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

# Sigma-5 servo system

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

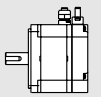
- Advance autotuning function
- Enhanced vibration supression function
- Standard support for analog voltage/pulse train reference series or MECHATROLINK-II communications reference series.
- Support for direct drive servomotors, linear servomotors and linear sliders
- Integrated safety stop function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

**Ratings**

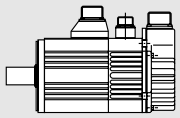
- 230 VAC Single-phase 50 W to 1.5 kW (4.77 Nm)
- 400 VAC Three-phase 500 W to 5 kW (28.4 Nm)

## System configuration

(Refer to chapter Sigma-II rotary motors)



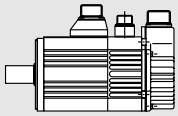
SGMAH, SGMPH Servo Motor



SGMGH, SGMUH, SGMSH, SGMBH Servo Motor

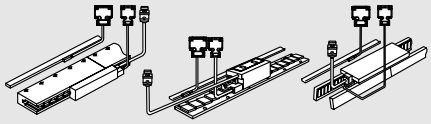
(Refer to chapter Sigma-5 rotary motors)

SGMJV, SGMAV, SGMEV Servo Motor



SGMGV, SGMSV Servo Motor

(Refer to chapter Sigma linear motors)

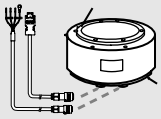


SGLG_ linear Servo Motor

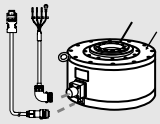
SGLF_ linear Servo Motor

SGLT_ linear Servo Motor

(Refer to chapter Sigma direct drive motors)

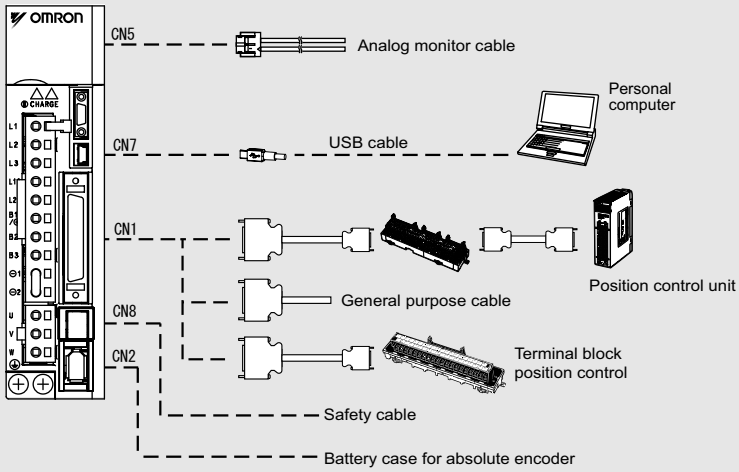


Direct drive servo motor

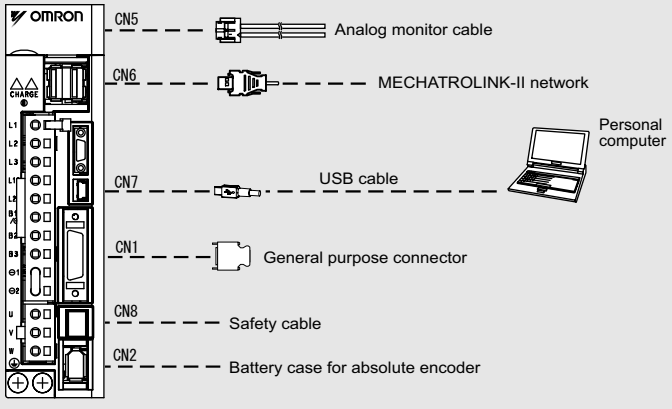


Direct drive servo motor

Sigma-5 Analog/Pulse Reference Servo Drive




Sigma-5 MECHATROLINK-II Servo Drive



## Type designation

**Servo drive**

SGDV - 04 A 01 A - OY - □

Sigma-5 servo drive

Capacity

| Voltage | Code | Output |
|---|---|---|
| 230 V | A5 | 50 W |
| | 01 | 100 W |
| | 02 | 200 W |
| | 04 | 400 W |
| | 08 | 750 W |
| | 15 | 1.5 kW |
| 400 V | 05 | 500 W |
| | 10 | 1.0 kW |
| | 15 | 1.5 kW |
| | 20 | 2.0 kW |
| | 30 | 3.0 kW |
| | 50 | 5.0 kW |

Source voltage

A: 230 V

D: 400 V

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) |

Design Revision Order: A, B...

Omron-Yaskawa Motion Control B.V.

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

## Servo drive specifications

**Single-phase, 230 V**

| Servo drive type | | SGDV- □ | A5A□□A-OY | 01A□□A-OY | 02A□□A-OY | 04A□□A-OY | 08A□□A-OY | 15A□□A-OY-008000 |
|---|---|---|---|---|---|---|---|---|
| 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□ |
| Basic specifications | 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) | | | | | |
| | Supply | 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 | | | | | |
| | Conditions: Usage/storage humidity | | 90%RH or less (non-condensing) | | | | | |
| | Conditions: Altitude | | 1000m or less above sea level | | | | | |
| | Conditions: Vibration/shock resistance | | 4.9 m/s$^2$ / 19.6 m/s$^2$ | | | | | |
| | Configuration | | Base mounted | | | | | |
| | Approx. weight Kg | | 0.9 | | | 1.0 | 1.5 | 2.8 |

**Three-phase, 400 V**

| Servo drive type | | SGDV-□ | 05D□□A-OY | 10D□□A-OY | 15D□□A-OY | 20D□□A-OY | 30D□□A-OY | 50D□□A-OY |
|---|---|---|---|---|---|---|---|---|
| Applicable servo motor | | SGMAH-□ | 03D□ | 07D□ | - | - | - | - |
| | | SGMPH-□ | 02D□/04D□ | 08D□ | 15D□ | - | - | - |
| | | SGMGH-□ | 05D□ | 09D□ | 13D□ | 20D□ | 30D□ | 44D□ |
| | | 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□ |
| | | SGMSV-□ | - | 10D□ | 15D□ | 20D□ | 25D□ | 40D□/50D□ |
| Basic specifications | Max. applicable motor capacity kW | | 0.5 | 1.0 | 1.5 | 2.0 | 3.0 | 5.0 |
| | Continuous output current Arms | | 1.9 | 3.5 | 5.4 | 8.4 | 11.9 | 16.5 |
| | Max. output current Arms | | 5.5 | 8.5 | 14 | 20 | 28 | 42 |
| | Input power | Main circuit | Three-phase, 380 to 480 VAC + 10 to -15% (50/60Hz) | | | | | |
| | Supply | 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 | | | | | |
| | Conditions: Usage/storage humidity | | 90%RH or less (non-condensing) | | | | | |
| | Conditions: Altitude | | 1000 m or less above sea level | | | | | |
| | Conditions: Vibration/shock resistance | | 4.9 m/s$^2$ / 19.6 m/s$^2$ | | | | | |
| | Configuration | | Base mounted | | | | | |
| | Approx. weight Kg | | 2.7 | | | 3.7 | | 5.6 |

## 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 ±0.01% max. (at rated speed) |
| | | | Voltage variance | Rated voltage ±10%:0% (at rated speed) |
| | | | Temperature variance | 25 ±25 °C: ±0.1 % max. (at rated speed) |
| | | Frequency characteristics | | 1.6 kHz |
| | | Torque control accuracy (Repeatability) | | ±1% |
| | | Soft start time setting | | 0 to 10 s (acceleration, deceleration can each be set.) |
| | Input signal | Speed reference input | Reference voltage | ±6 VDC (forward motor rotation if positive reference) at rated speed: Set at delivery<br>Variable setting range: ±2 to ±10 VDC at rated speed/ max. input voltage: ±12 V |
| | | | Input impedance | Approx. 14 kΩ |
| | | | Circuit time constant | Approx. 30 µs |
| | | Torque reference input | Reference voltage | ±3 VDC (forward rotation if positive reference) at rated torque: Set at delivery<br>Variable setting range ±1 to ±10 VDC at rated torque reference, max. input voltage: ±12 V |
| | | | Input impedance | Approx. 14 KΩ |
| | | | Circuit time constant | Approx. 30 µs |
| 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 | Non-insultated 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 Communica-tions | 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/au-totuning 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.<br>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 Drives

### General specifications

| | | | | |
|---|---|---|---|---|
| Position/speed/torque control mode | Performance | Speed control range | | 1:5000 |
| | | Speed variance | Load variance | During 0 to 100% load ±0.01% max. (at rated speed) |
| | | | Voltage variance | Rated voltage ±10%:0% (at rated speed) |
| | | | Temperature variance | 25 ±25 °C: ±0.1 % max. (at rated speed) |
| | | Frequency characteristics | | 1.6 kHz |
| | | Torque control accuracy (Repeatability) | | ±1% |
| | | Soft start time setting | | 0 to 10 s (acceleration, deceleration can each be set.) |
| | Command input | MECHATROLINK Communication | | MECHATROLINK-II commands<br>(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, servomotor rotation detection, servo ready, current limit detection, speed limit detection, brake release, warning, NEAR. |
| Integrated functions | 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 µs, 0.5 to 4.0 ms (multiple of 0.5 ms) |
| | | | Data length | 17-bytes and 32-bytes |
| | | 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, regeneration error |
| | | Analog monitor functions for supervision | | Integrates analog monitor connectors for supervision of the speed and torque reference signals, etc.<br>Number of channels: 2 (Output volatge: +/-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 - OY

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$^{-1}$ | 3000 min$^{-1}$ | 3000 min$^{-1}$ | 1500 min$^{-1}$ | 3000 min$^{-1}$ |
| A5 | 0.05 | 0.05 | | | |
| 01 | 0.1 | 0.1 | 0.1 | | |
| C2 | | 0.15 | | | |
| 02 | 0.2 | 0.2 | 0.2 | | |
| 03 | | | 0.3 | 0.3 | |
| 04 | 0.4 | 0.4 | 0.4 | | |
| 05 | | | | 0.45 | |
| 06 | | 0.55 | | | |
| 07 | | | 0.65 | | |
| 08 | 0.75 | 0.75 | 0.75 | | |
| 09 | | | | 0.85 | |
| 10 | | 1.0 | | | 1.0 |
| 13 | | | | 1.3 | |
| 15 | | | 1.5 | | 1.5 |
| 20 | | | | 1.8 | 2.0 |
| 25 | | | | | 2.5 |
| 30 | | | | 2.9 | 3.0 |
| 40 | | | | | 4.0 |
| 44 | | | | 4.4 | |
| 50 | | | | | 5.0 |
| 60 | | | | | |
| 70 | | | | | |
| 75 | | | | | |
| 1A | | | | | |
| 1E | | | | | |

Voltage

| Code | Voltage | Type | | | | |
|---|---|---|---|---|---|---|
| | | SGMJV | SGMAV | SGMEV | SGMGV | SGMSV |
| A | 230 V | ◎ | ◎ | ◎ | | |
| D | 400 V | | | ◎ | ◎ | ◎ |

Omron-Yaskawa Motion Control B.V.

Brake, oil seal specifications

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

◎: Standard ○: Option

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

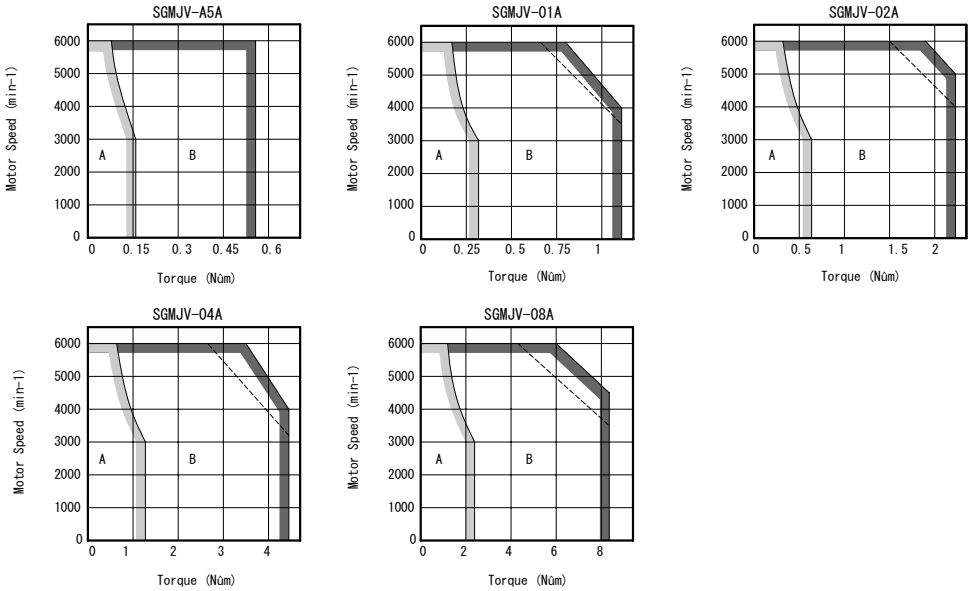
| Applied voltage | | | 230 V | | | | |
|---|---|---|---|---|---|---|---|
| Servo motor model SGMJV- □ | | | A5A□ | 01A□ | 02A□ | 04A□ | 08A□ |
| Rated output *1 | | W | 50 | 100 | 200 | 400 | 750 |
| Rated torque *1,*2 | | N·m | 0.159 | 0.318 | 0.637 | 1.27 | 2.39 |
| Instantaneous peak torque *1 | | N·m | 0.557 | 1.11 | 2.23 | 4.46 | 8.36 |
| Rated current *1 | | A (rms) | 0.61 | 0.84 | 1.6 | 2.7 | 4.7 |
| Instantaneous max. current *1 | | A (rms) | 2.1 | 2.9 | 5.8 | 9.3 | 16.9 |
| Rated speed *1 | | $min^{-1}$ | 3000 | | | | |
| Max. speed *1 | | $min^{-1}$ | 6000 | | | | |
| Torque constant | | N·m/A (rms) | 0.285 | 0.413 | 0.435 | 0.512 | 0.544 |
| Rotor moment of inertia (JM) | | $kg·m^2x10^{-4}$ (without brake) | 0.0414 | 0.0665 | 0.259 | 0.442 | 1.57 |
| | | $kg·m^2x10^{-4}$ (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 *1 | | kW/s | 6.11 | 15.2 | 15.7 | 36.5 | 36.3 |
| Rated angular acceleration *1 | | $rad/s^2$ | 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/s2 | | | | |
| | Altitude | | 1000 m or less above sea level | | | | |
| | Mounting | | Flange-mounted | | | | |

**Note:** ***1.** These items and torque/speed characteristics quoted in combination with an SGDV 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 charecteristics

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



## Type SGMAV, 230 V

### Ratings and specifications

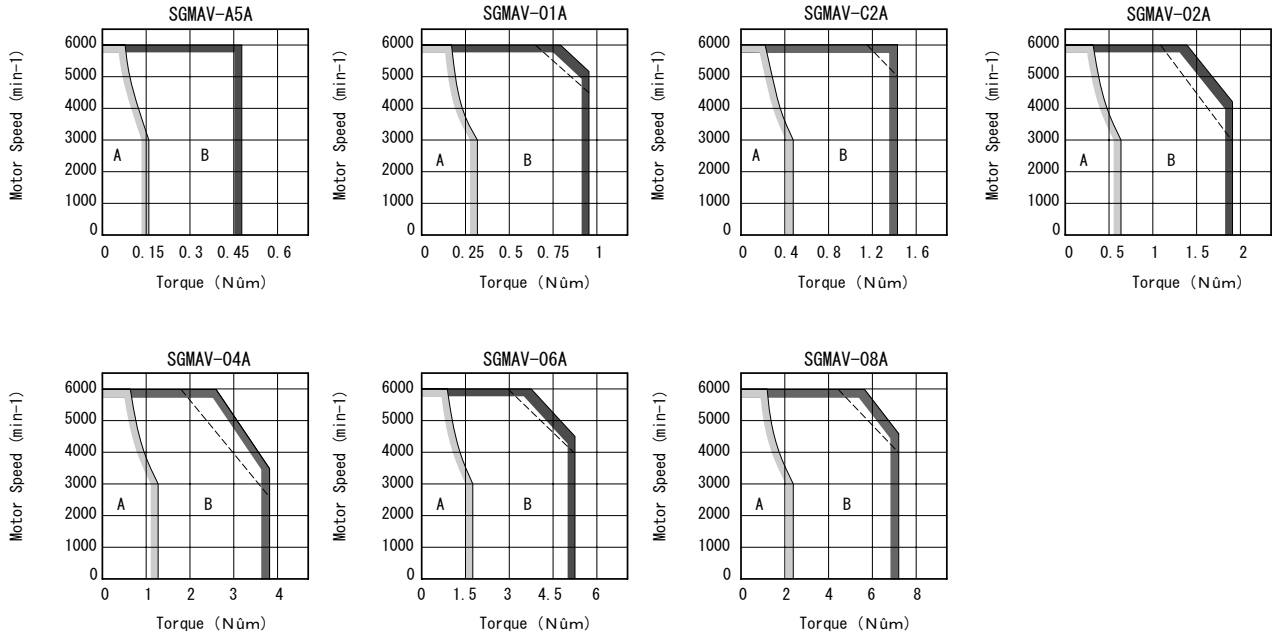
| Applied voltage | | | 230 V | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Servo motor model SGMAV- □ | | | A5A□ | 01A□ | C2A□ | 02A□ | 04A□ | 06A□ | 08A□ | 10A□ |
| Rated output*1 | | W | 50 | 100 | 150 | 200 | 400 | 550 | 750 | 1000 |
| Rated torque*1,2 | | N·m | 0.159 | 0.318 | 0.477 | 0.637 | 1.27 | 1.75 | 2.39 | 3.18 |
| Instantaneous peak torque*1 | | N·m | 0.477 | 0.955 | 1.43 | 1.91 | 3.82 | 5.25 | 7.16 | 9.55 |
| Rated current*1 | | A (rms) | 0.66 | 0.91 | 1.3 | 1.5 | 2.6 | 3.8 | 5.3 | 7.4 |
| Instantaneous max. current*1 | | A (rms) | 2.1 | 2.8 | 4.2 | 5.3 | 8.5 | 12.2 | 16.6 | 23.9 |
| Rated speed*1 | | $min^{-1}$ | 3000 | | | | | | | |
| Max. speed*1 | | $min^{-1}$ | 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) | | $kg·m^2x10^{-4}$ (without brake) | 0.0242 | 0.0380 | 0.0531 | 0.116 | 0.190 | 0.326 | 0.769 | 1.2 |
| | | $kg·m^2x10^{-4}$ (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*1 | | kW/s | 10.4 | 26.6 | 42.8 | 35.0 | 84.9 | 93.9 | 74.1 | 84.3 |
| Rated angular acceleration*1 | | $rad/s^2$ | 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) | W | 6 | | | 6.9 | | 8.7 | 7.7 | 7 |
| | Current consumption (at 20°C) | A | 0.25 | | | 0.29 | | 0.36 | 0.32 | 0.29 |
| | Holding torque | N·m | 0.159 | 0.318 | 0.477 | 0.637 | 1.27 | 1.75 | 2.39 | 3.18 |
| | 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/s2 | | | | | | | |
| | Altitude | | 1000 m or less above sea level | | | | | | | |
| | Mounting | | Flange-mounted | | | | | | | |

**Note:** ***1.** These items and torque/speed characteristics quoted in combination with an SGDV 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 40ºC 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 charecteristics

