGDV-2R8A□1A	
		1.75 Nm			550 W	SGMAV-06A3A6C	SGDV-5R5A□1A	
		Straight shaft with key and tap	Without brake	0.159 Nm	50 W	SGMAV-A5A3A61	SGDV-R70A□1A	
				0.318 Nm	100 W	SGMAV-01A3A61	SGDV-R90A□1A	
				0.477 Nm	150 W	SGMAV-C2A3A61	SGDV-1R6A□1A	
				0.637 Nm	200 W	SGMAV-02A3A61	SGDV-1R6A□1A	
				1.27 Nm	400 W	SGMAV-04A3A61	SGDV-2R8A□1A	
				1.75 Nm	550 W	SGMAV-06A3A61	SGDV-5R5A□1A	
			With brake	0.159 Nm	50 W	SGMAV-A5A3A6C	SGDV-R70A□1A	
				0.318 Nm	100 W	SGMAV-01A3A6C	SGDV-R90A□1A	
				0.477 Nm	150 W	SGMAV-C2A3A6C	SGDV-1R6A□1A	
				0.637 Nm	200 W	SGMAV-02A3A6C	SGDV-1R6A□1A	
1.27 Nm	400 W			SGMAV-04A3A6C	SGDV-2R8A□1A			
1.75 Nm	550 W			SGMAV-06A3A6C	SGDV-5R5A□1A			

SGMEV - servo motors 3000 r/min (100 W - 1.5 kW)


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	0.318 Nm	100 W	SGMEV-01ADA61	SGDV-R90A□1A
				0.637 Nm	200 W	SGMEV-02ADA61	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMEV-04ADA61	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMEV-08ADA61	SGDV-5R5A□1A
				4.77 Nm	1.5 kW	SGMEV-15ADA61	SGDV-120A□1A008000
			With brake	0.318 Nm	100 W	SGMEV-01ADA6C	SGDV-R90A□1A
				0.637 Nm	200 W	SGMEV-02ADA6C	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMEV-04ADA6C	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMEV-08ADA6C	SGDV-5R5A□1A
		Absolute encoder (20 bit)	Without brake	0.318 Nm	100 W	SGMEV-01A3A61	SGDV-R90A□1A
				0.637 Nm	200 W	SGMEV-02A3A61	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMEV-04A3A61	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMEV-08A3A61	SGDV-5R5A□1A
				4.77 Nm	1.5 kW	SGMEV-15A3A61	SGDV-120A□1A008000
			With brake	0.318 Nm	100 W	SGMEV-01A3A6C	SGDV-R90A□1A
				0.637 Nm	200 W	SGMEV-02A3A6C	SGDV-1R6A□1A
				1.27 Nm	400 W	SGMEV-04A3A6C	SGDV-2R8A□1A
				2.39 Nm	750 W	SGMEV-08A3A6C	SGDV-5R5A□1A
	400 V	Incremental encoder (20 bit)	Without brake	0.637 Nm	200 W	SGMEV-02DDA61	SGDV-1R9D□1A
				0.955 Nm	300 W	SGMEV-03DDA61	SGDV-1R9D□1A
				1.27 Nm	400 W	SGMEV-04DDA61	SGDV-1R9D□1A
				2.07 Nm	650 W	SGMEV-07DDA61	SGDV-3R5D□1A
				2.39 Nm	750 W	SGMEV-08DDA61	SGDV-3R5D□1A
			With brake	4.77 Nm	1.5 kW	SGMEV-15DDA61	SGDV-5R4D□1A
				0.637 Nm	200 W	SGMEV-02DDA6C	SGDV-1R9D□1A
				0.955 Nm	300 W	SGMEV-03DDA6C	SGDV-1R9D□1A
				1.27 Nm	400 W	SGMEV-04DDA6C	SGDV-1R9D□1A
		Absolute encoder (20 bit)	Without brake	2.07 Nm	650 W	SGMEV-07DDA2C	SGDV-3R5D□1A
				2.39 Nm	750 W	SGMEV-08DDA2C	SGDV-3R5D□1A
				4.77 Nm	1.5 kW	SGMEV-15DDA2C	SGDV-5R4D□1A
				0.637 Nm	200 W	SGMEV-02D3A61	SGDV-1R9D□1A
				0.955 Nm	300 W	SGMEV-03D3A61	SGDV-1R9D□1A
			With brake	1.27 Nm	400 W	SGMEV-04D3A61	SGDV-1R9D□1A
				2.07 Nm	650 W	SGMEV-07D3A61	SGDV-3R5D□1A
				2.39 Nm	750 W	SGMEV-08D3A61	SGDV-3R5D□1A
				4.77 Nm	1.5 kW	SGMEV-15D3A61	SGDV-5R4D□1A
Straight shaft with key and tap	Without brake	0.637 Nm	200 W	SGMEV-02D3A6C	SGDV-1R9D□1A		
		0.955 Nm	300 W	SGMEV-03D3A6C	SGDV-1R9D□1A		
		1.27 Nm	400 W	SGMEV-04D3A6C	SGDV-1R9D□1A		
		2.07 Nm	650 W	SGMEV-07D3A6C	SGDV-3R5D□1A		
		2.39 Nm	750 W	SGMEV-08D3A6C	SGDV-3R5D□1A		
	With brake	4.77 Nm	1.5 kW	SGMEV-15D3A6C	SGDV-5R4D□1A		
		0.637 Nm	200 W	SGMEV-02D3A6C	SGDV-1R9D□1A		
		0.955 Nm	300 W	SGMEV-03D3A6C	SGDV-1R9D□1A		
		1.27 Nm	400 W	SGMEV-04D3A6C	SGDV-1R9D□1A		

SGMGV - servo motors 1500 r/min (300 W - 15 kW)


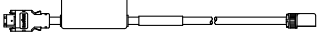
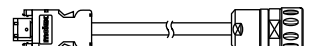
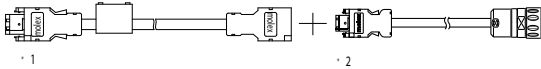

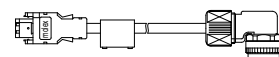
Symbol	Specifications				Servo motor model	Compatible servo drives <sup>②</sup>	
	Voltage	Encoder and design	Rated torque	Capacity			
① 	400 V	<b>Incremental encoder (20 bit)</b> Straight shaft with key and tap	Without brake	1.96 Nm	300 W	SGMGV-03DDA6F	SGDV-1R9D□1A
				2.86 Nm	450 W	SGMGV-05DDA6F	SGDV-1R9D□1A
				5.39 Nm	850 W	SGMGV-09DDA6F	SGDV-3R5D□1A
				8.34 Nm	1.3 kW	SGMGV-13DDA6F	SGDV-5R4D□1A
				11.5 Nm	1.8 kW	SGMGV-20DDA6F	SGDV-8R4D□1A
				18.6 Nm	2.9 kW	SGMGV-30DDA6F	SGDV-120D□1A
				28.4 Nm	4.4 kW	SGMGV-44DDA6F	SGDV-170D□1A
				35.0 Nm	5.5 kW	SGMGV-55DDA6F	SGDV-210D□1A
				48.0 Nm	7.5 kW	SGMGV-75DDA6F	SGDV-260D□1A
			70.0 Nm	11 kW	SGMGV-11DDA6F	SGDV-280D□1A	
			95.4 Nm	15 kW	SGMGV-15DDA6F	SGDV-370D□1A	
			With brake	1.96 Nm	300 W	SGMGV-03DDA6H	SGDV-1R9D□1A
				2.86 Nm	450 W	SGMGV-05DDA6H	SGDV-1R9D□1A
				5.39 Nm	850 W	SGMGV-09DDA6H	SGDV-3R5D□1A
				8.34 Nm	1.3 kW	SGMGV-13DDA6H	SGDV-5R4D□1A
				11.5 Nm	1.8 kW	SGMGV-20DDA6H	SGDV-8R4D□1A
				18.6 Nm	2.9 kW	SGMGV-30DDA6H	SGDV-120D□1A
				28.4 Nm	4.4 kW	SGMGV-44DDA6H	SGDV-170D□1A
		35.0 Nm		5.5 kW	SGMGV-55DDA6H	SGDV-210D□1A	
		48.0 Nm		7.5 kW	SGMGV-75DDA6H	SGDV-260D□1A	
		70.0 Nm	11 kW	SGMGV-11DDA6H	SGDV-280D□1A		
		95.4 Nm	15 kW	SGMGV-15DDA6H	SGDV-370D□1A		
		<b>Absolute encoder (20 bit)</b> Straight shaft with key and tap	Without brake	1.96 Nm	300 W	SGMGV-03D3A6F	SGDV-1R9D□1A
				2.86 Nm	450 W	SGMGV-05D3A6F	SGDV-1R9D□1A
				5.39 Nm	850 W	SGMGV-09D3A6F	SGDV-3R5D□1A
				8.34 Nm	1.3 kW	SGMGV-13D3A6F	SGDV-5R4D□1A
				11.5 Nm	1.8 kW	SGMGV-20D3A6F	SGDV-8R4D□1A
				18.6 Nm	2.9 kW	SGMGV-30D3A6F	SGDV-120D□1A
				28.4 Nm	4.4 kW	SGMGV-44D3A6F	SGDV-170D□1A
				35.0 Nm	5.5 kW	SGMGV-55D3A6F	SGDV-210D□1A
				48.0 Nm	7.5 kW	SGMGV-75D3A6F	SGDV-260D□1A
			70.0 Nm	11 kW	SGMGV-11D3A6F	SGDV-280D□1A	
			95.4 Nm	15 kW	SGMGV-15D3A6F	SGDV-370D□1A	
			With brake	1.96 Nm	300 W	SGMGV-03D3A6H	SGDV-1R9D□1A
				2.86 Nm	450 W	SGMGV-05D3A6H	SGDV-1R9D□1A
				5.39 Nm	850 W	SGMGV-09D3A6H	SGDV-3R5D□1A
				8.34 Nm	1.3 kW	SGMGV-13D3A6H	SGDV-5R4D□1A
				11.5 Nm	1.8 kW	SGMGV-20D3A6H	SGDV-8R4D□1A
				18.6 Nm	2.9 kW	SGMGV-30D3A6H	SGDV-120D□1A
				28.4 Nm	4.4 kW	SGMGV-44D3A6H	SGDV-170D□1A
		35.0 Nm		5.5 kW	SGMGV-55D3A6H	SGDV-210D□1A	
		48.0 Nm		7.5 kW	SGMGV-75D3A6H	SGDV-260D□1A	
70.0 Nm	11 kW	SGMGV-11D3A6H	SGDV-280D□1A				
95.4 Nm	15 kW	SGMGV-15D3A6H	SGDV-370D□1A				



