OMRON

PCB Relay

G6RN

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 ϕ = 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^2 (approx. 100G) Malfunction: 100 m/s^2 (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 (cosϕ = 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 (cosϕ = 1)	Insulation group according to VDE0110 C/250, B/380 Operating range: class 1 Pick-up class: class C Ambient temperature: –40°C to 85°C

UL508 (File No. E41515)

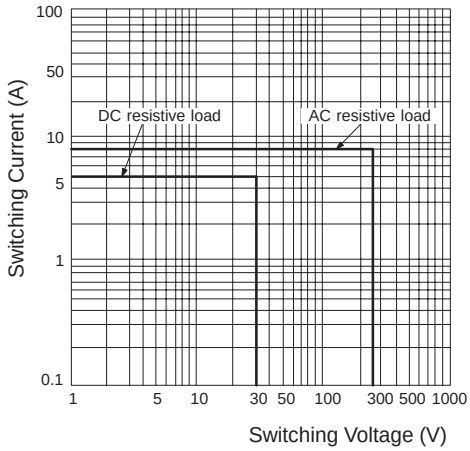
Coil rating	Contact rating
5 to 48 VDC	10 A at 250 VAC (resistive) 5 A at 30 VDC (resistive) 8 A at 250 VAC (resistive) (ambient temperature: 85°C)

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

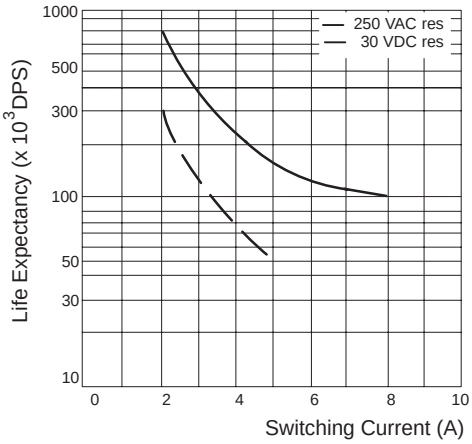
Coil rating	Contact rating
5 to 48 VDC	10 A at 250 VAC (resistive) 5 A at 30 VDC (resistive) 8 A at 250 VAC (resistive) (ambient temperature: 85°C)

Engineering Data

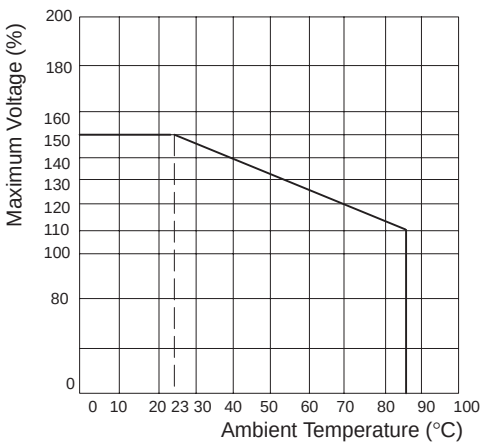
Maximum Switching Capacity



Life Expectancy



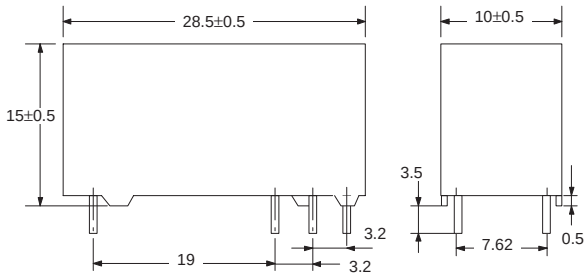
Ambient Temperature vs Max. Voltage



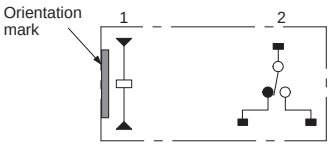
Dimensions

Note: All units are in millimeters unless otherwise indicated.

SPDT Type

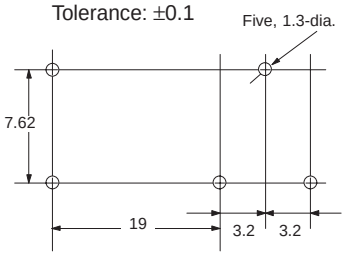


Terminal Arrangement/ Internal Connections (Bottom View)

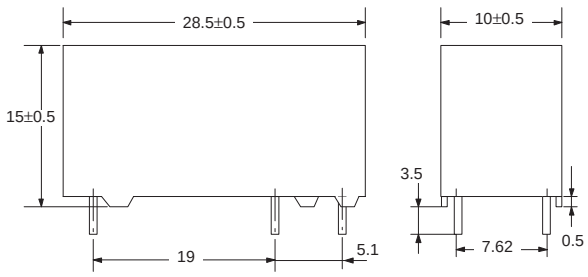


Mounting Holes (Bottom View)

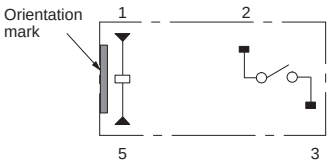
Tolerance: ±0.1



SPST-NO Type

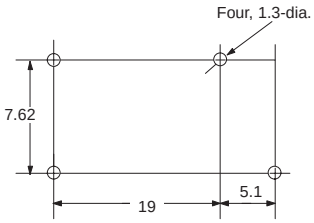


Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

Tolerance: ±0.1



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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