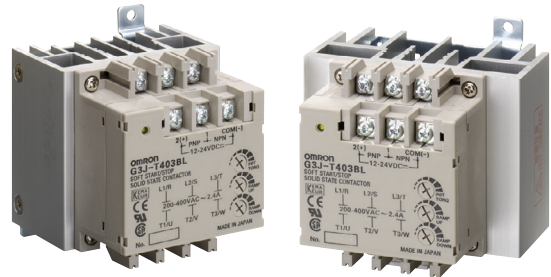


## Soft-start/stop Function Starts and Stops Three-phase Motors Smoothly and Economically

- Function like an inverter by holding down the starting current.
- Harmonized protection with thermal overload relays complying with IEC 947-4-1 (Class 10A/10); can be used like a standard contactor.
- Comply with UL, CSA, IEC (400-V models only), and JEM requirements.
- Mount with screws or to DIN tracks.
- Compact monoblock construction for the G3J-T217BL (W: 100 × H: 100 × D: 110 mm) with a heat sink.
- Snubber circuit and varistor are built-in.
- Operation indicator.



Refer to *Safety Precautions for All Solid State Relays*.



## Model Number Structure

### Model Number Legend

G3J-□□□□□□□  
1 2 3 4 5 6 7

#### 1. Basic Model Name

G3J: Solid State Contactor

#### 2. Load Power Supply

Blank: AC output

#### 3. Functions

T: Soft-start/stop function

#### 4. Rated Load Power Supply Voltage

2: 200 VAC

4: 400 VAC

#### 5. Rated Load Current

17: 17.4 A (200-V models)

11: 11.1 A (200-V models)

05: 4.8 A (200-V models), 5.5 A (400-V models)

03: 2.4 A (400-V models)

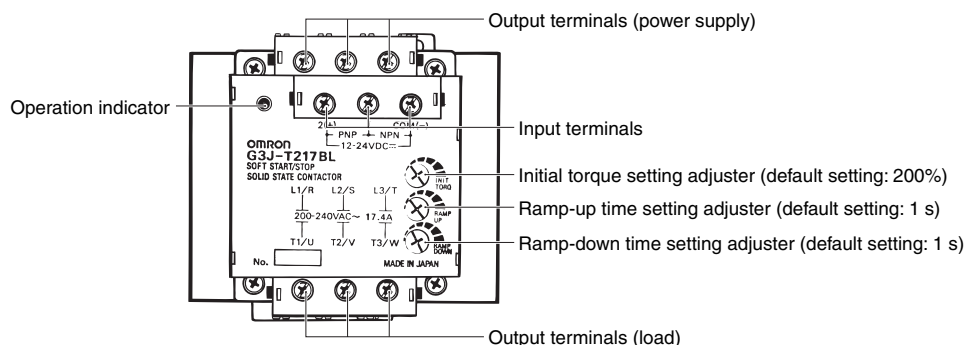
#### 6. Terminal Type

B: Screw terminals

#### 7. Zero Cross Function

L: Not equipped with zero cross function

## Appearance



# Ordering Information

## List of Models

| Number of elements | Insulation method | Rated supply voltage | Input method                                    | Applicable motor |                | Model      |
|--------------------|-------------------|----------------------|-------------------------------------------------|------------------|----------------|------------|
| 3                  | Phototriac        | 12 to 24 VDC         | No-voltage input (open and short-circuit input) | 2.2 kW (5.5 A)   | 380 to 400 VAC | G3J-T405BL |
|                    |                   |                      |                                                 | 0.75 kW (2.4 A)  |                | G3J-T403BL |
|                    |                   |                      |                                                 | 3.7 kW (17.4 A)  | 200 to 220 VAC | G3J-T217BL |
|                    |                   |                      |                                                 | 2.2 kW (11.1 A)  |                | G3J-T211BL |
|                    |                   |                      |                                                 | 0.75 kW (4.8 A)  |                | G3J-T205BL |

**Note:** When ordering, specify the rated supply voltage.

## Accessories (Order Separately)

### Mounting Bracket

| Model                      |
|----------------------------|
| R99-14 FOR G3J (See note.) |

**Note:** Use this Bracket when mounting Thermal Relay to a G3J-series SSR.

# Specifications

## Ratings (at an Ambient Temperature of 25°C)

### Power Supply

|                         |                              |
|-------------------------|------------------------------|
| Rated supply voltage    | 12 to 24 VDC                 |
| Operating voltage range | 10.2 to 26.4 VDC             |
| Current consumption     | 50 mA max. (at 12 to 24 VDC) |

### Operation Circuit

|                                                                    |                                                                                                                                                                                           |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input current                                                      | 10 mA max. (at 12 to 24 VDC)                                                                                                                                                              |
| Input method                                                       | Short-circuiting or opening terminals 1 and COM or 2 (+) and 1                                                                                                                            |
| No-voltage input (short-circuiting and opening inputs) (See note.) | SSR input turned ON: A maximum residual voltage of 2 V between short-circuited terminals<br>SSR input turned OFF: A maximum leakage current of 0.15 mA<br>Relay input: For minute signals |

