

Ordering Information

| Terminal Shape | Market Code      | Classification  | Contact Form    | Enclosure Rating  | Model             | Rated Coil Voltage | Minimum Packing Unit |
|----------------|------------------|-----------------|-----------------|-------------------|-------------------|--------------------|----------------------|
| PCB terminals  | General Purpose  | Standard        | SPST-NO (1a)    | Flux protection   | G2RL-1A           | 5, 12, 24, 48 VDC  | 20 pcs/tube          |
|                |                  |                 |                 | Sealed            | G2RL-1A-PW1       | 5, 12, 24 VDC      |                      |
|                |                  |                 | SPDT (1c)       | Flux protection   | G2RL-1A4          | 5, 12, 24, 48 VDC  |                      |
|                |                  |                 |                 | Sealed            | G2RL-1            |                    |                      |
|                |                  |                 | DPST-NO (2a)    | Flux protection   | G2RL-1-PW1        | 5, 12, 24 VDC      |                      |
|                |                  |                 |                 | Sealed            | G2RL-14           |                    |                      |
|                |                  |                 | DPDT (2c)       | Flux protection   | G2RL-2A           | 5, 12, 24, 48 VDC  |                      |
|                |                  |                 |                 |                   | G2RL-2A-PW1       |                    |                      |
|                |                  |                 |                 | Sealed            | G2RL-2A4          | 5, 12, 24, 48 VDC  |                      |
|                |                  |                 |                 |                   | Flux protection   |                    |                      |
|                |                  |                 | G2RL-2-ASI      | 5, 12, 24 VDC     |                   |                    |                      |
|                |                  |                 | Sealed          |                   | G2RL-2-PW1        | 5, 12, 24 VDC      |                      |
|                |                  | G2RL-24         |                 | 5, 12, 24, 48 VDC |                   |                    |                      |
|                |                  | High-capacity   | SPST-NO (1a)    |                   | Flux protection   | G2RL-1A-E          |                      |
|                |                  |                 |                 | G2RL-1A-E-ASI     |                   | 5, 12, 24 VDC      |                      |
|                |                  |                 |                 | Sealed            | G2RL-1A-E-CV      |                    |                      |
|                |                  |                 |                 |                   | G2RL-1A-E-PW1     | 5, 12, 24 VDC      |                      |
|                |                  |                 | SPDT (1c)       | Flux protection   | G2RL-1A4-E        |                    |                      |
|                | G2RL-1-E         |                 |                 |                   | 5, 12, 24, 48 VDC |                    |                      |
|                | Sealed           | G2RL-1-E-ASI    | 5, 12, 24 VDC   |                   |                   |                    |                      |
|                |                  | G2RL-1-E-PW1    |                 | 5, 12, 24 VDC     |                   |                    |                      |
|                | High-sensitivity | SPST-NO (1a)    | Flux protection |                   | G2RL-1-E          | 5, 12, 24, 48 VDC  |                      |
|                |                  |                 |                 | SPDT (1c)         | G2RL-14-E         |                    |                      |
|                | Home Application | Standard        | Flux protection | Sealed            | G2RL-1A-H         | 5, 12, 24 VDC      |                      |
| G2RL-1-H       |                  |                 |                 |                   |                   |                    |                      |
| G2RL-1-HA      |                  |                 |                 |                   |                   |                    |                      |
| G2RL-2A-HA     |                  |                 |                 |                   |                   |                    |                      |
| High-capacity  |                  | Flux protection | Sealed          | G2RL-2-HA         |                   |                    |                      |
|                |                  |                 |                 | G2RL-1A-E-HA      |                   |                    |                      |
|                |                  |                 |                 | G2RL-1A-E-CV-HA   |                   |                    |                      |
|                |                  |                 |                 | G2RL-1-E-HA       |                   |                    |                      |

Note 1. When ordering, add the rated coil voltage to the model number.  
Example: G2RL-1A DC5 — Rated coil voltage  
However, the notation of the coil voltage on the product case will be marked as □□VDC.  
Note 2. Place your order in tube (20 pcs/tube) units.  
Note 3. Contact your OMRON sales representative for sealed models.