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



## 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[*1] | W | 100 | 200 | 400 | 750 | 1500 | 200 | 300 | 400 | 650 | 750 | 1500 |
| Rated torque[*1,2] | 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[*1] | 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[*1] | 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[*1] | 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[*1] | $min^{-1}$ | 3000 | | | | | | | | | | |
| Max. speed[*1] | $min^{-1}$ | 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) | $kg·m^2x10^{-4}$ (without brake) | 0.049 | 0.193 | 0.331 | 2.1 | 4.02 | 0.193 | 0.173 | 0.331 | 0.672 | 2.1 | 4.02 |
| | $kg·m^2x10^{-4}$ (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[*1] | 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[*1] | $rad/s^2$ | 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 | $kg·m^2x10^{-4}$ | 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[*3] | | | | | | | | | | |
| | Vibration resistance | Vibration acceleration xx m/s2 | | | | | | | | | | |
| | Altitude | 1000 m or less above sea level | | | | | | | | | | |
| | Mounting | Flange-mounted | | | | | | | | | | |

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

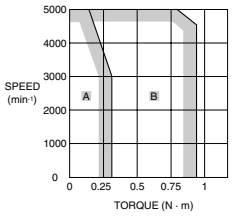
***2.** The rated torques listed here are the values for the continuous allowable torque at 40°C with an aluminium heatsink of the following dimensions attached (SGMEV-01A/02A/04A/02D/03D/04D/07D: 250 mm x 250 mm x 6 mm, SGMEV-08A/15A/08D/15D: 300 mm x 300 mm x 12 mm)

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

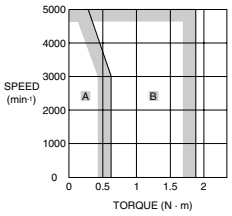
### Torque-speed charecteristics

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

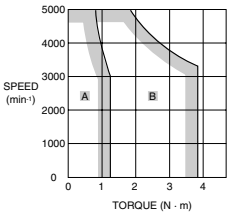
SGMEV-01A



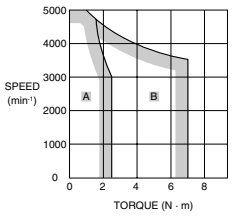

SGMEV-02A



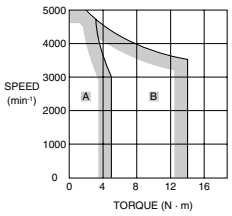

SGMEV-04A



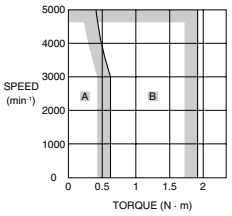

SGMEV-08A



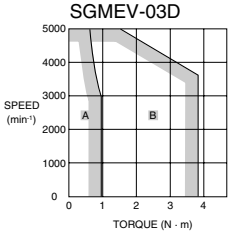

SGMEV-15A



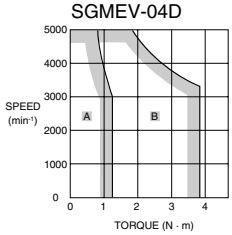

SGMEV-02D



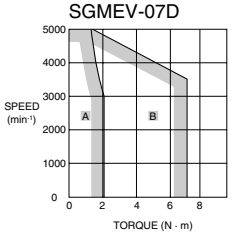

SGMEV-03D



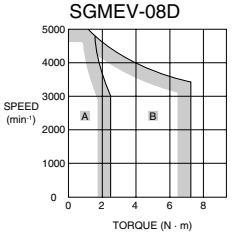

SGMEV-04D



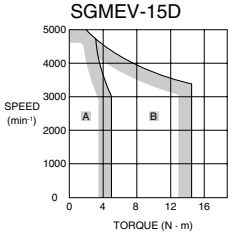

SGMEV-07D




SGMEV-08D




SGMEV-15D



## Type SGMGV, 400 V

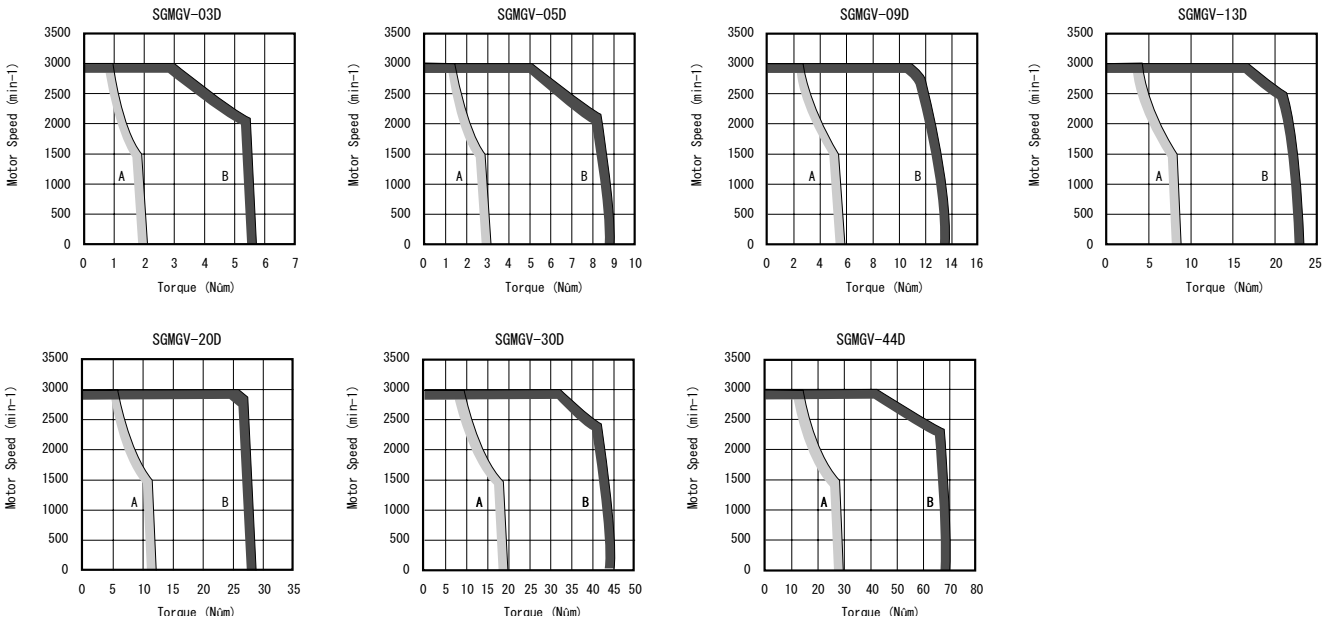
### Ratings and specifications

| Applied voltage | | 400 V | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Servo motor model SGMGV-□ | | 03D□ | 05D□ | 09D□ | 13D□ | 20D□ | 30D□ | 44D□ |
| Rated output*1 | kW | 0.3 | 0.45 | 0.85 | 1.3 | 1.8 | 2.9 | 4.4 |
| Rated torque*1 | N·m | 1.96 | 2.86 | 5.39 | 8.34 | 11.5 | 18.6 | 28.4 |
| Instantaneous peak torque*1 | N·m | 5.88 | 8.92 | 13.8 | 23.3 | 28.7 | 45.1 | 71.1 |
| Rated current*1 | A (rms) | 1.4 | 1.9 | 3.5 | 5.4 | 8.4 | 11.9 | 16.5 |
| Instantaneous max. current*1 | A (rms) | 4 | 5.5 | 8.5 | 14 | 20 | 28 | 40.5 |
| Rated speed*1 | $min^{-1}$ | 1500 | | | | | | |
| Max. speed*1 | $min^{-1}$ | 3000 | | | | | | |
| Torque constant | N·m/A (rms) | 1.55 | 1.71 | 1.72 | 1.78 | 1.50 | 1.70 | 1.93 |
| Rotor moment of inertia (JM) | $kg·m^2x10^{-4}$ (without brake) | 2.48 | 3.33 | 13.9 | 19.9 | 26 | 46 | 67.5 |
| | $kg·m^2x10^{-4}$ (with brake) | 2.69 | 3.54 | 16 | 22 | 28.1 | 54.5 | 76 |
| Allowable load moment of inertia (JL) | Multiple of (JM) | 5 | | | | | | |
| Rated power rate*1 | kW/s (without brake) | 15.5 | 24.6 | 20.9 | 35.0 | 50.9 | 75.2 | 119 |
| | kW/s (with brake) | 14.3 | 23.1 | 18.2 | 31.6 | 47.1 | 63.5 | 106 |
| Rated angular acceleration*1 | $rad/s^2$ (without brake) | 7900 | 8590 | 3880 | 4190 | 4420 | 4040 | 4210 |
| | $rad/s^2$ (with brake) | 7290 | 8080 | 3370 | 3790 | 4090 | 3410 | 3740 |
| Encoder | Standard | Incremental encoder (20 bits) | | | | | | |
| | Option | Absolute encoder (20 bits) | | | | | | |
| Allowable radial load | N | 490 | | | 686 | 980 | 1470 | |
| Allowable thrust load | N | 98 | | | 343 | 392 | 490 | |
| Approx. mass | Kg (without brake) | 2.6 | 3.2 | 5.5 | 7.1 | 8.6 | 13.4 | 17.5 |
| | Kg (with brake) | 4.5 | 5.0 | 7.5 | 9.0 | 11.0 | 19.5 | 23.5 |
| Brake specifications: Rated voltage | | 24 /90 VDC | | | | | | |
| Brake specifications: Power consumption (at 20°C) | W (24 VDC) | 10 | | 9.8 | | | 18.5 | |
| | W (90 VDC) | 10 | | 10.1 | | | 18.5 | |
| Brake specifications: Current consumption (at 20°C) | A (24 VDC) | 0.42 | | 0.41 | | | 0.77 | |
| | A (90 VDC) | 0.11 | | | | | 0.21 | |
| Brake specifications: Holding torque | N·m | 4.5 | | 12.7 | 19.6 | | 43.1 | |
| Brake specifications: Rise time for holding torque | ms (max) | 80 | | | | | 100 (24 V), 80 (90 V) | |
| Brake specifications: Release time | ms (max) | 100 | | | | | 170 | |
| Basic specifications: Time rating | | Continuous | | | | | | |
| Basic specifications: Thermal class | | Class F | | | | | | |
| Basic specifications: Usage/ storage temperature | | 0 to +40 °C/ -20 to 60 °C without freezing | | | | | | |
| Basic specifications: Usage/ storage humidity | | 20 to 80% RH (non-condensing) | | | | | | |
| Basic specifications: Insulation resistance | | 500 VDC, 10 MOhm min. | | | | | | |
| Basic specifications: Withstand voltage | | 1500 VAC for one minute | | | | | | |
| Basic specifications: Vibration class | | 15 μm or below | | | | | | |
| Basic specifications: Enclosure | | Totally-enclosed, self-cooled, IP67 (excluding shaft opening) | | | | | | |
| Basic specifications: Vibration resistance | | Vibration acceleration 24.5 m/s2 | | | | | | |
| Basic specifications: Altitude | | 1000 m or less above sea level | | | | | | |
| Basic specifications: Mounting | | Flange-mounted | | | | | | |

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

### Torque-speed charecteristics

( 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[*1] | kW | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 |
| Rated torque[*1,2] | N·m | 3.18 | 4.9 | 6.36 | 7.96 | 9.8 | 12.6 | 15.8 |
| Instantaneous peak torque[*1] | N·m | 9.54 | 14.7 | 19.1 | 23.9 | 29.4 | 37.8 | 47.6 |
| Rated current[*1] | A (rms) | 2.8 | 4.7 | 6.1 | 7.4 | 8.9 | 12.5 | 13.8 |
| Instantaneous max. current[*1] | A (rms) | 8.5 | 14 | 19.5 | 22.3 | 28 | 38 | 42 |
| Rated speed[*1] | $min^{-1}$ | 3000 | | | | | | |
| Max. speed[*1] | $min^{-1}$ | 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) | $kg·m^2x10^{-4}$ (without brake) | 1.74 | 2.0 | 2.47 | 3.19 | 7.0 | 9.60 | 12.3 |
| | $kg·m^2x10^{-4}$ (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[*1] | kW/s | 57.9 | 97.2 | 127 | 199 | 137 | 165 | 203 |
| Rated angular acceleration[*1] | $rad/s^2$ | 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 |

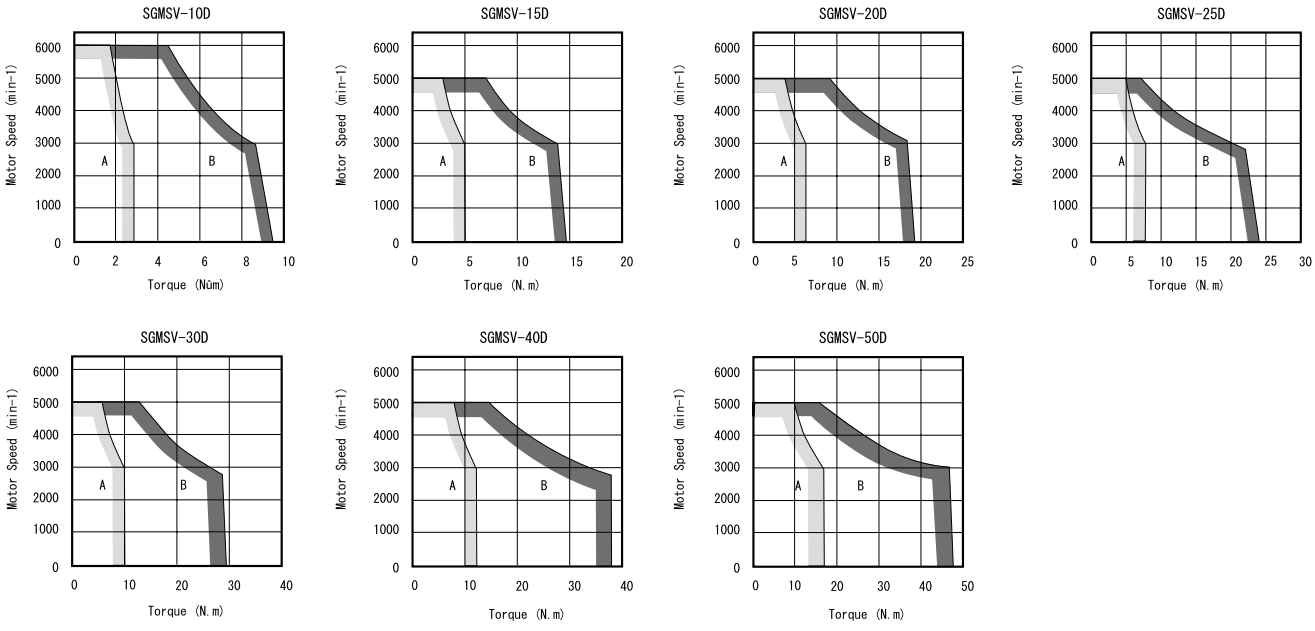
| Basic specifications | | |
|---|---|---|
| | Time rating | Continuous |
| | Thermal class | Class F |
| | Usage/ storage temperature | 0 to +40 °C/ -20 to 60°C without freezing |
| | Usage/ storage humidity | 20 to 80% RH (non-condensing) |
| | Vibration class | 15 µm or below |
| | Insulation resistance | 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/s2 |
| | Altitude | 1000 m or less above sea level |
| | Mounting | Flange-mounted |

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

***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 charecteristics

A : Continuous Duty Zone B : Intermittent Duty Zone

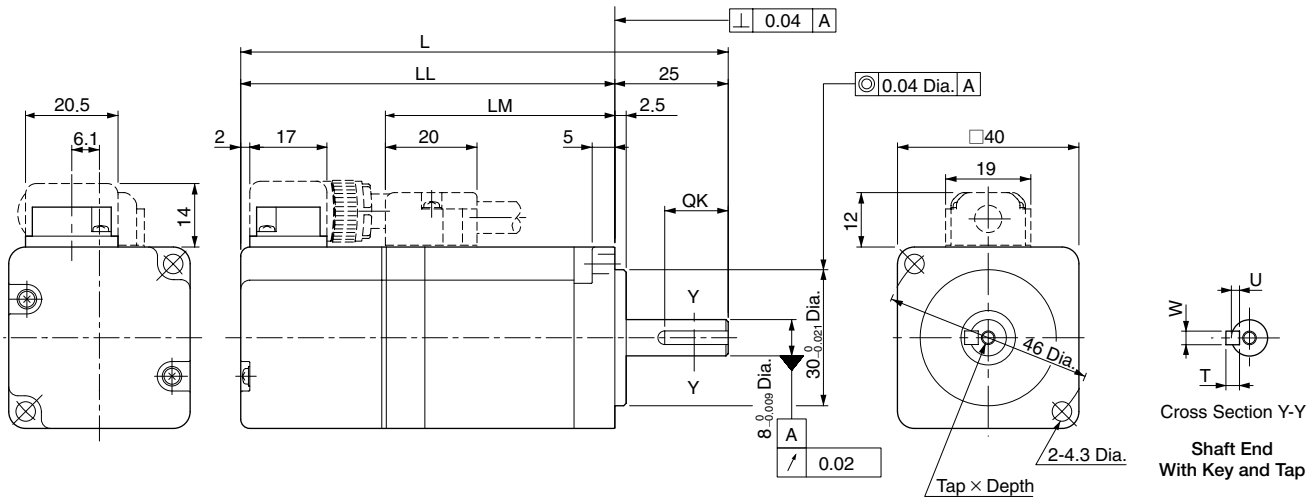


## Dimensions

### Servomotors

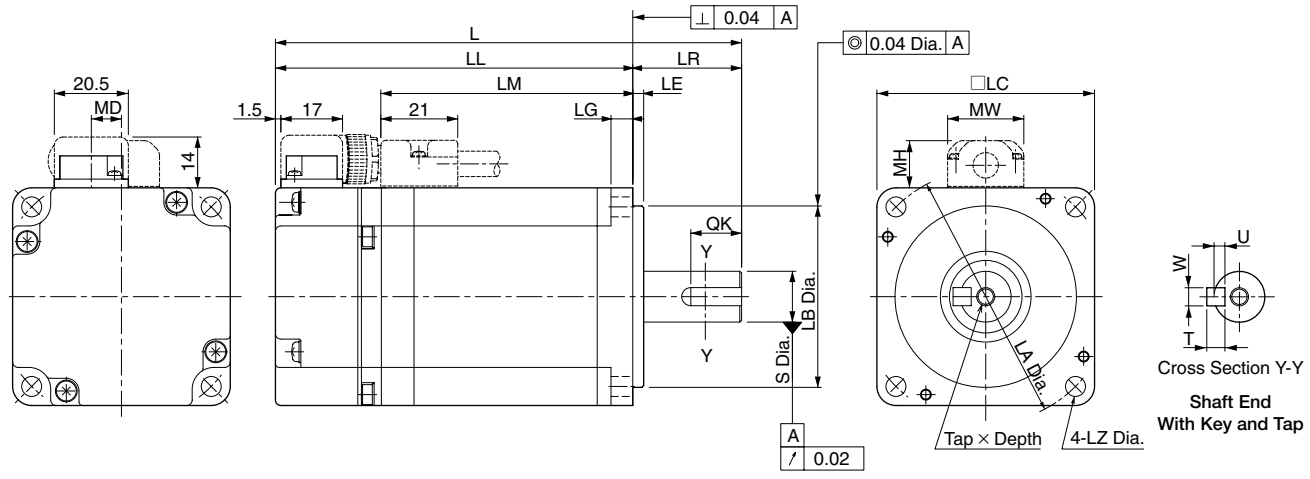
### Type SGMJV (230 V, 50 - 100 W)