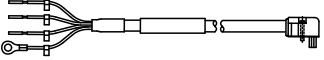
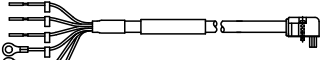
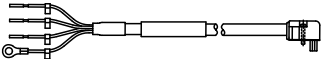
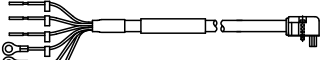
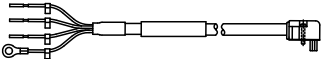
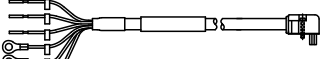
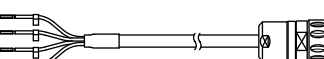
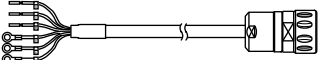
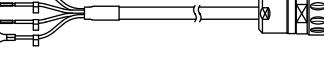
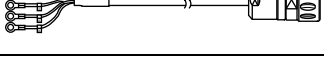
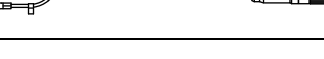
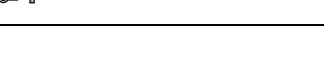
SGMSV - servo motors 3000 r/min (1 - 5 kW)

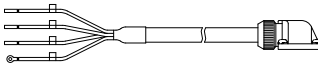

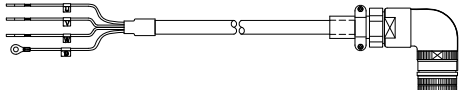
Symbol	Specifications				Servo motor model	Compatible servo drives <sup>(2)</sup> Sigma-5	
	Voltage	Encoder and design		Rated torque			Capacity
<p>①</p> 	400 V	Incremental encoder (20 bit)	Without brake	3.18 Nm	1 kW	SGMSV-10DDA6F	SGDV-3R5D□1A
				4.9 Nm	1.5 kW	SGMSV-15DDA6F	SGDV-5R4D□1A
				6.36 Nm	2 kW	SGMSV-20DDA6F	SGDV-8R4D□1A
				7.96 Nm	2.5 kW	SGMSV-25DDA6F	SGDV-120D□1A
				9.8 Nm	3 kW	SGMSV-30DDA6F	SGDV-120D□1A
				12.6 Nm	4 kW	SGMSV-40DDA6F	SGDV-170D□1A
			15.8 Nm	5 kW	SGMSV-50DDA6F	SGDV-170D□1A	
			With brake	3.18 Nm	1 kW	SGMSV-10DDA6H	SGDV-3R5D□1A
				4.9 Nm	1.5 kW	SGMSV-15DDA6H	SGDV-5R4D□1A
				6.36 Nm	2 kW	SGMSV-20DDA6H	SGDV-8R4D□1A
				7.96 Nm	2.5 kW	SGMSV-25DDA6H	SGDV-120D□1A
				9.8 Nm	3 kW	SGMSV-30DDA6H	SGDV-120D□1A
		12.6 Nm		4 kW	SGMSV-40DDA6H	SGDV-170D□1A	
		Absolute encoder (20 bit)	Without brake	3.18 Nm	1 kW	SGMSV-10D3A6F	SGDV-3R5D□1A
				4.9 Nm	1.5 kW	SGMSV-15D3A6F	SGDV-5R4D□1A
				6.36 Nm	2 kW	SGMSV-20D3A6F	SGDV-8R4D□1A
				7.96 Nm	2.5 kW	SGMSV-25D3A6F	SGDV-120D□1A
				9.8 Nm	3 kW	SGMSV-30D3A6F	SGDV-120D□1A
				12.6 Nm	4 kW	SGMSV-40D3A6F	SGDV-170D□1A
			15.8 Nm	5 kW	SGMSV-50D3A6F	SGDV-170D□1A	
			With brake	3.18 Nm	1 kW	SGMSV-10D3A6H	SGDV-3R5D□1A
				4.9 Nm	1.5 kW	SGMSV-15D3A6H	SGDV-5R4D□1A
				6.36 Nm	2 kW	SGMSV-20D3A6H	SGDV-8R4D□1A
				7.96 Nm	2.5 kW	SGMSV-25D3A6H	SGDV-120D□1A
9.8 Nm	3 kW			SGMSV-30D3A6H	SGDV-120D□1A		
12.6 Nm	4 kW	SGMSV-40D3A6H		SGDV-170D□1A			
15.8 Nm	5 kW	SGMSV-50D3A6H	SGDV-170D□1A				

Encoder Cables  
for Sigma-5 servo drive

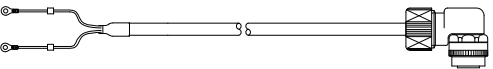
Symbol	Specifications	Model	Appearance	
③	Sigma-5 incremental encoder cable for SGMJV/AV Servo motors SGMJV-□□ADA□□ SGMJV-□□AAA□□ SGMAV-□□ADA□□	1.5 m	JZSP-CSP21-01-5E-E	
		3 m	JZSP-CSP21-03-E-E	
		5 m	JZSP-CSP21-05-E-E	
		10 m	JZSP-CSP21-10-E-E	
		15 m	JZSP-CSP21-15-E-E	
		20 m	JZSP-CSP21-20-E-E	
	Sigma-5 absolute encoder cable (with a battery case) for SGMJV/AV Servo motors SGMJV-□□A3A□□ SGMAV-□□A3A□□	3 m	JZSP-CSP25-03-G□	
		5 m	JZSP-CSP25-05-G□	
		10 m	JZSP-CSP25-10-G□	
		15 m	JZSP-CSP25-15-G□	
		20 m	JZSP-CSP25-20-G□	
	Sigma-5 incremental encoder cable for SGMEV Servo motors	1.5 m	R88A-CRWA001-5C-DE	
		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-E	 <p>*Note: *1 This cable is only an extension and must be used in conjunction with incremental encoder cable *2 R88A-CRWA0□□C-DE</p>
	Sigma-5 incremental encoder cable for SGMGV/SV Servo motors SGMGV-□□DD□ SGMSV-□□DD□	1.5 m	JZSP-CVP12-01-5E-E	
		3 m	JZSP-CVP12-03-E-E	
		5 m	JZSP-CVP12-05-E-E	
10 m		JZSP-CVP12-10-E-E		
15 m		JZSP-CVP12-15-E-E		
20 m	JZSP-CVP12-20-E-E			
Sigma-5 absolute encoder cable (with a battery case) for SGMGV/SV Servo motors SGMGV-□□D3□ SGMSV-□□D3□	3 m	JZSP-CVP27-03-G□		
	5 m	JZSP-CVP27-05-G□		
	10 m	JZSP-CVP27-10-G□		
	15 m	JZSP-CVP27-15-G□		
20 m	JZSP-CVP27-20-G□			