Ratings

Coil

|                                | Item          | Rated current<br>(mA) | Coil resistance<br>(Ω) | Must operate voltage<br>(V) | Must release voltage<br>(V) | Max. voltage<br>(V) | Power consumption<br>(mW) |
|--------------------------------|---------------|-----------------------|------------------------|-----------------------------|-----------------------------|---------------------|---------------------------|
|                                | Rated voltage |                       |                        | % of rated voltage          |                             |                     |                           |
| Standard,<br>High-<br>capacity | 5 VDC         | 80.0                  | 62.5                   | 70% max.                    | 10% min.<br>10 to 41%*      | 130%<br>(at 85°C)   | Approx. 400               |
|                                | 12 VDC        | 33.3                  | 360                    |                             |                             |                     | Approx. 120*              |
|                                | 24 VDC        | 16.7                  | 1,440                  |                             |                             |                     | Approx. 430               |
|                                | 48 VDC        | 8.96                  | 5,358                  |                             |                             |                     |                           |
| High-<br>sensitivity           | 5 VDC         | 50                    | 96                     | 75% max.                    | 10%                         |                     | Approx. 250               |
|                                | 12 VDC        | 20.8                  | 576                    |                             |                             |                     |                           |
|                                | 24 VDC        | 10.42                 | 2,304                  |                             |                             |                     |                           |

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.  
Note 2. The operating characteristics are measured at a coil temperature of 23°C.  
Note 3. The "max. voltage" is the maximum voltage that can be applied to the relay coil.  
\* These numbers are only for -PW1 type. Power consumption with holding voltage is approx. 120mW. Please confirm the detail in page 8 coil voltage reduction (holding voltage).

Contacts: Flux Protection Type

| Classification                            | Standard type (resistive load) |                                              | High-capacity type (resistive load)        | High-sensitivity type (resistive load)       |
|-------------------------------------------|--------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|
| Item                                      | Model                          | 1-pole                                       | 2-pole                                     | 1-pole                                       |
| Contact type                              |                                | Single                                       |                                            |                                              |
| Contact material                          |                                | Ag-alloy (Cd free)                           |                                            |                                              |
| Rated load                                |                                | 12 A at 250 VAC<br>12 A at 24 VDC (See note) | 8 A at 250 VAC<br>8 A at 30 VDC (See note) | 16 A at 250 VAC<br>16 A at 24 VDC (See note) |
| Rated carry current                       |                                | 12 A (See note)                              | 8 A (70°C)/5 A (85°C) (See note)           | 10 A (See note)                              |
| Max. switching voltage                    |                                | 440 VAC, 300 VDC                             |                                            |                                              |
| Max. switching current                    |                                | 12 A                                         | 8 A                                        | 16 A                                         |
| Failure rate (P level) (reference value*) |                                | 40 mA at 24 VDC                              |                                            |                                              |

\* This value was measured at a switching frequency of 120 operations/min.  
Note: Contact your OMRON representative for the ratings on sealed models.

## ■ Characteristics

### ● Flux Protection Type

| Classification                |                                        | Standard type                                                                                                   |                                                                                                               | High-capacity type                                                                                                                                                                                        | High-sensitivity type                              |
|-------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Item                          | Number of poles                        | 1-pole                                                                                                          | 2-pole                                                                                                        | 1-pole                                                                                                                                                                                                    |                                                    |
| Contact resistance *1         |                                        | 100 mΩ max.                                                                                                     |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Operate time                  |                                        | 15 ms max.                                                                                                      |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Release time                  |                                        | 5 ms max.                                                                                                       |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Insulation resistance *2      |                                        | 1,000 MΩ min.                                                                                                   |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Dielectric strength           | Between coil and contacts              | 5,000 VAC, 50/60 Hz for 1min                                                                                    |                                                                                                               |                                                                                                                                                                                                           |                                                    |
|                               | Between contacts of the same polarity  | 1,000 VAC, 50/60 Hz for 1min                                                                                    |                                                                                                               |                                                                                                                                                                                                           |                                                    |
|                               | Between contacts of different polarity | —                                                                                                               | 2,500 VAC, 50/60 Hz for 1min                                                                                  | —                                                                                                                                                                                                         |                                                    |
| Impulse withstand voltage     |                                        | 10 kV (1.2 x 50 μs)                                                                                             |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| 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 <sup>2</sup>                                                                                          |                                                                                                               |                                                                                                                                                                                                           |                                                    |
|                               | Malfunction                            | Energized: 100 m/s <sup>2</sup> , De-energized: 100 m/s <sup>2</sup>                                            |                                                                                                               |                                                                                                                                                                                                           |                                                    |
|                               | Mechanical                             | 20,000,000 operations (at 18,000 operations/hr)                                                                 |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Durability                    | Electrical *3 (resistive load)         | G2RL-1A, G2RL-1(-HA, -PW1):<br>50,000 operations at 250 VAC, 12 A<br>30,000 operations at 24 VDC, 12 A          | G2RL-2(A)(-HA, -PW1),<br>G2RL-2-ASI:<br>30,000 operations at 250 VAC, 8 A<br>30,000 operations at 30 VDC, 8 A | G2RL-1A-E(-ASI, -HA, -PW1),<br>G2RL-1-E(-ASI, -HA, -PW1):<br>30,000 operations at 250 VAC, 16 A<br>30,000 operations at 24 VDC, 16 A<br>G2RL-1A-E-CV(-HA):<br>50,000 operations at 250 VAC, 16 A at 105°C | G2RL-1(A)-H:<br>50,000 operations at 250 VAC, 10 A |
|                               |                                        |                                                                                                                 |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Ambient operating temperature |                                        | -40°C to 85°C (with no icing or condensation)<br>-40°C to 105°C (with no icing or condensation) by G2RL-1A-E-CV |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Ambient operating humidity    |                                        | 5% to 85% (with no icing or condensation)                                                                       |                                                                                                               |                                                                                                                                                                                                           |                                                    |
| Weight                        |                                        | Approx. 12 g                                                                                                    |                                                                                                               |                                                                                                                                                                                                           |                                                    |

