

## Low Profile Power Relay with 15.7 mm height, ideal for incorporation in miniature equipments

- A wide variety of single pole, double pole, high-capacity (16 A) type and high-sensitivity type (250 mW) Relays are available.
- Low profile; 15.7 mm max. in height.
- Conforms to VDE (EN61810-1), UL508 and CSA22.2.
- IEC/EN 60335-1 conformed. (-HA Model)
- Satisfies ambient operating temperature requirement of 85°C and 105°C (-CV Model).
- Clearance and creepage distance: 8 mm / 8 mm min.
- Coil insulation system: Class F (UL1446).
- G2RL-1A-E-ASI: TV3 Rating models available.

RoHS Compliant

### Model Number Legend

G2RL-□□□-□-□-□-□  
1 2 3 4 5 6 7

#### 1. Number of poles

- 1 : 1 pole
- 2 : 2 pole

#### 2. Contact Form

- None : SPDT (1c)
- A : SPST-NO (1a)

#### 3. Enclosure rating

- None : Flux protection
- 4 : Sealed

#### 4. Classification

- None : Standard
- E : High-capacity
- H : High-sensitivity

#### 5. Special Requirement

- None : Standard
- CV : 16 A, pinning 5 mm,; switching at 105 C

#### 6. Market Code

- None : General purpose
- HA : Home Appliance according to IEC/EN60335-1

#### 7. Contact material

- None : Standard (Ag-alloy, Cd free)
- ASI : AgSnIn

### Application Examples

- Home appliances
- OA equipments
- Industrial machinery

### 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 VDC<br>12 VDC<br>24 VDC<br>48 VDC | 20 pcs/tube          |                  |
|                |                 |                |                  | Sealed           | G2RL-1A4        |                                     |                      |                  |
|                |                 |                | SPDT (1c)        | Flux protection  | G2RL-1          |                                     |                      |                  |
|                |                 |                |                  | Sealed           | G2RL-14         |                                     |                      |                  |
|                |                 |                | DPST-NO (2a)     | Flux protection  | G2RL-2A         |                                     |                      |                  |
|                |                 |                |                  | Sealed           | G2RL-2A4        |                                     |                      |                  |
|                |                 |                | DPDT (2c)        | Flux protection  | G2RL-2          |                                     |                      |                  |
|                |                 |                |                  | Sealed           | G2RL-24         |                                     |                      |                  |
|                |                 | High-capacity  | SPST-NO (1a)     | Flux protection  | G2RL-1A-E       |                                     |                      |                  |
|                |                 |                |                  | Sealed           | G2RL-1A-E-ASI   |                                     |                      |                  |
|                |                 |                | SPDT (1c)        | Flux protection  | G2RL-1-E        |                                     |                      |                  |
|                |                 |                |                  | Sealed           | G2RL-14-E       |                                     |                      |                  |
|                |                 |                | High-sensitivity | SPST-NO (1a)     | Flux protection | G2RL-1A-E-CV                        |                      | 12 VDC<br>24 VDC |
|                |                 |                |                  |                  |                 | G2RL-1A-H                           |                      |                  |
|                | SPDT (1c)       | G2RL-1-H       |                  |                  |                 |                                     |                      |                  |
|                |                 | G2RL-1-H       |                  |                  |                 |                                     |                      |                  |
|                | Home Appliance  | Standard       | DPST-NO (2a)     | G2RL-2A-HA       |                 |                                     |                      |                  |
| DPDT (2c)      |                 |                | G2RL-2-HA        |                  |                 |                                     |                      |                  |
| High-capacity  |                 | SPST-NO (1a)   | G2RL-1A-E-HA     |                  |                 |                                     |                      |                  |
|                |                 | SPDT (1c)      | 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         | 5 VDC         | 80.0                  | 62.5                   | 70% max.                    | 10% min.                    | 130%<br>(at 85°C)   | Approx. 400               |
|                  | 12 VDC        | 33.3                  | 360                    |                             |                             |                     |                           |
|                  | 24 VDC        | 16.7                  | 1,440                  |                             |                             |                     | Approx. 430               |
|                  | 48 VDC        | 8.96                  | 5,358                  |                             |                             |                     |                           |
| High-sensitivity | 12 VDC        | 20.8                  | 576                    | 75% max.                    |                             |                     | Approx. 250               |
|                  | 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.

●Contacts

| Classification                               |       | Standard type (resistive load)               |        |                                            |        | High-capacity type (resistive load)          |          | High-sensitivity type (resistive load) |          |
|----------------------------------------------|-------|----------------------------------------------|--------|--------------------------------------------|--------|----------------------------------------------|----------|----------------------------------------|----------|
| Item                                         | Model | G2RL-1A                                      | G2RL-1 | G2RL-2A                                    | G2RL-2 | G2RL-1A-E (-CV, -ASI)                        | G2RL-1-E | G2RL-1A-H                              | G2RL-1-H |
| 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) |          | 10 A at 250 VAC (See note)             |          |
| Rated carry current                          |       | 12 A (See note)                              |        | 8 A (70°C)/5 A (85°C)<br>(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                                   |          |
| Failure rate (P level)<br>(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

| 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 (set) time            |                                        | 15 ms max.                                                                            |                                                                                     |                                                                                                                                                                        |                                                    |
| Release (reset) 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>                  |                                                                                     |                                                                                                                                                                        |                                                    |
| Durability                    | Mechanical                             | 20,000,000 operations (at 18,000 operations/hr)                                       |                                                                                     |                                                                                                                                                                        |                                                    |
|                               | Electrical *3 (resistive load)         | G2RL-1(A):<br>50,000 operations at 250 VAC, 12 A<br>30,000 operations at 24 VDC, 12 A | G2RL-2(A):<br>30,000 operations at 250 VAC, 8 A<br>30,000 operations at 30 VDC, 8 A | G2RL-1(A)-E, G2RL-1A-E-ASI:<br>30,000 operations at 250 VAC, 16 A<br>30,000 operations at 24 VDC, 16 A<br>G2RL-1A-E-CV:<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)                                         |                                                                                     |                                                                                                                                                                        |                                                    |
| Ambient operating humidity    |                                        | -40°C to 105°C (with no icing or condensation) by G2RL-1A-E-CV                        |                                                                                     |                                                                                                                                                                        |                                                    |
|                               |                                        | 5% to 85% (with no icing or condensation)                                             |                                                                                     |                                                                                                                                                                        |                                                    |
| Weight                        |                                        | Approx. 12 g                                                                          |                                                                                     |                                                                                                                                                                        |                                                    |

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

\*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.