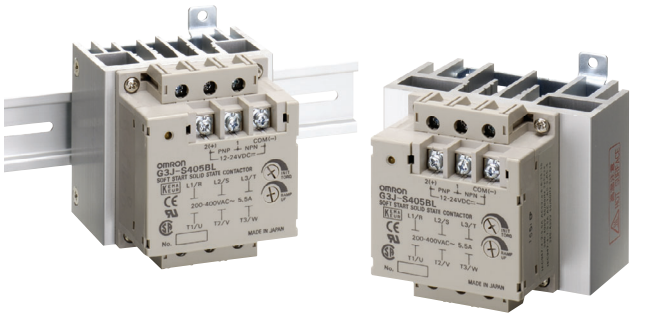
Soft-start Solid State Contactors
G3J-S

CSM_G3J-S_DS_E_2_1

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*.

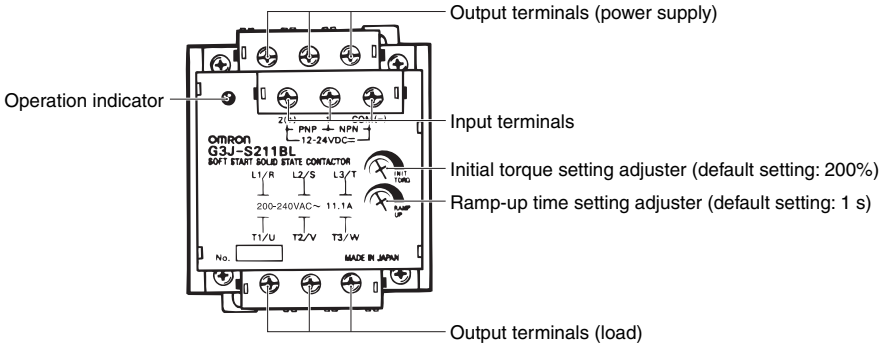
Model Number Structure

■ 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 *Information Common to the G3J, G3J-T, and G3J-S*.			
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
		Motors passing the AC3-class, AC4-class, and AC53-a-class switching frequency test (Ta = 40°C) under conditions specified by OMRON. Refer to *Information Common to the G3J, G3J-T, and G3J-S*.			
	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
Ramp-up time	Set within a range from 1 to 25 s.			
Reset time	5/6 cycles of load power supply + 1 ms max.			
Starting torque	Set within a range from 200% to 450% In.			
Output ON-voltage drop	1.8 V_{RMS} max.		1.6 V_{RMS} 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^2			
Ambient temperature	Operating: –20°C to 60°C (with no icing or condensation) Storage: –30°C to 70°C (with no icing or condensation)			
Ambient humidity	Operating: 45% to 85%			
Weight	730 g max.			
Certified standards	UL508 File No. E64562 CSA 22.2 No. 14 File No. LR35535 IEC947-4-1 File No. 96.2597.02			
EMC	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.

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