Note 1. Values in the above table are the initial values at 23°C.

Note 2. Contact your OMRON sales representative for sealed models.

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

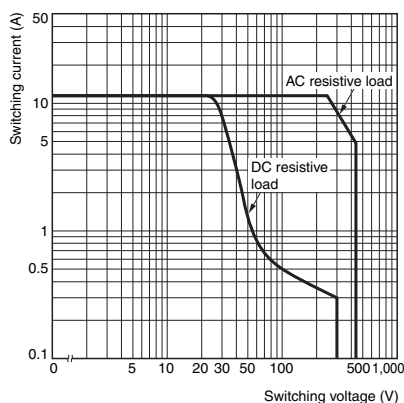
\*2. Measurement conditions: Measured at the same points as the dielectric strength using a 500 VDC ohmmeter.

\*3. 1,800 operations per hour.

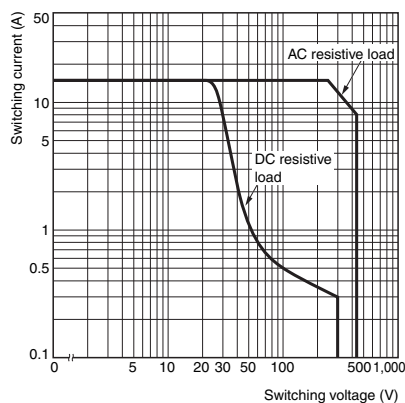
## Engineering Data

### Maximum Switching Capacity

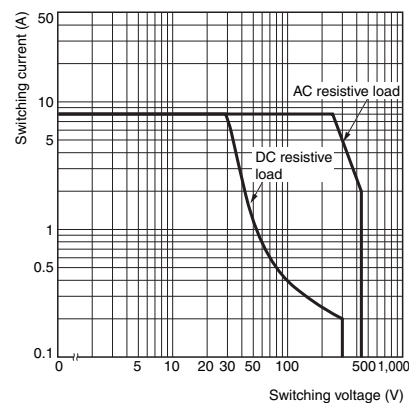
#### 1-pole Standard Type



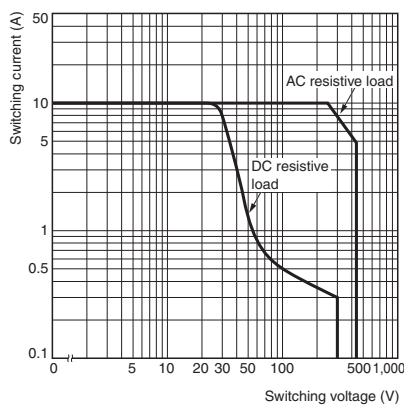
#### 1-pole High-capacity Type



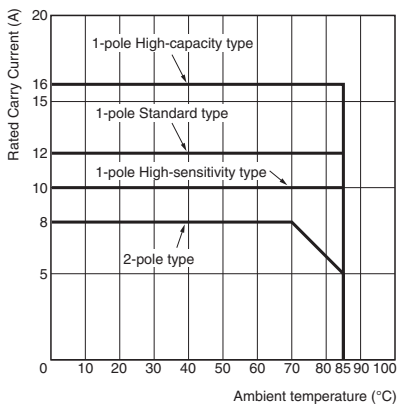
#### 2-pole Type



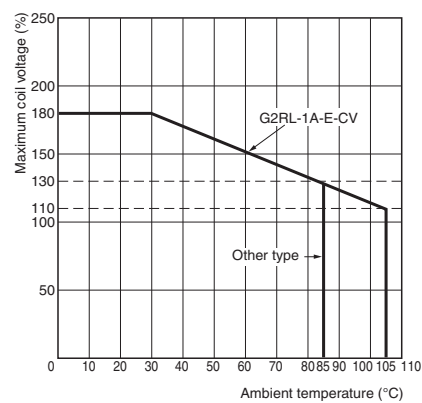
#### High-sensitivity Type



### Ambient Temperature vs. Rated Carry Current

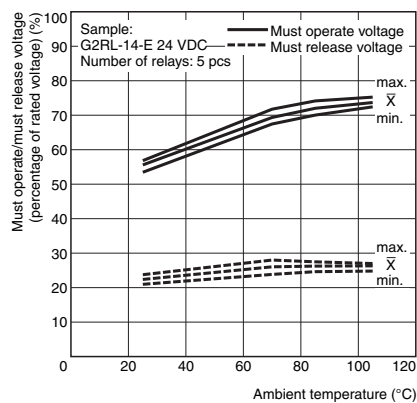


### Ambient Temperature vs. Maximum Coil Voltage



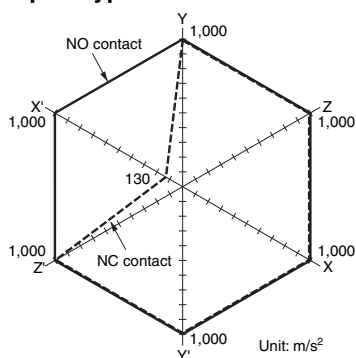
Note. The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

### Ambient Temperature vs. Must Operate and Must Release Voltages

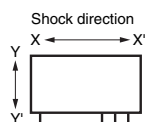


