



A Power Relay with Various Models

- High-sensitivity (250 mW) and High-capacity (16 A) Models available.
- 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
- Coil Insulation system: Class F (UL1446)

RoHS Compliant



Contact Data

| | Standard models | | High-capacity models | High-sensitivity models |
|--|---|---|--|---|
| Number of poles | 1 pole | 2 pole | 1 pole | 1 pole |
| Contact materials | AgSnO ₂ (Cd free) | | | |
| Contact resistance | 100 mΩ max. | | | |
| Rated load | 12 A at 250 VAC 12 A at 24 VDC (See note.) | 8 A at 250 VAC 8 A at 30 VDC (See Note.) | 16 A at 250 VAC 16 A at 30 VDC (See note.) | 10 A at 250 VAC 10 A at 24 VDC (See note.) |
| Rated carry current | 12 A (See note.) | 8 A (70°C)/5 A (85°C) (See note.) | 16 A (See note.) | 10 A (See note.) |
| Max. switching voltage | 440 VAC, 300 VDC | | | |
| Max. switching current | 12 A | 8 A | 16 A | 10 A |
| Max. switching power | 3,000 VA | 2,000 VA | 4,000 VA | 2,500 VA |
| Mechanical endurance | 20,000,000 operations (at 18,000 operations/hr) | | | |
| Max operating frequency | Mechanical: 18,000 operation/hr Electrical: 1,800 operation/hr at rated load | | | |
| Electrical endurance data | C.O.: 12 A at 250 VAC (cosφ=1) 50,000 operations min. 12 A at 24 VDC 30,000 operations min. N.O. only: 5 A at 250 VAC (cosφ=0.4) 150,000 operations min. 5 A at 30 VDC (L/R=7 ms) 20,000 operations min. | C.O.: 8 A at 250 VAC (cosφ=1) 30,000 operations min. 8 A at 30 VDC 30,000 operations min. | C.O.: 16 A at 250 VAC (cosφ=1) 30,000 operations min. 16 A at 24 VDC 30,000 operations min. N.O. only: 8 A at 250 VAC (cosφ=0.4) 200,000 operations min. 8 A at 30 VDC (L/R=7 ms) 10,000 operations min. Pilot duty (A300), 250 VAC 250,000 operations min. Pilot duty (A300), 125 VAC 150,000 operations min. 16 A at 250 VAC (cosφ=1) at 105°C 100,000 operations min. by -CV type. | C.O.: 10 A at 250 VAC (cosφ=1) 100,000 operations min. 10 A at 24 VDC 50,000 operations min. |
| Contact rating (Approved Standards) | UL508 (File No. E41643)/CSA C 22.2(No. 14) (File No. LR31928) | | | |
| | 12 A at 250 VAC (General use) 12 A at 24 VDC (Resistive) | 8 A at 277 VAC (General use) 8 A at 30 VDC (Resistive) | 16 A at 250 VAC (General use) 16 A at 24 VDC (Resistive) | 10 A at 250 VAC (General use) 10 A at 24 VDC (Resistive) |
| | VDE (EN61810-1) (License No. 119650) | | | |
| | 12 A at 250 VAC (cosφ=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 | 8 A at 250 VAC (cosφ=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 | 16 A at 250 VAC (cosφ=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 16 A at 250 VAC (cosφ=1) at 105°C -CV type | 10 A at 250 VAC (cosφ=1) 10 A at 24 VDC (L/R=0 ms) |

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

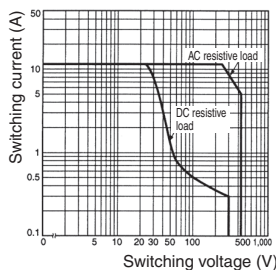
Values in the above table are the initial values.

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.

