

Ratings

Coil

Item	Rated current (mA)	Coil resistance (Ω)	Coil inductance (H)		Must operate voltage	Must release voltage	Max. permissible voltage	Power consumption (VA-W)
Rated voltage			Armature ON	Armature OFF	On the basis of rated voltage			
12 VAC	142	17.0 to 20.4			75% max.	15% min.	110%	Approx. 1.7 to 2.5
24 VAC	71							
50 VAC	34							
100 to 120 VAC	17.0 to 20.4				75 V max.	18 V min.	132 V	
200 to 240 VAC	8.5 to 10.2				150 V max.	36 V min.	264 V	
6 VDC	317	18.9	0.09	0.21	75% max.	15% min.	110%	Approx. 1.9
12 VDC	158	75	0.37	0.88				
24 VDC	79	303	1.42	3.54				
48 VDC	40	1220	6.1	15.3				
100 VDC	19	5260	21.3	60.0				

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for AC rated current and ±15% for DC coil resistance.

2. The inductances shown above are reference values.

3. Performance characteristic data are measured at a coil temperature of 23°C.

4. The maximum allowable coil voltage refers to the maximum value in a varying range of operating power voltage, measured at ambient temperature 23°C.

5. The "to" (for example "100 to 120") represents the range of rated voltages.

Contacts

Item	Contact Form load	G7L-1A-T□ G7L-1A-B□		G7L-2A-T□ G7L-2A-B□		G7L-1A-P G7L-2A-P	
		Resistive load	Inductive load (cosφ = 0.4)	Resistive load	Inductive load (cosφ = 0.4)	Resistive load	Inductive load (cosφ = 0.4)
Contact type	Double break						
Contact material	Ag alloy						
Rated load	30 A at 220 VAC	25 A at 220 VAC	25 A at 220 VAC		20 A at 220 VAC		
Rated carry current	30 A		25 A		20 A		
Max. switching voltage	250 VAC						
Max. switching current	30 A		25 A		20 A		

Note. When using B-series (screw) products, since the screw diameter of the contact terminal is M4, be careful that the contact current should be 20 A or less according to JET standard (electrical appliance and material control law of Japan).

Characteristics

Contact resistance *1		50 mΩ max.
Operate time *2		30 ms max.
Release time *3		30 ms max.
Max. operating frequency	Mechanical	1,800 operations/hr
	Rated load	1,800 operations/hr
Insulation resistance *3		1,000 MΩ min
Dielectric strength	Between coil and contacts	4,000 VAC min., 50/60 Hz for 1 min
	Between contacts of same polarity	2,000 VAC, 50/60 Hz for 1 min
	Between contacts of different polarity (DPST-NO model)	
Impulse withstand voltage		10,000 V between coil and contact *4
Vibration resistance	Destruction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)
	Malfunction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)
Shock resistance	Destruction	1,000 m/s ²
	Malfunction	100 m/s ²
Endurance	Mechanical	1,000,000 operations min. (at 1,800 operations/hr)
	Electrical *5	100,000 operations min. (at 1,800 operations/hr under rated load)
Failure rate (P level) (reference value *6)		100 mA at 5 VDC
Weight		Approx. 90 g: Quick-connect terminal models Approx. 100 g: PCB terminal models Approx. 120 g: Screw terminal models

Note. The values given above are initial values.

*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.

*2. Measurement conditions: Rated operating voltage applied, not including contact bounce.

*3. Measurement conditions: The insulation resistance was measured with a 500-VDC megohmmeter at the same locations as the dielectric strength was measured.

*4. JEC-212 (1981) Standard Impulse Wave Type (1.2x50μs).

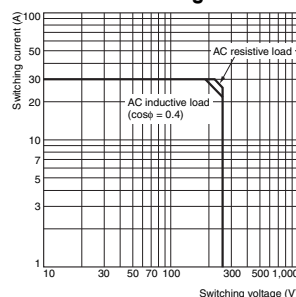
*5. Ambient temperature: 23°C

*6. This value was measured at a switching frequency of 60 operations/min.