## ●Shock Malfunction

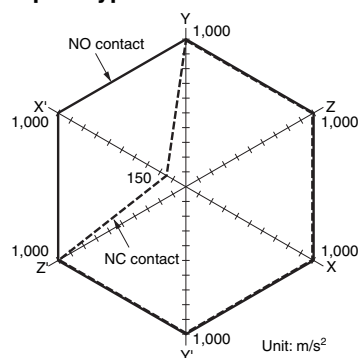
## 1-pole type



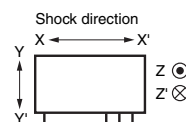
Sample: G2RL-14 12 VDC  
 Number of relays: 5 pcs  
 Test conditions: Shock is applied in  $\pm X$ ,  $\pm Y$ , and  $\pm Z$  directions three times each with without energizing the relays to check the number of malfunctions.  
 Requirement: None malfunction  
 100 m/s<sup>2</sup>



## 2-pole type



Sample: G2RL-24 12 VDC  
 Number of relays: 5 pcs  
 Test conditions: Shock is applied in  $\pm X$ ,  $\pm Y$ , and  $\pm Z$  directions three times each with without energizing the relays to check the number of malfunctions.  
 Requirement: None malfunction  
 100 m/s<sup>2</sup>

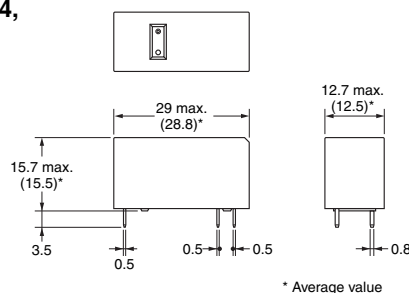
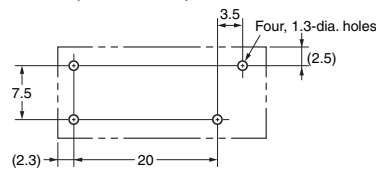
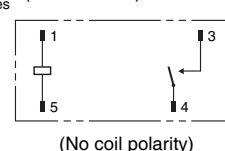
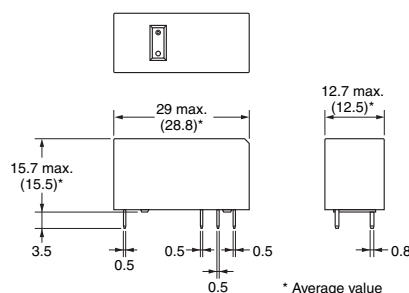
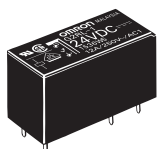
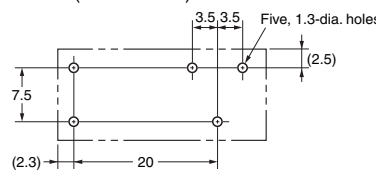
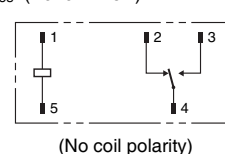
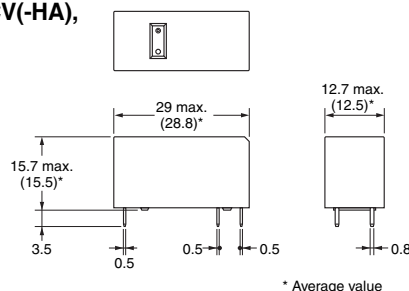
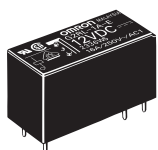
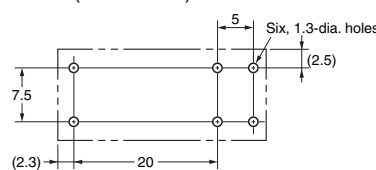
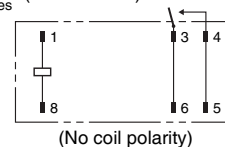