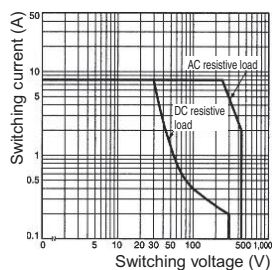
Maximum Switching Capacity

Standard models

G2RL-1A, G2RL-1

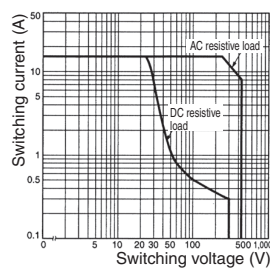


G2RL-2A, G2RL-2



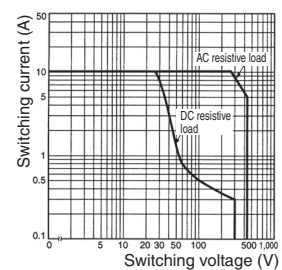
High-capacity models

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



High-sensitivity models

G2RL-1A-H, G2RL-1-H

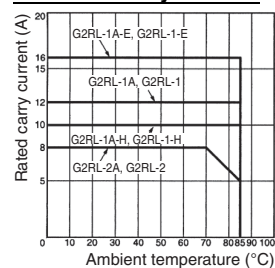


Coil Rating

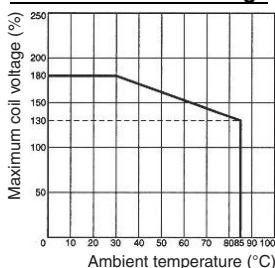
| | Standard models | | | | High-capacity models | | | | High-sensitivity models | | |
|---|---------------------------------|---------|---------|----------------|----------------------|---------|---------|----------------|-------------------------------|---------|----------|
| | 5 VDC | 12 VDC | 24 VDC | 48 VDC | 5 VDC | 12 VDC | 24 VDC | 48 VDC | 5 VDC | 12 VDC | 24 VDC |
| Rated voltage | 5 VDC | 12 VDC | 24 VDC | 48 VDC | 5 VDC | 12 VDC | 24 VDC | 48 VDC | 5 VDC | 12 VDC | 24 VDC |
| Rated current | 80.0 mA | 33.3 mA | 16.7 mA | 8.96 mA | 80.0 mA | 33.3 mA | 16.7 mA | 8.96 mA | 50.0 mA | 20.8 mA | 10.42 mA |
| Coil resistance | 62.5Ω | 360Ω | 1,440Ω | 5,358Ω | 62.5Ω | 360Ω | 1,440Ω | 5,358Ω | 100Ω | 576Ω | 2,304Ω |
| Must operate voltage | 70% max. of the rated voltage | | | | | | | | 75% 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 | Approx. 400 mW | | | Approx. 430 mW | Approx. 250 mW | | |
| Coil insulation system according to UL | Class F | | | | | | | | | | |

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

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.

Insulation

| | Standard models | | High-capacity models | High-sensitivity models |
|--|--|---|--|--|
| | 1 pole | 2 pole | 1 pole | 1 pole |
| 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 | 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 1,000 VAC, 1 min between contacts of same polarity |
| Impulse withstand voltage | 10 kV(1.2X50μs) between coil and contact | | | |
| Insulation resistance | 1,000 MΩ min. (at 500 VDC) | | | |
| Creepage distance | 10 mm MIN. | | | |
| Clearance distance | 10 mm MIN. | | | |
| Insulation material group | IIIa | | | |
| Insulation to IEC 60664-1 | | | | |
| Type of insulation coil-contact circuit | Reinforced | | | |
| Type of insulation open contact circuit | Functional | | | |
| Rated insulation voltage | 250 V | | | |
| Pollution degree | 3 (Flux protection), 2(Fully sealed) | | | 3 |
| Rated voltage system | 250 V (Flux protection), 400 V (Fully sealed) | | | 250 V |
| Over voltage category | III | | | |

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

Other Data

| | Standard/High-capacity/High-sensitivity models |
|---|--|
| RoHS directive 2002/95/EC | Compliant |
| Flammability class according to UL94 | V-0 |
| Operate(set) time | 15 ms max. |
| Release(reset) time | 5 ms max. |
| 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 (approx. 100G) Malfunction: 100 m/s ² (approx. 10G) |
| Ambient temperature | Operating: -40°C to 85°C (with no icing) Storage: -55°C to 85°C (with no icing) |
| Ambient humidity | Operating: 5% to 85% |
| Category of protection (IEC 61810) | RT II(Flux protection), RT III(Fully sealed) |
| Weight | Approx. 12g |