Power cables

Symbol	Specifications		Model	Appearance
④	For 200 V servo motors without brake SGMJV-(A5/01)A□A□1 SGMAV-(A5/01/C2)ADA□1	1.5 m	JZSP-CSM21-01-5E-E	
		3 m	JZSP-CSM21-03-E-E	
		5 m	JZSP-CSM21-05-E-E	
		10 m	JZSP-CSM21-10-E-E	
		15 m	JZSP-CSM21-15-E-E	
		20 m	JZSP-CSM21-20-E-E	
	For 200 V servo motors with brake SGMJV-(A5/01)A□A□C SGMAV-(A5/01/C2)A□A□C	1.5 m	JZSP-CSM31-01-5E-E	
		3 m	JZSP-CSM31-03-E-E	
		5 m	JZSP-CSM31-05-E-E	
		10 m	JZSP-CSM31-10-E-E	
		15 m	JZSP-CSM31-15-E-E	
		20 m	JZSP-CSM31-20-E-E	
	For 200 V servo motors without brake SGMJV-(02/04)A□A□1 SGMAV-(02/04/06)A□A□1	1.5 m	JZSP-CSM22-01-5E-E	
		3 m	JZSP-CSM22-03-E-E	
		5 m	JZSP-CSM22-05-E-E	
		10 m	JZSP-CSM22-10-E-E	
		15 m	JZSP-CSM22-15-E-E	
		20 m	JZSP-CSM22-20-E-E	
	For 200 V servo motors with brake SGMJV-(02/04)A□A□C SGMAV-(02/04/06)A□A□C	1.5 m	JZSP-CSM32-01-5E-E	
		3 m	JZSP-CSM32-03-E-E	
5 m		JZSP-CSM32-05-E-E		
10 m		JZSP-CSM32-10-E-E		
15 m		JZSP-CSM32-15-E-E		
	20 m	JZSP-CSM32-20-E-E		
For 200 V servo motors without brake SGMJV-08A□A□1 SGMAV-08A□A□1 SGMAV-10A□A□1	1.5 m	JZSP-CSM23-01-5E-E		
	3 m	JZSP-CSM23-03-E-E		
	5 m	JZSP-CSM23-05-E-E		
	10 m	JZSP-CSM23-10-E-E		
	15 m	JZSP-CSM23-15-E-E		
	20 m	JZSP-CSM23-20-E-E		
For 200 V servo motors with brake SGMJV-08A□A□C SGMAV-08A□A□C SGMAV-10A□A□C	1.5 m	JZSP-CSM33-01-5E-E		
	3 m	JZSP-CSM33-03-E-E		
	5 m	JZSP-CSM33-05-E-E		
	10 m	JZSP-CSM33-10-E-E		
	15 m	JZSP-CSM33-15-E-E		
	20 m	JZSP-CSM33-20-E-E		
For 200 V servo motors without brake SGMEV-(01/02/04/08)A□A□1	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	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	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	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	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 with brake SGMEV-(02/03/04/07/08/15)D□A□C	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		

Symbol	Specifications	Model	Appearance	
④	For 400 V servo motors without brake SGMGV-(03/05)D□A□1	1.5 m	JZSP-VVM21-01-5E-E	
		3 m	JZSP-VVM21-03-E-E	
		5 m	JZSP-VVM21-05-E-E	
		10 m	JZSP-VVM21-10-E-E	
		15 m	JZSP-VVM21-15-E-E	
		20 m	JZSP-VVM21-20-E-E	
	For 400 V servo motors with brake SGMGV-(03/05)D□A□C	1.5 m	JZSP-VVM41-01-5E-E	
		3 m	JZSP-VVM41-03-E-E	
		5 m	JZSP-VVM41-05-E-E	
		10 m	JZSP-VVM41-10-E-E	
		15 m	JZSP-VVM41-15-E-E	
		20 m	JZSP-VVM41-20-E-E	
	For 400 V servo motors SGMGV-(09/13/20)D□ SGMSV-(10/15/20/25)D□	3 m	R88A-CAWC003S-E	
		5 m	R88A-CAWC005S-E	
		10 m	R88A-CAWC010S-E	
		15 m	R88A-CAWC015S-E	
		20 m	R88A-CAWC020S-E	
		For servomotors with brake, a separate cable (JZSP-CVB12-□□-E-E) is needed		
	For 400 V servo motors SGMGV-(30/44)D□ SGMSV-(30/40/50)D□	3 m	R88A-CAWG003S-E	
		5 m	R88A-CAWG005S-E	
10 m		R88A-CAWG010S-E		
15 m		R88A-CAWG015S-E		
20 m		R88A-CAWG020S-E		
For servomotors with brake, a separate cable (JZSP-CVB12-□□-E-E) is needed				
For 400 V servo motors SGMGV-55D□	3 m	JZSP-CVMCA14-03-E-G□		
	5 m	JZSP-CVMCA14-05-E-G□		
	10 m	JZSP-CVMCA14-10-E-G□		
	15 m	JZSP-CVMCA14-15-E-G□		
	20 m	JZSP-CVMCA14-20-E-G□		
	For servomotors with brake, a separate cable (JZSP-CVB12-□□-E-E) is needed			
For 400 V servo motors SGMGV-(75/1A)D□	3 m	JZSP-CVMCA15-03-E-G□		
	5 m	JZSP-CVMCA15-05-E-G□		
	10 m	JZSP-CVMCA15-10-E-G□		
	15 m	JZSP-CVMCA15-15-E-G□		
	20 m	JZSP-CVMCA15-20-E-G□		
	For servomotors with brake, a separate cable (JZSP-CVB12-□□-E-E) is needed			
For 400 V servo motors SGMGV-1ED□	3 m	JZSP-CVMCA16-03-E-G□		
	5 m	JZSP-CVMCA16-05-E-G□		
	10 m	JZSP-CVMCA16-10-E-G□		
	15 m	JZSP-CVMCA16-15-E-G□		
	20 m	JZSP-CVMCA16-20-E-G□		
	For servomotors with brake, a separate cable (JZSP-CVB12-□□-E-E) is needed			

**Brake cable (for SGMGV-09/13/20/30/44/55/75/1A/1E and SGMSV-10/15/20/25/30/40/50 Motors)**

Symbol	Specifications	Model	Appearance	
⑤	Brake cable only. For 400 V servo motors with brake SGMGV-(09/13/20/30/44/55/75/1A/ 1E)D□A□C SGMSV-(10/15/20/25/30/40/50)D□A□C	1.5 m	JZSP-CVB12-01-5E-E	
		3 m	JZSP-CVB12-03-E-E	
		5 m	JZSP-CVB12-05-E-E	
		10 m	JZSP-CVB12-10-E-E	
		15 m	JZSP-CVB12-15-E-E	
		20 m	JZSP-CVB12-20-E-E	

