

G5RL-U/-K

PCB Power Relay

Small-Size and Low-Back High Performance Latching Relay that Realizes a 16-A High Inrush Switching Current

- Creepage distance 8 mm between coil and contacts.
- 10 kV Impulse withstand voltage.
- Ambient Operating Temperature 85°C
- Suitable for TV-8 rating. (SPST-NO (1a))
- In-rush resistant and supports illumination load
- Compatible with capacitor load (IEC60669-1) (*)
- Compatible with the International Safety Standard for Electrical/Electronic Household Appliances (IEC60335-1) (*)

* G5RL-K1A-EL-HA type

RoHS Compliant

Model Number Legend

G5RL-

1	2	3	4	5
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1. Relay Function

U : Single-winding latching
K : Double-winding latching

2. Number of poles

1 : 1-Pole

3. Contact Form

None: SPDT (1c)
A : SPST-NO (1a)

4. Classification

E : High-capacity
EL: In-rush resistance

5. Market Code

None: General purpose
HA: Home Appliance according to IEC/EN60335-1

Application Examples

- Housing equipment
- Building Automation
- UPS, FA equipment
- Electric power meter
- Illumination control
- Smart home



Note. The actual product is marked differently from the image shown above.

Ordering Information

Classification	Terminal shape	Contact form	Enclosure rating	Single-winding latching		Double-winding latching		Minimum packing unit
				Model	Rated coil voltage	Model	Rated coil voltage	
High-capacity	PCB terminals	SPST-NO (1a)	Flux protection	G5RL-U1A-E	3 VDC 5 VDC 6 VDC	G5RL-K1A-E	5 VDC 12 VDC 24 VDC	100 pcs/tray
		SPDT (1c)		G5RL-U1-E	12 VDC 24 VDC	G5RL-K1-E		
In-rush resistance		SPST-NO (1a)		---	---	G5RL-K1A-EL-HA		

Note. When ordering, add the rated coil voltage to the model number.

Example: G5RL-U1A-E DC5

— Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as □□ VDC.

G
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■Ratings

●Coil

Single-Winding Latching Type

Rated voltage	Rated current (mA)	Coil resistance (Ω)	Must set voltage	Must reset voltage	Max voltage	Power consumption (W)
			% of rated voltage			
3 VDC	200	15	70% max.	70% max.	130%	Approx. 0.6
5 VDC	120	41.7				
6 VDC	100	60				
12 VDC	50	240				
24 VDC	25	960				

Double-Winding Latching Type

Rated Voltage	Rated current (mA)		Coil resistance (Ω)		Must set voltage	Must reset voltage	Max voltage	Power consumption (W)	
	Set coil	Reset coil	Set coil	Reset coil	% of rated voltage			Set coil	Reset coil
5 VDC	150		33.3		70% max.	70% max.	130%	Approx. 0.75	
12 VDC	62.5		192					Approx. 0.84	
24 VDC	35		686						

Note. The rated current and resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

●Contacts

Load	Resistive load		
Classification	High-capacity		In-rush resistance
Contact form	SPST-NO (1a)		SPST-NO (1a)
Contact type	Single		
Contact material	Ag Alloy (Cd free)		
Rated load	16 A at 250 VAC 16 A at 24 VDC	16 A at 250 VAC (NO) 5 A at 250 VAC (NC) 16 A at 24 VDC (NO) 5 A at 24 VDC (NC)	16 A at 250 VAC
Rated carry current	16 A		16 A
Max. switching voltage	250 VAC, 24 VDC		250 VAC
Max. switching current	16 A		16 A

■Characteristics

Item	Classification Relay function Contact form	High-capacity		In-rush resistance
		Single-winding latching, Double-winding latching		Double-winding latching
		SPST-NO (1a), SPDT (1c)		SPST-NO (1a)
Contact resistance *1		100 mΩ max.		
Set time		10 ms max.		
Reset time		10 ms max.		
Minimum pulse width *2		30 ms		
Maximum pulse width *2		1 min		
Insulation resistance *3		1,000 MΩ min.		
Dielectric strength	Between coil and contacts	6,000 VAC, 50/60 Hz for 1 min		
	Between contacts of the same polarity	1,000 VAC, 50/60 Hz for 1 min		1,250 VAC, 50/60 Hz for 1 min.
Impulse withstand voltage	Between coil and contacts	10 kV (1.2 × 50 μs)		
Insulation distance	Between coil and contacts	Clearance: 6.4 mm, Creepage: 8 mm		
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) at set status 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) at reset status (Except SPST-NO)		
Shock resistance	Destruction	1,000 m/s ²		
	Malfunction	150 m/s ² at Set status 50 m/s ² at Reset status (Except SPST-NO)		
Durability	Mechanical *4	5,000,000 operations min.		
	Electrical *4	50,000 operations min.		20,000 operations min.
Ambient operating temperature		-40° to 85°C (with no icing or condensation)		
Ambient operating humidity		5% to 85%		
Weight		Approx. 10 g		

Note. Values in the above table are initial values.

- *1. The contact resistance is measured with 1 A applied at 5 VDC using a fall-of-potential method.
- *2. These are measured at a coil temperature of 23°C and rated coil voltage.
Pulse duty factor should be 10% MAX.
- *3. The insulation resistance is measured between coil and contacts and between contacts of same polarity at 500 VDC.
- *4. Operated with input pulse width "30 ms".