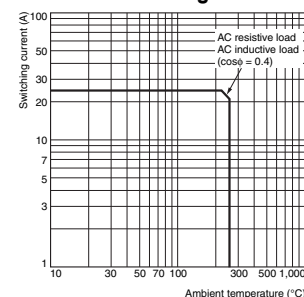
Ambient operating temperature	-25°C to 60°C (with no icing or condensation)
Ambient operating humidity	5% to 85%

Engineering Data

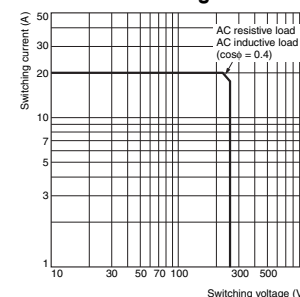
**G7L-1A-T (TJ) (TUB) (TUBJ)
G7L-1A-B (BJ) (BUB) (BUBJ)
Maximum Switching Power**



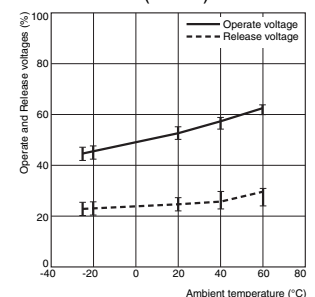
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G7L-2A-B (BJ) (BUB) (BUBJ)
Maximum Switching Power**



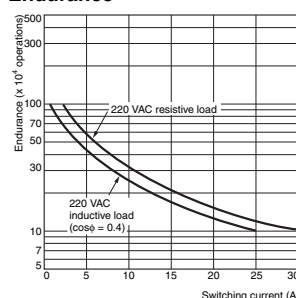
**G7L-1A-P
G7L-2A-P
Maximum Switching Power**



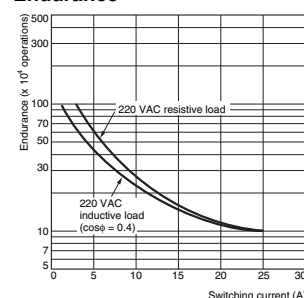
**Ambient Temperature vs. Operate and Release Voltage
G7L-1A VAC (60 Hz)**



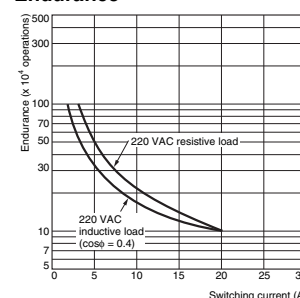
Endurance



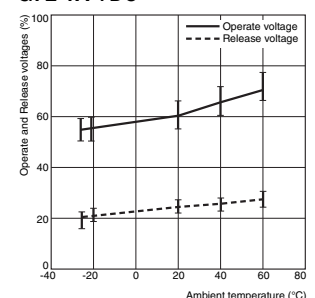
Endurance



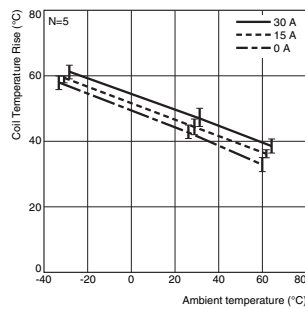
Endurance



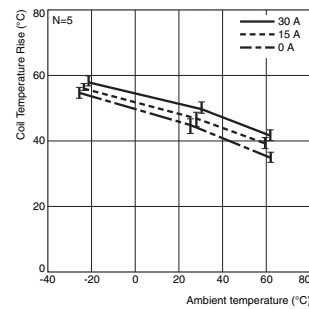
G7L-1A VDC



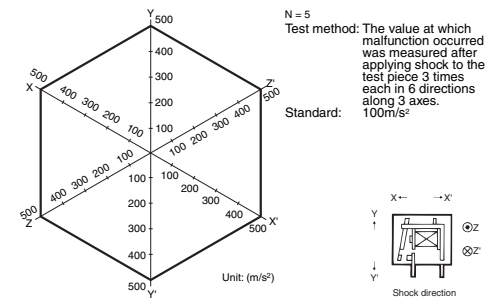
Ambient Temperature vs. Coil Temperature Rise G7L-1A 120 VAC (50 Hz)



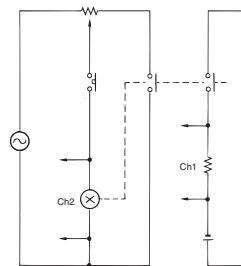
G7L-1A VDC



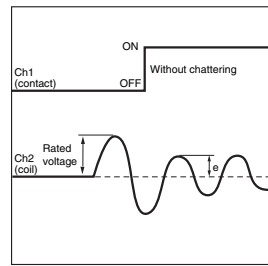
Shock Malfunction G7L-2A-T (TUB) 100 to 120 VAC



