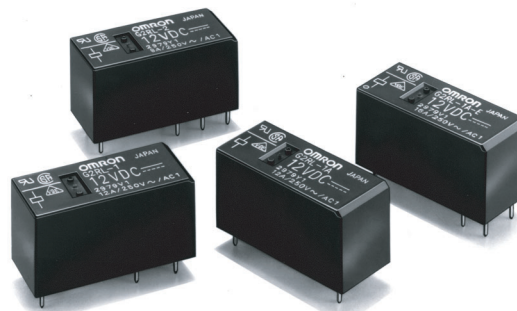


Next-generation PCB Relay Available in 24 Models

- Low profile: 15.7 mm max. in height
- Conforms to VDE (EN61810-1), UL508 and CSA22.2.
- Meets EN60335-1 requirements for household products.
- Clearance and creepage distance: 10 mm/10 mm.
- Tracking resistance: CTI>250 (Both standard and class F type)
- Coil Insulation system: Class F (UL1446)
- High sensitivity: 400 mW



RoHS Compliant Refer to pages 16 to 17 for details.

Ordering Information

| Classification | | Enclosure ratings | Contact form | | | |
|----------------|-----------------|-------------------|--------------|-----------|----------|---------|
| | | | SPST-NO | SPDT | DPST-NO | DPDT |
| Standard | General-purpose | Flux protection | G2RL-1A | G2RL-1 | G2RL-2A | G2RL-2 |
| | | Fully sealed | G2RL-1A4 | G2RL-14 | G2RL-2A4 | G2RL-24 |
| | High-capacity | Flux protection | G2RL-1A-E | G2RL-1-E | --- | --- |
| | | Fully sealed | G2RL-1A4-E | G2RL-14-E | --- | --- |

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

Rated coil voltage

Model Number Legend

G2RL-□□□-□□□

1 2 3 4 5

1. Number of Poles

- 1: 1 pole
- 2: 2 poles

2. Contact Form

- None: □PDT
- A: □PST-NO

3. Enclosure Ratings

- None: Flux protection
- 4: Fully sealed

4. Classification

- None: General purpose
- E: High capacity (1 pole)

5. Approved Standards

- None: UL, CSA, VDE, UL Class B Insulation

Specifications

■ Coil Ratings

| | | | | |
|----------------------|---------------------------------|---------|---------|----------------|
| Rated voltage | 5 VDC | 12 VDC | 24 VDC | 48 VDC |
| Rated current | 80.0 mA | 33.3 mA | 16.7 mA | 8.96 mA |
| Coil resistance | 62.5 Ω | 360 Ω | 1,440 Ω | 5,358 Ω |
| Must operate voltage | 70% max. of the rated voltage | | | |
| Must release voltage | 10% min. of the rated voltage | | | |
| Max. voltage | 180% of rated voltage (at 23°C) | | | |
| Power consumption | Approx. 400 mW | | | Approx. 430 mW |

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

■ Contact Ratings

| | | |
|------------------------|--|--|
| Number of poles | 1 pole | 2 poles |
| Contact material | AgSnO ₂ | AgNi |
| Load | Resistive load (cosφ=1) | Resistive load (cosφ=1) |
| Rated load | 12 A (16 A) at 250 VAC 12 A (16 A) at 24 VDC (See note 2.) | 8 A at 250 VAC 8 A at 30 VDC (See note 2.) |
| Rated carry current | 12 A (16 A) (See note 2.) | 8 A (70°C)/5 A (85°C) (See note 2.) |
| Max. switching voltage | 440 VAC, 300 VDC | |
| Max. switching current | 12 A (16 A) | 8 A |
| Max. switching power | 3,000 VA (4,000 VA) | 2,000 VA |

Note: 1. Values in parentheses are those for the high-capacity model.

2. Contact your OMRON representative for the ratings on fully sealed models.

■ Characteristics

| Item | 1 pole | 2 poles |
|---------------------------|--|---|
| Contact resistance | 100 mΩ max. | |
| Operate (set) time | 15 ms max. (Approx. 7 ms typical) | |
| Release (reset) time | 5 ms max. (Approx. 2 ms typical) | |
| Max. operating frequency | Mechanical: 18,000 operation/hr Electrical: 1,800 operation/hr at rated load | |
| Insulation resistance | 1,000 MΩ min. (at 500 VDC) | |
| Dielectric strength | 5,000 VAC, 1 min between coil and contacts 1,000 VAC, 1 min between contacts of same polarity | 5,000 VAC, 1 min between coil and contacts 2,500 VAC, 1 min between contacts of different polarity 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 (at 18,000 operations/hr) | |
| Ambient temperature | Operating: -40°C to 85°C (with no icing) Storage: -40°C to 85°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)

