OMRON

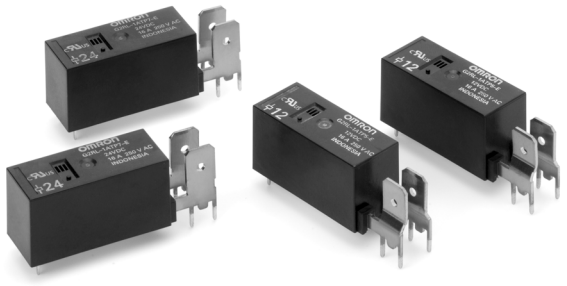
# PCB Relay

# G2RL-TP

## PCB Power Relay with Quick-connect Terminals

- High switching capacity: 250 VAC, 16 A at 105°C.
- Ideal for high temperature applications.
- Coil insulation: Class F (UL508).
- Low profile for total size reduction.
- Easy wiring with quick-connect terminals.
- Model with 5-mm pitch (RAST5) is also available.

RoHS Compliant



Approval pending

Application: Cooking ovens, electric heating, power supplies.

# Ordering Information

| Classification | Contact form | Enclosure ratings | Model |
|---|---|---|---|
| 5-mm pitch | SPST-NO | Flux protection | G2RL-1ATP5-E |
| 7.5-mm pitch | | | G2RL-1ATP7-E |

**Note:** When ordering, add the rated coil voltage to the model number.
Example: G2RL-1ATP7-E 12 VDC
Rated coil voltage

### Model Number Legend

**G2RL-□□□-□□VDC**
1 2 3 4 5

1. **Number of Poles**
   1: 1 pole
2. **Contact Form**
   A: SPST-NO
3. **Quick-connect Terminal Pitch**
   TP5: 5-mm pitch
   TP7: 7.5-mm pitch
4. **Classification**
   E: High capacity
5. **Rated Coil Voltage**
   12, 24 VDC

# Specifications

## ■ Coils Ratings

| | | |
|---|---|---|
| **Rated voltage** | 12 VDC | 24 VDC |
| **Rated current** | 33.3 mA | 16.7 mA |
| **Coil resistance** | 360 Ω | 1,440 Ω |
| **Must operate voltage** | 70% max. of the rated voltage | |
| **Must release voltage** | 10% min. of the rated voltage | |
| **Max. voltage** | 130% at 105°C of the rated voltage | |
| **Power consumption** | Approx. 400 mW | |

**Note:** The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of 10%.

## ■ Contact Ratings

| | |
|---|---|
| **Contact material** | Ag alloy (Cd free) |
| **Load** | Resistive load (cosϕ=1) |
| **Rated load** | 16 A at 250 VAC |
| **Rated carry current** | 16 A |
| **Max. switching voltage** | 440 VAC |
| **Max. switching current** | 16 A |
| **Max. switching power** | 4,000 VA |

**Note:** P level: $\lambda 60=0.1 \times 10^{-6}$operations

## ■ Characteristics

| | |
|---|---|
| **Contact resistance** | 100 mΩ max. |
| **Operate time** | 15 ms max. |
| **Release time** | 5 ms max. |
| **Max. operating frequency** | Mechanical: 18,000 operations/hr<br>Electrical: 900 operations/hr at rated load |
| **Insulation resistance** | 1,000 MΩ min. (at 500 VDC) |
| **Dielectric strength** | 5,000 VAC, 1 min between coil and contacts<br>1,000 VAC, 1 min between contacts of same polarity |
| **Impulse withstand voltage** | 10 kV (1.2 × 50 μs) between coil and contact |
| **Vibration resistance** | Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)<br>Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) |
| **Shock resistance** | Destruction: 1,000 $m/s^2$<br>Malfunction: Energized:100 $m/s^2$<br>Not energized:100 $m/s^2$ |
| **Endurance** | Mechanical: 20,000,000 operations min. (at 18,000 operations/hr)<br>Electrical: 50,000 operations min. (at 900 operations/hr) |
| **Ambient temperature** | –40 to 105°C (with no icing) |
| **Ambient humidity** | 5% to 85% |
| **Weight** | Approx. 12 g |

**Note:** Values in the above table are the initial values.

## ■ Approved Standards

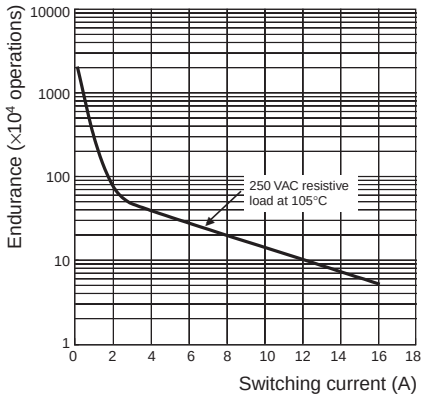
### UL508 (File No. E41643)/CSA C22.2 (No.14) (File No. LR31928)

| Model | Contact form | Coil ratings | Contact ratings |
|---|---|---|---|
| G2RL-1ATP7-E | SPST-NO (High capacity) | 12 to 24 VDC | 16 A at 250 VAC (General use)<br>16 A at 24 VDC (Resistive)<br>16 A at 250 VAC (Resistive) 105°C |
| G2RL-1ATP5-E | | | |

