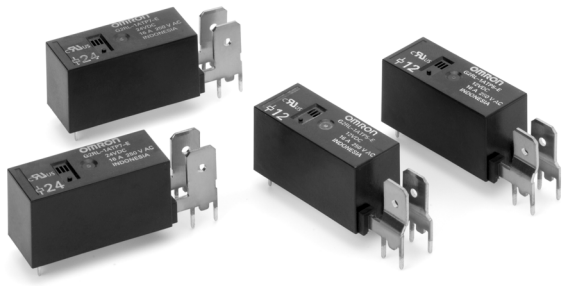
# PCB Relay
# G2RL-TP

## 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.
- Low profile for total size reduction.
- Easy wiring with quick-connect terminals.
- Model with 5-mm pitch (RAST5) is also available.

**Application**: Cooking ovens, electric heating, power supplies.



(VDE Approval pending)

# 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 DC12
Rated coil voltage

### Model Number Legend

**G2RL-□ □ □-□ DC□**
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 x $10^{-6}$ 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 |
| | 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) |
| | 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: | Energized:100 $m/s^2$ |
| | | Not energized:100 $m/s^2$ |
| **Endurance** | Mechanical: | 20,000,000 operations min. (at 18,000 operations/hr) |
| | 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

### UL Recognized (File No. E41643) / CSA Certified (File No. LR31928)

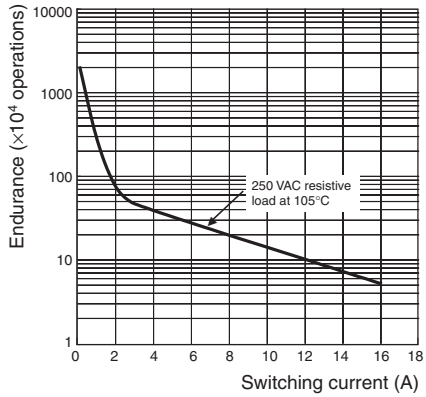
| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|---|---|---|---|---|
| G2RL-1ATP□-E | SPST-NO (High capacity) | 12 to 24 VDC | 16 A at 250 VAC (General use), 40°C | 100,000 |
| | | | 16 A at 24 VDC (Resistive), 40°C | 50,000 |
| | | | 16 A at 250 VAC (Resistive), 105°C | 100,000 |

### VDE (EN61810-1): Pending

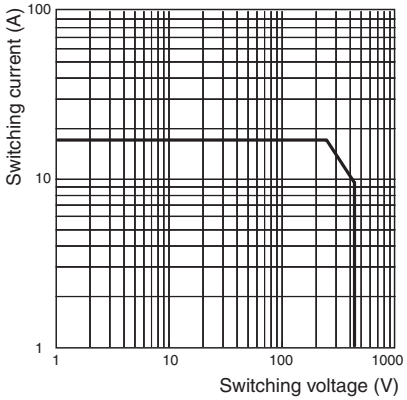
# Engineering Data

**G2RL-1ATP5-E/G2RL-1ATP7-E**

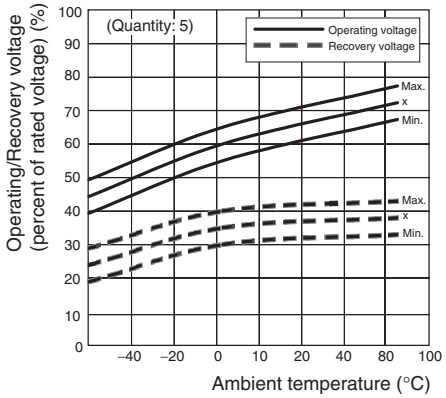
## ■ Endurance at 105°C



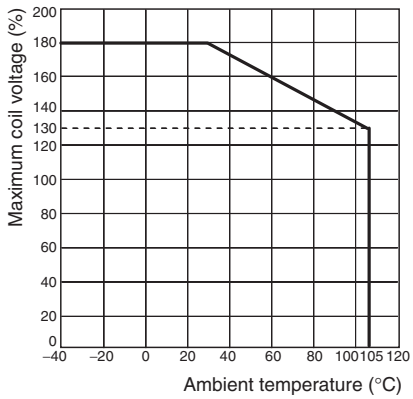

## ■ Maximum Switching Power




## ■ Ambient temperature vs. Operating/Recovery Voltage




## ■ Ambient Temperature vs. Maximum Coil Voltage

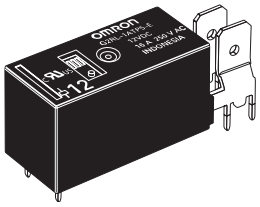


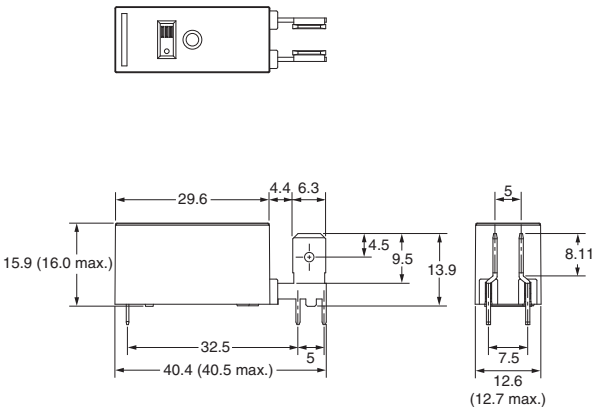

**Note:** The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

# Dimensions

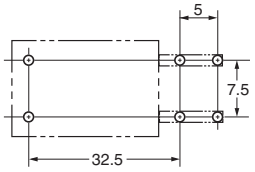
**Note:** All units are in millimeters unless otherwise indicated.

