

### 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.

RoHS Compliant

#### 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<br>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.

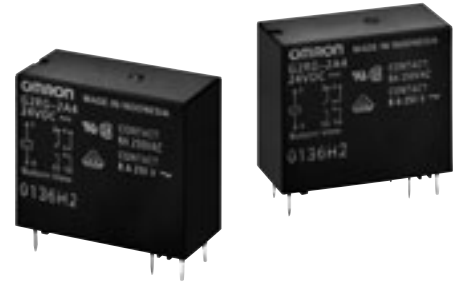
##### Contacts

| 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

- Home appliances
- OA equipments
- Industrial machinery

#### 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/s²                                                            |
|                               | Malfunction                            | 200 m/s² 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                                                          |

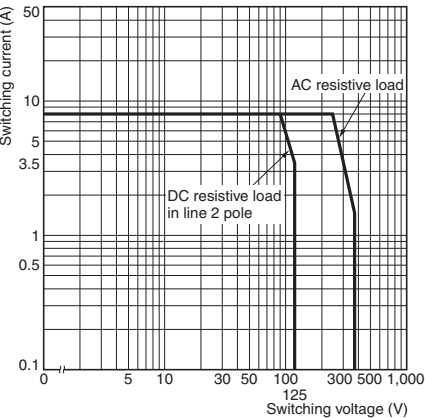
Note. The above values are initial values (at an ambient temperature of 23°C.)

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

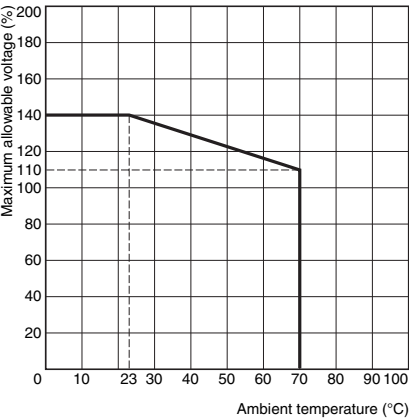
\*2. Measurement conditions: Measured with a 500 VDC megohmmeter at the same places as the dielectric strength.

Engineering Data

Maximum Switching Capacity

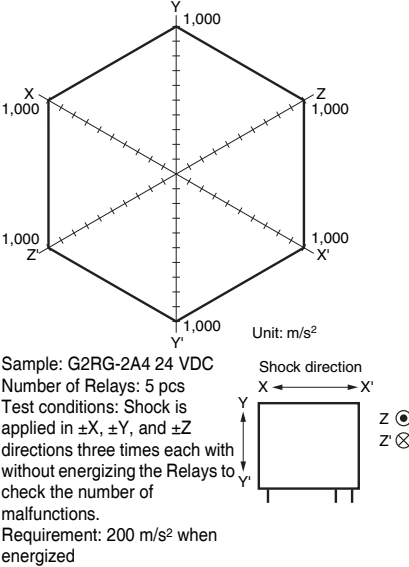


Ambient Temperature vs Maximum Coil Voltage



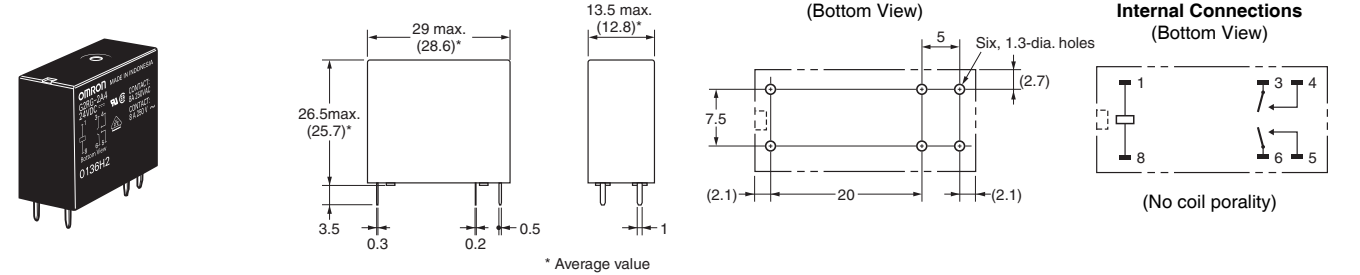
Note. The maximum allowable voltage is the maximum possible value of the voltage that can be applied to the relay coil.

Shock Malfunction



Dimensions

G2RG-2A4



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: (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                    |

CSA Certified: (File No. LR31928)

| 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.

• Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.  
• Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

**Note: Do not use this document to operate the Unit.**

**OMRON Corporation**  
Electronic and Mechanical Components Company

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