

### Heavy-duty Miniature Relay

- Incorporates environment-friendly, cadmium-free contacts.
- Variety of contact forms: SPDT or SPST-NO (continuous current rating: 8 A)
- Mechanical and electrical characteristics comply with VDE0435.
- Satisfies VDE0700 requirements with a dielectric strength of 4 kV at a distance of 8 mm.
- Satisfies C/250 insulation requirements of VDE0110.
- Conforms to class II, part 1 of VDE0106.



### Ordering Information

Classification	Structure	Contact material	Contact form	
			SPST-NO	SPDT
Standard	Plastic-sealed	AgNi + gold plating (0.35 μ)	G6RN-1A	G6RN-1
		AgNi	G6RN-1A-ANI	G6RN-1-ANI
		AgCdO + gold plating (0.35 μ)	G6RN-1A-ACD	G6RN-1-ACD
		AgCdO	G6RN-1A-CDM	G6RN-1-CDM

**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  
 ANI: AgNi  
 ACD: AgCdO + gold plating  
 CDM: AgCdO

# Specifications

## ■ Coil Ratings

Rated voltage	5 VDC	6 VDC	12 VDC	18 VDC	24 VDC	36 VDC	48 VDC
Rated current	44 mA	36.7 mA	18.3 mA	12.2 mA	9.2 mA	6.4 mA	5.2 mA
Coil resistance	114 Ω	164 Ω	655 Ω	1,470 Ω	2,620 Ω	5,630 Ω	9,210 Ω
Must operate voltage	70% max. of rated voltage						
Must release voltage	10% min. of rated voltage						
Max. voltage	110% of rated voltage at max. temperature (85°C)						
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 ±10%.  
2. Operating characteristics are measured at a coil temperature of 23°C.

## ■ Contact Ratings

Load	Resistance load ( $\cos \phi = 1$ )
Rated load	8 A at 250 VAC; 5 A at 30 VDC
Rated carry current	8 A
Max. switching voltage	250 VAC; 30 VDC, (400 VAC) (see note)
Max. switching current	AC 8 A; DC 5 A
Max. switching capacity	2,000 VA; 150 W
Min. permissible load	5 VDC 10 mA (for gold plating 0.35 μ min.)

**Note:** Electrical life expectancy is reduced.

## ■ Characteristics

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 MΩ 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	Malfunction: 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. 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, B/380 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, 18, 24, 36, 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, 18, 24, 36, 48 VDC	8 A at 250 VAC ( $\cos\phi = 1$ )	Insulation group according to VDE0110 C/250, B/380 Operating range: class 1 Pick-up class: class C Ambient temperature: $-40^{\circ}\text{C}$ to $85^{\circ}\text{C}$

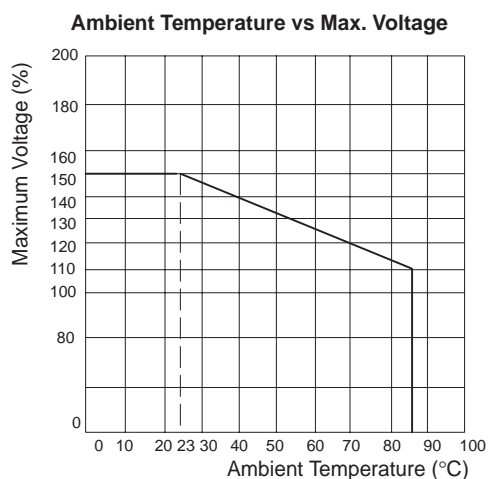
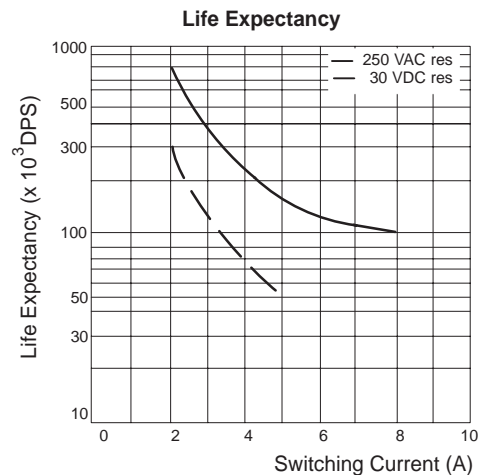
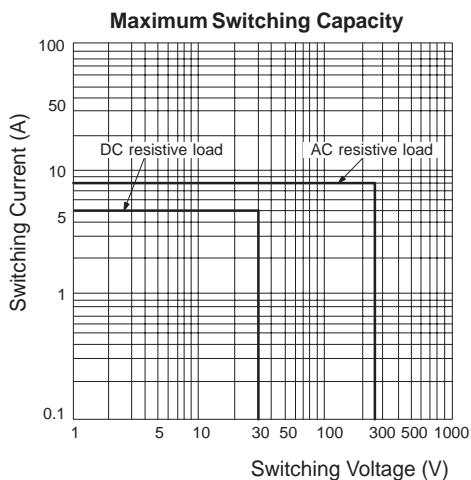
## UL508 (File No. E41515)