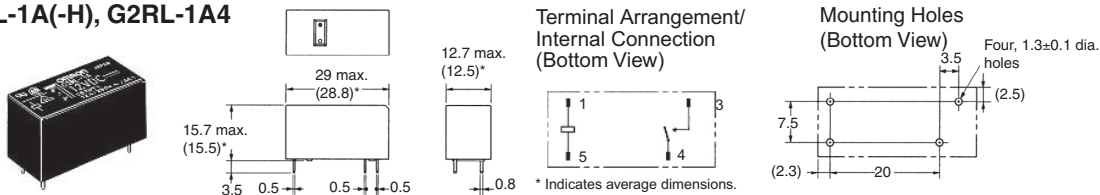
Note: Values in the above table are the initial values.

Dimensions

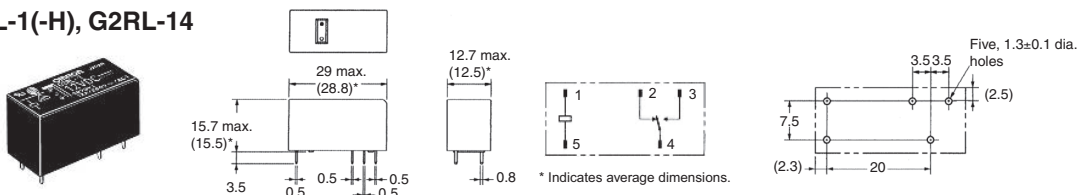
Note: All units are in millimeters unless otherwise indicated.

