

## Power Relay

## G6RN

### Heavy-duty Miniature Relay

- Incorporates environmentally-friendly, cadmium-free contacts
- Variety of contact forms: SPDT or SPST-NO (continuous current rating: 8 A)
- Low profile (0.39W X 1.12L X 0.59H inches)
- High dielectric strength of 4 kV with 8mm creepage/clearance
- Sealed plastic construction
- Ideal for switching contactors, solenoids and motors



### Ordering Information

Classification	Structure	Contact material	Contact form	
			SPST-NO	SPDT
Standard	Plastic-sealed	AgNi + gold plating	<b>G6RN-1A</b>	<b>G6RN-1</b>

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

Example: G6RN-1A 24 VDC

Rated coil voltage

#### ■ MODEL NUMBER LEGEND

**G6RN-**                   **-**   

1 2 3 4 5 6

**1. Number of Poles**

1: 1 pole

**2. Contact Form**

None: SPDT

A: SPST-NO

**3. Contact Type**

None: Single contact

**4. Enclosure Ratings**

None: Plastic-sealed

**5. Terminals**

None: Standard PCB

**6. Contact Material**

None: AgNi + gold plating

ACD: AgCdO + gold plating

# Specifications

## ■ COIL RATINGS

Rated voltage	5 VDC	6 VDC	12 VDC	24 VDC	48 VDC
Rated current	44 mA	36.7 mA	18.3 mA	9.2 mA	5.2 mA
Coil resistance	114 $\Omega$	164 $\Omega$	655 $\Omega$	2,620 $\Omega$	9,210 $\Omega$
Must operate voltage	70% max. of rated voltage				
Must release voltage	10% min. of rated voltage				
Max. voltage	110% of rated voltage				
Power consumption	Approx. 220 mW				Approx. 250 mW

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of  $\pm 10\%$ .  
 2. Operating characteristics are measured at a coil temperature of 23°C.

## ■ CONTACT RATINGS

Contact type	Single contact
Configuration	SPDT, SPST-NO
Contact material	AgNi + gold plating (standard)
Max. switching voltage	250 VAC, 125 VDC
Rated switching current	8 A at 250 VAC 5 A at 30 VDC
Max. switching capacity	2,000 VA, 150W
Min. permissible load	10 mA, 5 VDC

Note: Current value for switching 125 VDC is 0.15 A resistive and 0.1 A inductive (L/R = 7 ms)

## ■ CHARACTERISTICS

Contact resistance	100 m $\Omega$ max.	
Operate time	15 ms max.	
Release time	5 ms max.	
Max. operating frequency	Mechanical	36,000 operations/hr
	Electrical	360 operations/hr (under rated load)
Insulation resistance	1,000 M $\Omega$ min.	
Dielectric strength	4,000 VAC: between coil and contacts	
	1,000 VAC: between contacts	
Creepage/clearance	8 mm min. between coil and contacts	
Vibration resistance	NO: 10 to 55 Hz, 1.5-mm double amplitude	
	NC: 10 to 55 Hz, 0.8-mm double amplitude	
Shock resistance	Destruction	1,000 m/s <sup>2</sup> (approx. 100G)
	Malfunction	100 m/s <sup>2</sup> (approx. 10G)
Life expectancy	Mechanical	10,000,000 operations min.
Life expectancy	Electrical	Approx. 100,000 operations (see note)
Ambient temperature	Operating	-40°C to 85°C
	Storage	-40°C to 85°C
Ambient humidity	Operating	35% to 85%
Weight	Approx. 9 g	
Protection class	II according to VDE0106 Part 1	
Insulation class	C/250 according to VDE0110	

Note: Resistive load test at 250 VAC, 8 A, room temperature with diode.  
 Continuous monitoring must be performed to detect contact sticking and short circuit.  
 Dielectric strength measured at 500 V for 1 minute with the same polarity.

## ■ APPROVED STANDARDS

**IEC255 (Includes Reinforced Insulation and Spacing Requirements According to IEC65, 335-1, 950, EN60335-1, 60950)**

Standard	Contact form	Coil ratings	Contact ratings	Conditions
IEC255-1-00 IEC255-0-20	SPDT SPST-NO	5, 6, 12, 24, 48 VDC	8 A at 250 VAC ( $\cos\phi = 1$ ) (see note)	Pollution degree: 3 Overvoltage category: II Operating range: class 1 Pick-up class: class C Ambient temperature: -40°C to 85°C

Note: VAC according to IEC417.

## VDE

Standard	Contact form	Coil ratings	Contact ratings	Conditions
VDE0435 Part201 VDE0435 Part120	SPDT SPST-NO	5, 6, 12, 24, 48 VDC	8 A at 250 VAC ( $\cos\phi = 1$ )	Insulation group according to VDE0110 C/250 Operating range: class 1 Pick-up class: class C Ambient temperature: -40°C to 85°C

**UL (File No. E41515)**

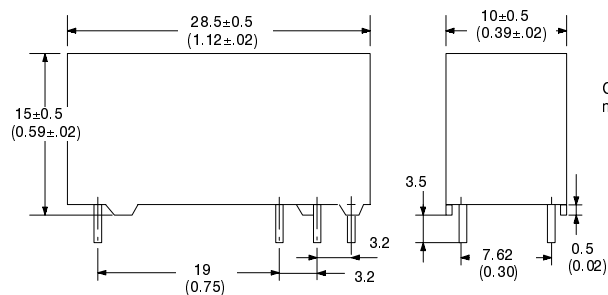
**CSA (File No. LR31928)**

Standard	Contact form	Coil ratings	Contact ratings
UL508	SPDT SPST-NO	5, 6, 12, 24, 48 VDC	250 VAC, 10 A resistive 250 VAC, 8 A resistive, 85°C 30 VDC, 5 A

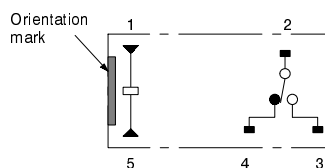
## Dimensions

Unit: mm (inch)

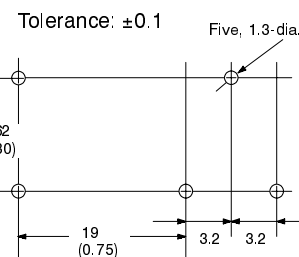
### ■ SPDT TYPE



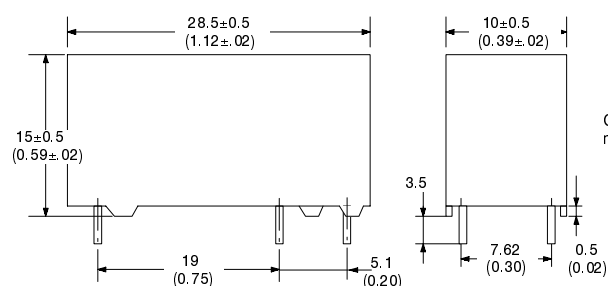
**Terminal Arrangement/  
Internal Connections  
(Bottom View)**



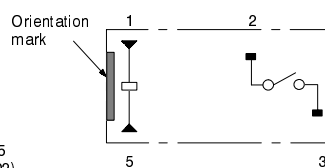
**Mounting Holes  
(Bottom View)**



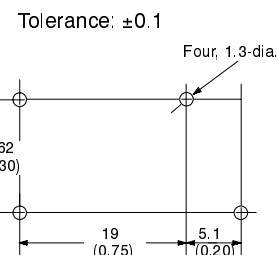
### ■ SPST-NO TYPE



**Terminal Arrangement/  
Internal Connections  
(Bottom View)**



**Mounting Holes  
(Bottom View)**



NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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