Coil rating	Contact rating
5 to 48 VDC	10 A at 250 VAC (resistive) 5 A at 30 VDC (resistive) 8 A at 250 VAC (resistive) (ambient temperature: $85^{\circ}\text{C}$ )

## CSA C22.2 (File No. LR31928-543)

Coil rating	Contact rating
5 to 48 VDC	10 A at 250 VAC (resistive) 5 A at 30 VDC (resistive) 8 A at 250 VAC (resistive) (ambient temperature: $85^{\circ}\text{C}$ )

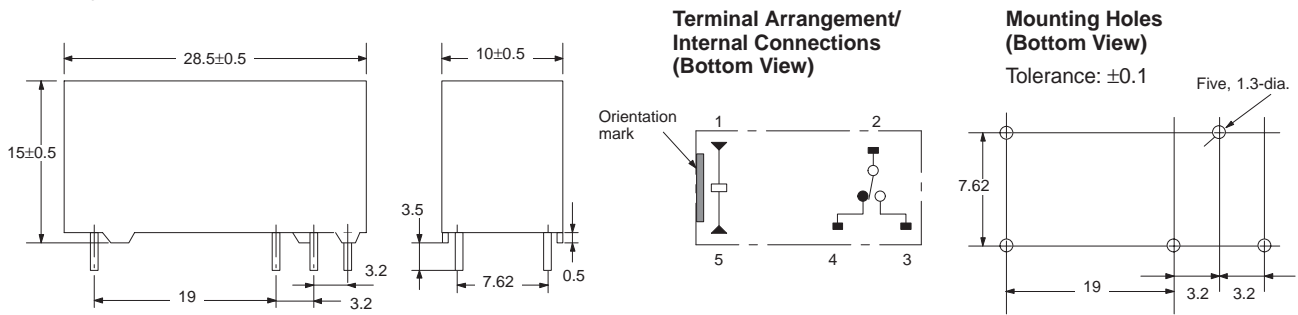
## Engineering Data



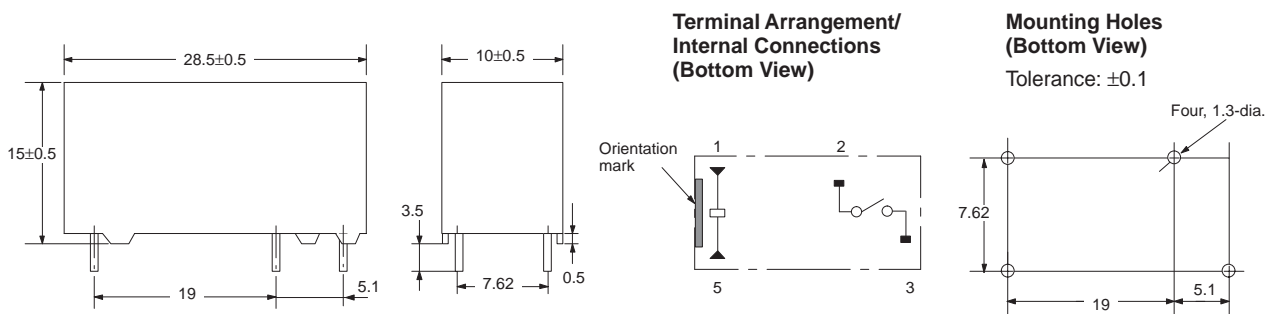
# Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

## SPDT Type



## SPST-NO Type



**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. K96-E1-2 In the interest of product improvement, specifications are subject to change without notice.

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Printed in Japan  
1196-1M (0196) a