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



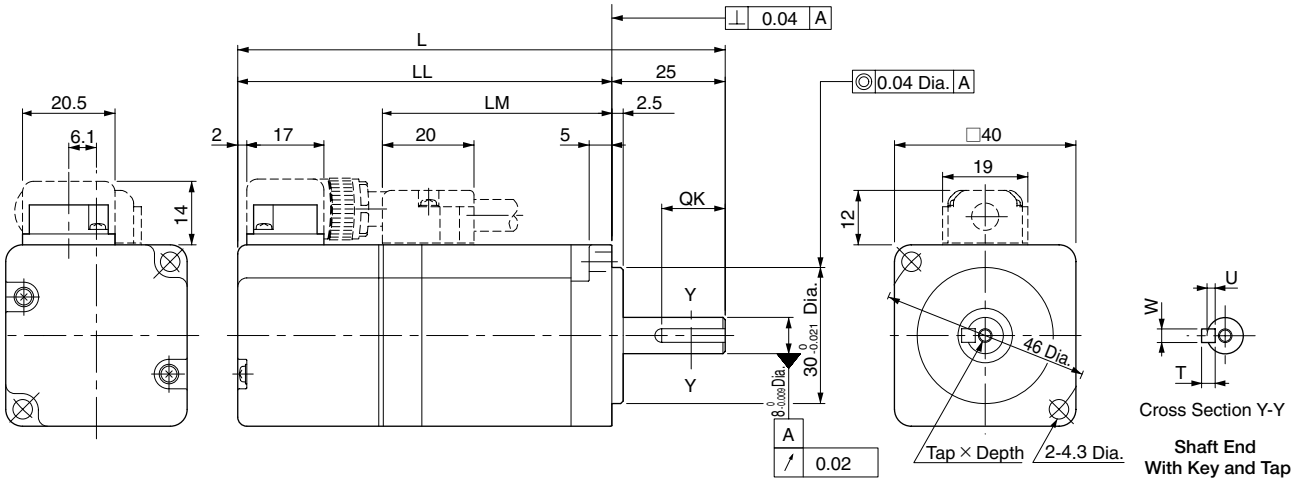

### Type SGMJV (230 V, 200 - 750 W)

| Dimensions (mm) | Without brake | | With brake | | LM | Flange Face Dimensions | | | | | | | Shaft End Dimensions | | | | | | MD | MW | MH | Approx. Mass Kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | L | LL | | LR | LE | LG | LC | LA | LB | LZ | S | Tap × Depth | QK | U | W | T | | | | Without brake | With brake |
| SGMJV-02A□A6□-OY | 110 | 80 | 150 | 120 | 51 | 30 | 3 | 6 | 60 | 70 | $50^{0}_{-0.025}$ | 5.5 | $14^{0}_{-0.011}$ | M5x8L | 14 | 3 | 5 | 5 | 8.3 | 21 | 13 | 0.9 | 1.5 |
| SGMJV-04A□A6□-OY | 128.5 | 98.5 | 168.5 | 138.5 | 69.5 | | | | | | | | | | | | | | | | | 1.3 | 1.9 |
| SGMJV-08A□A6□-OY | 155 | 115 | 200 | 160 | 85 | 40 | | 8 | 80 | 90 | $70^{0}_{-0.030}$ | 7 | $19^{0}_{-0.013}$ | M6x10L | 22 | 3.5 | 6 | 6 | 13.8 | 27 | 15 | 2.3 | 3.2 |



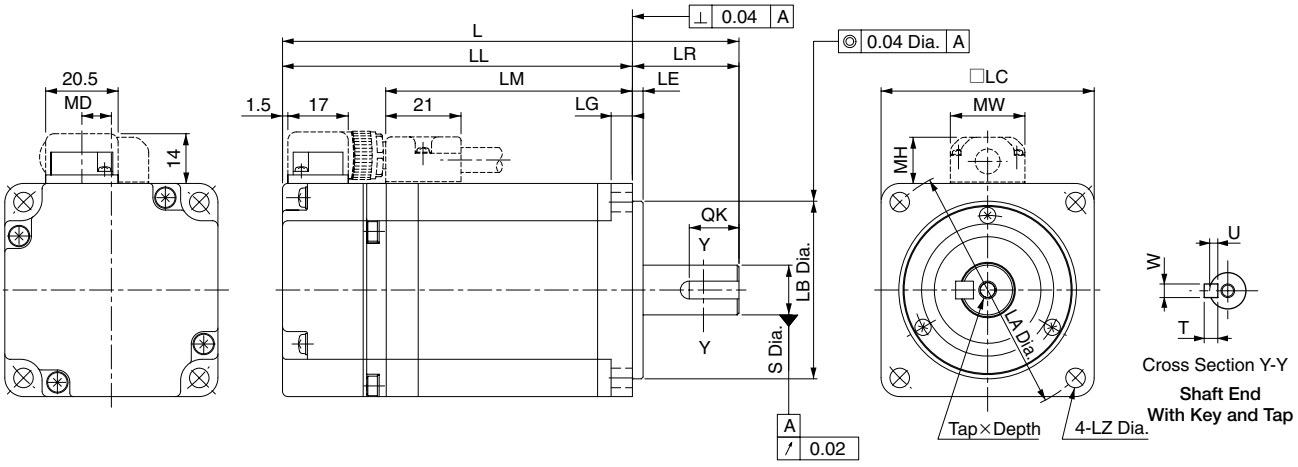
### Type SGMAV (230 V, 50 - 150 W)

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



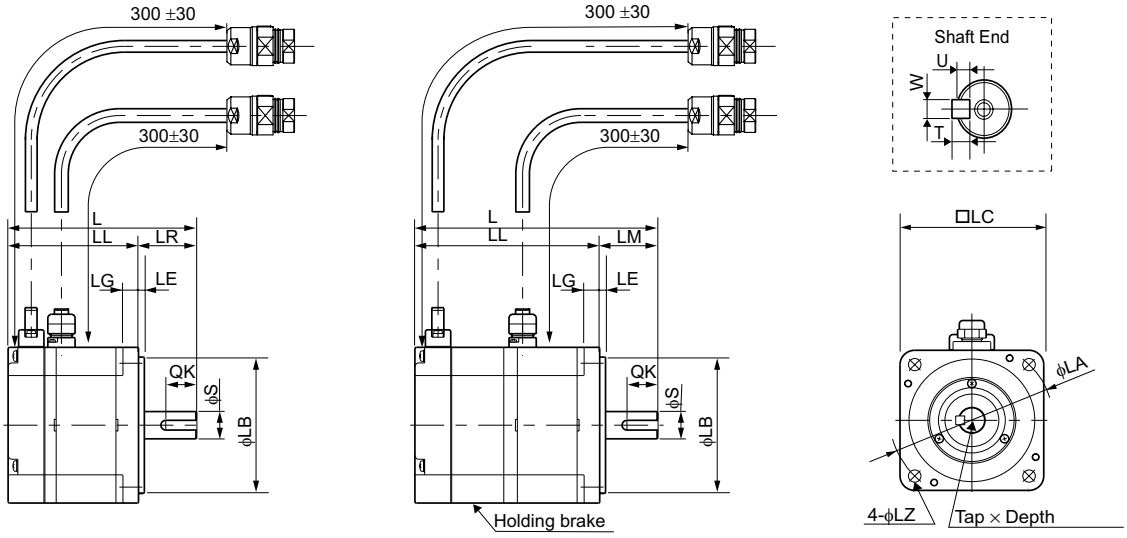

### Type SGMAV (230 V, 200 - 750 W)

| Dimensions (mm) | Without brake | | With brake | | LM | Flange Face Dimensions | | | | | | | Shaft End Dimensions | | | | | | MD | MW | MH | Approx. Mass (Kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | L | LL | | LR | LE | LG | LC | LA | LB | LZ | S | Tap x Depth | QK | U | W | T | | | | Without brake | With brake |
| SGMAV-02A□A6□-OY | 110 | 80 | 150 | 120 | 51 | 30 | 3 | 6 | 60 | 70 | $50^{0}_{-0..025}$ | 5.5 | $14^{0}_{-0..011}$ | M5x8L | 20 | 3 | 5 | 5 | 8.5 | 21 | 13 | 0..9 | 1.5 |
| SGMAV-04A□A6□-OY | 128.5 | 98.5 | 168.5 | 138.5 | 69.5 | | | | | | | | | | 14 | | | | | | | 1.2 | 1.9 |
| SGMAV-06A□A6□-OY | 154.5 | 124.5 | 200.5 | 170.5 | 95.5 | | | | | | | | | | | | | | | | | 1.7 | 2.4 |
| SGMAV-08A□A6□-OY | 155 | 115 | 200 | 160 | 85 | 40 | | 8 | 80 | 90 | $70^{0}_{-0..030}$ | 7 | $19^{0}_{-0..013}$ | M6x10L | 22 | 3.5 | 6 | 6 | 13.8 | 27 | 15 | 2.3 | 3.2 |
| SGMAV-10A□A6□-OY | 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) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | L | LL | | LA | LB | LC | LE | LG | LZ | S | QK | W | T | U | Tap x Depth | Without brake | With brake |
| SGMEV-01A□A6□-OY | 87 | 62 | 116 | 91 | 25 | 70 | $50^{0}_{-0..030}$ | 60 | 3 | 6 | | $8^{0}_{-0..011}$ | 14 | 3 | 3 | 1.8 | M3 x 6L | 0.7 | 0.9 |
| SGMEV-02A□A6□-OY | 97 | 67 | 128.5 | 98.5 | 30 | 90 | $70^{0}_{-0..030}$ | 80 | | 8 | 7 | $14^{0}_{-0..011}$ | 16 | 5 | 5 | 3 | M5 x 8L | 1.4 | 1.9 |
| SGMEV-02D□A6□-OY | | | | | | | | | | | | | | | | | | | |
| SGMEV-04A□A6□-OY | 117 | 87 | 148.5 | 118.5 | | | | | | | | | | | | | | 2.1 | 2.6 |
| SGMEV-04D□A6□-OY | | | | | | | | | | | | | | | | | | | |
| SGMEV-08A□A6□-OY | 126.5 | 86.5 | 160 | 120 | 40 | 145 | $110^{0}_{-0..035}$ | 120 | 3.5 | 10 | 10 | $16^{0}_{-0..011}$ | 22 | | | | | 4.2 | 4.7 |
| SGMEV-08D□A6□-OY | | | | | | | | | | | | | | | | | | | |
| SGMEV-15A□A6□-OY | 154.5 | 114.5 | 188 | 148 | | | | | | | | $19^{0}_{-0..013}$ | | 6 | 6 | 3.5 | M6 x 10L | 6.6 | 8.1 |
| SGMEV-15D□A6□-OY | | | | | | | | | | | | | | | | | | | |

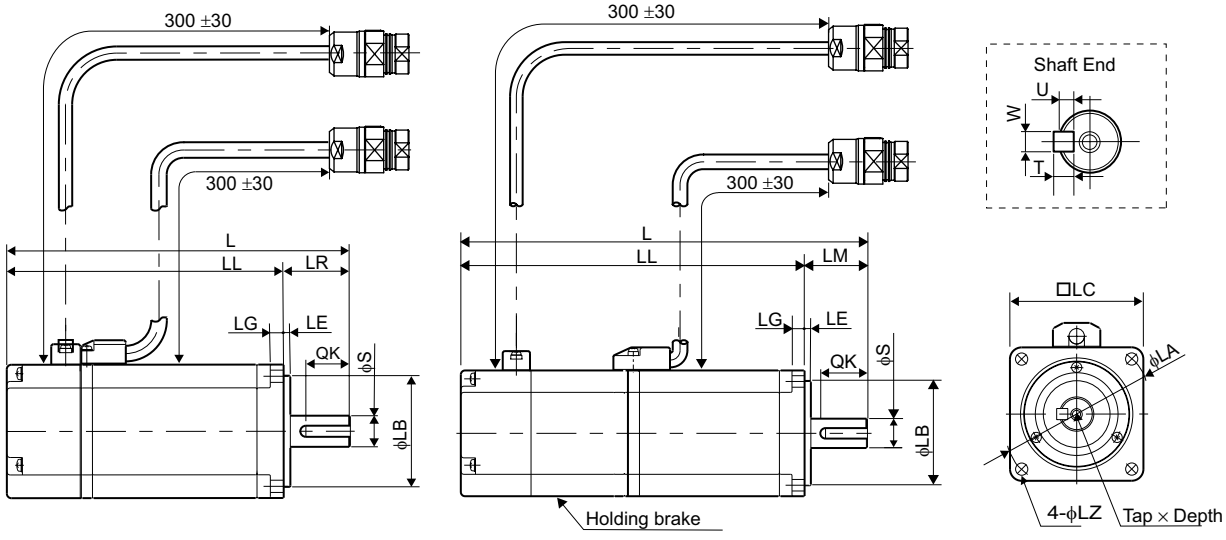



Models without Brake

Models with Brake

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

| Dimensions (mm) | Without brake | | With brake | | LM | Flange Face Dimensions | | | | | | Shaft End Dimensions | | | | | | Approx. Mass (Kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | L | LL | | LA | LB | LC | LE | LG | LZ | S | QK | W | T | U | Tap x Depth | Without brake | With brake |
| SGMEV-03D□A6□-OY | 154.5 | 124.5 | 194 | 164 | 30 | 70 | $50^{0}_{-0..025}$ | 60 | 3 | 6 | 5.5 | $14^{0}_{-0..011}$ | 20 | 5 | 5 | 3 | M5 x 8L | 1.7 | 2.2 |
| SGMEV-07D□A6□-OY | 185 | 145 | 229.5 | 189.5 | 40 | 90 | $70^{0}_{-0..030}$ | 80 | 3 | 8 | 70 | $16^{0}_{-0..011}$ | 30 | | | | | 3.4 | 4.3 |

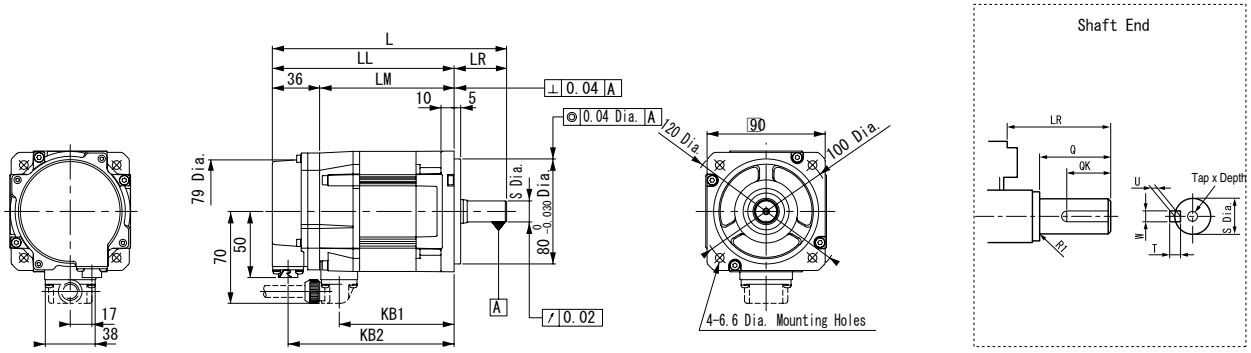



Models without Brake

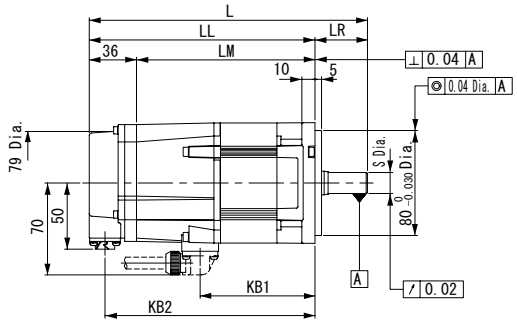
Models with Brake

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

| Dimensions (mm) | Without brake | | | | With brake | | | | LR | KB1 | Shaft End Dimensions | | | | | | | Approx. Mass (Kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | LM | KB2 | L | LL | LM | KB2 | | | S | Q | QK | W | T | U | Tap x Depth | Without brake | With brake |
| SGMGV-03D□A6□-OY | 163 | 126 | 90 | 114 | 196 | 159 | 123 | 147 | 37 | 75 | $14^{0}_{-0.011}$ | 25 | 15 | 5 | 5 | 3 | M4 x 10L | 2.6 | 4.5 |
| SGMGV-05D□A6□-OY | 179 | 139 | 103 | 127 | 212 | 172 | 136 | 160 | 40 | 88 | $14^{0}_{-0.011}$ | 30 | 20 | | | | M4 x 12L | 3.2 | 5.0 |



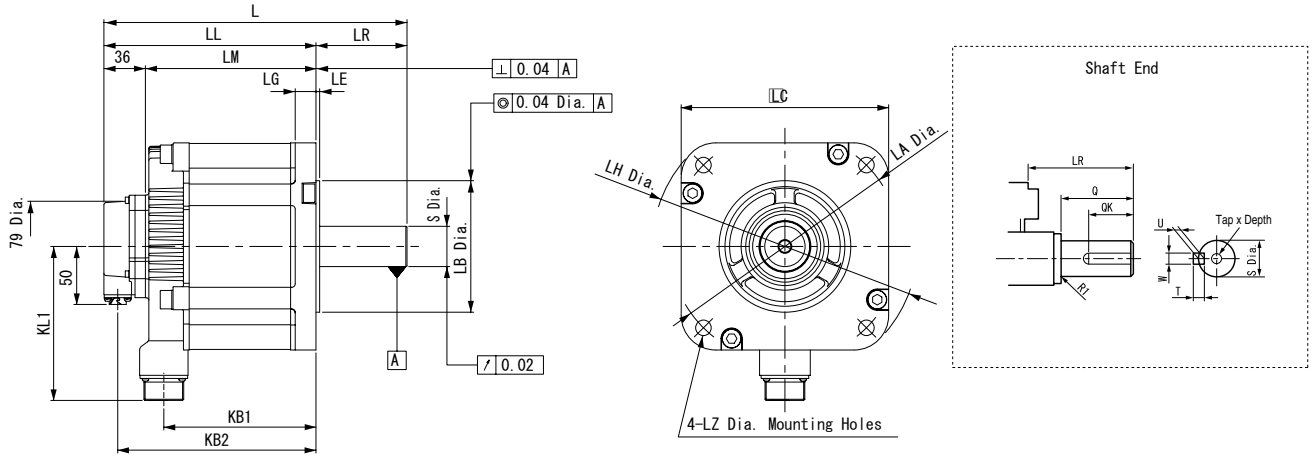

Models without brake



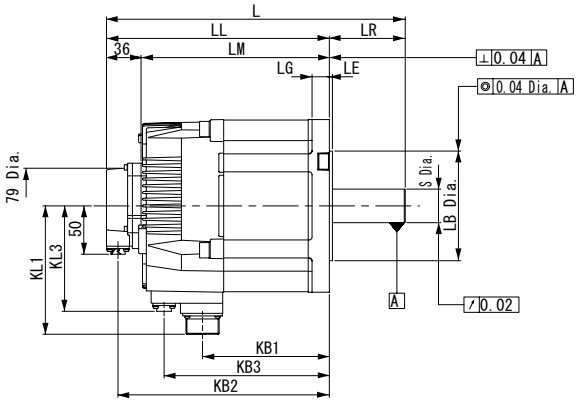

Models with brake

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

| Dimensions (mm) | Without brake | | | | With brake | | | | | | LR | KB1 | KL1 | Flange Face Dimensions | | | | | | | Shaft End Dimensions | | | | | | | Approx. Mass (Kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | LM | KB 2 | L | LL | LM | KB2 | 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-09D□A6□-OY | 195 | 137 | 101 | 125 | 231 | 173 | 137 | 161 | 115 | 80 | 58 | 83 | 104 | 145 | $110^{0}_{-0.035}$ | 130 | 6 | 12 | 165 | 9 | $19^{0}_{-0..013}$ | 40 | 25 | 5 | 5 | 3 | M5 x 12L | 5.5 | 7.5 |
| SGMGV-13D□A6□-OY | 211 | 153 | 117 | 141 | 247 | 189 | 153 | 177 | 131 | | | 99 | | | | | | | | | $22^{0}_{-0..013}$ | | | 6 | 6 | 3.5 | | 7.1 | 9.0 |
| SGMGV-20D□A6□-OY | 229 | 171 | 135 | 159 | 265 | 207 | 171 | 195 | 149 | | | 117 | | | | | | | | | $24^{0}_{-0..013}$ | | | 8 | 7 | 4 | | 8.6 | 11.0 |
| SGMGV-30D□A6□-OY | 239 | 160 | 124 | 148 | 287 | 208 | 172 | 196 | 148 | 110 | 79 | 108 | 134 | 200 | $114.3^{0}_{-0.025}$ | 180 | 3.2 | 18 | 230 | 13.5 | $35^{+0.01}_{0}$ | 76 | 60 | 10 | 8 | 5 | M12 x 25L | 13.4 | 19.5 |
| SGMGV-44D□A6□-OY | 263 | 184 | 148 | 172 | 311 | 232 | 196 | 220 | 172 | | | 132 | | | | | | | | | | | | | | | | 17.5 | 23.5 |