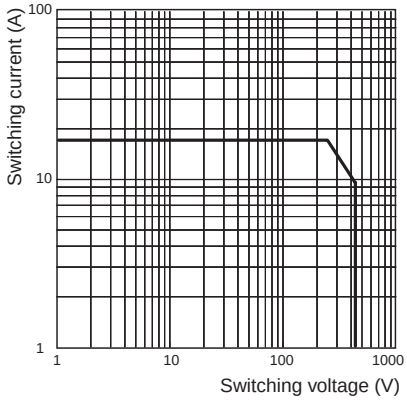
### VDE (EN61810-1): Pending

# Engineering Data

## Endurance at 105°C

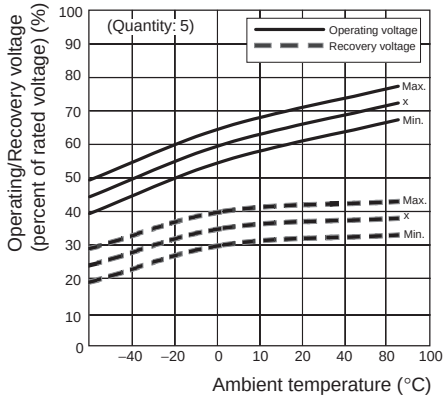



## Maximum Switching Power

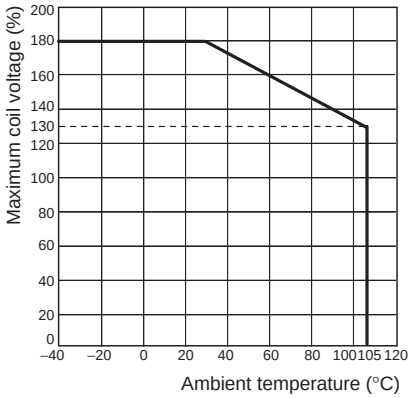



## Ambient temperature vs. Operating/Recovery Voltage

### G2RL-1ATP5-E/G2RL-1ATP7-E




## Ambient Temperature vs. Maximum Coil Voltage

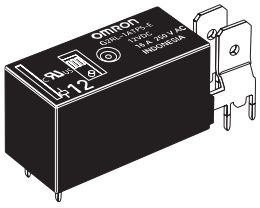


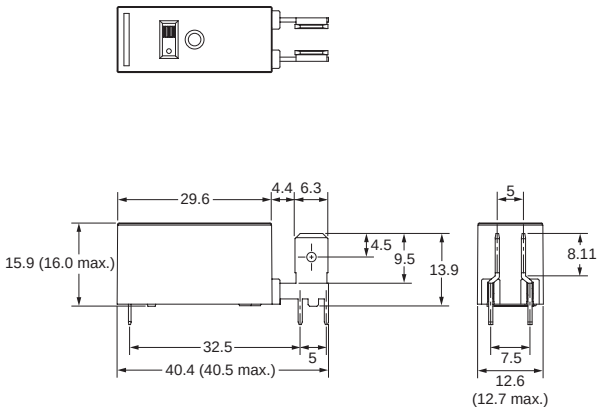

**Note:** The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

# Dimensions

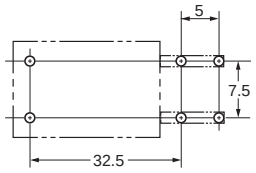
**Note:** All units are in millimeters unless otherwise indicated.

**G2RL-1ATP5-E**

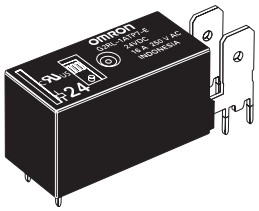


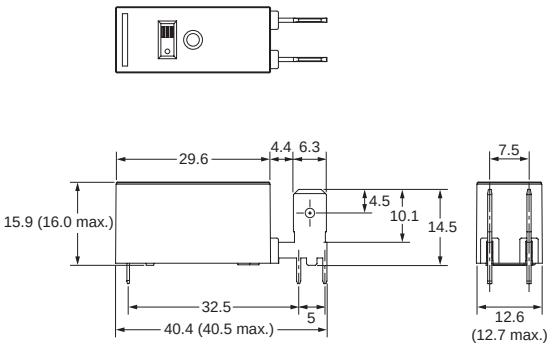



**PCB Mounting Holes (Bottom View)**

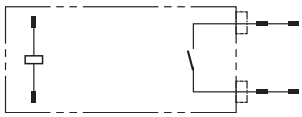



**G2RL-1ATP7-E**






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



# Precautions

### Disclaimer:

All technical performance data applies to the product as such; specific conditions of individual applications are not considered. Always check the suitability of the product for your intended purpose. OMRON does not assume any responsibility or liability for noncompliance herein, and we recommend prior technical clarification for applications where requirements, loading, or ambient conditions differ from those applying to general electric applications. Any responsibility for the application of the product remains with the customer alone. THIS COMPONENT CAN NOT BE USED FOR AUTOMOTIVE APPLICATIONS.

**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. J161-E1-01 **In the interest of product improvement, specifications are subject to change without notice.**

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