## ■Electrical Endurance Data (Reference Value)

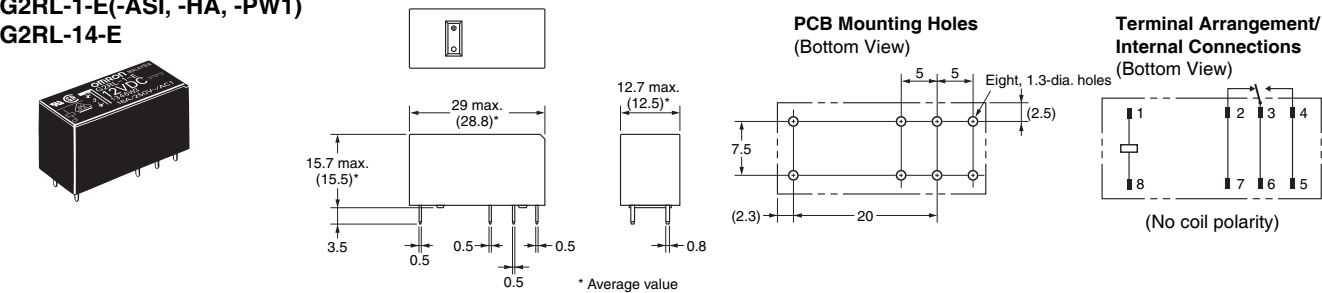
|           |                                                          |                                                           |
|-----------|----------------------------------------------------------|-----------------------------------------------------------|
| G2RL-1-E  | 8 A 250 VAC (cosφ=0.4)<br>8 A 30 VDC (L/R=7 ms)          | 200,000 operation min. (NO)<br>10,000 operation min. (NO) |
| G2RL-1    | 5 A 250 VAC (cosφ=0.4)<br>5 A 30 VDC (L/R=7 ms)          | 150,000 operation min. (NO)<br>10,000 operation min. (NO) |
| G2RL-2    | 8 A 250 VAC (cosφ=1)<br>8 A 30 VDC                       | 30,000 operation min.<br>10,000 operation min.            |
| G2RL-1A-E | Pilot duty (A300), 250 VAC<br>Pilot duty (A300), 125 VAC | 250,000 operation min.<br>150,000 operation min.          |

Note. The results shown reflect values at ambient temperature 23°C. 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 condition.

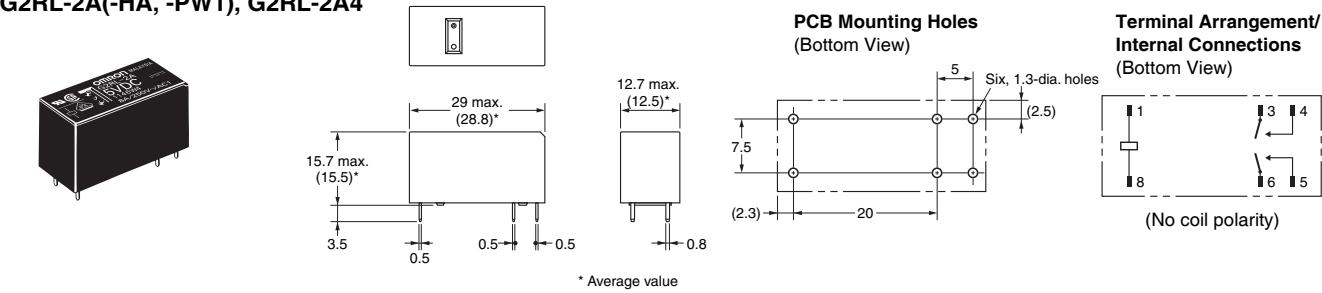
## ■Dimensions (Unit: mm)

