

## ■ Contact Ratings

Item	Resistive load ( $\cos\phi = 1$ )	Inductive load ( $\cos\phi = 0.4$ )	Resistive load
Contact mechanism	Double break		
Contact material	Ag alloy		
Rated load	NO: 25 A at 220 VAC (24 A at 230 VAC) NC: 8 A at 220 VAC (7.5 A at 230 VAC)		NO: 25 A at 30 VDC NC: 8 A at 30 VDC
Rated carry current	NO: 25 A (1 A) NC: 8 A (1 A)		
Max. switching voltage	250 VAC		125 VDC
Max. switching current	NO: 25 A (1 A) NC: 8 A (1 A)		

Note: The values in parentheses indicate values for a bifurcated contact.

## ■ Characteristics

Contact resistance (see note 2)	50 mΩ max.
Operate time (see note 3)	50 ms max.
Release time (see note 3)	50 ms max.
Max. operating frequency	Mechanical: 1,800 operations/hr Electrical: 1,800 operations/hr
Insulation resistance (see note 4)	1,000 MΩ min. (at 500 VDC)
Dielectric strength	4,000 VAC, 50/60 Hz for 1 min between coil and contacts 4,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 2,000 VAC, 50/60 Hz for 1 min between contacts of same polarity
Impulse withstand voltage	10,000 V between coil and contact (with 1.2 x 50 μs impulse wave)
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) Malfunction: NO: 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude); NC: 10 to 26 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> Malfunction: NO: 100 m/s <sup>2</sup> NC: 20 m/s <sup>2</sup>
Endurance	Mechanical: 1,000,000 operations min. (at 1,800 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr) (see note 5)
Error rate (see note 6)	100 mA at 24 VDC (bifurcated contact: 24 VDC 10 mA)
Ambient temperature	Operating: -25°C to 60°C (with no icing or condensation)
Ambient humidity	Operating: 5% to 85%
Weight	PCB terminal: approx. 140 g Screw terminal: approx. 165 g Quick-connect terminal: approx. 140 g

- Note:
- The above values are all initial values.
  - The contact resistance was measured with 1 A at 5 VDC using the voltage drop method.
  - The operate and the release times were measured with the rated voltage imposed with any contact bounce ignored at an ambient temperature of 23°C.
  - The insulation resistance was measured with a 500-VDC megger applied to the same places as those used for checking the dielectric strength.
  - The electrical endurance was measured at an ambient temperature of 23°C.
  - This value was measured at a switching frequency of 60 operations per minute.

■ **Approved by Standards**

The G7J satisfies the following international standards. Approval for some international markings and symbols are still pending, however, and information on them will be added when they are approved.

**UL (File No. E41643)**

**CSA (File No. LR35535)**

Coil ratings	Contact ratings		Number of test operations
	NO contact	NC contact	
24 to 265 VAC 6 to 110 VDC	NO contact	25 A 277 VAC, Resistive	30,000
		25 A 120 VAC, General Use	
		25 A 277 VAC, General Use	
		1.5 kW 120 VAC, Tungsten	6,000
		1.5 hp 120 VAC	
		3 hp 240/265/277 VAC	
		3-phase 3 hp 240/265/277 VAC	
		3-phase 5 hp 240/265/277 VAC	30,000
		20FLA/120LRA 120 VAC	
		17FLA/102LRA 277 VAC	
	TV-10 120 VAC	25,000	
	25 A 30 VDC, Resistive	30,000	
	1 A 277 VAC, General Use	6,000	
	NC contact	8 A 277 VAC, Resistive	30,000
		8 A 120 VAC, General Use	
8 A 277 VAC, General Use			
8 A 30 VDC, Resistive			
1 A 277 VAC, General Use		6,000	

**Reference**

UL approval: UL508 for industrial control devices

UL1950 for information processing equipment including business machines

CSA approval: CSA C22.2 No. 14 for industrial control devices

CSA C22.2 No. 950 for information processing equipment including business machines

**VDE (File No. 5381UG)**

Model	Coil ratings	Contact ratings	
		NO contact	NC contact
G7J-4A-B(P) (T) (Z) G7J-2A2B(P) (T) G7J-3A1B-B(P) (T) (Z)	6, 12, 24, 48, 100 VDC 24, 50, 100 to 120, 200 to 240 VAC	25 A 240 VAC $\cos\phi = 0.4$ 25 A 240 VAC $\cos\phi = 1$ 25 A 30 VDC $L/R \geq 1$ *1 A 240 VAC $\cos\phi = 0.4$	8 A 240 VAC $\cos\phi = 0.4$ 8 A 240 VAC $\cos\phi = 1$ 8 A 30 VDC $L/R \geq 1$ *1 A 240 VAC $\cos\phi = 0.4$

**Note:** Add the suffix “-KM” to the model number when ordering.

\*These ratings are bifurcated contact ratings.

**Reference**

VDE approval: VDE0435 for electromagnetic relays

IEC255 for relays