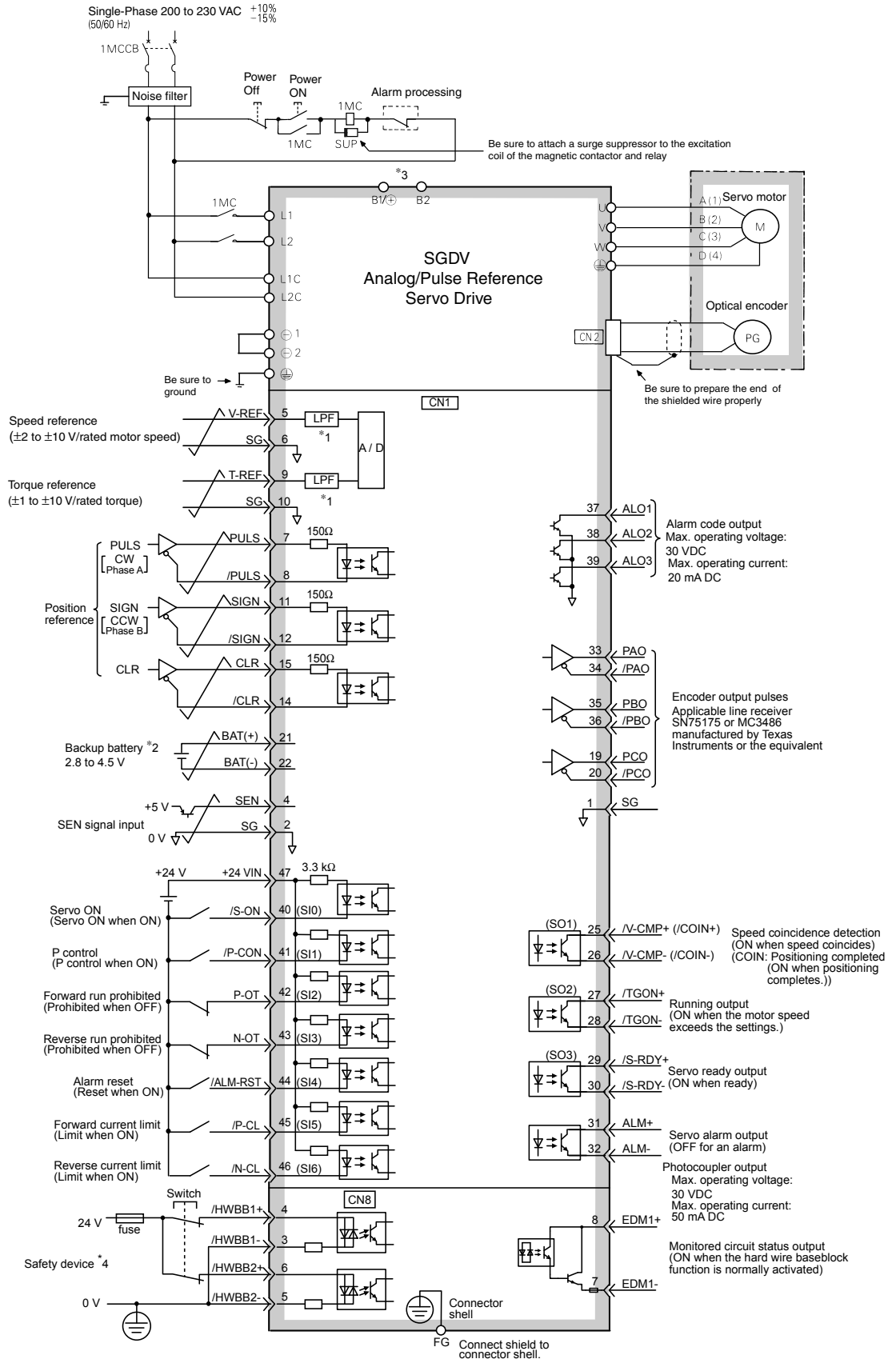
## Connectors for power and encoder cables

Description		Applicable Servo motor	Manufacturer	Model	Appearance
Power connector kit	Servomotor side	SGMJV-(A5/01)□, SGMAV-(A5/01)□, SGMAV-C2□	J.S.T.	JZSP-CSM9-1-E-G□	
		SGMJV-(02/04)□, SGMAV-(02/04/06)□	J.S.T.	JZSP-CSM9-2-E-G□	
		SGMJV-08□, SGMAV-(08/10)□	J.S.T.	JZSP-CSM9-3-E-G□	
		SGMGV-(03/05)□	Japan Aviation Electronics Industry, Ltd	JZSP-CVM9-1-E	
		SGMGV-(09/13/20)□, SGMSV-(10/15/20/25)□	DDK Ltd	MS3108E18-10S	
		SGMGV-(30/44)□, SGMSV-(30/40/50)□	DDK Ltd	MS3108E22-22S	
		SGMGV-(55/75/1A/1E)□	DDK Ltd	MS3108E32-17S	
		SGMEV-□□A□	Hypertac	SPOC-06K-FSDN169	
		SGMEV-□□D□	Hypertac	LPRA-06B-FRBN170	
Brake connector kit	Servomotor side	SGMGV-(09/13/20/30/44/55/75/1A/1E)□, SGMSV-(10/15/20/25/30/40/50)□	DDK Ltd <sup>*1</sup>	CM10Y-AP2S-M-D-G□	
Encoder connector kit	Servo drive side	SGMJV-□, SGMAV-□, SGMGV-□, SGMEV-□	Molex	JZSP-CMP9-1-E-G□	
	Servomotor side	SGMJV-□, SGMAV-□	Molex	JZSP-CSP9-2-E-G□	
		SGMGV-□, SGMSV-□	DDK Ltd <sup>*1</sup>	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	LRRR-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.

<sup>\*1</sup>The DDK connectors are not supplied. Use the model reference to request the connector to the manufacturer.

Single-phase, 230 VAC



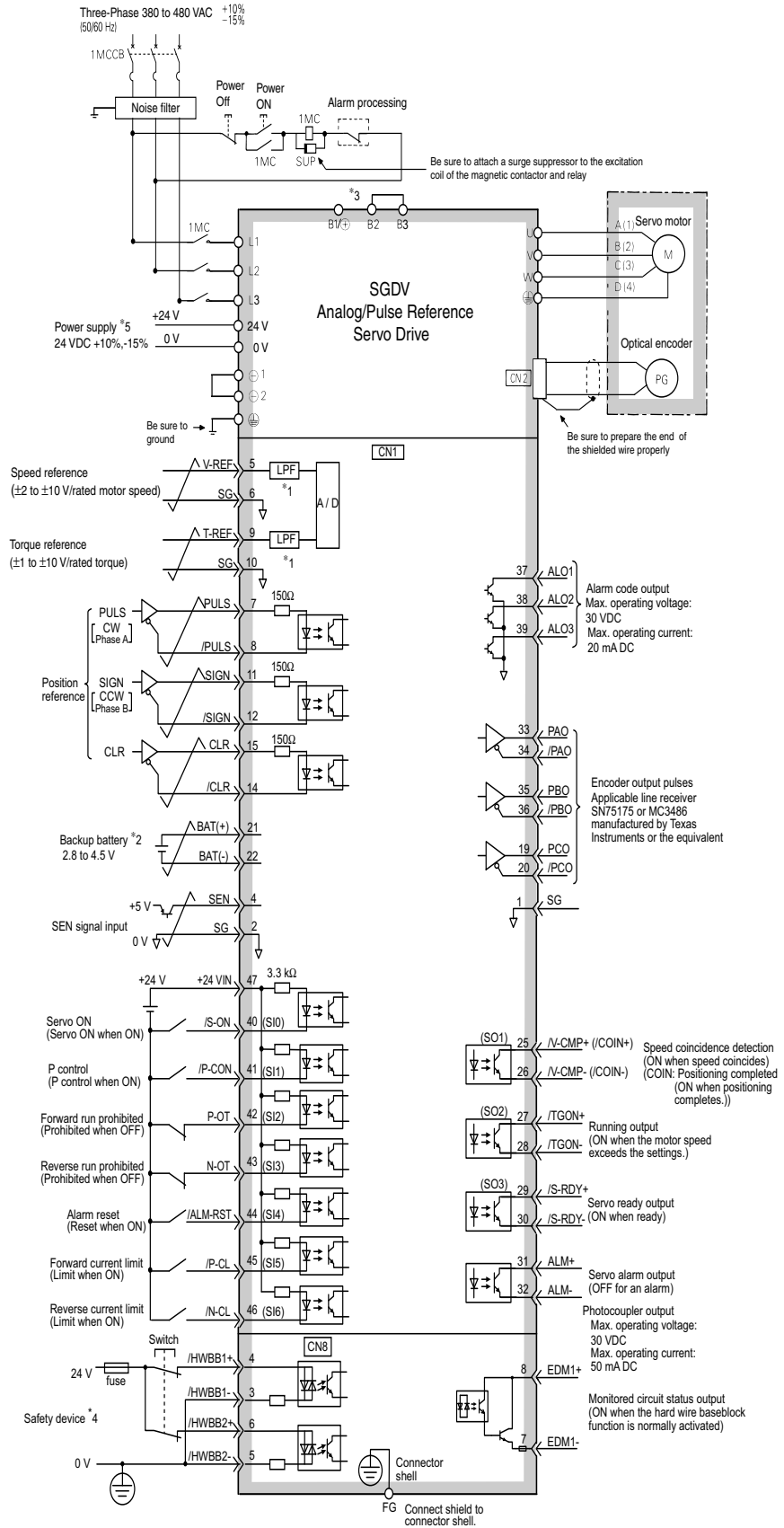
\*1 The time constant for the primary filter is 30  $\mu$ s.

\*2 Connect when using an absolute encoder. When the encoder cable for the battery case is connected, do not connect a backup battery.

\*3 Regenerative resistor can be connected between B1 and B2. For 750 W servo drives types normally short B2 and B3.

\*4 For servo ON, connect to safety device and set wiring to enable safety function. When not using the safety function, use the servo drive with the plug (JZSP-CVH05-E, provided as an accessory) inserted into the CN8.

Three-phase, 400 VAC



\*1 The time constant for the primary filter is 30  $\mu$ s.