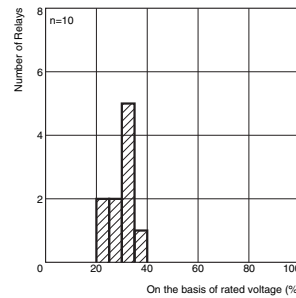
Momentary Voltage Drop Test G7L-2A-T (TUB) 100 to 120 VAC Test Circuit



Wave resulted from test

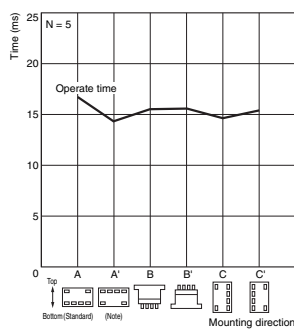


Voltage distribution of wave e which chattering does not occur.

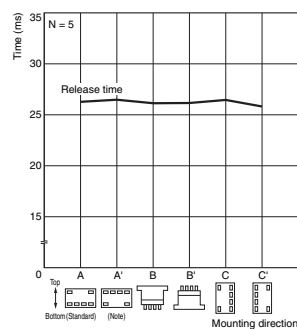


Characteristic variation resulted from different mounting directions

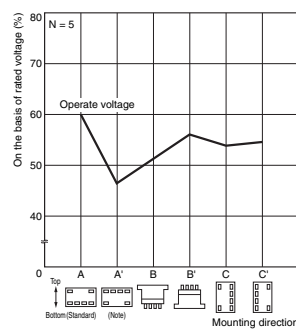
G7L-2A-T (TUB) 100 to 120 VAC Operate time



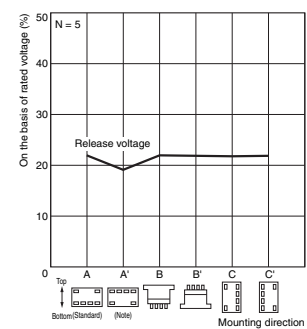
Release time



Operate voltage

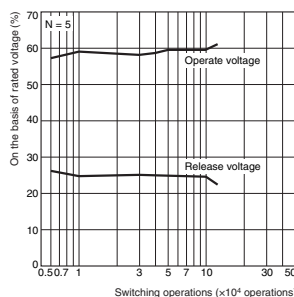


Release voltage

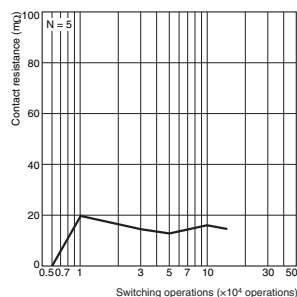


(Note.)The mounting direction A' deteriorates switching performance.

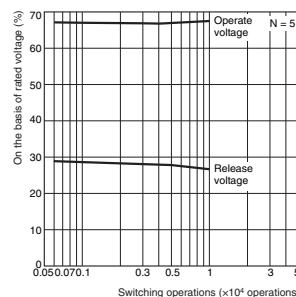
Actual Load Endurance Test G7L-2A 100 to 200 VAC Operate and Release voltages N = 5



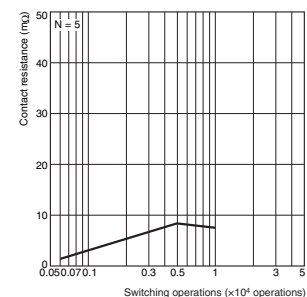
Contact resistance



Operate and Release voltages N = 5

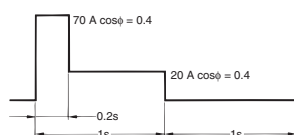


Contact resistance



Load conditions

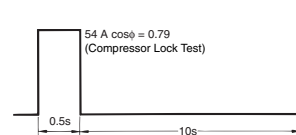
- 1 φ 220 VAC



- Applied coil voltage: 100% of rated voltage

Load conditions

- 1 φ 220 VAC



- Applied coil voltage: 100% of rated voltage