| Model | Contact form | Coil ratings | Contact ratings |
|-----------|-------------------------|--------------|---|
| G2RL-1A | SPST-NO | 3 to 48 VDC | 12 A at 250 VAC (General use) 12 A at 24 VDC (Resistive) |
| G2RL-1 | SPDT | | 16 A at 250 VAC (General use) 16 A at 24 VDC (Resistive) |
| G2RL-1A-E | SPST-NO (High capacity) | | |
| G2RL-1-E | SPDT (High capacity) | | |
| G2RL-2A | DPST-NO | | 8 A at 277 VAC (General use) 8 A at 30 VDC (Resistive) |
| G2RL-2 | DPDT | | |

CSA C22.2 (No. 14) (File No. LR31928)

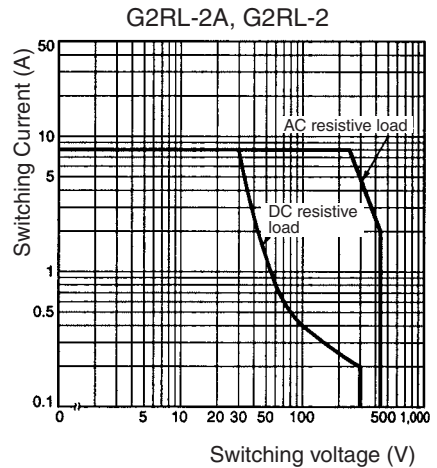
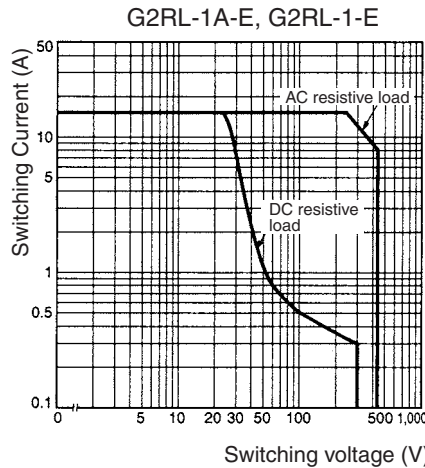
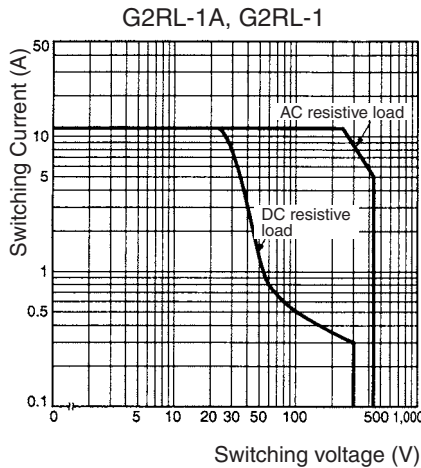
| Model | Contact form | Coil ratings | Contact ratings |
|-----------|-------------------------|--------------|---|
| G2RL-1A | SPST-NO | 3 to 48 VDC | 12 A at 250 VAC (General use) 12 A at 24 VDC (Resistive) |
| G2RL-1 | SPDT | | |
| G2RL-1A-E | SPST-NO (High capacity) | | 16 A at 250 VAC (General use) 16 A at 24 VDC (Resistive) |
| G2RL-1-E | SPDT (High capacity) | | |
| G2RL-2A | DPST-NO | | 8 A at 277 VAC (General use) 8 A at 30 VDC (Resistive) |
| G2RL-2 | DPDT | | |

VDE (EN61810-1) (Licence No. 119650)

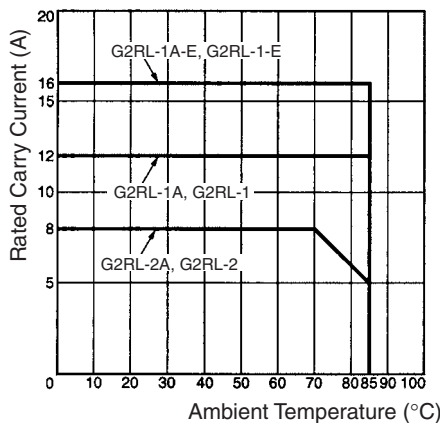
| Model | Contact form | Coil ratings | Contact ratings |
|-------|------------------------|---------------------------|---|
| G2RL | 1 pole | 5, 12, 18, 22, 24, 48 VDC | 12 A at 250 VAC ($\cos\phi=1$) 12 A at 24 VDC (L/R=0 ms) AC15:3 A at 240 VAC DC13: 2.5 A at 24 VDC, 50 ms |
| | 1 pole (High capacity) | | 16 A at 250 VAC ($\cos\phi=1$) 16 A at 24 VDC (L/R=0 ms) AC15:3 A at 240 VAC (NO) 1.5 A at 240 VAC (NC) DC13: 2.5 A at 24 VDC (NO), 50 ms |
| | 2 poles | | 8 A at 250 VAC ($\cos\phi=1$) 8 A at 24 VDC (L/R=0 ms) AC15:1.5 A at 240 VAC DC13: 2 A at 30 VDC, 50 ms |