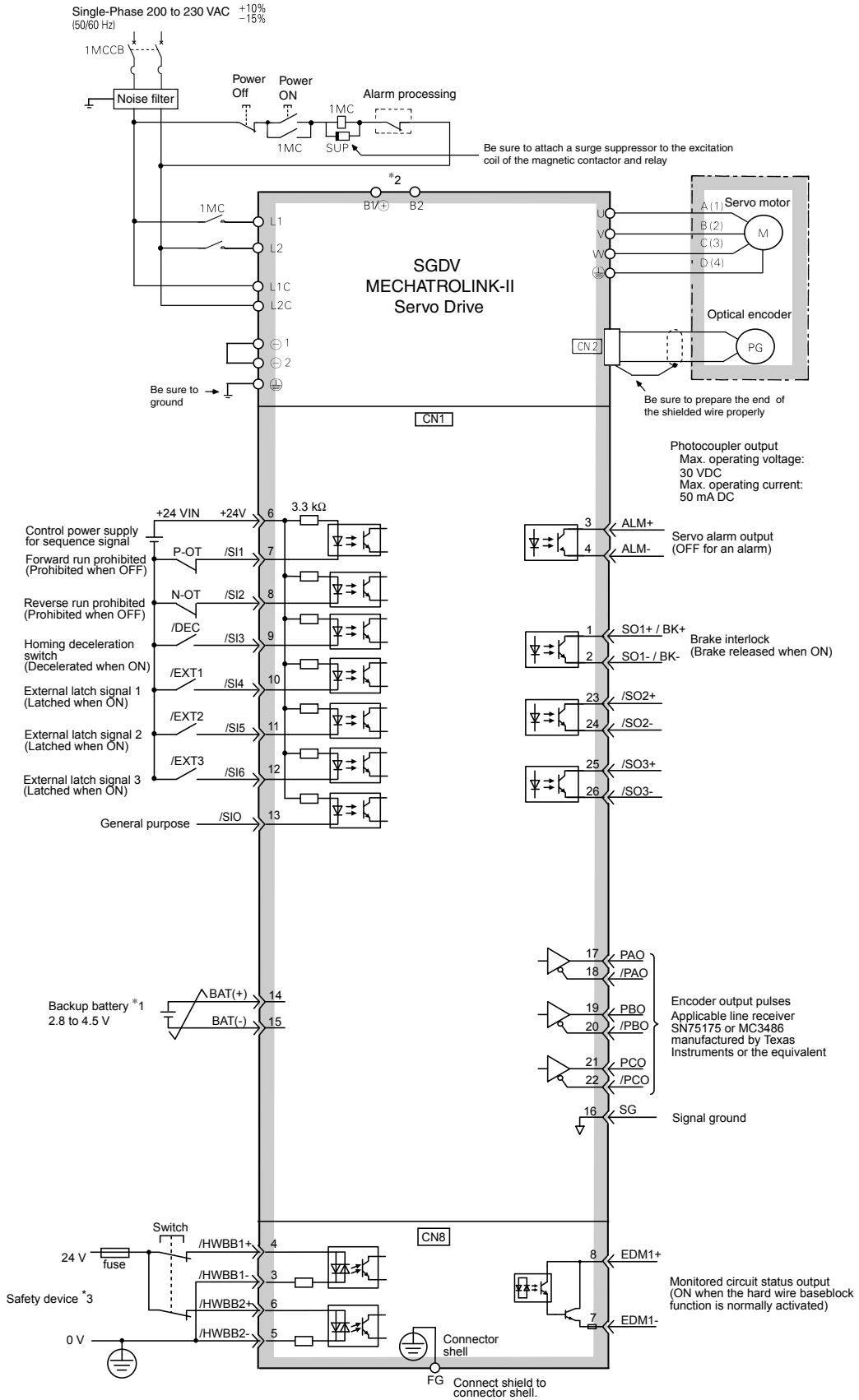
\*2 Connect when using an absolute encoder. When the encoder cable for the battery case is connected, do not connect a backup battery.

\*3 Normally short B2 and B3. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external regenerative resistor between B1 and B2.

\*4 For servo ON, connect to safety device and set wiring to enable safety function. When not using the safety function, use the servo drive with the plug (JZSP-CVH05-E, provided as an accessory) inserted into the CN8.

\*5 It is the user's responsibility to obtain 24 VDC power supply.

Single-phase, 230 VAC

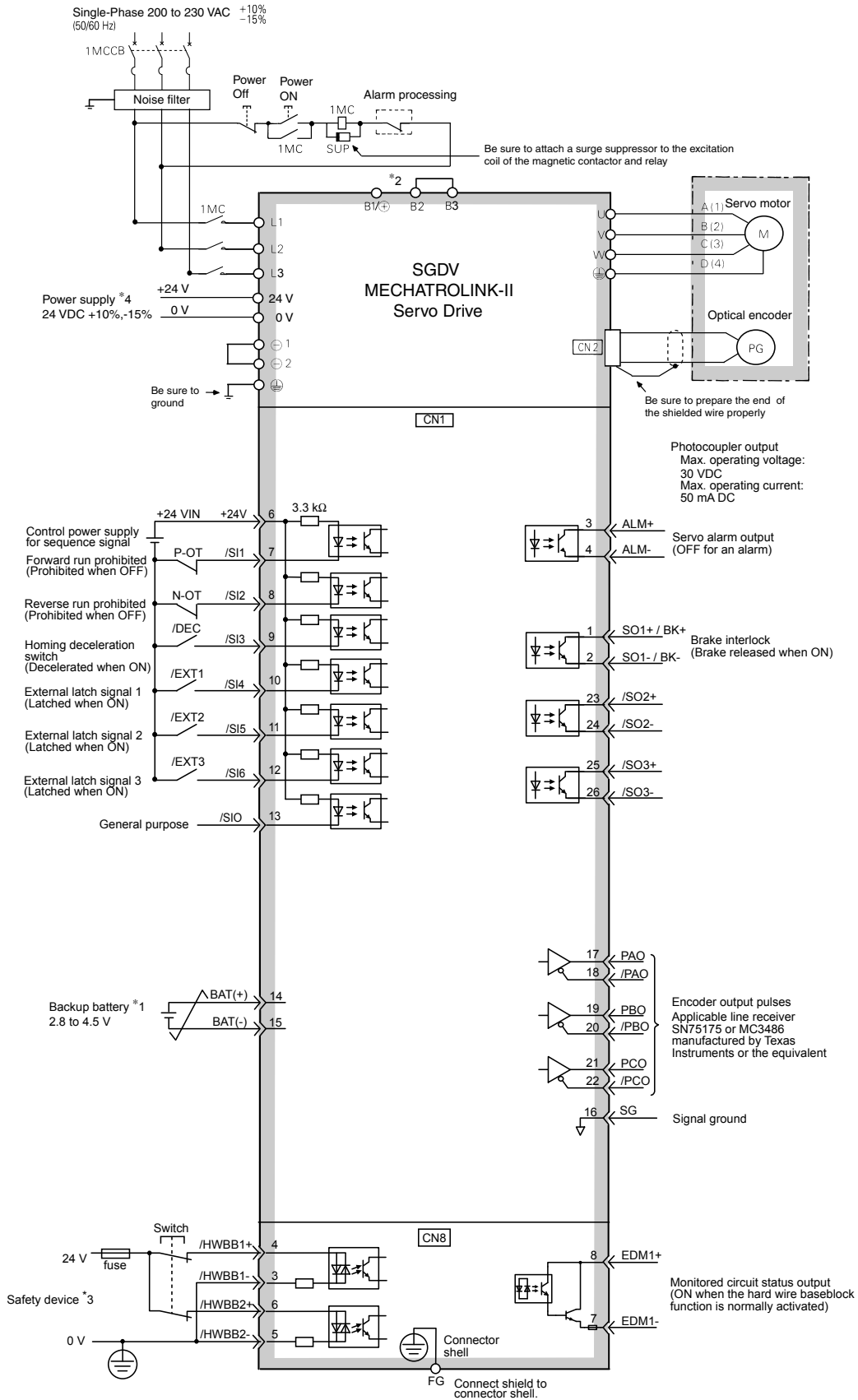


\*1 Connect when using an absolute encoder. When the encoder cable for the battery case is connected, do not connect a backup battery.

\*2 Regenerative resistor can be connected between B1 and B2. For 750 W servo drives types normally short B2 and B3.

\*3 For servo ON, connect to safety device and set wiring to enable safety function. When not using the safety function, use the servo drive with the plug (JZSP-CVH05-E, provided as an accessory) inserted into the CN8.