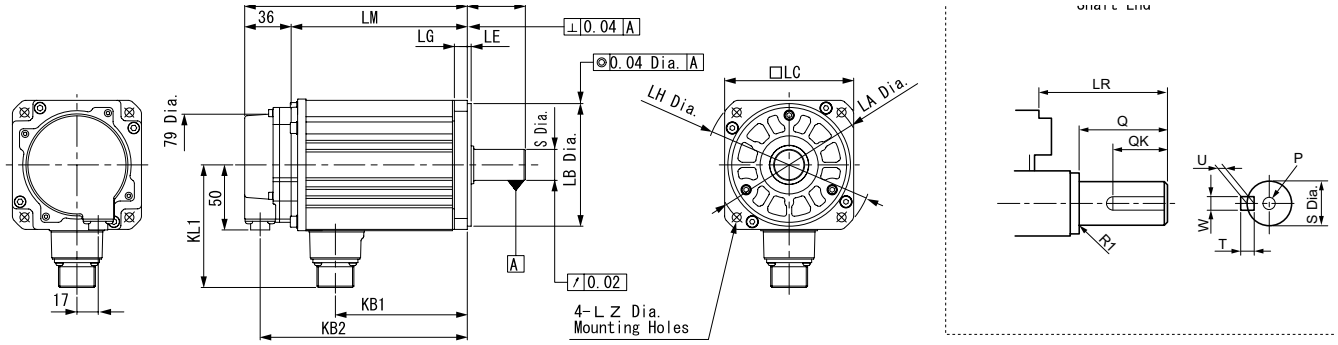

Models without brake



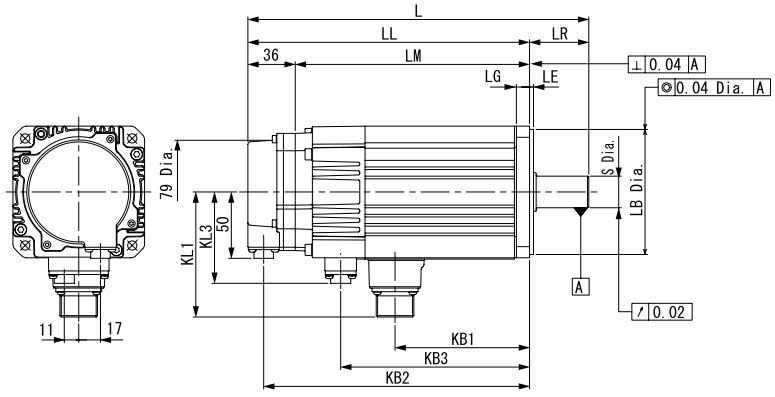

Models with brake

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

| Dimensions (mm) | Without brake | | | | | With brake | | | | | | | KB1 | KL1 | Flange Face Dimensions | | | | | | | | Shaft End Dimensions | | | | | | | Approx. Mass (Kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | L | LL | LM | LR | KB2 | L | LL | LM | LR | KB2 | KB3 | KL2 | | | LA | LB | LC | LE | LF | LG | LH | LZ | S | Q | QK | W | T | U | Tap x Depth | Without brake | With brake |
| SGMSV-10D□A2□-OY | 192 | 147 | 111 | 45 | 135 | 233 | 188 | 152 | 45 | 118 | 176 | 69 | 76 | 96 | 115 | $95^{0}_{-0..035}$ | 100 | 3 | 3 | 10 | 130 | 7 | $24^{0}_{-0..013}$ | 40 | 32 | 8 | 7 | 4 | M8 x 16L | 4.1 | 5.5 |
| SGMSV-15D□A2□-OY | 211 | 153 | 117 | 58 | 141 | 243 | 198 | 162 | 45 | 128 | 186 | | 99 | | | | | | | | | | | | | | | | | 4.6 | 6 |
| SGMSV-20D□A2□-OY | 229 | 171 | 135 | 58 | 159 | 259 | 214 | 178 | 45 | 144 | 202 | | 117 | | | | | | | | | | | | | | | | | 5.4 | 6.8 |
| SGMSV-25D□A2□-OY | 239 | 160 | 124 | 79 | 148 | 292 | 247 | 211 | 45 | 177 | 225 | | 108 | | | | | | | | | | | | | | | | | 6.8 | 8.7 |
| SGMSV-30D□A2□-OY | 259 | 196 | 160 | 63 | 184 | 295 | 232 | 196 | 63 | 176 | 220 | 81 | 124 | 114 | 145 | $110^{0}_{-0..035}$ | 130 | 6 | 6 | 12 | 165 | 9 | $28^{0}_{-0..013}$ | 55 | 50 | | | | | 10.5 | 13 |
| SGMSV-40D□A2□-OY | 296 | 233 | 197 | 63 | 221 | 332 | 269 | 233 | 63 | 213 | 257 | | 161 | | | | | | | | | | | | | | | | | 13.5 | 16 |
| SGMSV-50D□A2□-OY | 336 | 273 | 237 | 63 | 261 | 372 | 309 | 273 | 63 | 253 | 297 | | 201 | | | | | | | | | | | | | | | | | 16.5 | 19 |