Standard models/High-sensitivity models

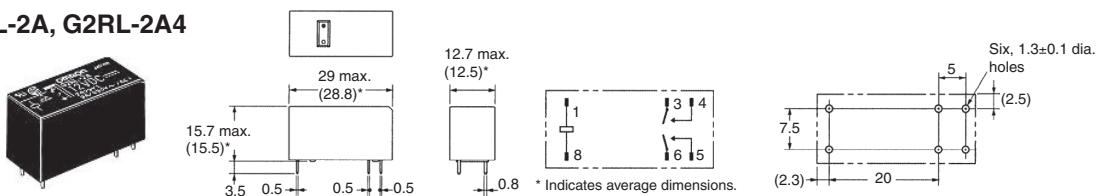
G2RL-1A(-H), G2RL-1A4



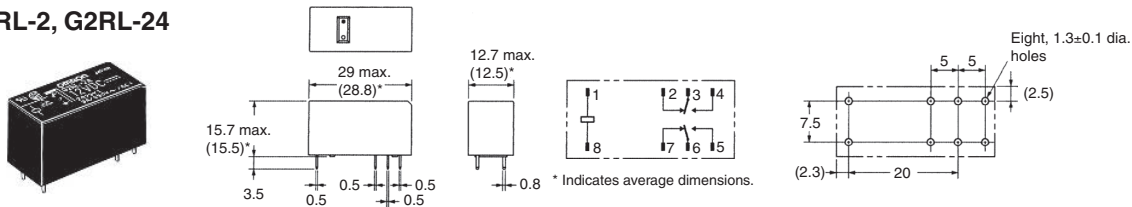
G2RL-1(-H), G2RL-14



G2RL-2A, G2RL-2A4

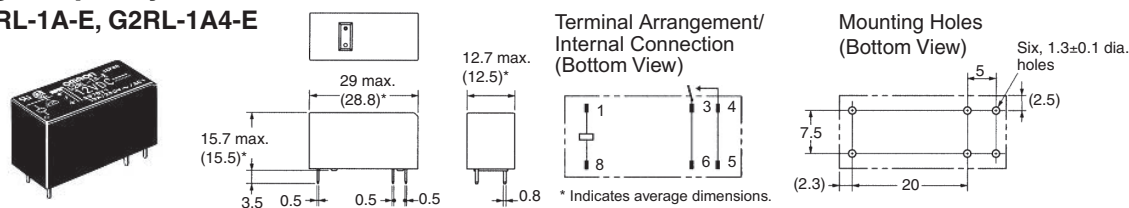


G2RL-2, G2RL-24

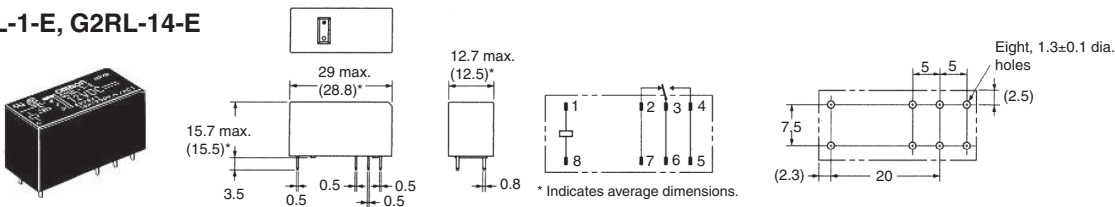


High-capacity models

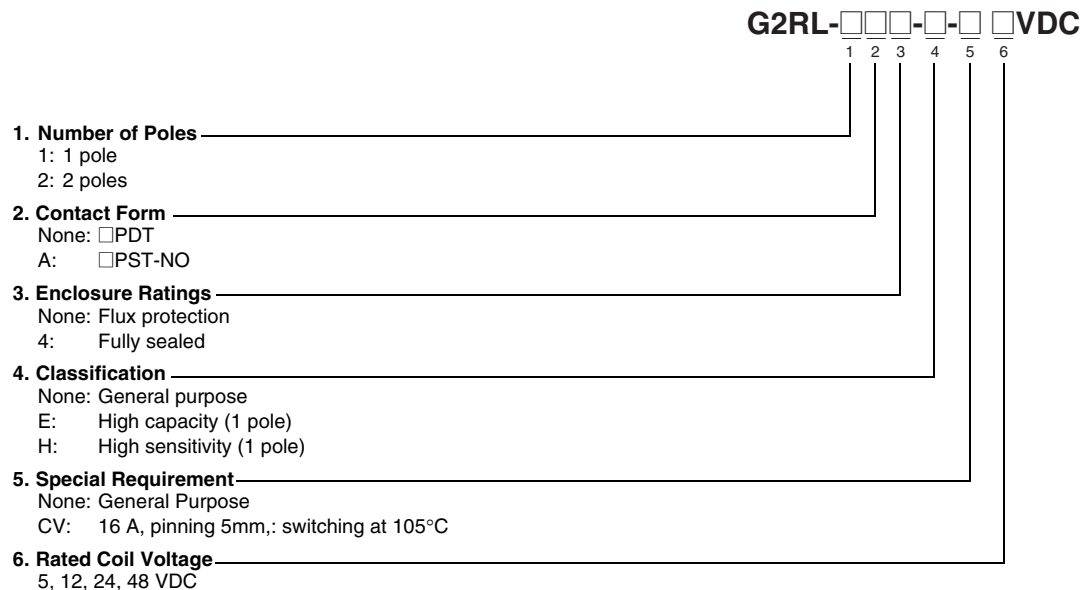
G2RL-1A-E, G2RL-1A4-E



G2RL-1-E, G2RL-14-E



Model Number Legend



Ordering Information

| Enclosure ratings | Standard models | | | | High-cap models | | High-sensitivity models | |
|------------------------|-----------------|---------|----------|---------|-----------------|-----------|-------------------------|----------|
| | SPST-NO | SPDT | DPST | DPDT | SPST-NO | SPDT | SPST-NO | SPDT |
| Flux protection | G2RL-1A | G2RL-1 | G2RL-2A | G2RL-2 | G2RL-1A-E-(CV) | G2RL-1-E | G2RL-1A-H | G2RL-1-H |
| Fully sealed | G2RL-1A4 | G2RL-14 | G2RL-2A4 | G2RL-24 | 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

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.