Engineering Data

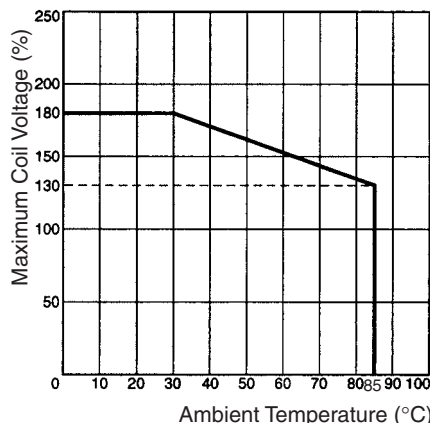
Maximum Switching Capacity



Ambient Temperature vs Rated Carry Current



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.

Note: Contact your OMRON representative for the data on fully sealed models.

Electrical Endurance Data

| | | |
|------------------|---|---|
| G2RL-1-E | 16 A at 250 VAC ($\cos\phi=1$) 16 A at 24 VDC 8 A at 250 VAC ($\cos\phi=0.4$) 8 A at 30 VDC (L/R=7 ms) | 30,000 operations min. 30,000 operations min. 200,000 operation min. (Normally open side operation) 10,000 operation min. (Normally open side operation) |
| G2RL-1 | 12 A at 250 VAC ($\cos\phi=1$) 12 A at 24 VDC 5 A at 250 VAC ($\cos\phi=0.4$) 5 A at 30 VDC (L/R=7 ms) | 50,000 operations min. 30,000 operations min. 150,000 operation min. (Normally open side operation) 20,000 operation min. (Normally open side operation) |
| G2RL-2 | 8 A at 250 VAC ($\cos\phi=1$) 8 A at 30 VDC | 30,000 operations min. 30,000 operations min. |
| G2RL-1A-E | Pilot duty (A300), 250 VAC Pilot duty (A300), 125 VAC | 250,000 operations min. 150,000 operations min. |

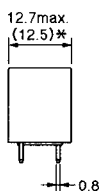
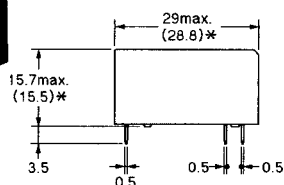
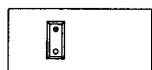
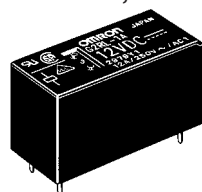
Note: The results shown reflect values measured using very severe test conditions i.e., Duty: 1 s ON/1 s OFF.

Electrical endurance will vary depending on the test conditions. Contact your OMRON representative if you require more detailed information for the electrical endurance under your test conditions.

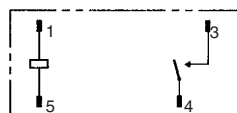
Dimensions

Note: All units are in millimeters unless otherwise indicated.

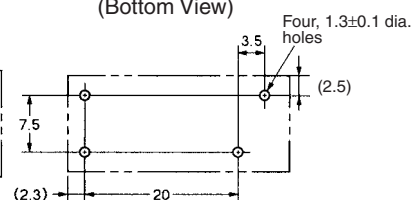
G2RL-1A, G2RL-1A4



Terminal Arrangement/
Internal Connection
(Bottom View)

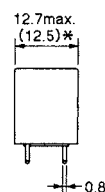
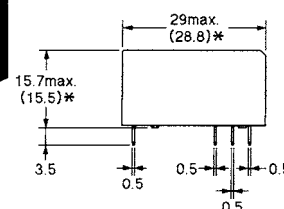
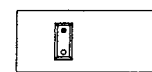
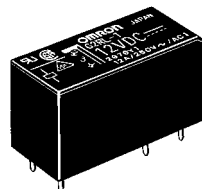


Mounting Holes
(Bottom View)

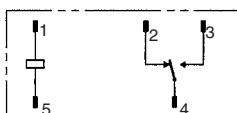


* Indicates average dimensions.