Three-phase, 400 VAC

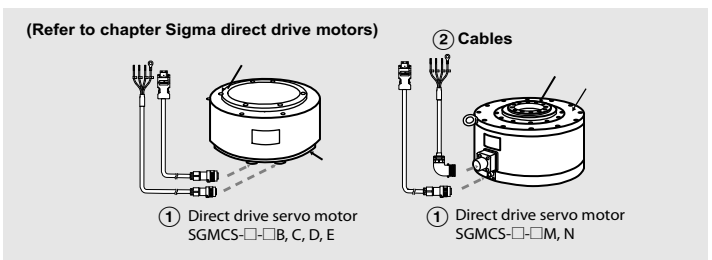
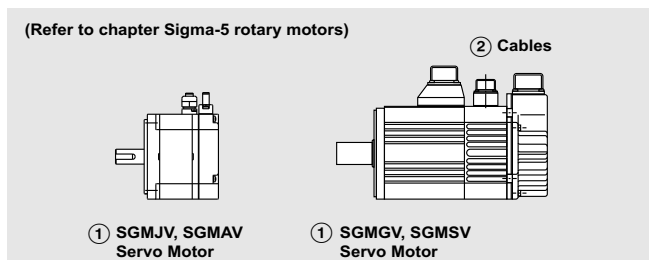
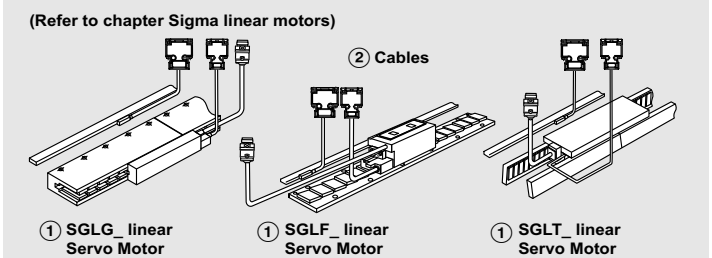
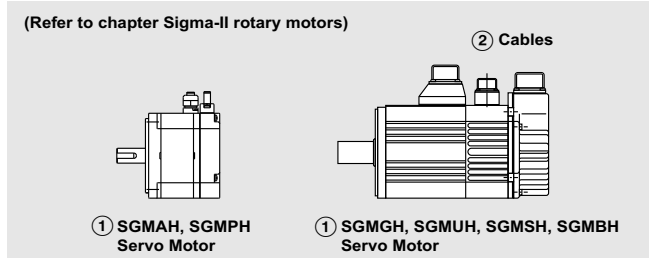
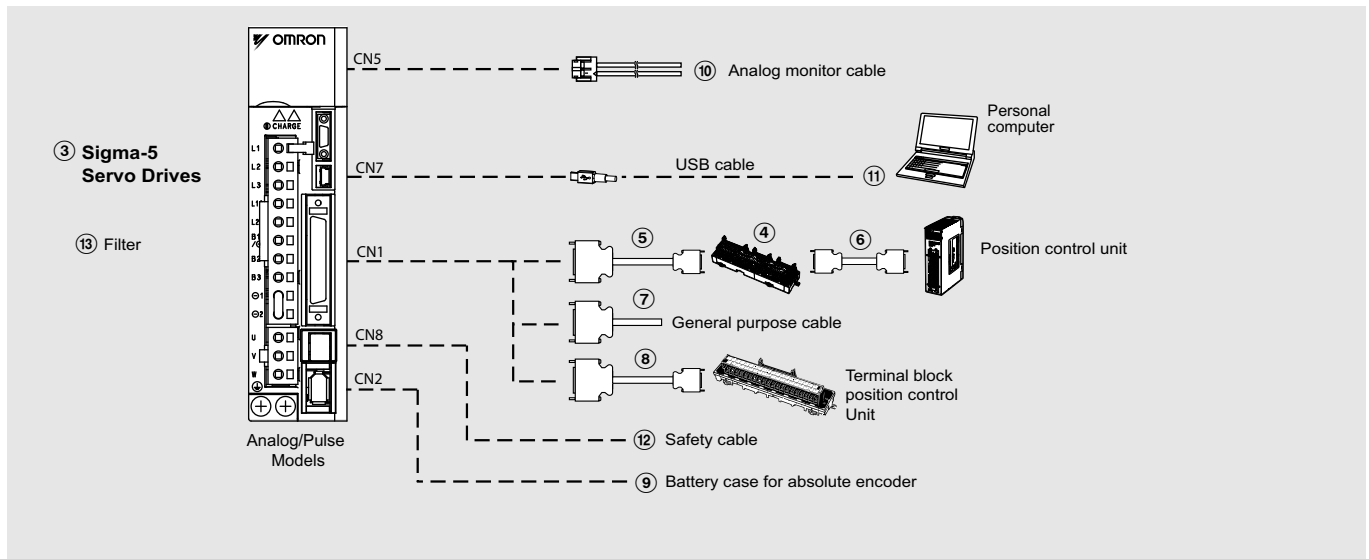


- \*1 Connect when using an absolute encoder. When the encoder cable for the battery case is connected, do not connect a backup battery.
- \*2 Normally short B2 and B3. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external regenerative resistor between B1 and B2.
- \*3 For servo ON, connect to safety device and set wiring to enable safety function. When not using the safety function, use the servo drive with the plug (JZSP-CVH05-E, provided as an accessory) inserted into the CN8.
- \*4 It is the user's responsibility to obtain 24 VDC power supply.



**Ordering information**

**Sigma-5 Analog/Pulse Reference Configuration**



**Note:** The symbols ①②③④⑤... show the recommended sequence to select the components in a Sigma-5 servo system

**Servo motors, power & encoder cables**

**Note:** ①② Refer to the servo motors chapter for detailed motor specifications and selection

Servo drives

Symbol	Specifications	Model	Compatible rotary servo motors ①	Compatible direct drive motors ①	Compatible linear motors ①		
③	1 phase 230 VAC	50 W	SGDV-R70A01A	SGMAH-A5D□, SGMJV-A5A□, SGMAV-A5A□	-	-	
			SGDV-R70A05A	-	-	SGLGW-30A050□	
		100 W	SGDV-R90A01A	SGMAH-01A□, SGMPH-01A□, SGMJV-01A□, SGMAV-01A□, SGMEV-01A□	-	-	-
			SGDV-R90A05A	-	-	SGLGW-30A080□, SGLGW-40A140□	
		200 W	SGDV-1R6A01A	SGMAH-02A□, SGMPH-02A□, SGMJV-02A□, SGMAV-02A□, SGMEV-02A□	SGMCS-07B□	-	-
			SGDV-1R6A05A	-	-	SGLGW-60A140□, SGLGW-40A253□, SGLFW-20A□, SGLFW-35A120□	
		400 W	SGDV-2R8A01A	SGMAH-04A□, SGMPH-04A□, SGMJV-04A□, SGMAV-04A□, SGMEV-04A□	SGMCS-02B□, SGMCS-05B□, SGMCS-04C□, SGMCS-10C□, SGMCS-14C□, SGMCS-08D□, SGMCS-17D□, SGMCS-25D□	-	-
			SGDV-2R8A05A	-	-	SGLGW-40A365□, SGLGW-60A253A□	
		750 W	SGDV-5R5A01A	SGMAH-08A□, SGMPH-08A□, SGMJV-08A□, SGMAV-08A□, SGMEV-08A□	SGMCS-16E□, SGMCS-35E□	-	-
			SGDV-5R5A05A	-	-	SGLGW-60A365A□, SGLFW-35A230□, SGLFW-50A200□	
	1.5 kW	SGDV-120A01A008000	SGMPH-15A□, SGMAV-10A□, SGMEV-15A□	SGMCS-45M□, SGMCS-80M□, SGMCS-80N□	-	-	
		SGDV-120A05A008000	-	-	SGLGW-90A200A□, SGLFW-50A380□, SGLFW-1ZA200□		
	3 phase 400 VAC	0.5 kW	SGDV-1R9D01A	SGMAH-03D□, SGMPH-04D□, SGMGH-05D□, SGMEV-04D□, SGMGV-05D□	-	-	
			SGDV-1R9D05A	-	-	SGLFW-35D□	
		1.0 kW	SGDV-3R5D01A	SGMAH-07D□, SGMPH-08D□, SGMGH-09D□, SGMSH-10D□, SGMUH-10D□, SGMEV-08D□, SGMGV-09D□, SGMSV-10D□,	-	-	-
			SGDV-3R5D05A	-	-	SGLFW-50D200□, SGLTW-35D170□, SGLTW-50D170□	
		1.5 kW	SGDV-5R4D01A	SGMPH-15D□, SGMGH-13D□, SGMSH-15D□, SGMUH-15D□, SGMEV-15D□, SGMGV-13D□, SGMSV-15D□	-	-	-
			SGDV-5R4D05A	-	-	SGLFW-50D380□, SGLFW-1ZD200□	
		2 kW	SGDV-8R4D01A	SGMGH-20D□, SGMSH-20D□, SGMGV-20D□, SGMSV-20D□	-	-	-
			SGDV-8R4D05A	-	-	SGLFW-1ED380□, SGLTW-35D320□, SGLTW-50D320□	
3 kW		SGDV-120D01A	SGMGH-30D□, SGMSH-30D□, SGMUH-30D□, SGMGV-30D□, SGMGV-30D□	-	-	-	
		SGDV-120D05A	-	-	SGLFW-1ZD380□, SGLFW-1ED560□, SGLTW-40D400□		
5 kW		SGDV-170D01A	SGMGH-44D□, SGMSH-50D□, SGMUH-40D□, SGMGV-44D□, SGMSV-50D□	-	-	-	
		SGDV-170D05A	-	-	SGLTW-40D60□, SGLTW-80D400□		
6 kW		SGDV-210D01A	SGMGH-55D□, SGMGV-55D□	-	-	-	
7.5 kW		SGDV-260D01A	SGMGH-75D□, SGMGV-75D□	-	-	-	
11 kW	SGDV-280D01A	SGMGH-1AD□, SGMGV-1AD□	-	-	-		
15 kW	SGDV-370D01A	SGMGH-1ED□, SGMGV-1ED□	-	-	-		