Models without brake

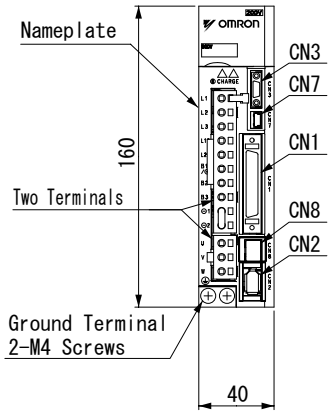


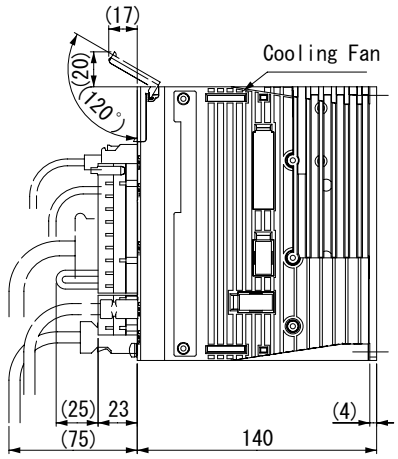

Models with brake

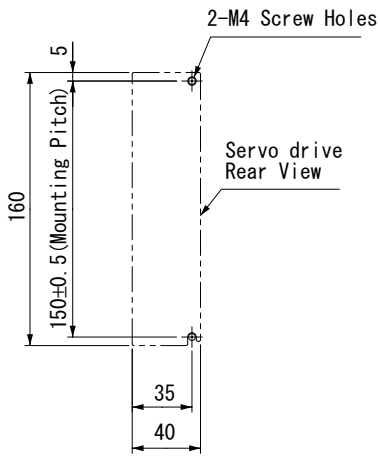
## Dimensions

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

#### SGDV-A5A0□A-OY to -02A0□A-OY (230 V, 50 to 200 W)

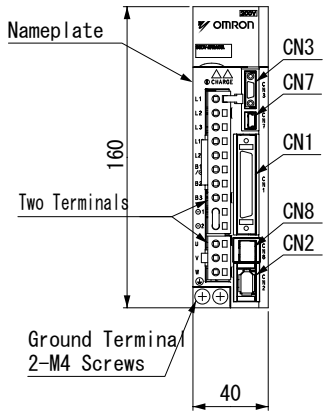


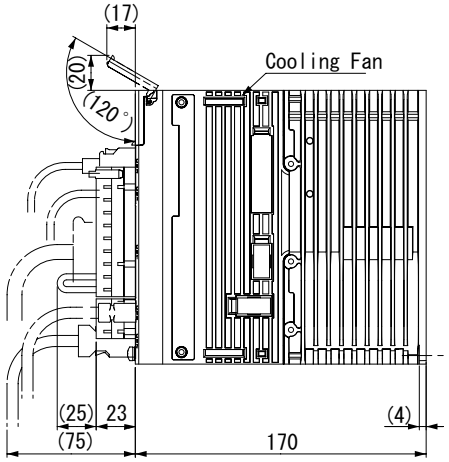



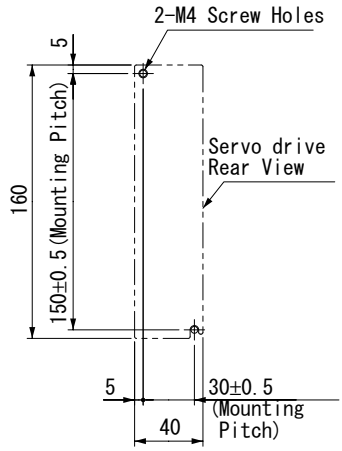




Mounting Hole Diagram

#### SGDV-04A0□A-OY (230 V, 400 W)

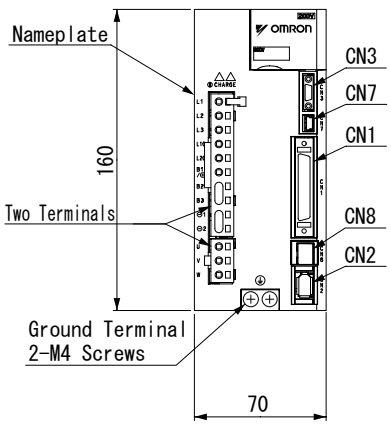


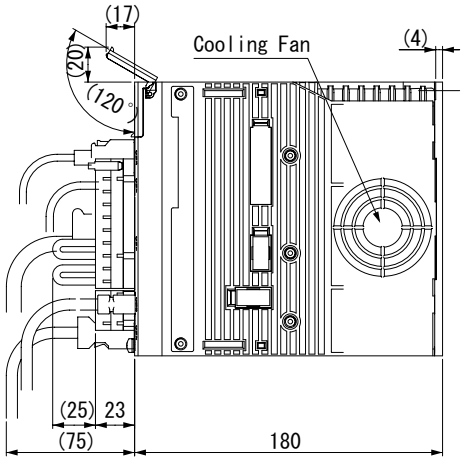



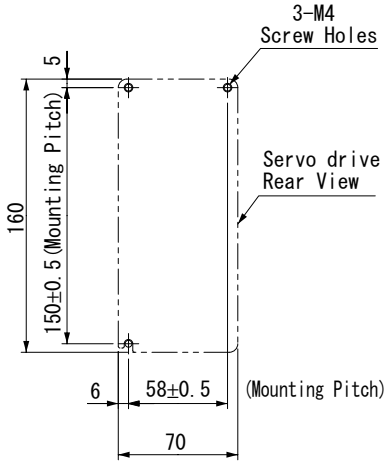




Mounting Hole Diagram

#### SGDV-08A0□A-OY (230 V, 750 W)

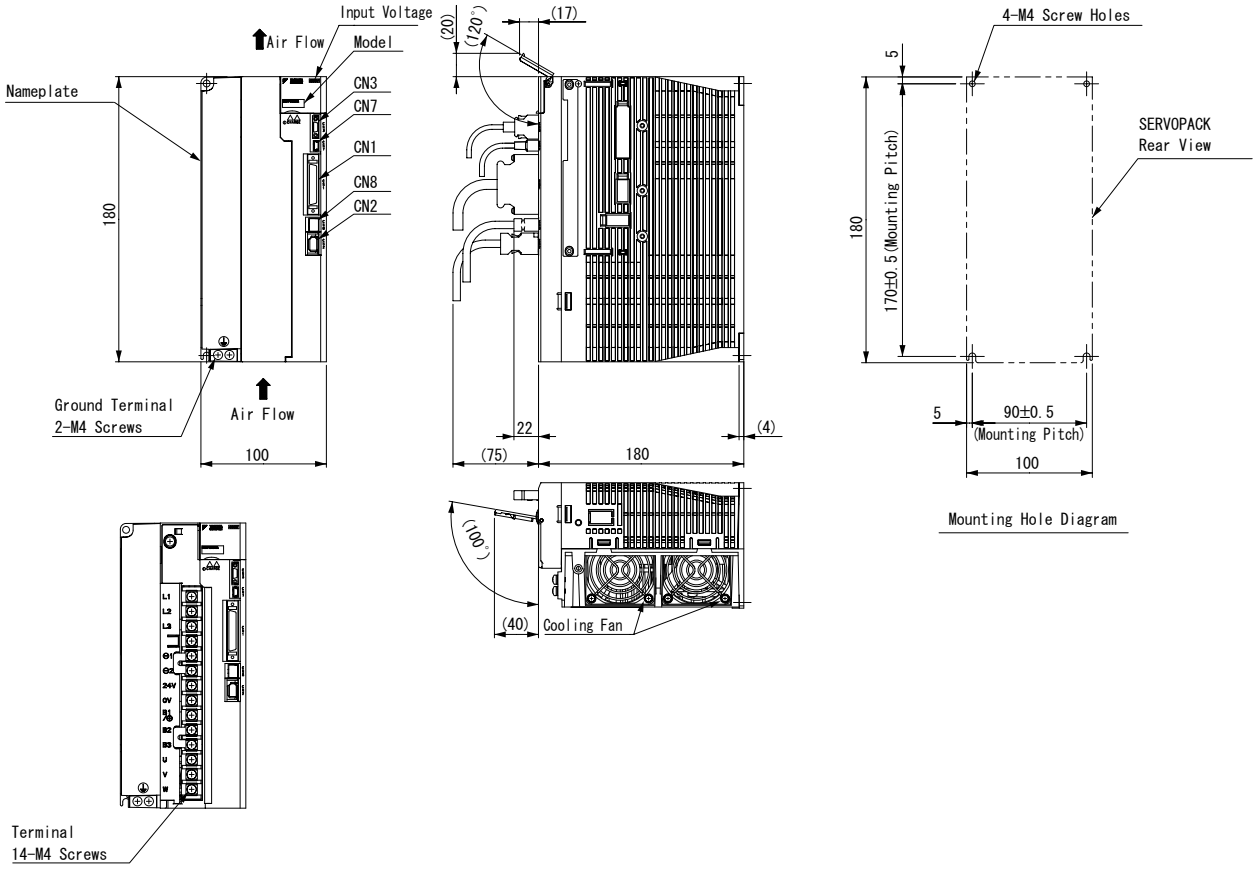


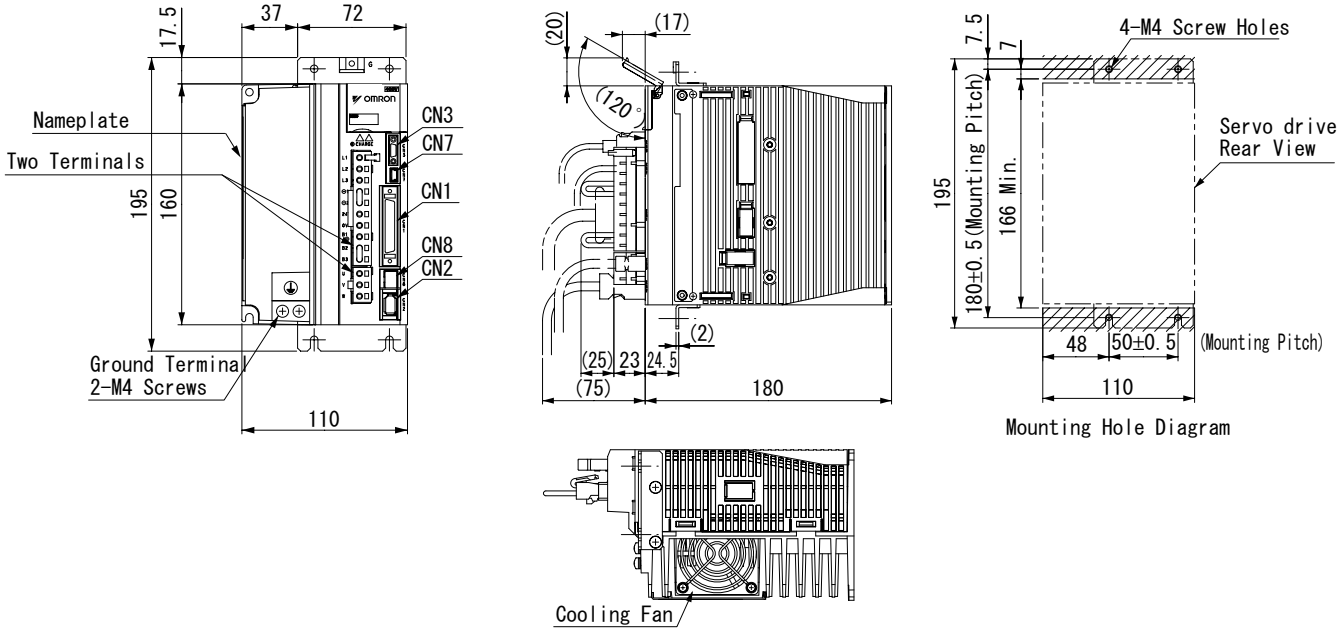




Mounting Hole Diagram

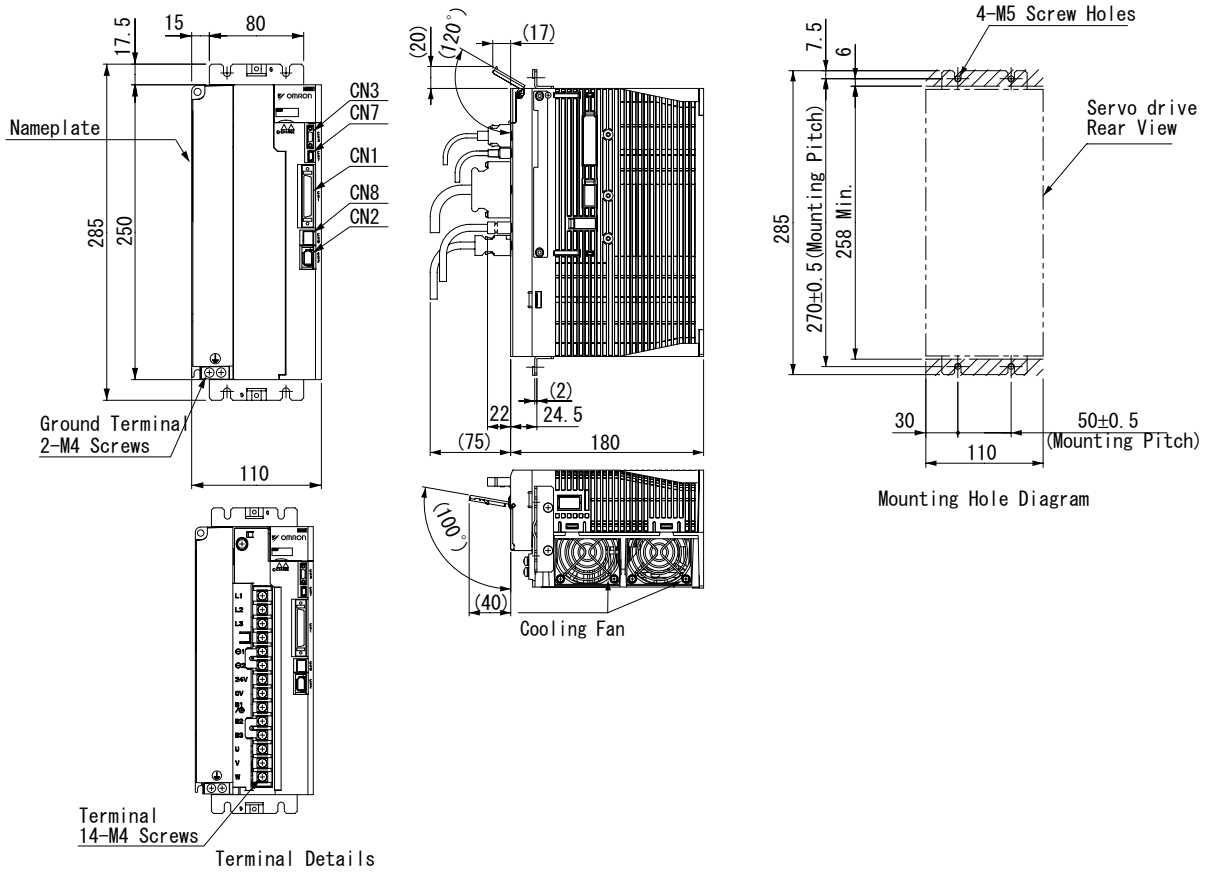
**SGDV-15A0□A-OY (230 V, 1.5 kW)**



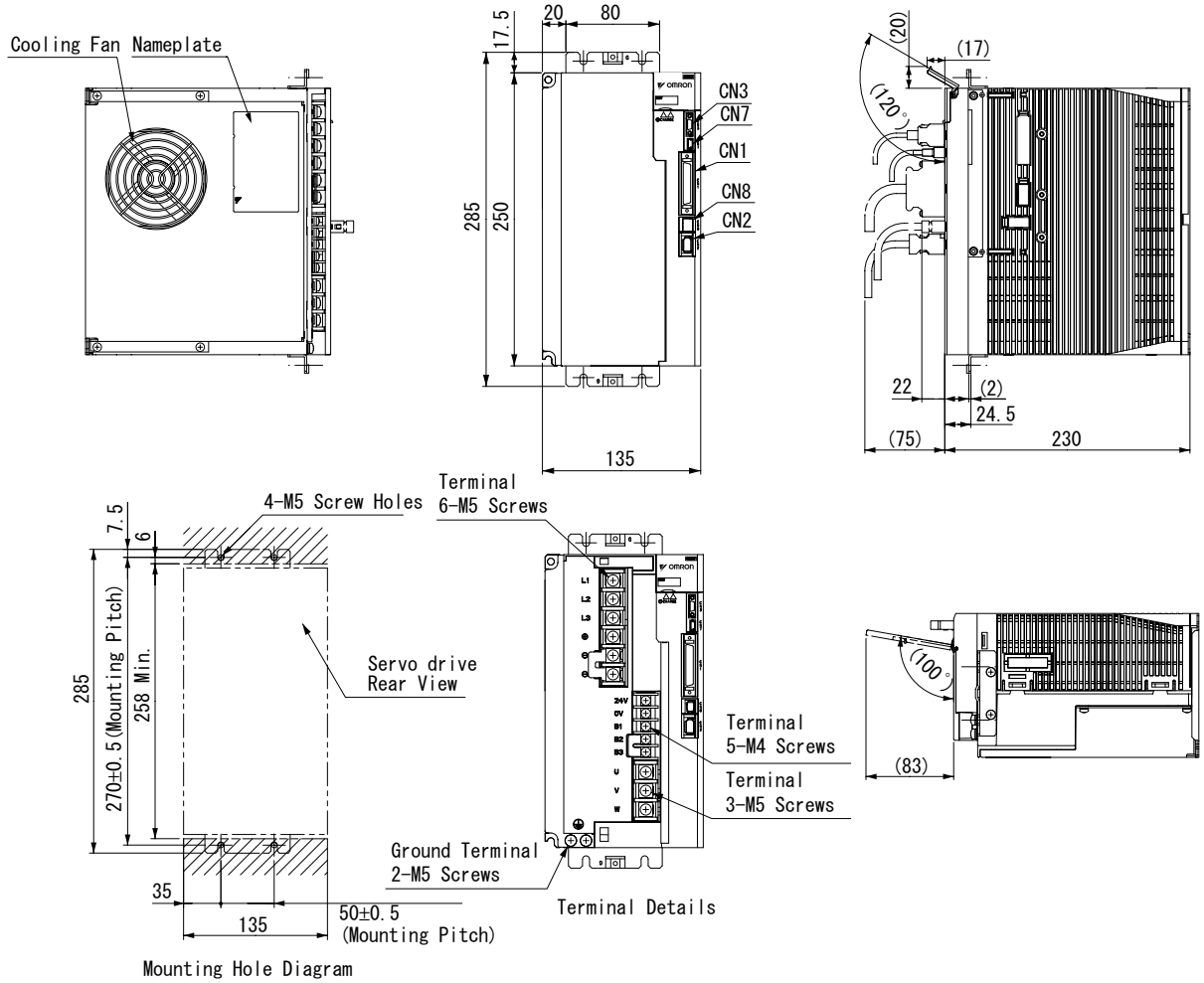

**SGDV-05D0□A-OY to -15D0□A-OY (400 V, 0.5 to 1.5 kW)**



**SGDV-20/30D0□A-OY (400 V, 2/3 kW)**

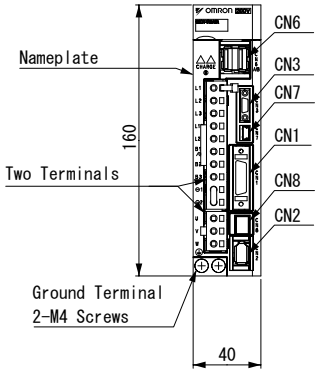


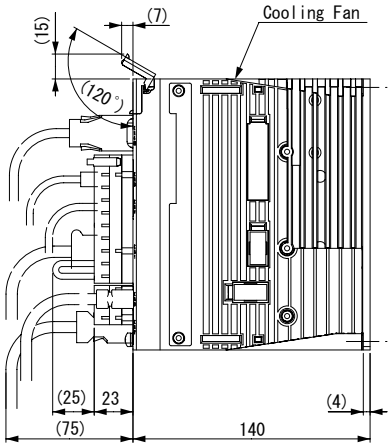

**SGDV-50D0□A-OY (400 V, 5 kW)**

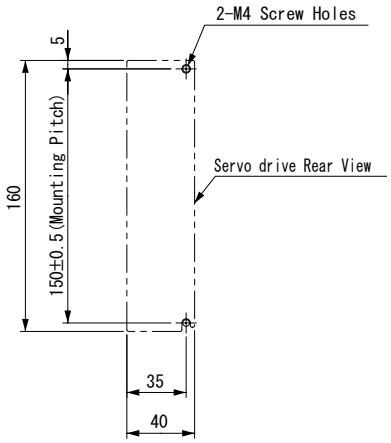


**Sigma-5 MECHATROLINK-II Servo Drives**

**SGDV-A5A1□A-OY to -02A1□A-OY (230 V, 50 to 200 W)**

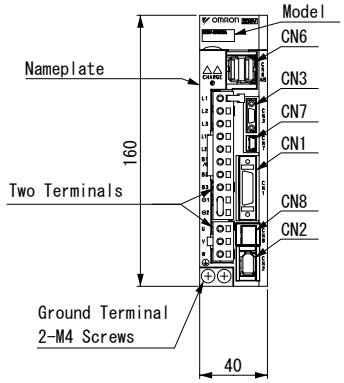


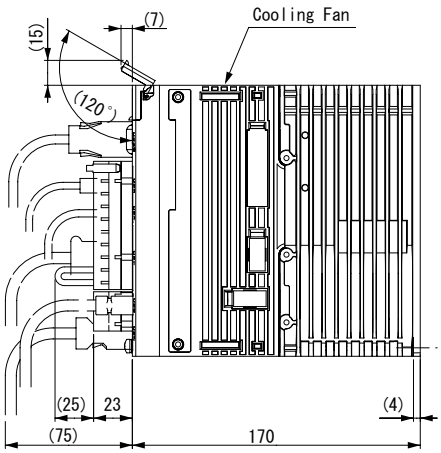



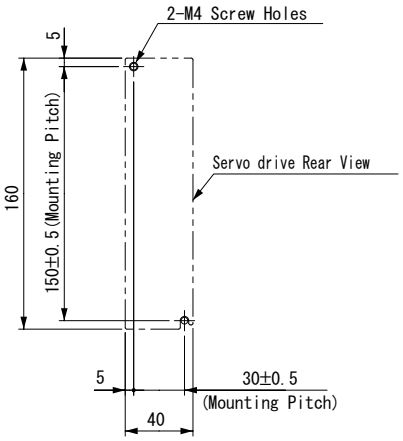




Mounting Hole Diagram

**SGDV-04A1□A-OY (230 V, 400 W)**

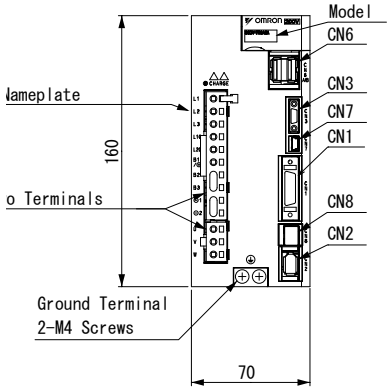


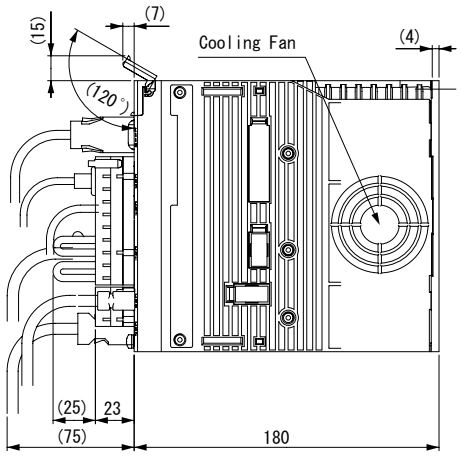



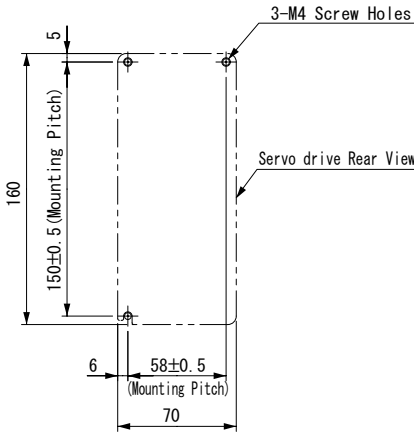




Mounting Hole Diagram

**SGDV-08A1□A-OY (230 V, 750 W)**

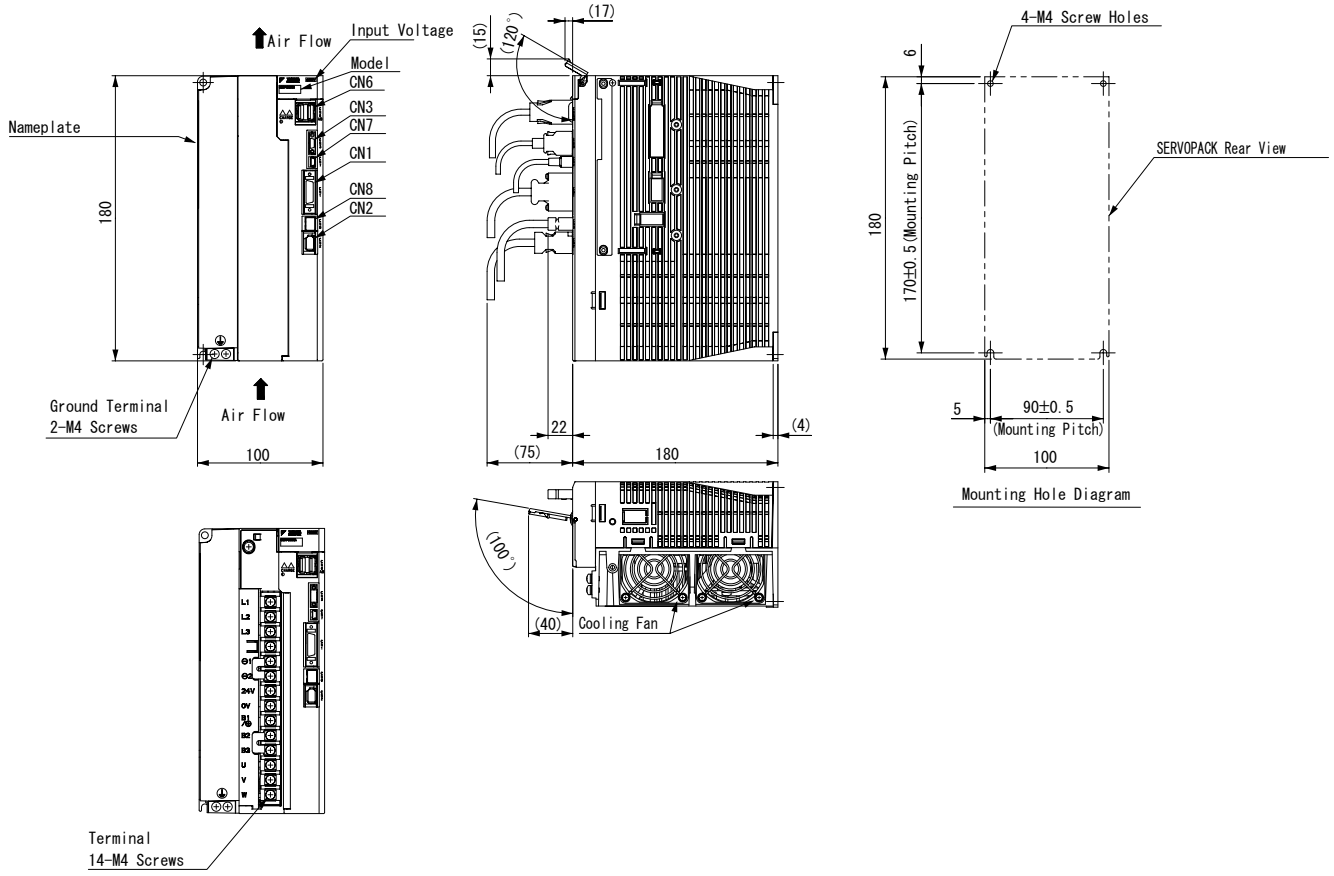


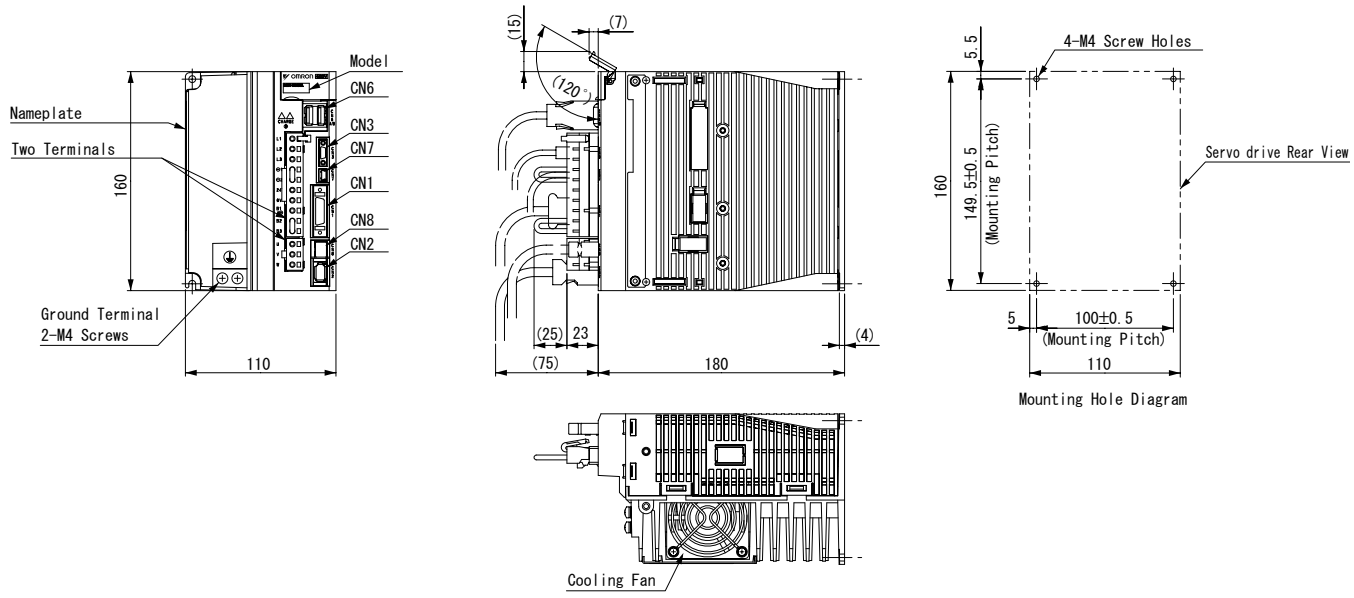




Mounting Hole Diagram

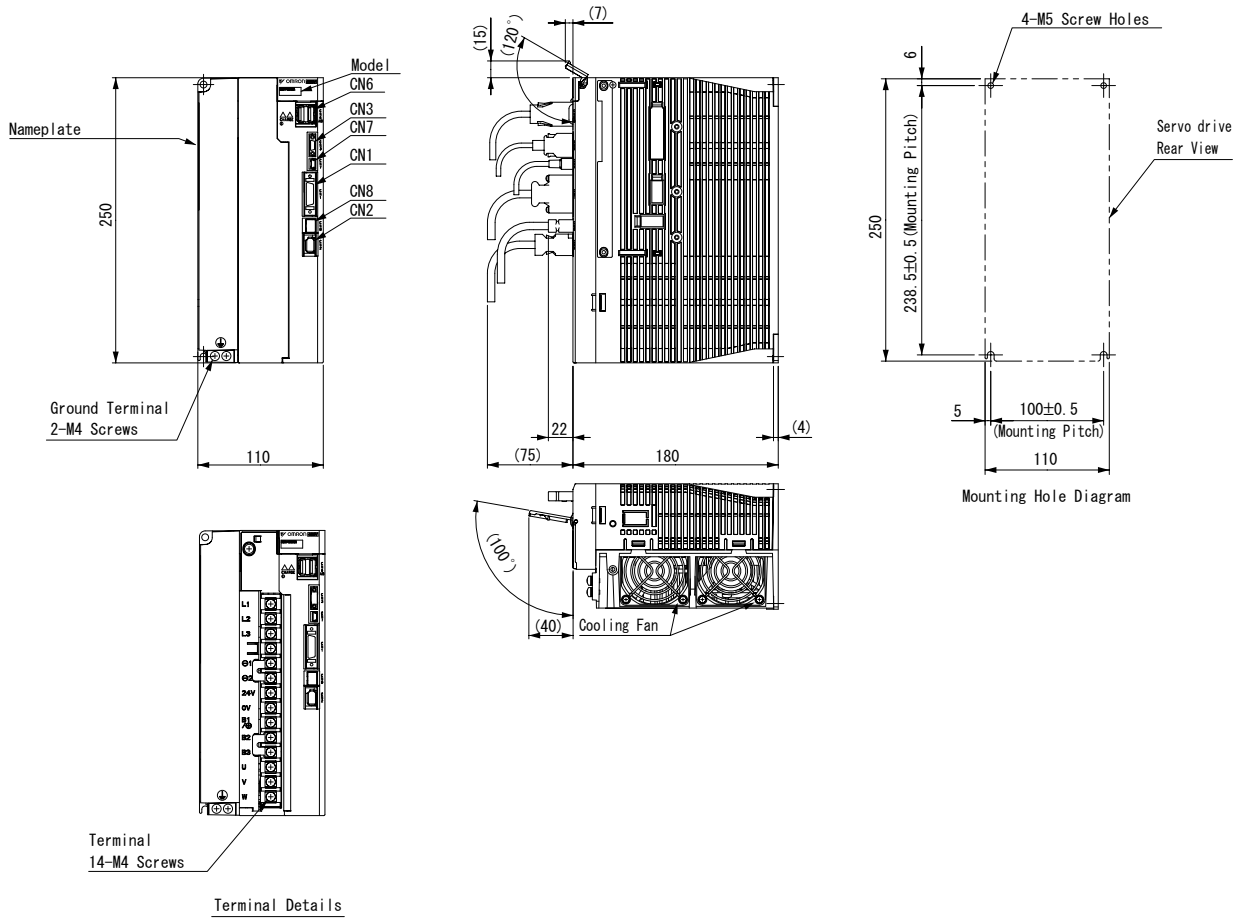
**SGDV-15A1□A-OY (230 V, 1.5 kW)**



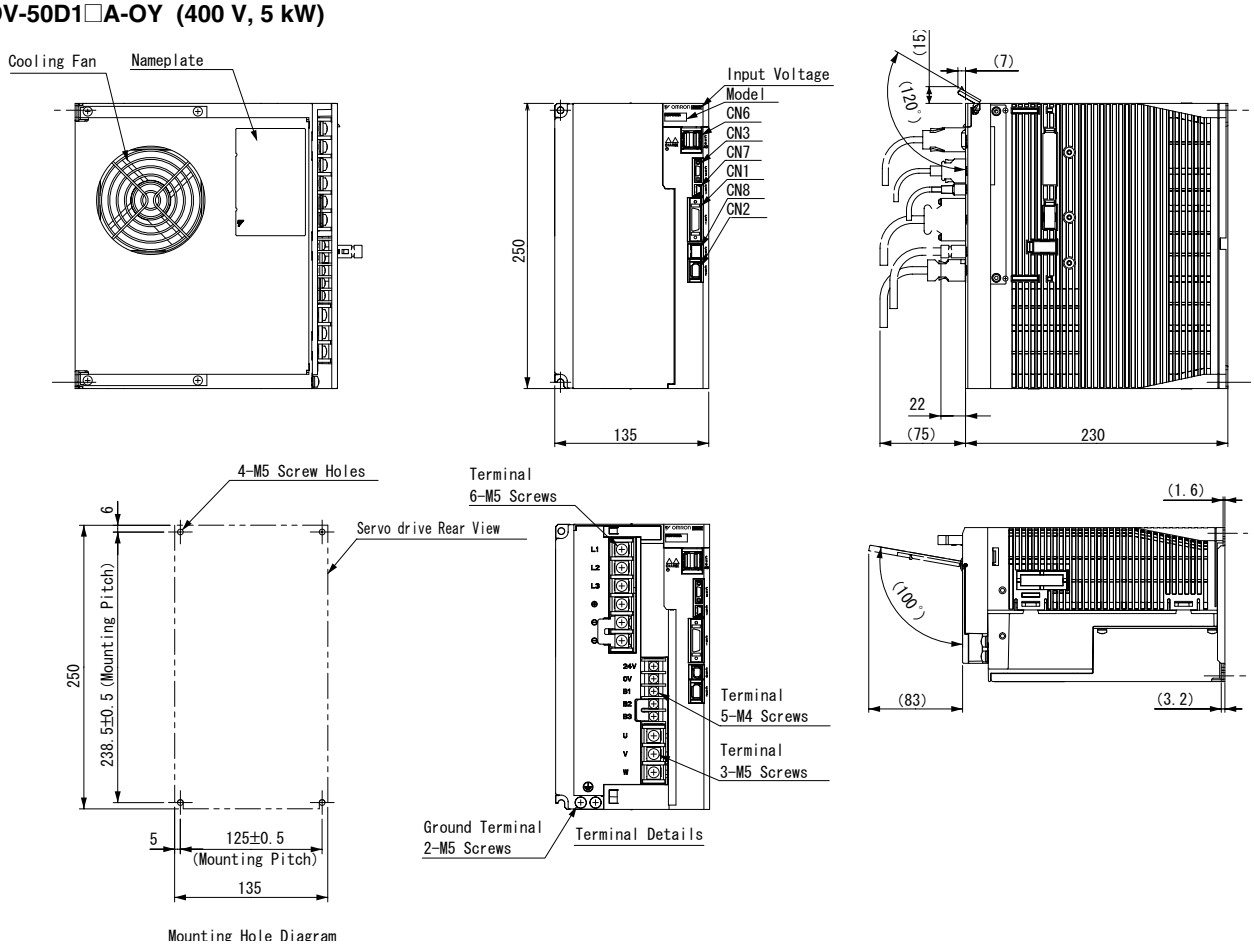

**SGDV-05D1□A-OY to -15D1□A-OY (400 V, 0.5 to 1.5 kW)**



### SGDV-20/30D1□A-OY (400 V, 2/3 kW)



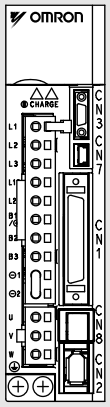

### SGDV-50D1□A-OY (400 V, 5 kW)



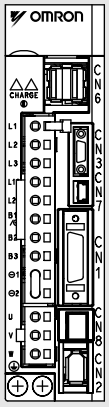
## Ordering information

**(Refer to servo drive chapter)**

Drive options



② Analog Pulse Models

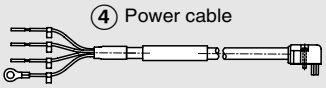


② MECHATROLINK-II Models

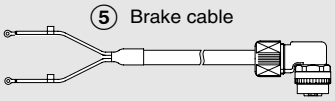
**Power, encoder and brake cables**

③ Encoder cable

④ Power cable



⑤ Brake cable



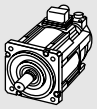
(a separate brake cable to use only for SGMGV and SGMSV servo motors from 850W)

**Servo motors**

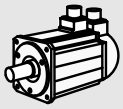
**① SGMJV Servo Motor 3000 rpm (50-750 W)**

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

**① SGMEV Servo Motor 3000 rpm (100W-1.5kW)**



**① SGMGV Servo Motor 1500 rpm (300W-4.4 kW)**



**① SGMSV Servo Motor 3000 rpm (1-5kW)**

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

**Servo motor**

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

**Servo drive**

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

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

| Symbol | Specifications | | | | | Servo motor model | Compatible servo drives ② |
|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | | Sigma-5 |
| ①  | 230 V | **Incremental encoder (13 bit)** Straight shaft with key and tap | Without brake | 0.159 Nm | 50 W | SGMJV-A5AAA61-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMJV-01AAA61-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMJV-02AAA61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMJV-04AAA61-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMJV-08AAA61-OY | SGDV-08A□1A-OY |
| | | | With brake | 0.159 Nm | 50 W | SGMJV-A5AAA6C-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMJV-01AAA6C-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMJV-02AAA6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMJV-04AAA6C-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMJV-08AAA6C-OY | SGDV-08A□1A-OY |
| | | **Incremental encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.159 Nm | 50 W | SGMJV-A5ADA61-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMJV-01ADA61-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMJV-02ADA61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMJV-04ADA61-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMJV-08ADA61-OY | SGDV-08A□1A-OY |
| | | | With brake | 0.159 Nm | 50 W | SGMJV-A5ADA6C-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMJV-01ADA6C-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMJV-02ADA6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMJV-04ADA6C-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMJV-08ADA6C-OY | SGDV-08A□1A-OY |
| | | **Absolute encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.159 Nm | 50 W | SGMJV-A5A3A61-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMJV-01A3A61-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMJV-02A3A61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMJV-04A3A61-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMJV-08A3A61-OY | SGDV-08A□1A-OY |
| | | | With brake | 0.159 Nm | 50 W | SGMJV-A5A3A6C-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMJV-01A3A6C-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMJV-02A3A6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMJV-04A3A6C-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMJV-08A3A6C-OY | SGDV-08A□1A-OY |

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

| Symbol | Specifications | | | | | Servo motor model | Compatible servo drives ② |
|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | | Sigma-5 |
| ①  | 230 V | **Incremental encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.159 Nm | 50 W | SGMAV-A5ADA61-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMAV-01ADA61-OY | SGDV-01A□1A-OY |
| | | | | 0.477 Nm | 150 W | SGMAV-C2ADA61-OY | SGDV-02A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMAV-02ADA61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMAV-04ADA61-OY | SGDV-04A□1A-OY |
| | | | | 1.75 Nm | 550 W | SGMAV-06ADA61-OY | SGDV-08A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMAV-08ADA61-OY | SGDV-08A□1A-OY |
| | | | | 3.18 Nm | 1 kW | SGMAV-10ADA61-OY | SGDV-15A□1A-OY-008000 |
| | | | With brake | 0.159 Nm | 50 W | SGMAV-A5ADA6C-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMAV-01ADA6C-OY | SGDV-01A□1A-OY |
| | | | | 0.477 Nm | 150 W | SGMAV-C2ADA6C-OY | SGDV-02A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMAV-02ADA6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMAV-04ADA6C-OY | SGDV-04A□1A-OY |
| | | | | 1.75 Nm | 550 W | SGMAV-06ADA6C-OY | SGDV-08A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMAV-08ADA6C-OY | SGDV-08A□1A-OY |
| | | | | 3.18 Nm | 1 kW | SGMAV-10ADA6C-OY | SGDV-15A□1A-OY-008000 |
| | | **Absolute encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.159 Nm | 50 W | SGMAV-A5A3A61-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMAV-01A3A61-OY | SGDV-01A□1A-OY |
| | | | | 0.477 Nm | 150 W | SGMAV-C2A3A61-OY | SGDV-02A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMAV-02A3A61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMAV-04A3A61-OY | SGDV-04A□1A-OY |
| | | | | 1.75 Nm | 550 W | SGMAV-06A3A61-OY | SGDV-08A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMAV-08A3A61-OY | SGDV-08A□1A-OY |
| | | | | 3.18 Nm | 1 kW | SGMAV-10A3A61-OY | SGDV-15A□1A-OY-008000 |