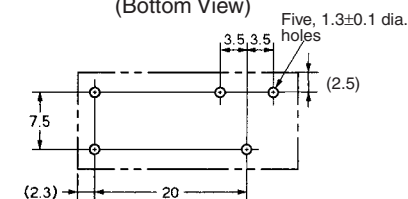
G2RL-1, G2RL-14



Terminal Arrangement/
Internal Connection
(Bottom View)

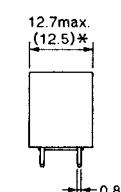
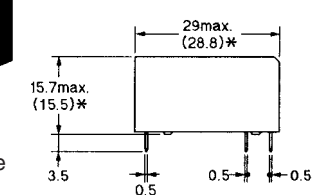
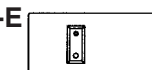
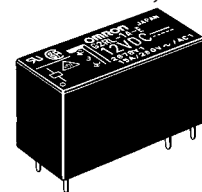


Mounting Holes
(Bottom View)



* Indicates average dimensions.

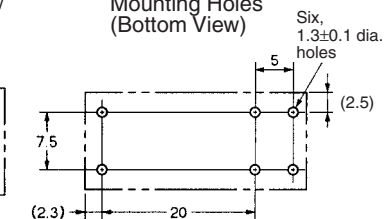
G2RL-1A-E, G2RL-1A4-E



Terminal Arrangement/
Internal Connection
(Bottom View)

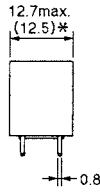
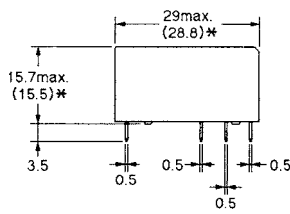
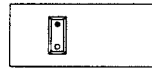
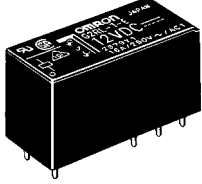


Mounting Holes
(Bottom View)

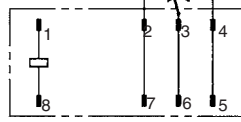


* Indicates average dimensions.

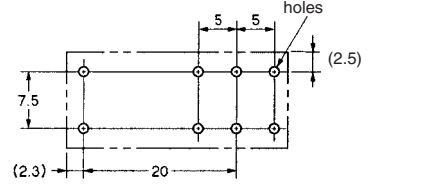
G2RL-1-E, G2RL-14-E



Terminal Arrangement/
Internal Connection
(Bottom View)

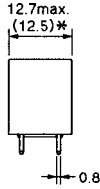
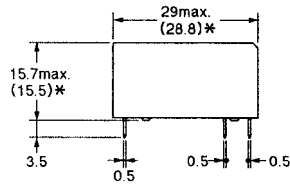
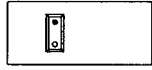
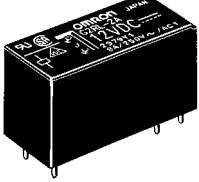


Mounting Holes
(Bottom View)



* Indicates average dimensions.

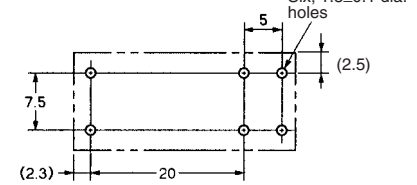
G2RL-2A, G2RL-2A4



Terminal Arrangement/
Internal Connection
(Bottom View)

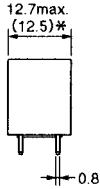
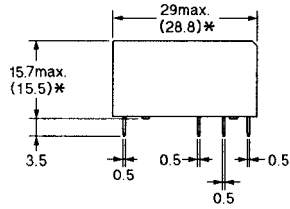
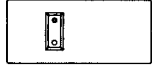
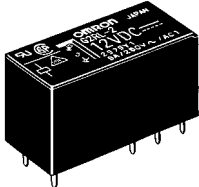


Mounting Holes
(Bottom View)

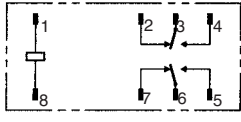


* Indicates average dimensions.

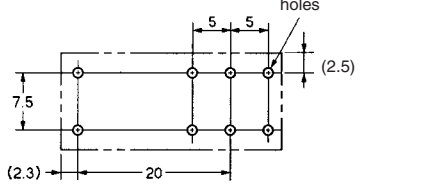
G2RL-2, G2RL-24



Terminal Arrangement/
Internal Connection
(Bottom View)



Mounting Holes
(Bottom View)



* Indicates average dimensions.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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