**Note:** Refer to *Safety Precautions for the G3J-T, G3J-S, and G3J*.

### Main Circuit

| Item                               |                                          | G3J-T405BL                                                                                                                                                                                                                                                                                                                                                                     | G3J-T403BL              | G3J-T217BL                | G3J-T211BL               | G3J-T205BL               |
|------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------|--------------------------|--------------------------|
| Rated load voltage                 |                                          | 200 to 400 VAC (50/60 Hz)                                                                                                                                                                                                                                                                                                                                                      |                         | 200 to 240 VAC (50/60 Hz) |                          |                          |
| Load voltage range                 |                                          | 180 to 440 VAC (50/60 Hz)                                                                                                                                                                                                                                                                                                                                                      |                         | 180 to 264 VAC (50/60 Hz) |                          |                          |
| Rated carry current (See note 1.)  |                                          | 5.5 A<br>(Ta = 40°C)                                                                                                                                                                                                                                                                                                                                                           | 2.4 A<br>(Ta = 40°C)    | 17.4 A<br>(Ta = 40°C)     | 11.1 A<br>(Ta = 40°C)    | 4.8 A<br>(Ta = 40°C)     |
| Min. load current                  |                                          | 0.5 A                                                                                                                                                                                                                                                                                                                                                                          |                         |                           |                          |                          |
| Peak-value current resistivity     |                                          | 220 A, 60 Hz,<br>1 cycle                                                                                                                                                                                                                                                                                                                                                       | 96 A, 60 Hz,<br>1 cycle | 500 A, 60 Hz,<br>1 cycle  | 350 A, 60 Hz,<br>1 cycle | 150 A, 60 Hz,<br>1 cycle |
| Overload resistance                |                                          | Refer to <i>Information Common to the G3J, G3J-T, and G3J-S</i> .                                                                                                                                                                                                                                                                                                              |                         |                           |                          |                          |
| Closed current (effective value)   | AC3                                      | 55 A                                                                                                                                                                                                                                                                                                                                                                           | 24 A                    | 174 A                     | 111 A                    | 48 A                     |
|                                    | AC4                                      | 66 A                                                                                                                                                                                                                                                                                                                                                                           | 28.8 A                  | 208.8 A                   | 133.2 A                  | 57.6 A                   |
| Breaking current (effective value) | AC3                                      | 44 A                                                                                                                                                                                                                                                                                                                                                                           | 19.2 A                  | 139.2 A                   | 88.8 A                   | 38.4 A                   |
|                                    | AC4                                      | 55 A                                                                                                                                                                                                                                                                                                                                                                           | 24 A                    | 174 A                     | 111 A                    | 48 A                     |
| Applicable load                    | 3-phase inductive motor (AC3 AC4 AC53-a) | 380 to 400 VAC, 2.2 kW, 5.5 A<br>380 to 400 VAC, 0.75 kW, 2.4 A<br>200 to 220 VAC, 3.7 kW, 17.4 A<br>200 to 220 VAC, 2.2 kW, 11.1 A<br>200 to 220 VAC, 0.75 kW, 4.8 A<br>Motors passing the AC3-class, AC4-class, and AC53-a-class switching frequency test (Ta = 40°C) under conditions specified by OMRON. Refer to <i>Information Common to the G3J, G3J-T, and G3J-S</i> . |                         |                           |                          |                          |
|                                    | Resistive load (AC1) (See note 2.)       | 200 to 400 VAC, 5.5 A                                                                                                                                                                                                                                                                                                                                                          | 200 to 400 VAC, 2.4 A   | 200 to 240 VAC, 17.4 A    | 200 to 240 VAC, 11.1 A   | 200 to 240 VAC, 4.8 A    |

**Note:** 1. The rated carry current varies depending on the ambient temperature. Refer to *Load Current vs. Ambient Temperature* under *Engineering Data* in the *Information Common to the G3J-T, G3J-S, and G3J* for details.

2. No single-phase load can be connected.

## ■ Characteristics

| Item                   | G3J-T405BL                                                                                                         | G3J-T403BL | G3J-T217BL                | G3J-T211BL | G3J-T205BL |
|------------------------|--------------------------------------------------------------------------------------------------------------------|------------|---------------------------|------------|------------|
| Ramp-up time           | Set within a range from 1 to 25 s.                                                                                 |            |                           |            |            |
| Ramp-down time         | Set within a range from 1 to 25 s.                                                                                 |            |                           |            |            |
| Starting torque        | Set within a range from 200% to 450% In.                                                                           |            |                           |            |            |
| Output ON-voltage drop | 1.8 V <sub>RMS</sub> max.                                                                                          |            | 1.6 V <sub>RMS</sub> max. |            |            |
| Leakage current        | 20 mA max. (at 400 VAC)                                                                                            |            | 10 mA max. (at 200 VAC)   |            |            |
| Insulation resistance  | 100 MΩ min. (at 500 VDC)                                                                                           |            |                           |            |            |
| Dielectric strength    | 2,500 VAC, 50/60 Hz for 1 min                                                                                      |            |                           |            |            |
| Vibration resistance   | Destruction: 10 to 55 to 10 Hz, 0.75–mm single amplitude                                                           |            |                           |            |            |
| Shock resistance       | Destruction: 294 m/s <sup>2</sup>                                                                                  |            |                           |            |            |
| Ambient temperature    | Operating: –20°C to 60°C (with no icing or condensation)<br>Storage: –30°C to 70°C (with no icing or condensation) |            |                           |            |            |
| Ambient humidity       | Operating: 45% to 85%                                                                                              |            |                           |            |            |
| Weight                 | 730 g max.                                                                                                         |            | 800 g max.                | 730 g max. |            |
| Standards              | UL508 File No. E64562<br>CSA22.2 No. 14 File No. LR35535                                                           |            |                           |            |            |

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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