| | | | With brake | 0.159 Nm | 50 W | SGMAV-A5A3A6C-OY | SGDV-A5A□1A-OY |
| | | | | 0.318 Nm | 100 W | SGMAV-01A3A6C-OY | SGDV-01A□1A-OY |
| | | | | 0.477 Nm | 150 W | SGMAV-C2A3A6C-OY | SGDV-02A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMAV-02A3A6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMAV-04A3A6C-OY | SGDV-04A□1A-OY |
| | | | | 1.75 Nm | 550 W | SGMAV-06A3A6C-OY | SGDV-08A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMAV-08A3A6C-OY | SGDV-08A□1A-OY |
| | | | | 3.18 Nm | 1 kW | SGMAV-10A3A6C-OY | SGDV-15A□1A-OY-008000 |

### 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 | | Sigma-5 |
| ①  | 230 V | **Incremental encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.318 Nm | 100 W | SGMEV-01ADA61-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMEV-02ADA61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04ADA61-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08ADA61-OY | SGDV-08A□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15ADA61-OY | SGDV-15A□1A-OY-008000 |
| | | | With brake | 0.318 Nm | 100 W | SGMEV-01ADA6C-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMEV-02ADA6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04ADA6C-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08ADA6C-OY | SGDV-08A□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15ADA6C-OY | SGDV-15A□1A-OY-008000 |
| | | **Absolute encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.318 Nm | 100 W | SGMEV-01A3A61-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMEV-02A3A61-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04A3A61-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08A3A61-OY | SGDV-08A□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15A3A61-OY | SGDV-15A□1A-OY-008000 |
| | | | With brake | 0.318 Nm | 100 W | SGMEV-01A3A6C-OY | SGDV-01A□1A-OY |
| | | | | 0.637 Nm | 200 W | SGMEV-02A3A6C-OY | SGDV-02A□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04A3A6C-OY | SGDV-04A□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08A3A6C-OY | SGDV-08A□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15A3A6C-OY | SGDV-15A□1A-OY-008000 |
| | 400 V | **Incremental encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.637 Nm | 200 W | SGMEV-02DDA61-OY | SGDV-05D□1A-OY |
| | | | | 0.955 Nm | 300 W | SGMEV-03DDA61-OY | SGDV-05D□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04DDA61-OY | SGDV-05D□1A-OY |
| | | | | 2.07 Nm | 650 W | SGMEV-07DDA61-OY | SGDV-10D□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08DDA61-OY | SGDV-10D□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15DDA61-OY | SGDV-15D□1A-OY |
| | | | With brake | 0.637 Nm | 200 W | SGMEV-02DDA6C-OY | SGDV-05D□1A-OY |
| | | | | 0.955 Nm | 300 W | SGMEV-03DDA6C-OY | SGDV-05D□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04DDA6C-OY | SGDV-05D□1A-OY |
| | | | | 2.07 Nm | 650 W | SGMEV-07DDA2C-OY | SGDV-10D□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08DDA2C-OY | SGDV-10D□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15DDA2C-OY | SGDV-15D□1A-OY |
| | | **Absolute encoder (20 bit)** Straight shaft with key and tap | Without brake | 0.637 Nm | 200 W | SGMEV-02D3A61-OY | SGDV-05D□1A-OY |
| | | | | 0.955 Nm | 300 W | SGMEV-03D3A61-OY | SGDV-05D□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04D3A61-OY | SGDV-05D□1A-OY |
| | | | | 2.07 Nm | 650 W | SGMEV-07D3A61-OY | SGDV-10D□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08D3A61-OY | SGDV-10D□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15D3A61-OY | SGDV-15D□1A-OY |
| | | | With brake | 0.637 Nm | 200 W | SGMEV-02D3A6C-OY | SGDV-05D□1A-OY |
| | | | | 0.955 Nm | 300 W | SGMEV-03D3A6C-OY | SGDV-05D□1A-OY |
| | | | | 1.27 Nm | 400 W | SGMEV-04D3A6C-OY | SGDV-05D□1A-OY |
| | | | | 2.07 Nm | 650 W | SGMEV-07D3A6C-OY | SGDV-10D□1A-OY |
| | | | | 2.39 Nm | 750 W | SGMEV-08D3A6C-OY | SGDV-10D□1A-OY |
| | | | | 4.77 Nm | 1.5 kW | SGMEV-15D3A6C-OY | SGDV-15D□1A-OY |

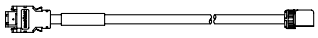
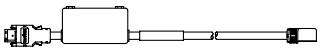
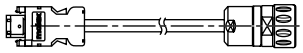
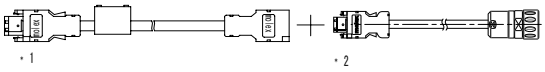
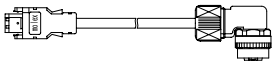
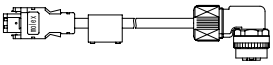
### SGMGV - servo motors 1500 r/min (300 W - 4.4 kW)

| Symbol | Specifications | | | | | Servo motor model | Compatible servo drives ② |
|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | | Sigma-5 |
| ①  | 400 V | Incremental encoder (20 bit)<br>Straight shaft with key and tap | Without brake | 1.96 Nm | 300 W | SGMGV-03DDA6F-OY | SGDV-05D□1A-OY |
| | | | | 2.86 Nm | 450 W | SGMGV-05DDA6F-OY | SGDV-05D□1A-OY |
| | | | | 5.39 Nm | 850 W | SGMGV-09DDA6F-OY | SGDV-10D□1A-OY |
| | | | | 8.34 Nm | 1.3 kW | SGMGV-13DDA6F-OY | SGDV-15D□1A-OY |
| | | | | 11.5 Nm | 1.8 kW | SGMGV-20DDA6F-OY | SGDV-20D□1A-OY |
| | | | | 18.6 Nm | 2.9 kW | SGMGV-30DDA6F-OY | SGDV-30D□1A-OY |
| | | | | 28.4 Nm | 4.4 kW | SGMGV-44DDA6F-OY | SGDV-50D□1A-OY |
| | | | With brake | 1.96 Nm | 300 W | SGMGV-03DDA6H-OY | SGDV-05D□1A-OY |
| | | | | 2.86 Nm | 450 W | SGMGV-05DDA6H-OY | SGDV-05D□1A-OY |
| | | | | 5.39 Nm | 850 W | SGMGV-09DDA6H-OY | SGDV-10D□1A-OY |
| | | | | 8.34 Nm | 1.3 kW | SGMGV-13DDA6H-OY | SGDV-15D□1A-OY |
| | | | | 11.5 Nm | 1.8 kW | SGMGV-20DDA6H-OY | SGDV-20D□1A-OY |
| | | | | 18.6 Nm | 2.9 kW | SGMGV-30DDA6H-OY | SGDV-30D□1A-OY |
| | | | | 28.4 Nm | 4.4 kW | SGMGV-44DDA6H-OY | SGDV-50D□1A-OY |
| | | Absolute encoder (20 bit)<br>Straight shaft with key and tap | Without brake | 1.96 Nm | 300 W | SGMGV-03D3A6F-OY | SGDV-05D□1A-OY |
| | | | | 2.86 Nm | 450 W | SGMGV-05D3A6F-OY | SGDV-05D□1A-OY |
| | | | | 5.39 Nm | 850 W | SGMGV-09D3A6F-OY | SGDV-10D□1A-OY |
| | | | | 8.34 Nm | 1.3 kW | SGMGV-13D3A6F-OY | SGDV-15D□1A-OY |
| | | | | 11.5 Nm | 1.8 kW | SGMGV-20D3A6F-OY | SGDV-20D□1A-OY |
| | | | | 18.6 Nm | 2.9 kW | SGMGV-30D3A6F-OY | SGDV-30D□1A-OY |
| | | | | 28.4 Nm | 4.4 kW | SGMGV-44D3A6F-OY | SGDV-50D□1A-OY |
| | | | With brake | 1.96 Nm | 300 W | SGMGV-03D3A6H-OY | SGDV-05D□1A-OY |
| | | | | 2.86 Nm | 450 W | SGMGV-05D3A6H-OY | SGDV-05D□1A-OY |
| | | | | 5.39 Nm | 850 W | SGMGV-09D3A6H-OY | SGDV-10D□1A-OY |
| | | | | 8.34 Nm | 1.3 kW | SGMGV-13D3A6H-OY | SGDV-15D□1A-OY |
| | | | | 11.5 Nm | 1.8 kW | SGMGV-20D3A6H-OY | SGDV-20D□1A-OY |
| | | | | 18.6 Nm | 2.9 kW | SGMGV-30D3A6H-OY | SGDV-30D□1A-OY |
| | | | | 28.4 Nm | 4.4 kW | SGMGV-44D3A6H-OY | SGDV-50D□1A-OY |

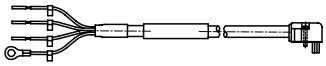
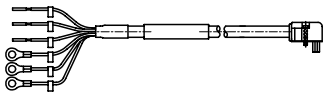
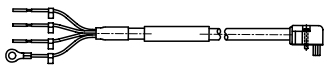
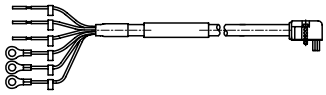
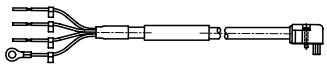
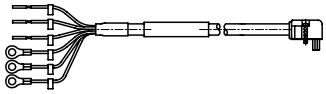
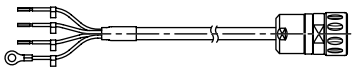
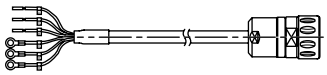
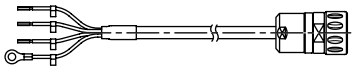
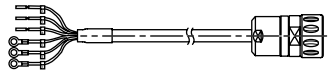
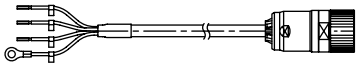
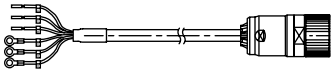
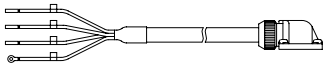
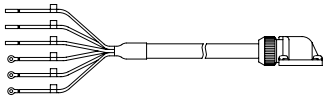
### SGMSV - servo motors 6000 r/min ( 1 - 5 kW)

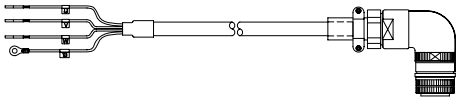
| Symbol | Specifications | | | | | Servo motor model | Compatible servo drives ② |
|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | | Sigma-5 |
| ① | 400 V | Incremental encoder (20 bit)<br>Straight shaft with key and tap | Without brake | 3.18 Nm | 1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

