

Power Relay with 110 VDC 5 A Switching Capacity (Use 2 poles in series with 3 mm contact gap)

- 2.8-mm contact gap (EN50091-1) satisfies the European requirement of UPS (uninterrupted power supply).
- Offers high insulation with insulation distance above 8 mm and impulse withstand voltage of 10 kV between coil and contacts.
- Standard model conforms to VDE standards.



Model Number Legend

G2RG-□□□
1 2 3

1. Number of Poles 2. Contact Form 3. Enclosure rating

2: 2-pole A: N.O. contact 4: Fully sealed
DPST-NO (2a)

Ordering Information

| Contact form | Model | Rated coil voltage | Minimum packing unit |
|--------------|----------|--------------------|----------------------|
| DPST-NO (2a) | G2RG-2A4 | 12 VDC 24 VDC | 100 pcs/tray |

Note. When ordering, add the rated coil voltage to the model number.
Example: G2RG-2A4 DC12

□□ 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.

Ratings

Coil

| Item | Rated current (mA) | Coil resistance (Ω) | Must-operate voltage (V) | Must-release voltage (V) | Maximum voltage (V) | Power consumption (mW) |
|---------------|--------------------|---------------------|--------------------------|--------------------------|---------------------|------------------------|
| Rated voltage | | | % of rated voltage | | | |
| 12 VDC | 66.6 | 180 | 80% max. | 10% min. | 140% (at 23°C) | Approx. 800 |
| 24 VDC | 33.3 | 720 | | | | |

Note 1. The rated current and coil resistance are for a coil temperature of 23°C and have a tolerance of ±10%.

Note 2. The operating characteristics given in the above table are for a coil temperature of 23°C.

Note 3. The maximum allowable voltage is the maximum possible value of the voltage that can be applied to the relay coil.

Contacts

| Item | Load | Resistive load |
|-------------------------------------------|--------------------|----------------|
| Contact type | Single | |
| Contact material | Ag-alloy (Cd free) | |
| Rated load | 8 A at 250 VAC | |
| Rated carry current | 8 A | |
| Maximum switching voltage | 380 VAC, 125 VDC | |
| Maximum switching current | 8 A | |
| Failure rate (P level) (reference value*) | 10 mA at 5 VDC | |

* This value was measured at a switching frequency of 120 operations/min.

Contacts in line 2 pole

| Item | Load | Resistive load |
|---------------------------|----------------|----------------|
| Rated load | 5 A at 110 VDC | |
| Rated carry current | 8 A | |
| Maximum switching voltage | 125 VDC | |

Application Examples

- PV equipment
- UPS
- FA equipment

Characteristics

| | | |
|-------------------------------|----------------------------------------|-----------------------------------------------------------------------|
| Contact resistance *1 | | 100 mΩ max. |
| Operate time | | 15 ms max. |
| Release time | | 5 ms max. |
| Max. switching frequency | Mechanical | 18,000 operations/hr |
| | Electrical | 1,800 operations/hr |
| Insulation resistance *2 | | 1,000 MΩ min. |
| Dielectric strength | Between coil and contacts | 5,000 VAC, 50/60 Hz for 1 min |
| | Between contacts of different polarity | 3,000 VAC, 50/60 Hz for 1 min |
| | Between contacts of the same polarity | 1,000 VAC, 50/60 Hz for 1 min |
| Impulse withstand voltage | | 10 kV (1.2 x 50 μs) |
| Insulation distance | Between coil and contacts | Clearance: 8 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) |
| Shock resistance | Destruction | 1,000 m/s ² |
| | Malfunction | 200 m/s ² when energized |
| Durability | Mechanical | 1,000,000 operations min. (at 18,000 operations/hr) |
| | Electrical | 10,000 operations min. (at 1,800 operations/hr under rated load) |
| Ambient operating temperature | | -40 to 70 °C (with no icing or condensation) |
| Ambient operating humidity | | 5% to 85% |
| Weight | | Approx. 17 g |

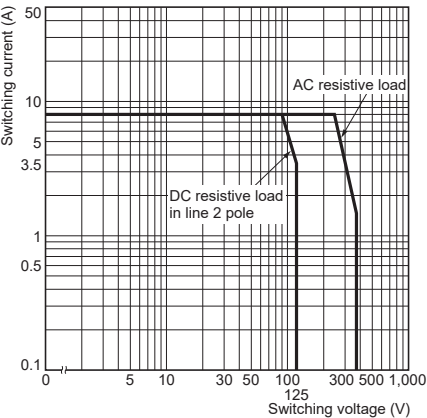
Note. The above values are initial values (at an ambient temperature of 23°C.)