G2RL-1A(-PW1), G2RL-1A4,  
G2RL-1A-HPCB Mounting Holes  
(Bottom View)Terminal Arrangement/  
Internal Connections  
(Bottom View)G2RL-1(-PW1), G2RL-14,  
G2RL-1-H, G2RL-1-HAPCB Mounting Holes  
(Bottom View)Terminal Arrangement/  
Internal Connections  
(Bottom View)G2RL-1A-E(-HA, -PW1),  
G2RL-1A4-E, G2RL-1A-E-CV(-HA),  
G2RL-1A-E-ASIPCB Mounting Holes  
(Bottom View)Terminal Arrangement/  
Internal Connections  
(Bottom View)

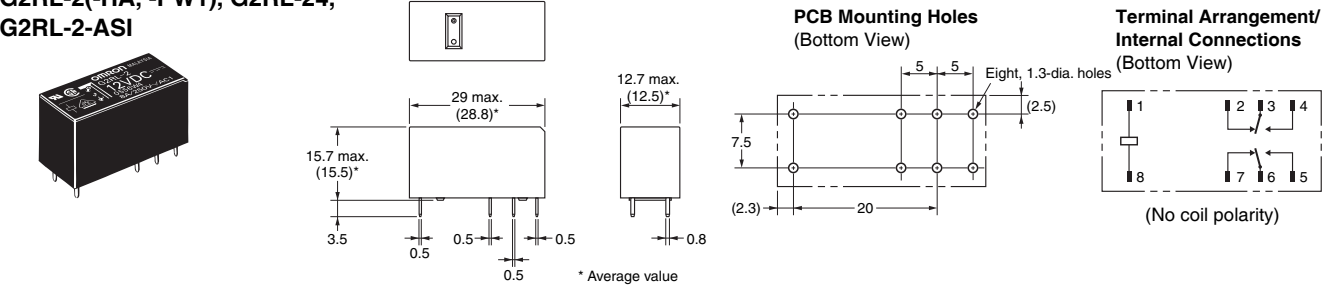
G2RL-1-E(-ASI, -HA, -PW1)  
G2RL-14-E



G2RL-2A(-HA, -PW1), G2RL-2A4



G2RL-2(-HA, -PW1), G2RL-24,  
G2RL-2-ASI



Approved Standards

• The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

UL Recognized:  (File No. 41643)

CSA Certified:  (File No. LR31928)

| Model                | Contact form | Coil ratings | Contact ratings                  | Number of test operations |
|----------------------|--------------|--------------|----------------------------------|---------------------------|
| G2RL-1A(-PW1)        | SPST-NO (1a) | 3 to 48 VDC  | 12 A, 250 VAC (General Use) 40°C | 100,000                   |
| G2RL-1(-HA, -PW1)    | SPDT (1c)    |              | 12 A, 24 VDC (Resistive) 40°C    | 50,000                    |
| G2RL-1A-E(-HA, -PW1) | SPST-NO (1a) | 3 to 48 VDC  | 16 A, 250 VAC (General Use) 40°C | 100,000                   |
| G2RL-1-E(-HA, -PW1)  | SPDT (1c)    |              | 16 A, 24 VDC (Resistive) 40°C    | 50,000                    |
| G2RL-1A-E-ASI        | SPST-NO (1a) | 3 to 48 VDC  | 16 A, 250 VAC (Resistive) 85°C   | 30,000                    |
| G2RL-1-E-ASI         | SPDT (1c)    |              | TV-3 40°C                        | 25,000                    |
| G2RL-1A-E-CV(-HA)    | SPST-NO (1a) | 3 to 48 VDC  | 16 A, 250 VAC (Resistive) 105°C  | 100,000                   |
| G2RL-1A-H            | SPST-NO (1a) | 3 to 48 VDC  | 10 A, 250 VAC (General Use) 40°C | 50,000                    |
| G2RL-1-H             | SPDT (1c)    |              | 10 A, 24 VDC (Resistive) 40°C    |                           |
| G2RL-2A(-HA, -PW1)   | DPST-NO (2a) | 3 to 48 VDC  | 8 A, 277 VAC (General Use) 40°C  | 100,000                   |
| G2RL-2(-HA, -PW1)    | DPDT (2c)    |              | 8 A, 30 VDC (Resistive) 40°C     |                           |
| G2RL-2-ASI           | DPDT (2c)    | 3 to 48 VDC  | 8 A, 250 VAC (Resistive) 85°C    | 15,000                    |
|                      |              |              | 8 A, 30 VDC (Resistive) 85°C     | 15,000                    |