### Encoder Cables for sigma-5 servo drive

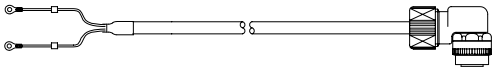
| Symbol | Specifications | | Model | Appearance |
|---|---|---|---|---|
| ③ | Sigma-5 incremental encoder cable for SGMJV/AV Servo motors SGMJV-□□ADA□□-OY, SGMJV-□□AAA□□-OY, SGMAV-□□ADA□□-OY | 3 m | JZSP-CSP21-03-E-G1 |  |
| | | 5 m | JZSP-CSP21-05-E-G1 | |
| | | 10 m | JZSP-CSP21-10-E-G1 | |
| | | 15 m | JZSP-CSP21-15-E-G1 | |
| | | 20 m | JZSP-CSP21-20-E-G1 | |
| | Sigma-5 absolute encoder cable (with a battery case) for SGMJV/AV Servo motors SGMJV-□□A3A□□-OY SGMAV-□□A3A□□-OY | 3 m | JZSP-CSP25-03-G1 |  |
| | | 5 m | JZSP-CSP25-05-G1 | |
| | | 10 m | JZSP-CSP25-10-G1 | |
| | | 15 m | JZSP-CSP25-15-G1 | |
| | | 20 m | JZSP-CSP25-20-G1 | |
| | Sigma-5 incremental encoder cable for SGMEV Servo motors | 3 m | R88A-CRWA003C-DE |  |
| | | 5 m | R88A-CRWA005C-DE | |
| | | 10 m | R88A-CRWA010C-DE | |
| | | 15 m | R88A-CRWA015C-DE | |
| | | 20 m | R88A-CRWA020C-DE | |
| | Sigma-5 absolute encoder cable extension with a battery case for SGMEV Servo motors<br><br>·**Note:** *1This cable is only an extension and must be used in conjunction with incremental encoder cable *2R88A-CRWA0□□C-DE | 0.3 m | JZSP-CSP12-E |  |
| | Sigma-5 incremental encoder cable for SGMGV/SV Servo motors SGMGV-□□DDA□□-OY SGMSV-□□DDA□□-OY | 3 m | JZSP-CVP12-03-E-G1 |  |
| | | 5 m | JZSP-CVP12-05-E-G1 | |
| | | 10 m | JZSP-CVP12-10-E-G1 | |
| | | 15 m | JZSP-CVP12-15-E-G1 | |
| | | 20 m | JZSP-CVP12-20-E-G1 | |
| | Sigma-5 absolute encoder cable (with a battery case) for SGMGV/SV Servo motors SGMGV-□□D3A□□-OY SGMSV-□□D3A□□-OY | 3 m | JZSP-CVP27-03-G1 |  |
| | | 5 m | JZSP-CVP27-05-G1 | |
| | | 10 m | JZSP-CVP27-10-G1 | |
| | | 15 m | JZSP-CVP27-15-G1 | |
| | | 20 m | JZSP-CVP27-20-G1 | |

### Power cables

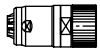
| Symbol | Specifications | | Model | Appearance |
|---|---|---|---|---|
| ④ | For 200 V servo motors without brake<br>SGMJV-(A5/01)A□A□**1**-OY<br>SGMAV-(A5/01/C2)ADA□**1**-OY | 3 m | JZSP-CSM21-03-E-G1 |  |
| | | 5 m | JZSP-CSM21-05-E-G1 | |
| | | 10 m | JZSP-CSM21-10-E-G1 | |
| | | 15 m | JZSP-CSM21-15-E-G1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

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

### Brake cable (for SGMGV-09/13/20/30/44 and SGMSV-10/15/20/25/30/40/50 Motors)

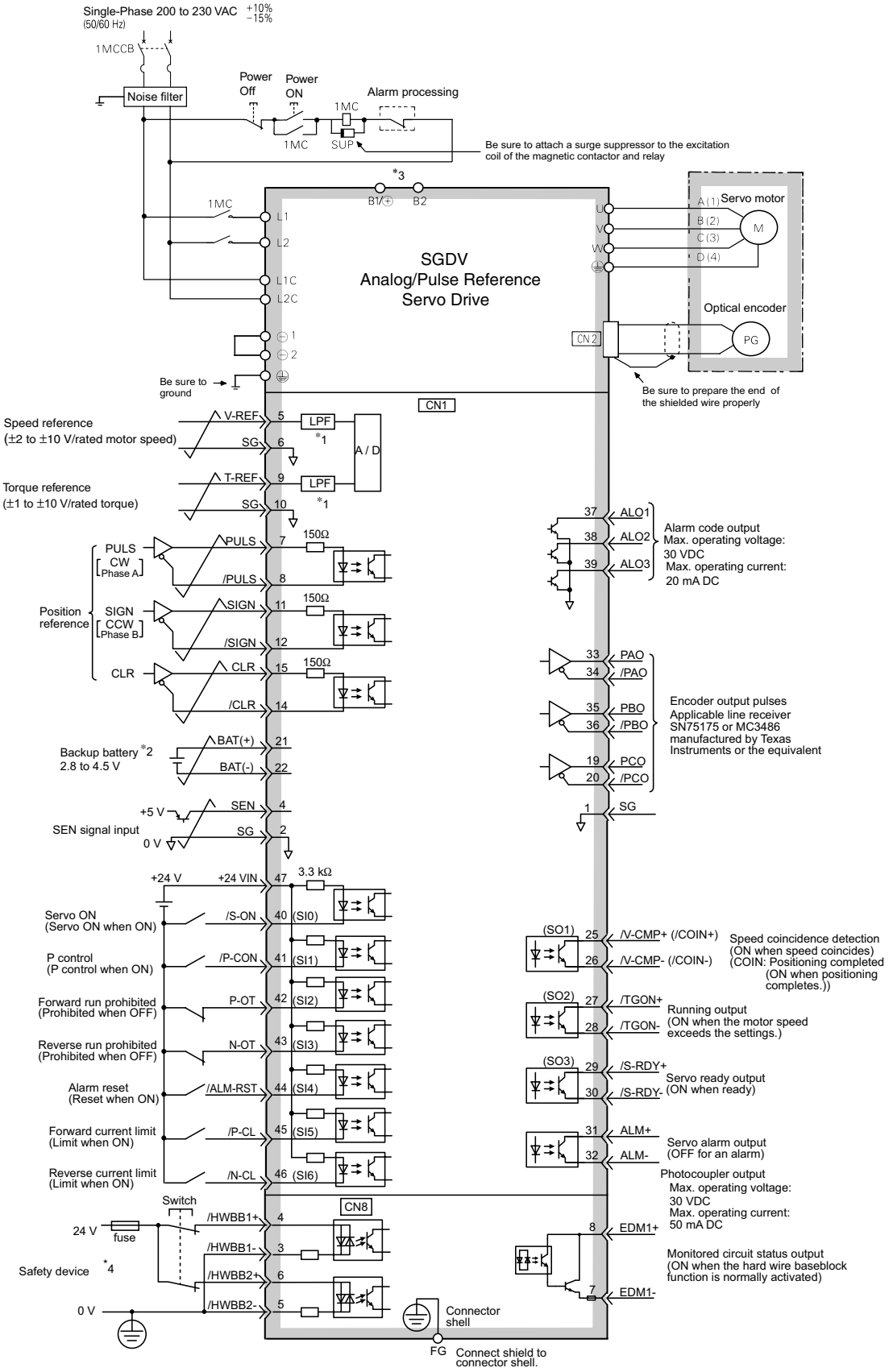
| Symbol | Specifications | | Model | Appearance |
|---|---|---|---|---|
| ⑤ | Brake cable only.<br>For 400 V servo motors with brake<br>SGMGV-(09/13/20/30/44)D□A□**C**-OY<br>SGMSV-(10/15/20/25/30/40/50)D□A□**C**-OY | 3 m | JZSP-CVB12-03-E-G1 |  |
| | | 5 m | JZSP-CVB12-05-E-G1 | |
| | | 10 m | JZSP-CVB12-10-E-G1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

### Connectors for power and encoder cables

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

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

### Single-phase, 230 VAC



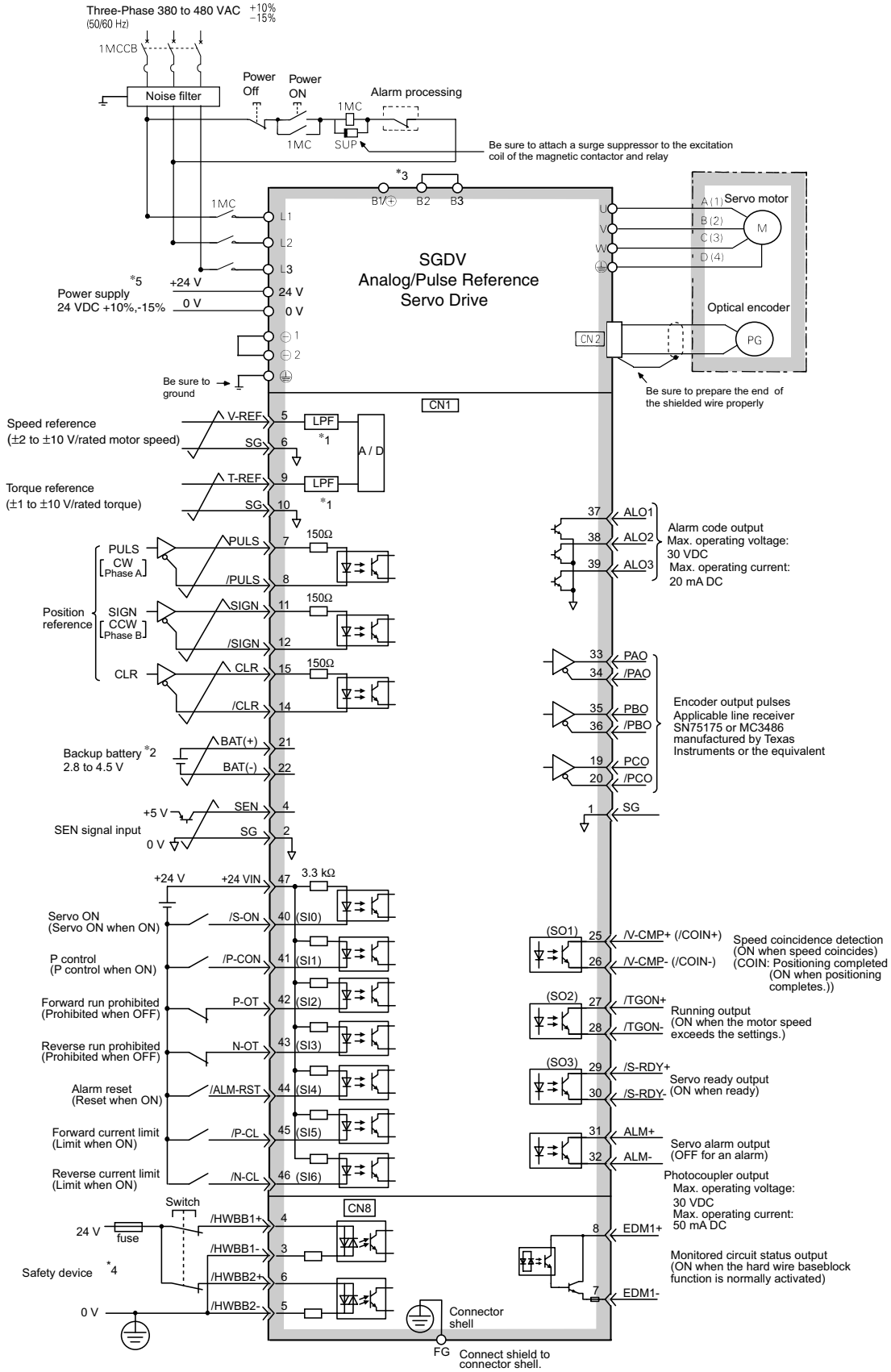

*1 The time constant for the primary filter is 30 µs.

*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 µs.

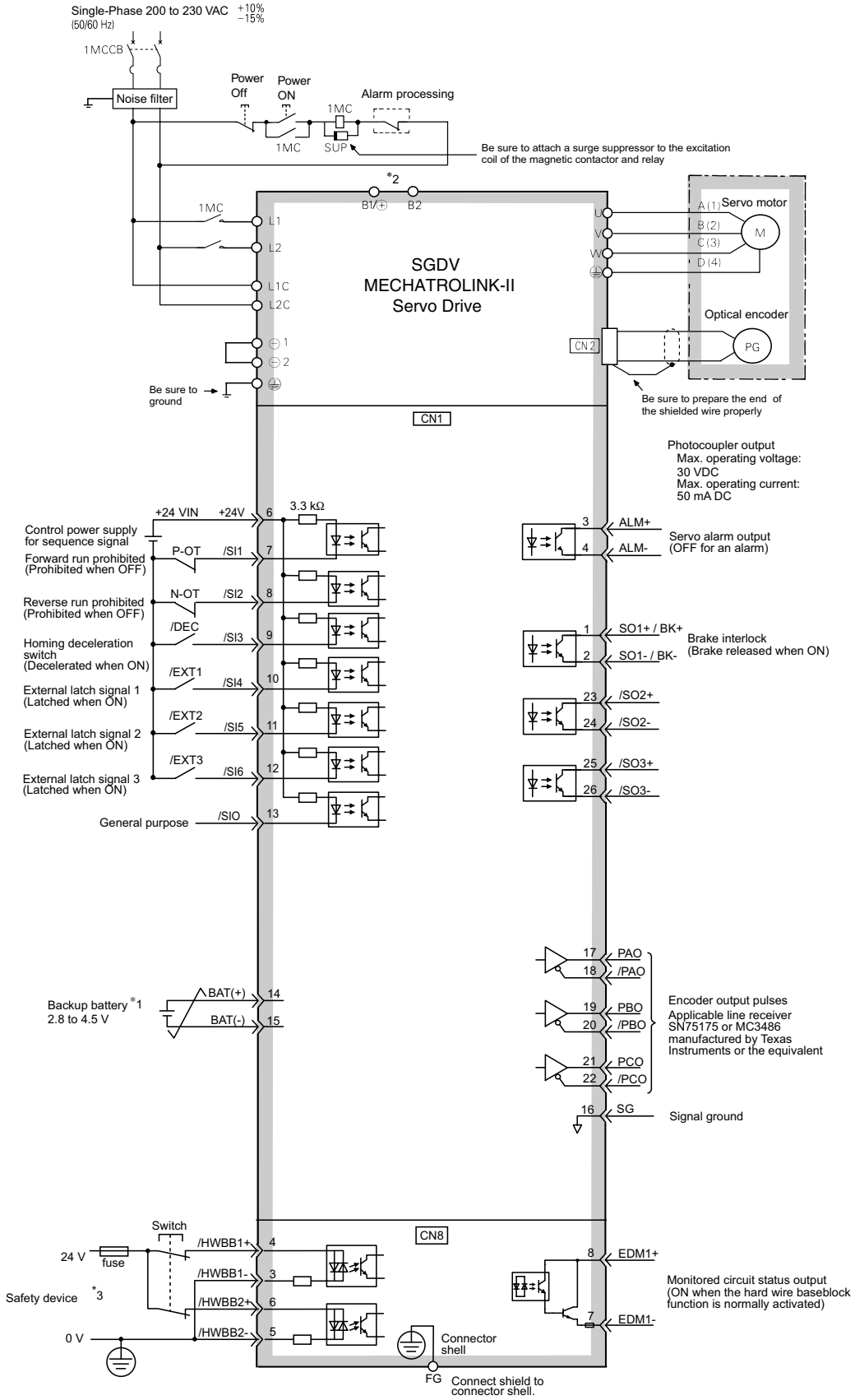
*2 Connect when using an absolute encoder. When the encoder cable for the battery case is connected, do not connect a backup battery.

*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

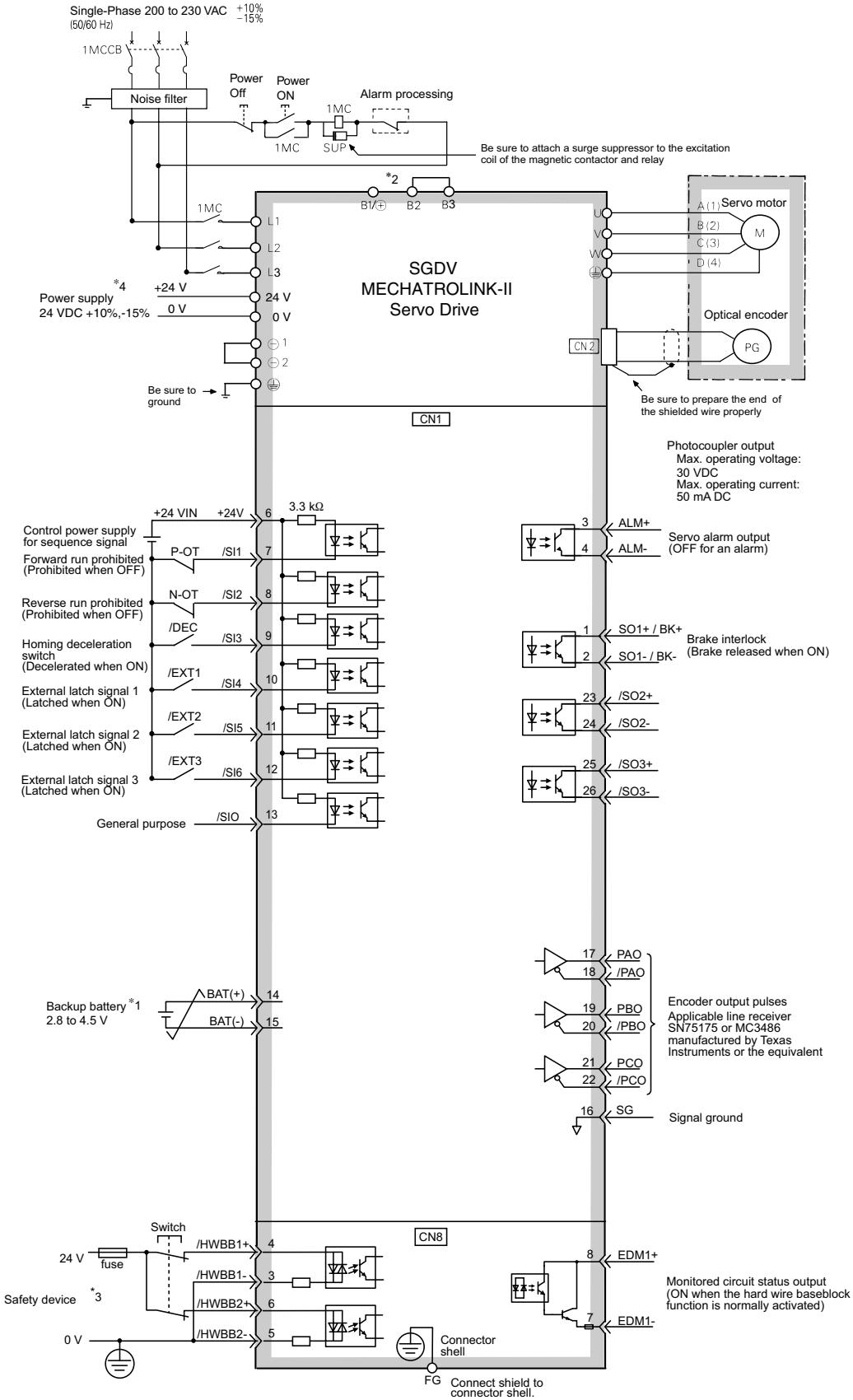



*1 Connect when using an absolute encoder. When the encoder cable for the battery case is connected, do not connect a backup battery.

*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.