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

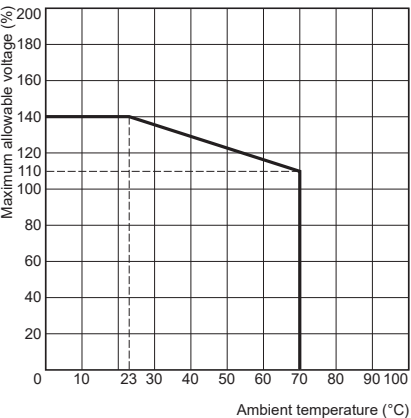
*2. Measurement conditions: Measured with a 500 VDC megohmmeter at the same places as the dielectric strength.

Engineering Data

Maximum Switching Capacity

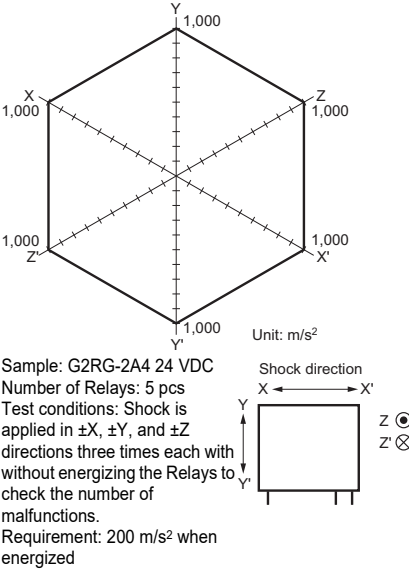


Ambient Temperature vs Maximum Coil Voltage



Note. The maximum allowable voltage is the maximum possible value of the voltage that can be applied to the relay coil.

Shock Malfunction

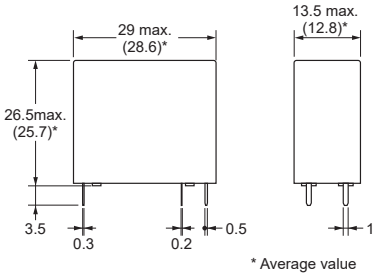
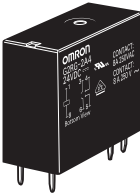


Dimensions

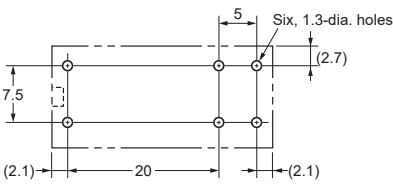
CAD Data marked products, 2D drawings and 3D CAD models are available. For CAD information, please visit our website, which is noted on the last page.

(Unit: mm)

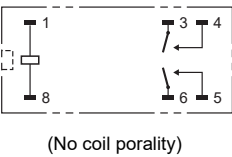
G2RG-2A4



PCB Mounting Holes (Bottom View)



Terminal Arrangement/ Internal Connections (Bottom View)



CAD Data

Approved Standards

The approved rated values for international standards are different to the individually specified characteristic values. Be sure to confirm that required standards are satisfied before actual use.

UL Recognized: cULus (File No. E41643)

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|----------|--------------|--------------|-------------------------------|---------------------------|
| G2RG-2A4 | DPST-NO (2a) | 12 to 24 VDC | 8 A, 250 VAC (Resistive) 70°C | 10,000 |

EN/IEC Certified Model (Approval/No. 40015012)

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|----------|--------------|--------------|----------------------------|---------------------------|
| G2RG-2A4 | DPST-NO (2a) | 12, 24 VDC | 8 A, 250 VAC (cosφ=1) 70°C | 10,000 |

Precautions

Please refer to “PCB Relays Common Precautions” for correct use.

Correct Use

Differences with the G2R

The G2RG-2A4 has the same terminal arrangement as the G2R-2A4 but the switching capacity and electrical endurance are different. Confirm that correct operation is possible in the actual operating conditions before using in applications.

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