**Control cables (for CN1)**

Symbol	Description	Connect to	Model
④	Servo relay unit	CJ1W-NC1□3	XW2B-20J6-1B (1 axis)
		CJ1W-NC2□3/4□3	XW2B-40J6-2B (2 axis)
		CJ1M-CPU22/23	XW2B-20J6-8A (1 axis)
			XW2B-40J6-9A (2 axis)
⑤	Cable to servo drive	Servo relay units XW2B-□0J6-□B	1 m XW2Z-100J-B4
			2 m XW2Z-200J-B4
⑥	Position control unit connecting cable	CJ1W-NC113	0.5 m XW2Z-050J-A14
			1 m XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m XW2Z-050J-A15
			1 m XW2Z-100J-A15
		CJ1W-NC133	0.5 m XW2Z-050J-A18
			1 m XW2Z-100J-A18
		CJ1W-NC233/433	0.5 m XW2Z-050J-A19
			1 m XW2Z-100J-A19
CJ1M-CPU22/23	0.5 m XW2Z-050J-A27		
	1 m XW2Z-100J-A27		
⑦	Control cable	For general purpose controllers	1 m R88A-CPW001S
			2 m R88A-CPW002S
⑧	Relay terminal block cable	General purpose controller	1 m R88A-CTW001N
			2 m R88A-CTW002N
	Relay terminal block	-	XW2B-50G5

**Battery backup for absolute encoder (for CN2 encoder cable)**

Symbol	Name	Model
⑨	Battery	JZSP-BA01

**Note:** When the encoder cables with a battery case are used, no battery is required for CN1 (between pin 21 and 22). Battery for CN1 is ER6VCN3.

**Cable (for CN5)**

Symbol	Name	Model
⑩	Analog monitor cable	R88A-CMW001S
		DE9404559

**USB personal computer cable (for CN7)**

Symbol	Name	Note
⑪	USB Mini Connector cable	JZSP-CVS06-02-E

**Note:** Double shield USB cable recommended

**Cable for Safety Functions (for CN8)**

Symbol	Name	Model
⑫	Safety connector with 3 m cable (with Loose Wires at one End)	JZSP-CVH03-03-E

**Note:** When using the safety function, connect this cable to the safety devices. Even when not using the safety function, use servo drive with the Safe Jumper Connector (JZSP-CVH05-E) connected.

**Filters**

Symbol	Applicable servo drive	Filter model	Rated current	Rated voltage
⑬	SGDV-R70A□□A, -R90A□□A, -1R6A□□A, -2R8A□□A	R88A-FI5-1005-RE	5 A	250 VAC single-phase
	SGDV-5R5A□□A	R88A-FI5-1009-RE	9 A	
	SGDV-120A□□A008000	R88A-FI5-1016-RE	16 A	
	SGDV-1R9D□□A, -3R5D□□A, -5R4D□□A	R88A-FI5-3004-RE	4.3 A	400 VAC three-phase
	SGDV-8R4D□□A, -120D□□A	R88A-FI5-3008-RE	8.6 A	
	SGDV-170D□□A	R88A-FI5-3012-RE	14.5 A	

**Connectors**

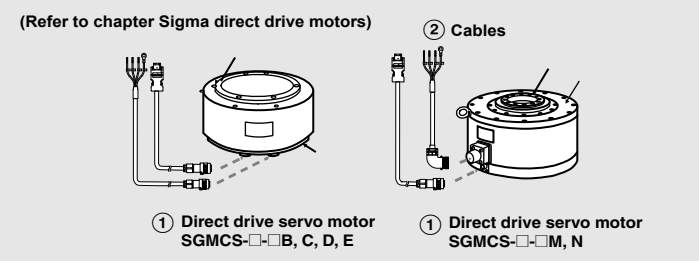
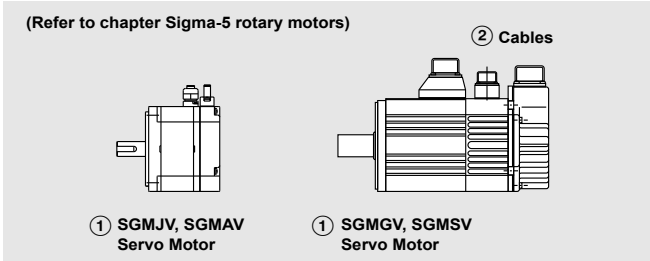
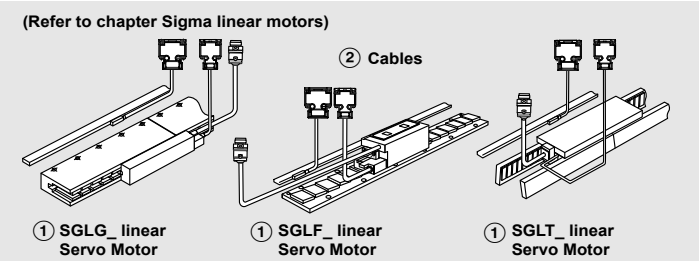
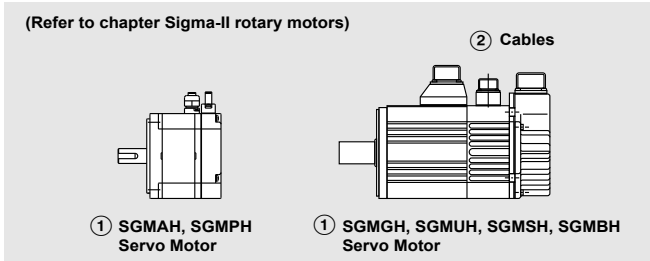
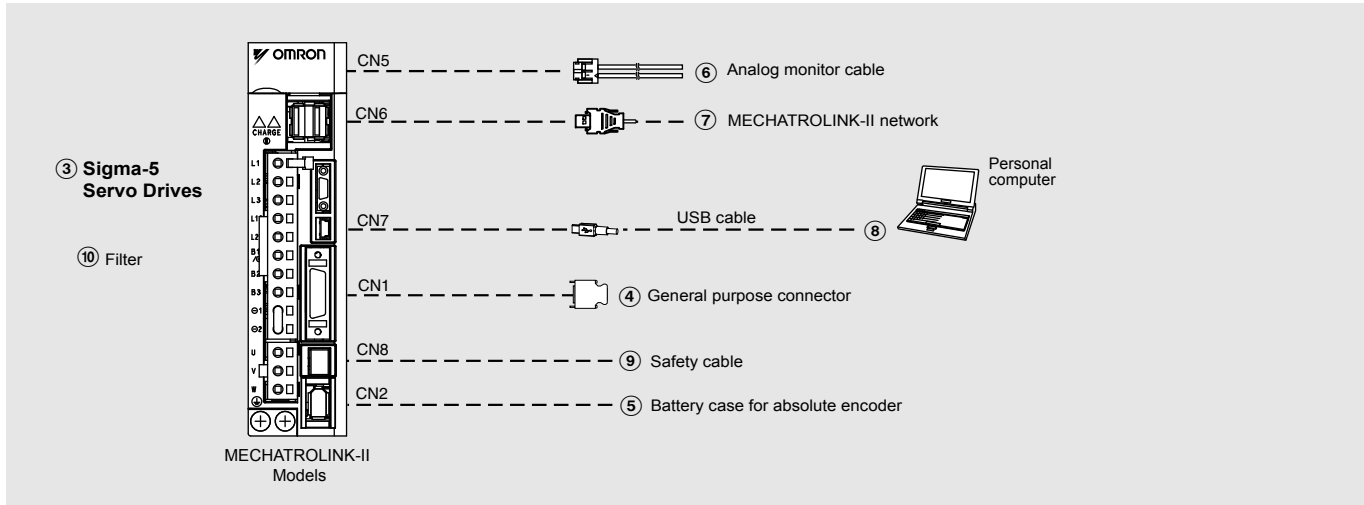
Specifications	Model
I/O connector kit (for CN1)	R88A-CNU11C
Sigma-5 drive encoder connector (for CN2)	JZSP-CMP9-1
Safe Jumper Connector	JZSP-CVH05-E