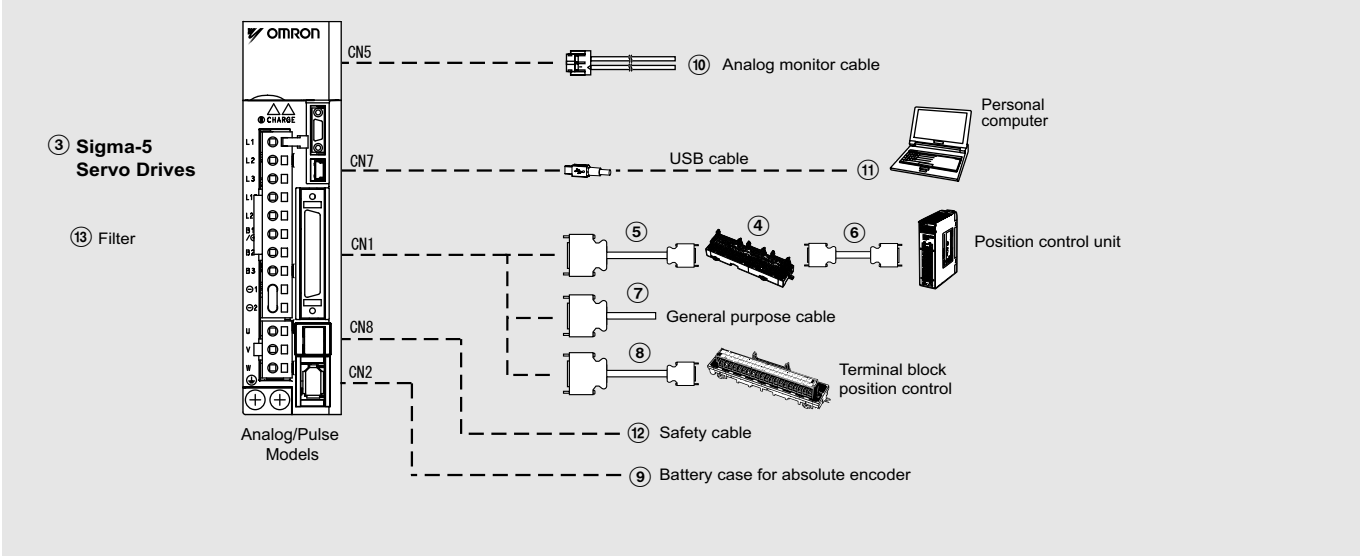
*2 Normally short B2 and B3. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external regenerative resistor between B1 and B2.

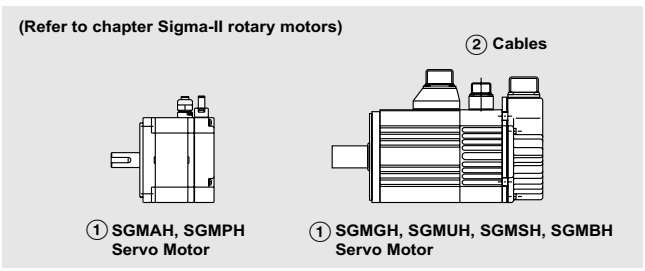
*3 For servo ON, connect to safety device and set wiring to enable safety function. When not using the safety function, use the servo drive with the plug (JZSP-CVH05-E, provided as an accessory) inserted into the CN8.

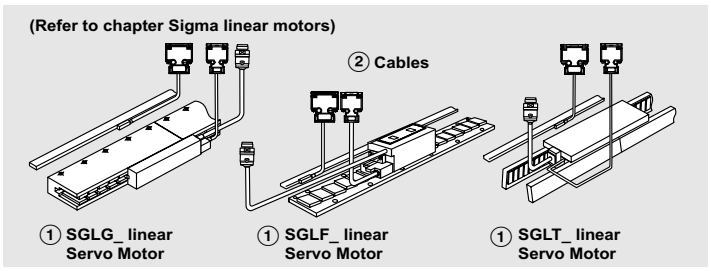
*4 It is the user's responsibility to obtain 24 VDC power supply.

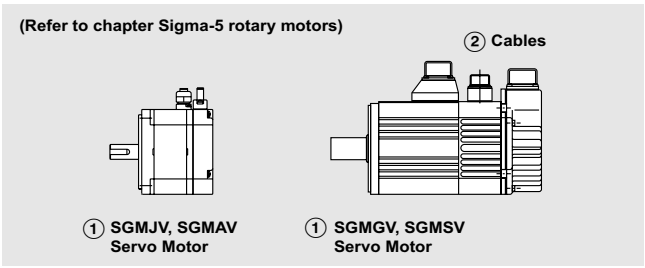
## Ordering information

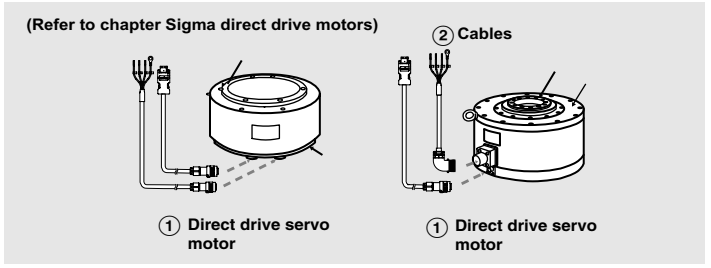
### Sigma-5 Analog/Pulse Reference Configuration




**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-A5A01A-OY | SGMAH-A5D□, SGMJV-A5A□, SGMAV-A5A□ | - | - |
| | | | SGDV-A5A05A-OY | - | - | SGLGW-30A050□ |
| | | 100 W | SGDV-01A01A-OY | SGMAH-01A□, SGMPH-01A□, SGMJV-01A□, SGMAV-01A□, SGMEV-01A□ | - | - |
| | | | SGDV-01A05A-OY | - | - | SGLGW-30A080□, SGLGW-40A140□ |
| | | 200 W | SGDV-02A01A-OY | SGMAH-02A□, SGMPH-02A□, SGMJV-02A□, SGMAV-02A□, SGMEV-02A□ | SGMCS-07B□ | - |
| | | | SGDV-02A05A-OY | - | - | SGLGW-60A140□, SGLGW-40A253□, SGLFW-20A□, SGLFW-35A120□ |
| | | 400 W | SGDV-04A01A-OY | 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-04A05A-OY | - | - | SGLGW-40A365□, SGLGW-60A253A□ |
| | | 750 W | SGDV-08A01A-OY | SGMAH-08A□, SGMPH-08A□, SGMJV-08A□, SGMAV-08A□, SGMEV-08A□ | SGMCS-16E□, SGMCS-35E□ | - |
| | | | SGDV-08A05A-OY | - | - | SGLGW-60A365A□, SGLFW-35A230□, SGLFW-50A200□ |
| | | 1.5 kW | SGDV-15A01A-OY | SGMPH-15A□, SGMAV-10A□, SGMEV-15A□ | SGMCS-45M□, SGMCS-80M□, SGMCS-80N□ | - |
| | | | SGDV-15A05A-OY | - | - | SGLGW-90A200A□, SGLFW-50A380□, SGLFW-1ZA200□ |
| | 3 phase 400 VAC | 0.5 kW | SGDV-05D01A-OY | SGMAH-03D□, SGMPH-04D□, SGMGH-05D□, SGMEV-04D□, SGMGV-05D□ | - | - |
| | | | SGDV-05D05A-OY | - | - | SGLFW-35D□ |
| | | 1.0 kW | SGDV-10D01A-OY | SGMAH-07D□, SGMPH-08D□, SGMGH-09D□, SGMSH-10D□, SGMUH-10D□, SGMEV-08D□, SGMGV-09D□, SGMSV-10D□, | - | - |
| | | | SGDV-10D05A-OY | - | - | SGLFW-50D200□, SGLTW-35D170□, SGLTW-50D170□ |
| | | 1.5 kW | SGDV-15D01A-OY | SGMPH-15D□, SGMGH-13D□, SGMSH-15D□, SGMUH-15D□, SGMEV-15D□, SGMGV-13D□, SGMSV-15D□ | - | - |
| | | | SGDV-15D05A-OY | - | - | SGLFW-50D380□, SGLFW-1ZD200□ |
| | | 2 kW | SGDV-20D01A-OY | SGMGH-20D□, SGMSH-20D□, SGMGV-20D□, SGMSV-20D□ | - | - |
| | | | SGDV-20D05A-OY | - | - | SGLFW-1ED380□, SGLTW-35D320□, SGLTW-50D320□ |
| | | 3 kW | SGDV-30D01A-OY | SGMGH-30D□, SGMSH-30D□, SGMUH-30D□, SGMGV-30D□, SGMGV-30D□ | - | - |
| | | | SGDV-30D05A-OY | - | - | SGLFW-1ZD380□, SGLFW-1ED560□, SGLTW-40D400□ |
| | | 5 kW | SGDV-50D01A-OY | SGMGH-44D□, SGMSH-50D□, SGMUH-40D□, SGMGV-44D□, SGMSV-50D□ | - | - |
| | | | SGDV-50D05A-OY | - | - | SGLTW-40D60□, SGLTW-80D400□ |

### 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:** doble 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-A5A□□A-OY,SGDV-A01□□A-OY, SGDV-01A□□A-OY, SGDV-04A□□A-OY | R88A-FI5-1005-RE | 5 A | 250 VAC single-phase |
| | SGDV-08A□□A-OY | R88A-FI5-1009-RE | 9 A | |
| | SGDV-15A□□A-OY | R88A-FI5-1016-RE | 16 A | |
| | SGDV-05D□□A-OY, SGDV-10D□□A-OY, SGDV-15D□□A-OY | R88A-FI5-3004-RE | 4.3 A | 400 VAC three-phase |
| | SGDV-20D□□A-OY, SGDV-30D□□A-OY | R88A-FI5-3008-RE | 8.6 A | |
| | SGDV-50D□□A-OY | R88A-FI5-3012-RE | 14.5 A | |

### Connectors

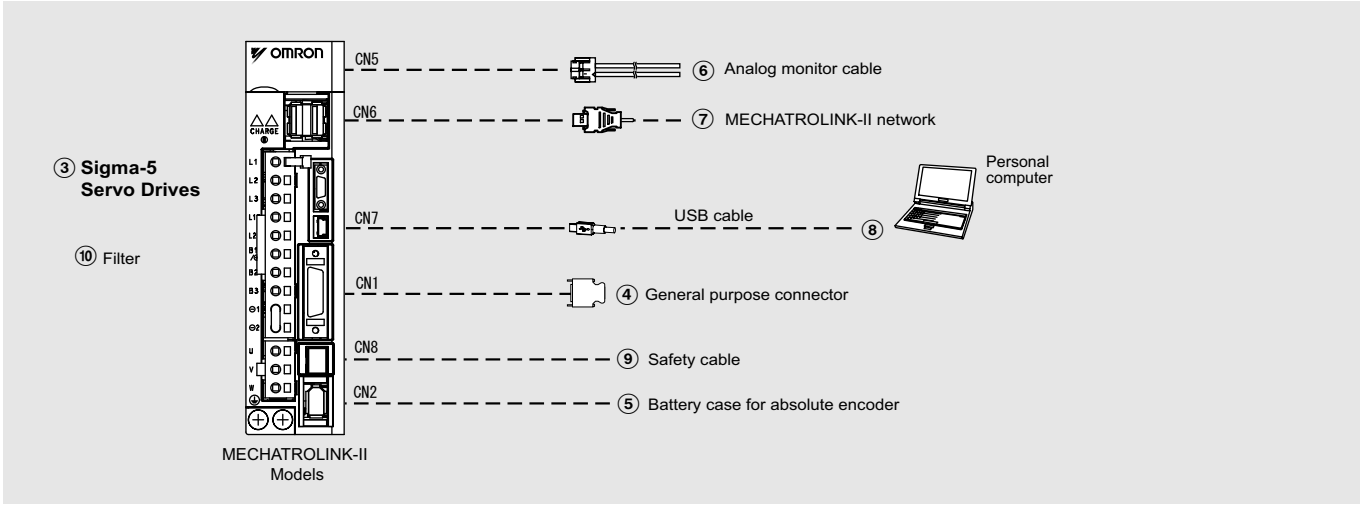
| Specifications | Model |
|---|---|
| I/O connector kit (for CN1) | R88A-CNU11C |
| Sigma-5 drive encoder connector (for CN2) | JZSP-CMP9-1 |
| Safe Jumper Connector | JZSP-CVH05-E |

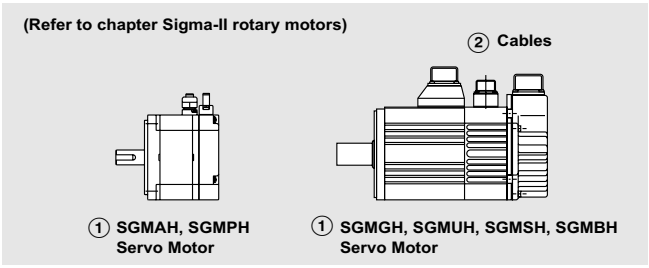
#### Computer software

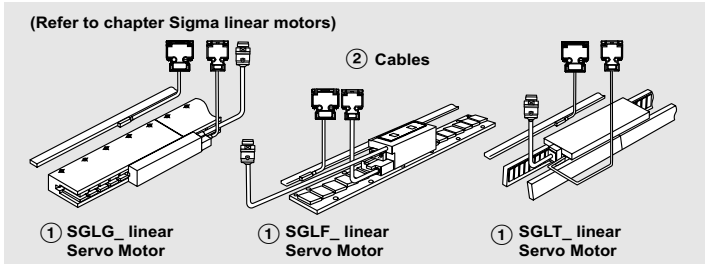
| Specifications | Model |
|---|---|
| Configuration and monitoring software tool for servo drives and inverters. (CX-drive version 1.50 or higher) | CX-drive |
| Complete OMRON software package including CX-drive. (CX-One version 3.0.2 or higher) | CX-One |

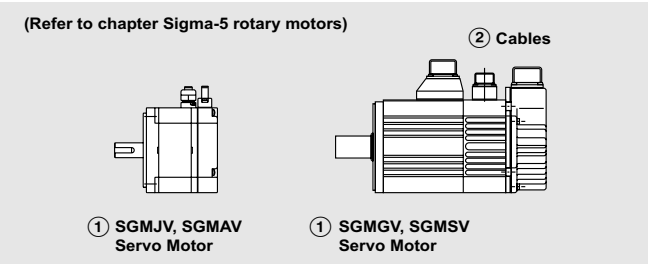
## Ordering information

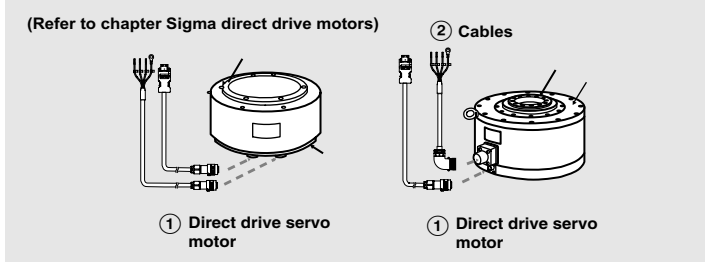
### Sigma-5 MECHATROLINK Servo Drive Configuration




**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-A5A11A-OY | SGMAH-A5D□, SGMJV-A5A□, SGMAV-A5A□ | - | - |
| | | | SGDV-A5A15A-OY | - | - | SGLGW-30A050□ |
| | | 100 W | SGDV-01A11A-OY | SGMAH-01A□, SGMPH-01A□, SGMJV-01A□, SGMAV-01A□, SGMEV-01A□ | - | - |
| | | | SGDV-01A15A-OY | - | - | SGLGW-30A080□, SGLGW-40A140□ |
| | | 200 W | SGDV-02A11A-OY | SGMAH-02A□, SGMPH-02A□, SGMJV-02A□, SGMAV-02A□, SGMEV-02A□ | SGMCS-07B□ | - |
| | | | SGDV-02A15A-OY | - | - | SGLGW-60A140□, SGLGW-40A253□, SGLFW-20A□, SGLFW-35A120□ |
| | | 400 W | SGDV-04A11A-OY | 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-04A15A-OY | - | - | SGLGW-40A365□, SGLGW-60A253A□ |
| | | 750 W | SGDV-08A11A-OY | SGMAH-08A□, SGMPH-08A□, SGMJV-08A□, SGMAV-08A□, SGMEV-08A□ | SGMCS-16E□, SGMCS-35E□ | - |
| | | | SGDV-08A15A-OY | - | - | SGLGW-60A365A□, SGLFW-35A230□, SGLFW-50A200□ |
| | | 1.5 kW | SGDV-15A11A-OY | SGMPH-15A□, SGMAV-10A□, SGMEV-15A□ | SGMCS-45M□, SGMCS-80M□, SGMCS-80N□ | - |
| | | | SGDV-15A15A-OY | - | - | SGLGW-90A200A□, SGLFW-50A380□, SGLFW-1ZA200□ |
| | 3 phase 400 VAC | 0.5 kW | SGDV-05D11A-OY | SGMAH-03D□, SGMPH-04D□, SGMGH-05D□, SGMEV-04D□, SGMGV-05D□ | - | - |
| | | | SGDV-05D15A-OY | - | - | SGLFW-35D□ |
| | | 1.0 kW | SGDV-10D11A-OY | SGMAH-07D□, SGMPH-08D□, SGMGH-09D□, SGMSH-10D□, SGMUH-10D□, SGMEV-08D□, SGMGV-09D□, SGMSV-10D□, | - | - |
| | | | SGDV-10D15A-OY | - | - | SGLFW-50D200□, SGLTW-35D170□, SGLTW-50D170□ |
| | | 1.5 kW | SGDV-15D11A-OY | SGMPH-15D□, SGMGH-13D□, SGMSH-15D□, SGMUH-15D□, SGMEV-15D□, SGMGV-13D□, SGMSV-15D□ | - | - |
| | | | SGDV-15D15A-OY | - | - | SGLFW-50D380□, SGLFW-1ZD200□ |
| | | 2 kW | SGDV-20D11A-OY | SGMGH-20D□, SGMSH-20D□, SGMGV-20D□, SGMSV-20D□ | - | - |
| | | | SGDV-20D15A-OY | - | - | SGLFW-1ED380□, SGLTW-35D320□, SGLTW-50D320□ |
| | | 3 kW | SGDV-30D11A-OY | SGMGH-30D□, SGMSH-30D□, SGMUH-30D□, SGMGV-30D□, SGMGV-30D□ | - | - |
| | | | SGDV-30D15A-OY | - | - | SGLFW-1ZD380□, SGLFW-1ED560□, SGLTW-40D400□ |
| | | 5 kW | SGDV-50D11A-OY | SGMGH-44D□, SGMSH-50D□, SGMUH-40D□, SGMGV-44D□, SGMSV-50D□ | - | - |
| | | | SGDV-50D15A-OY | - | - | SGLTW-40D60□, SGLTW-80D400□ |

### 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 JUSP-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 |

### 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 |

### USB personal computer cable (for CN7)

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

**Note:** doble 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.

### Filters

| Symbol | Applicable servo drive | Filter model | Rated current | Rated voltage |
|---|---|---|---|---|
| ⑩ | SGDV-A5A□□A-OY,SGDV-A01□□A-OY, SGDV-01A□□A-OY, SGDV-04A□□A-OY | R88A-FI5-1005-RE | 5 A | 250 VAC single-phase |
| | SGDV-08A□□A-OY | R88A-FI5-1009-RE | 9 A | |
| | SGDV-15A□□A-OY | R88A-FI5-1016-RE | 16 A | |
| | SGDV-05D□□A-OY, SGDV-10D□□A-OY, SGDV-15D□□A-OY | R88A-FI5-3004-RE | 4.3 A | 400 VAC three-phase |
| | SGDV-20D□□A-OY, SGDV-30D□□A-OY | R88A-FI5-3008-RE | 8.6 A | |
| | SGDV-50D□□A-OY | 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

| 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 |

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