EN/IEC, VDE Certified  (Certificate No. 119650)

| Model                                       | Contact form              | Coil ratings      | Contact ratings                                                                                                                                                                                                    | Number of test operations   |
|---------------------------------------------|---------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| G2RL-1A(-PW1)<br>G2RL-1(-HA, -PW1)          | SPST-NO (1a)<br>SPDT (1c) | 5, 12, 24, 48 VDC | 12 A, 250 VAC (cosφ=1) 85°C<br>12 A, 24 VDC (L/R=0 ms) 85°C<br>AC15: 3 A at 240 VAC at room temperature<br>DC13: 2.5 A at 24 VDC, 50ms at room temperature                                                         | 100,000<br>6,000            |
| G2RL-1A-E(-HA, -PW1)<br>G2RL-1-E(-HA, -PW1) | SPST-NO (1a)<br>SPDT (1c) | 5, 12, 24, 48 VDC | 16 A, 250 VAC (cosφ=1) 85°C<br>16 A, 24 VDC (L/R=0 ms) 85°C<br>AC15: 3 A at 240 VAC (NO) at room temperature,<br>1.5 A at 240V AC (NC) at room temperature<br>DC13: 2.5 A at 24 VDC (NO), 50ms at room temperature | 30,000<br>15,000<br>6,000   |
| G2RL-1A-E-ASI<br>G2RL-1-E-ASI               | SPST-NO (1a)<br>SPDT (1c) | 5, 12, 24, 48 VDC | 16 A, 250 VAC (cosφ=1) 85°C                                                                                                                                                                                        | 30,000                      |
| G2RL-1A-E-CV(-HA)                           | SPST-NO (1a)              | 5, 12, 24, 48 VDC | 16 A, 250 VAC (cosφ=1) 105°C                                                                                                                                                                                       | 100,000                     |
| G2RL-1A-H<br>G2RL-1-H                       | SPST-NO (1a)<br>SPDT (1c) | 5, 12, 24 VDC     | 10 A, 250 VAC (cosφ=1) 85°C<br>10 A, 250 VAC (cosφ=1) 40°C<br>10 A, 24 VDC (L/R=0 ms) 85°C                                                                                                                         | 50,000<br>100,000<br>50,000 |
| G2RL-2A (-HA, -PW1)<br>G2RL-2 (-HA, -PW1)   | DPST-NO (2a)<br>DPDT (2c) | 5, 12, 24, 48 VDC | 8 A, 250 VAC (cosφ=1) 85°C<br>8 A, 30 VDC (L/R=0 ms) 85°C<br>AC15: 1.5 A at 240VAC at room temperature<br>DC13: 2 A at 30 VDC, 50ms at room temperature                                                            | 30,000<br>15,000<br>6,000   |
| G2RL-2-ASI                                  | DPDT (2c)                 | 5, 12, 24, 48 VDC | 8 A, 250V AC (Resistive) 85°C<br>8 A, 30V DC (Resistive) 85°C                                                                                                                                                      | 15,000<br>15,000            |

CQC Certified  (Certificate No. CQC17002171904)

| Model                                             | Contact form              | Coil ratings | Contact ratings                                                                                                                                                                    | Number of test operations            |
|---------------------------------------------------|---------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| G2RL-1A(-PW1)                                     | SPST-NO (1a)              | 5 to 48 VDC  | 12 A, 250 VAC (cosφ=1) at room temperature<br>12 A, 24 VDC (L/R=0 ms) at room temperature                                                                                          | 50,000<br>30,000                     |
| G2RL-1(-HA, -PW1)                                 | SPDT (1c)                 |              | 12 A, 250 VAC (cosφ=1) at room temperature<br>12 A, 24 VDC (L/R=0 ms) at room temperature                                                                                          | 50,000<br>30,000                     |
| G2RL-1A-E(-ASI, -HA, -PW1)<br>G2RL-1A-E-CV(-HA)   | SPST-NO (1a)              | 5 to 48 VDC  | 16 A, 250 VAC (cosφ=1) at room temperature<br>16 A, 24 VDC (L/R=0 ms) at room temperature                                                                                          | 30,000<br>30,000                     |
| G2RL-1-E(-ASI, -HA, -PW1)                         | SPDT (1c)                 |              | 16 A, 250 VAC (cosφ=1) at room temperature<br>16 A, 24 VDC (L/R=0 ms) at room temperature                                                                                          | 30,000<br>30,000                     |
| G2RL-2A (4)(-HA, -PW1)<br>G2RL-2(-ASI, -HA, -PW1) | DPST-NO (2a)<br>DPDT (2c) | 5 to 48 VDC  | 8 A, 250 VAC (cosφ=1) at room temperature<br>8 A, 30 VDC (L/R=0 ms) at room temperature<br>3 A, 250 VAC (cosφ=1) at room temperature<br>3 A, 30 VDC (L/R=0 ms) at room temperature | 30,000<br>30,000<br>30,000<br>30,000 |

