

A Solid-state Contactor for 3-phase Motors that Achieves Harmonized Protection with Thermal Overload Relays and Can Be Used Like a Standard Contactor

- Harmonized protection with thermal overload relays conforming to IEC 947-4-2 (Class 10A/10); can be used like a standard contactor.
- Thermal Overload Relays (J7TY) can be mounted directly.
- Conforms to AC Class 3 (IEC947).
- Meets UL, CSA, IEC, and JEM requirements.
- Mounts with screws or to DIN tracks.
- Compact monoblock construction (80 (W) x 100 (H) x 100 (D)) with a heat sink.
- Snubber circuit and varistor are built-in.
- With an operation indicator.
- Two-element models added to series.



Ordering Information

Number of elements	Insulation method	Rated supply voltage	Applicable motor		Model
3	Phototriac	12 to 24 VDC	2.2 kW (11.1 A)	200 to 220 VAC	G3J-211BL
			0.75 kW (4.8 A)		G3J-205BL
	Photocoupler	100 to 240 VAC	2.2 kW (11.1 A)		G3J-211BL
			0.75 kW (4.8 A)		G3J-205BL
2	Phototriac	12 to 24 VDC	2.2 kW (11.1 A)	200 to 220 VAC	G3J-211BL-2
			0.75 kW (4.8 A)		G3J-205BL-2
	Photocoupler	100 to 240 VAC	2.2 kW (11.1 A)		G3J-211BL-2
			0.75 kW (4.8 A)		G3J-205BL-2

Specifications

■ Ratings (Ambient Temperature: 25°C)

Operation Circuit

Item	DC-input models	AC-input models
Rated supply voltage	12 to 24 VDC	100 to 240 VAC (50/60 Hz)
Operating voltage range	9.6 to 28.8 VDC	75 to 264 VAC (50/60 Hz)
Rated input current (impedance)	15 mA max. (at 12 to 24 VDC)	36 kΩ ±20% (100 to 240 VAC)
Must-operate voltage	9.6 VDC max.	75 VAC max.
Release voltage	3.6 VDC min.	20 VAC min.

Main Circuit

Item	G3J-211BL, G3J-211BL-2	G3J-205BL, G3J-205BL-2
Rated load voltage	100 to 240 VAC (50/60 Hz)	
Load voltage range	75 to 264 VAC (50/60 Hz)	
Rated carry current	11.1 A (Ta = 40°C)	4.8 A (Ta = 40°C)
Min. load current	0.5 A	
Peak-value current resistivity	350 A, 60 Hz, 1 cycle	150 A, 60 Hz, 1 cycle
Overload resistance	Refer to <i>Engineering Data</i> on page 96.	
Closed current (effective value)	AC3	111 A
	AC4	133.2 A
Breaking current (effective value)	AC3	88.8 A
	AC4	111 A
Applicable load	3-phase inductive motor (AC3 AC4 AC53-a)	200 to 220 VAC, 2.2 kW, (11.1 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 <i>Switching Frequency Test Conditions</i> on page 97.
	Single-phase motor (AC3) (see note 1)	100 VAC, 0.4 kW (11.1 A) 200 VAC, 0.75 kW (8.8 A)
	Resistive load (AC1)	100 to 240 VAC, 11.1 A
		200 to 220 VAC, 0.75 kW, (4.8 A) 100 VAC, 0.1 kW, (5.1 A) 200 VAC, 0.4 kW (5.5 A) (see note 2)
		100 to 240 VAC, 4.8 A

- Note:** 1. With 2-element models, L2 and T2 are shorted internally.
2. When using 0.75-W models with 3 poles ON simultaneously, use either combination at 4.8 A max.

■ Characteristics

Item	DC-input models	AC-input models
Operating time	1 ms max.	50 ms max.
Release time	5/6 of the load power supply cycle time + 1 ms max.	3/2 of the load power supply cycle time + 1 ms max.
Output ON-voltage drop	1.6 V _{RMS} max.	
Leakage current (see note)	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 Hz, 0.75-mm single amplitude Malfunction: 10 to 55 Hz, 0.75-mm single amplitude	
Shock resistance	Destruction: 294 m/s ² Malfunction: 147 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	Approx. 700 g	
Standards	UL508, CSA22.2 No. 14, IEC947-4-2, JEM1441	

- Note:** With 2-element models, the S-phase leakage current will be larger by a factor of $\sqrt{3}$.