


## Soft-start Function Starts Motors Smoothly and Economically

- The soft-start function allows a smooth startup of motors by holding down the starting current, and functions like an inverter.
- 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, and JEM requirements.
- Mount with screws or to DIN tracks.
- Compact monoblock construction (W: 80 × H: 100 × D: 100 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

S: Soft-start function

#### 4. Rated Load Power Supply Voltage

2: 200 VAC

4: 400 VAC

#### 5. Rated Load Current

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

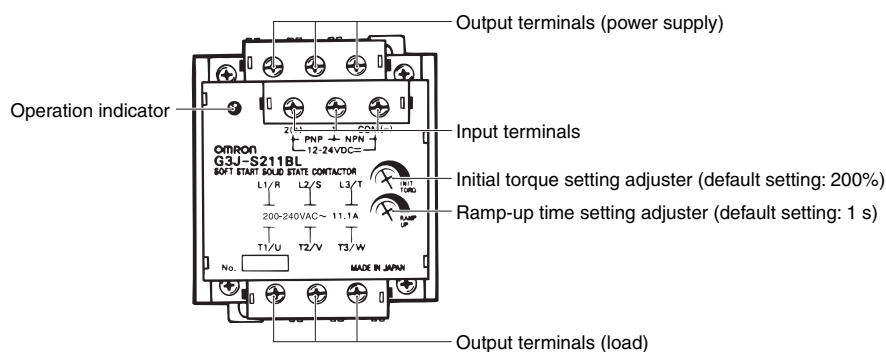
#### 6. Terminal Type

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-S405BL
				0.75 kW (2.4 A)		G3J-S403BL
				2.2 kW (11.1 A)	200 to 220 VAC	G3J-S211BL
				0.75 kW (4.8 A)		G3J-S205BL

**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	100 mA max. (at 12 to 24 VDC)

#### Operation Circuit

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

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

#### Main Circuit

Item		G3J-S405BL	G3J-S403BL	G3J-S211BL	G3J-S205BL
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		5.5 A (Ta = 40°C)	2.4 A (Ta = 40°C)	11.1 A (Ta = 40°C)	4.8 A (Ta = 40°C)
Min. load current		0.5 A			
Peak-value current resistivity		220 A, 60 Hz, 1 cycle	96 A, 60 Hz, 1 cycle	350 A, 60 Hz, 1 cycle	150 A, 60 Hz, 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	111 A	48 A
	AC4	66 A	28.8 A	133.2 A	57.6 A
Breaking current (effective value)	AC3	44 A	19.2 A	88.8 A	38.4 A
	AC4	55 A	24 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	380 to 400 VAC, 0.75 kW, 2.4 A	200 to 220 VAC, 2.2 kW, 11.1 A	200 to 220 VAC, 0.75 kW, 4.8 A
	Resistive load (AC1) (See note.)	200 to 400 VAC, 5.5 A	200 to 400 VAC, 2.4 A	200 to 240 VAC, 11.1 A	200 to 240 VAC, 4.8 A

**Note:** No single-phase load can be connected.

## ■ Characteristics

Item	G3J-S405BL	G3J-S403BL	G3J-S211BL	G3J-S205BL
<b>Ramp-up time</b>	Set within a range from 1 to 25 s.			
<b>Reset time</b>	5/6 cycles of load power supply + 1 ms max.			
<b>Starting torque</b>	Set within a range from 200% to 450% I <sub>n</sub> .			
<b>Output ON-voltage drop</b>	1.8 V <sub>RMS</sub> max.		1.6 V <sub>RMS</sub> max.	
<b>Leakage current</b>	20 mA max. (at 400 VAC)		10 mA max. (at 200 VAC)	
<b>Insulation resistance</b>	100 MΩ min. (at 500 VDC)			
<b>Dielectric strength</b>	2,500 VAC, 50/60 Hz for 1 min			
<b>Vibration resistance</b>	Destruction: 10 to 55 to 10 Hz, 0.75–mm single amplitude			
<b>Shock resistance</b>	Destruction: 294 m/s <sup>2</sup>			
<b>Ambient temperature</b>	Operating: –20°C to 60°C (with no icing or condensation) Storage: –30°C to 70°C (with no icing or condensation)			
<b>Ambient humidity</b>	Operating: 45% to 85%			
<b>Weight</b>	730 g max.			
<b>Certified standards</b>	UL508 File No. E64562 CSA 22.2 No. 14 File No. LR35535 IEC947-4-1 File No. 96.2597.02			
<b>EMC</b>	Emission	AC mains	IEC947-4-2, CISPR 11 Class A	
	Emission	Electromagnetic	IEC947-4-2, CISPR 11 Class A	
	Immunity	ESD	IEC947-4-2, IEC801-2: 4 kV contact discharge 8 kV air discharge	
	Immunity	Electromagnetic	IEC947-4-2, IEC1000-4-3 10 V/m (80 MHz to 1 GHz)	
	Immunity	EFT	IEC947-4-2, IEC801-4: 2 kV AC power-signal line	
	Immunity	Surge transient	IEC947-4-2, IEC1000-4-5 1 kV differential mode 2 kV common mode	
	Immunity	RF disturbance	IEC947-4-2, IEC/DIS1000-4-6 10 V (0.15 to 80 MHz)	

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

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2008.11

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