|                                                                 |                                                                                        |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Creepage distance                                               | 8 mm min.                                                                              |
| Clearance distance                                              | 8 mm min.                                                                              |
| Insulation material group                                       | IIIa                                                                                   |
| Type of insulation coil-contact circuit<br>open contact circuit | Reinforced<br>Micro disconnection                                                      |
| Rated Insulation voltage                                        | 250 V                                                                                  |
| Pollution degree                                                | 3 (Flux protection / Sealed)                                                           |
| Rated voltage system                                            | 250 V / 400 V (Flux protection)                                                        |
| Over voltage category                                           | III                                                                                    |
| Category of protection according to IEC 61810-1                 | RT II (Flux protection) / RT III (Sealed)                                              |
| Glow wire according to IEC 60335-1                              | <HA Models only><br>GWT 750°C min. (IEC 60695-2-11) / GWFI 850°C min. (IEC 60695-2-12) |
| Tracking Index of relay base                                    | PTI 250 V min. (housing parts)                                                         |

## ■Precautions

- Please refer to “PCB Relays Common Precautions” for correct use.

### Correct Use

#### ● Mounting Position Compared to G2R Model

- Although the G2RL model and the G2R model are both low profile relays, their characteristics such as switching capacity are different. Be sure to check operation under the actual operating conditions before use.

#### ● Cleaning

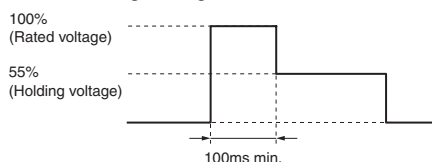
- The G2RL model is flux-resistant with two sealing holes on the case. Thus, do not clean the relay by boiling or soaking in water. Consult your Omron sales representative for sealed type relay.

#### ● Using Relays in an Atmosphere Containing Corrosive Gas

- Do not use relays in an atmosphere containing corrosive gas (sulfuric or organic gas). Otherwise, connection failure due to corrosion on the contact surface may lead to functional faults.

#### ● Coil Voltage Reduction (Holding Voltage) after Relay Operation

- If the coil voltage is reduced to the holding voltage after relay operation, first apply the rated voltage to the coil for at least 100 ms, as shown below.
- A voltage of at least 55% of the rated voltage is required for the coil holding voltage. Do not allow voltage fluctuations to cause the coil holding voltage to fall below this level.



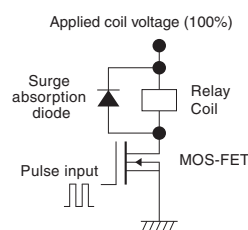
|                 | Applied coil voltage | Coil resistance*               | Power consumption |
|-----------------|----------------------|--------------------------------|-------------------|
| Rated voltage   | 100%                 | 62.5Ω (5 VDC)<br>360Ω (12 VDC) | Approx. 400 mW    |
| Holding voltage | 55%                  | 1,440Ω (24 VDC)                | Approx. 120 mW    |

\* The coil resistance were measured at a coil temperature of 23°C with tolerances of ± 10%.

#### ● Power consumption reduction of coil with pulse width modulation (PWM)

- Models with PWM drive capability (-PW1) can reduce coil holding current with PWM control. This function reduces power consumption by reducing the current held by coil.
- Apply the rated voltage for at least 100 ms at the time of relay operation.
- The following are our verification conditions. When using, it be sure to check the actual machine under the actual usage conditions.

#### ■ Example of drive circuit



#### ■ Conditions of validation carried out by OMRON

- Applied voltage: rated voltage
- Duty: 60% or more
- Frequency: 10 kHz or more
- Diode Vf: 0.4 V or less

Please check each region's Terms & Conditions by region website.

## OMRON Corporation

Electronic and Mechanical Components Company

### Regional Contact

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