**Computer software**

Specifications	Model
Configuration and monitoring software tool for servo drives and inverters. (CX-Drive version 1.50 or higher)	CX-Drive
Complete OMRON software package including CX-Drive. (CX-One version 3.0.2 or higher)	CX-One

Ordering information

Sigma-5 MECHATROLINK-II Servo Drive Configuration



**Note:** The symbols ①②③④⑤... show the recommended sequence to select the components in a Sigma-5 servo system

Servo motors, power & encoder cables

**Note:** ①② Refer to the servo motors chapter for detailed motor specifications and selection

Servo drives

Symbol	Specifications	Model	Compatible rotary servo motors ①	Compatible direct drive motors ①	Compatible linear motors ①		
③	1 phase 230 VAC	50 W	SGDV-R70A11A	SGMAH-A5D□, SGMJV-A5A□, SGMAV-A5A□	-	-	
			SGDV-R70A15A	-	-	SGLGW-30A050□	
		100 W	SGDV-R90A11A	SGMAH-01A□, SGMPH-01A□, SGMJV-01A□, SGMAV-01A□, SGMEV-01A□	-	-	-
			SGDV-R90A15A	-	-	SGLGW-30A080□, SGLGW-40A140□	
		200 W	SGDV-1R6A11A	SGMAH-02A□, SGMPH-02A□, SGMJV-02A□, SGMAV-02A□, SGMEV-02A□	SGMCS-07B□	-	-
			SGDV-1R6A15A	-	-	SGLGW-60A140□, SGLGW-40A253□, SGLFW-20A□, SGLFW-35A120□	
		400 W	SGDV-2R8A11A	SGMAH-04A□, SGMPH-04A□, SGMJV-04A□, SGMAV-04A□, SGMEV-04A□	SGMCS-02B□, SGMCS-05B□, SGMCS-04C□, SGMCS-10C□, SGMCS-14C□, SGMCS-08D□, SGMCS-17D□, SGMCS-25D□	-	-
			SGDV-2R8A15A	-	-	SGLGW-40A365□, SGLGW-60A253A□	
		750 W	SGDV-5R5A11A	SGMAH-08A□, SGMPH-08A□, SGMJV-08A□, SGMAV-08A□, SGMEV-08A□	SGMCS-16E□, SGMCS-35E□	-	-
			SGDV-5R5A15A	-	-	SGLGW-60A365A□, SGLFW-35A230□, SGLFW-50A200□	
		1.5 kW	SGDV-120A11A008000	SGMPH-15A□, SGMAV-10A□, SGMEV-15A□	SGMCS-45M□, SGMCS-80M□, SGMCS-80N□	-	-
			SGDV-120A15A008000	-	-	SGLGW-90A200A□, SGLFW-50A380□, SGLFW-1ZA200□	
	3 phase 400 VAC	0.5 kW	SGDV-1R9D11A	SGMAH-03D□, SGMPH-04D□, SGMGH-05D□, SGMEV-04D□, SGMGV-05D□	-	-	
			SGDV-1R9D15A	-	-	SGLFW-35D□	
		1.0 kW	SGDV-3R5D11A	SGMAH-07D□, SGMPH-08D□, SGMGH-09D□, SGMSH-10D□, SGMUH-10D□, SGMEV-08D□, SGMGV-09D□, SGMSV-10D□,	-	-	-
			SGDV-3R5D15A	-	-	SGLFW-50D200□, SGLTW-35D170□, SGLTW-50D170□	
		1.5 kW	SGDV-5R4D11A	SGMPH-15D□, SGMGH-13D□, SGMSH-15D□, SGMUH-15D□, SGMEV-15D□, SGMGV-13D□, SGMSV-15D□	-	-	-
			SGDV-5R4D15A	-	-	SGLFW-50D380□, SGLFW-1ZD200□	
		2 kW	SGDV-8R4D11A	SGMGH-20D□, SGMSH-20D□, SGMGV-20D□, SGMSV-20D□	-	-	-
			SGDV-8R4D15A	-	-	SGLFW-1ED380□, SGLTW-35D320□, SGLTW-50D320□	
		3 kW	SGDV-120D11A	SGMGH-30D□, SGMSH-30D□, SGMUH-30D□, SGMGV-30D□, SGMGV-30D□	-	-	-
			SGDV-120D15A	-	-	SGLFW-1ZD380□, SGLFW-1ED560□, SGLTW-40D400□	
		5 kW	SGDV-170D11A	SGMGH-44D□, SGMSH-50D□, SGMUH-40D□, SGMGV-44D□, SGMSV-50D□	-	-	-
			SGDV-170D15A	-	-	SGLTW-40D60□, SGLTW-80D400□	
6 kW		SGDV-210D11A	SGMGH-55D□, SGMGV-55D□	-	-	-	
7.5 kW		SGDV-260D11A	SGMGH-75D□, SGMGV-75D□	-	-	-	
11 kW		SGDV-280D11A	SGMGH-1AD□, SGMGV-1AD□	-	-	-	
15 kW		SGDV-370D11A	SGMGH-1ED□, SGMGV-1ED□	-	-	-	

## Battery backup for absolute encoder (for CN2 encoder cable)

Symbol	Name	Model
⑤	Battery	JZSP-BA01

**Note:** When the encoder cables with a battery case JZSP-BA01 are used, no battery is required for CN1 (between pin 21 and 22). Battery for CN1 is ER6VCN3.

## Cable (for CN5)

Symbol	Name	Model
⑥	Analog monitor cable	R88A-CMW001S
		DE9404559

## USB personal computer cable (for CN7)

Symbol	Name	Note
⑧	USB Mini Connector cable	JZSP-CVS06-02-E

**Note:** Double shield USB cable recommended

## Cable for Safety Functions (for CN8)

Symbol	Name	Model
⑨	Safety connector with 3 m cable (with Loose Wires at one End)	JZSP-CVH03-03-E

**Note:** When using the safety function, connect this cable to the safety devices. Even when not using the safety function, use servo drive with the Safe Jumper Connector (JZSP-CVH05-E) connected.

## Mechatrolink-II cables (for CN6)

Symbol	Specifications	Length	Model
⑦	Mechatrolink-II Terminator resistor		JEPMC-W6022
	Mechatrolink-II Cables	0.5 m	JEPMC-W6003-A5
		1 m	JEPMC-W6003-01
		3 m	JEPMC-W6003-03
		5 m	JEPMC-W6003-05
		10 m	JEPMC-W6003-10
		20 m	JEPMC-W6003-20
30 m	JEPMC-W6003-30		

## Filters

Symbol	Applicable servo drive	Filter model	Rated current	Rated voltage
⑩	SGDV-R70A□□□A, -R90A□□□A, -1R6A□□□A, -2R8A□□□A	R88A-FI5-1005-RE	5 A	250 VAC single-phase
	SGDV-5R5A□□□A	R88A-FI5-1009-RE	9 A	
	SGDV-120A□□□A008000	R88A-FI5-1016-RE	16 A	
	SGDV-1R9D□□□A, -3R5D□□□A, -5R4D□□□A	R88A-FI5-3004-RE	4.3 A	400 VAC three-phase
	SGDV-8R4D□□□A, -120D□□□A	R88A-FI5-3008-RE	8.6 A	
	SGDV-170D□□□A	R88A-FI5-3012-RE	14.5 A	

## Connectors

Specification	Model
I/O connector kit (for CN1)	R88A-CNW01C
Sigma-5 drive encoder connector (for CN2)	JZSP-CMP9-1
Safe Jumper Connector	JZSP-CVH05-E

## Computer software

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

In the interest of product improvement, specifications are subject to change without notice.

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