## G2RL-1ATP5-E

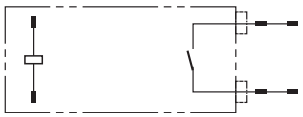




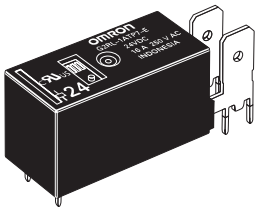

**PCB Mounting Holes (Bottom View)**

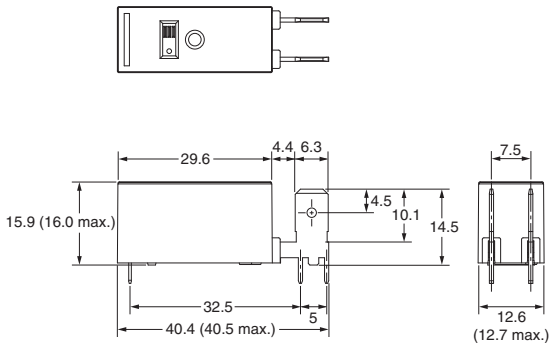



**Terminal Arrangement/ Internal Connection (Bottom View)**



## G2RL-1ATP7-E





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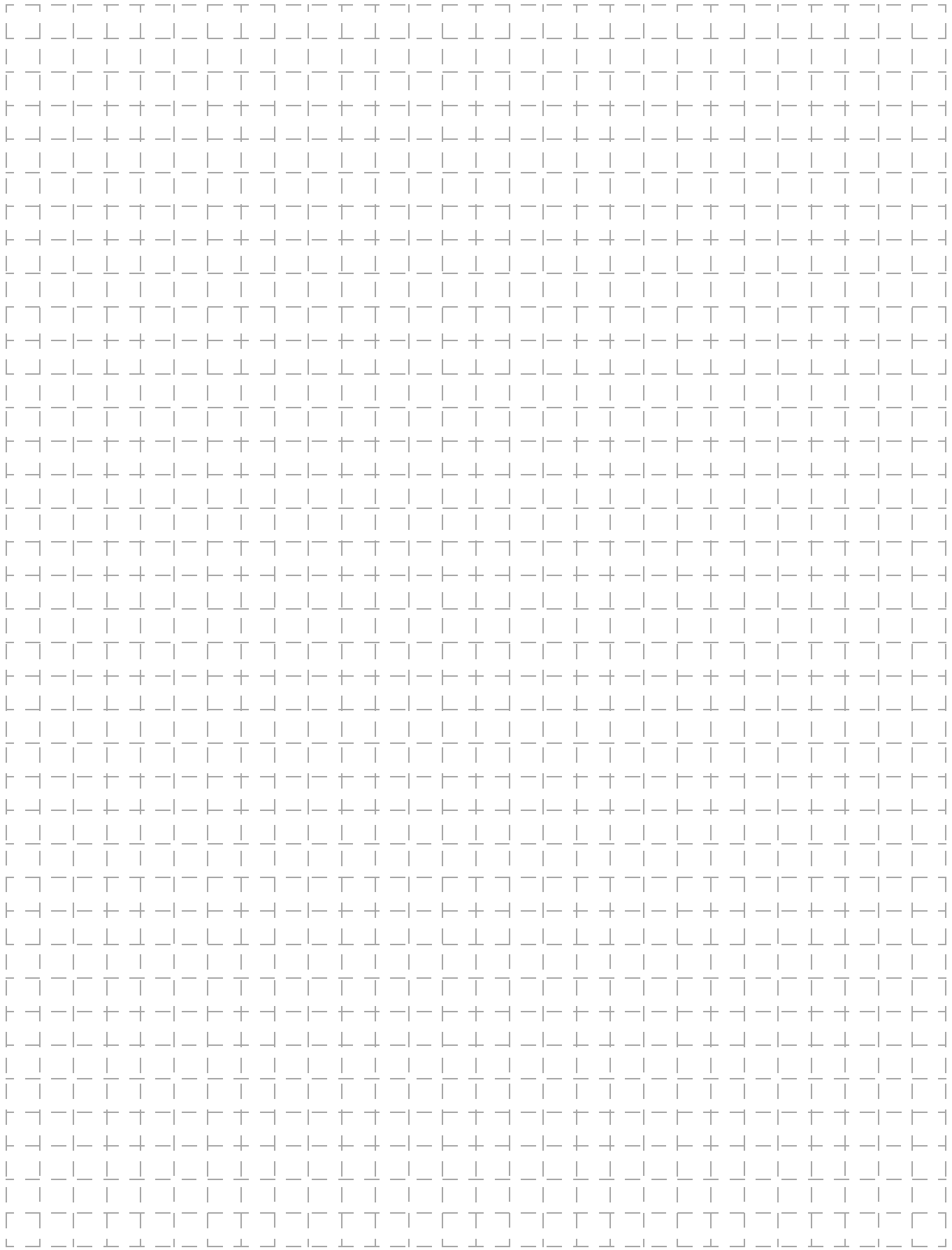

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Cat. No. X301-E-1b 09/11 Specifications subject to change without notice Printed in USA