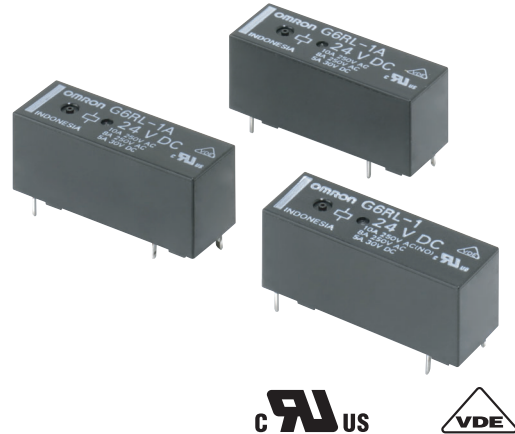


### Low-profile power relay with maximum switching of 10 A

- Low profile: 12.3 mm in height
- Max. switching capacity: 2,500 VA (NO)
- Dielectric strength: 5 kV
- Clearance and creepage distance: 10 mm.

RoHS Compliant



### Applications:

Boilers, PLCs, I/O ports, timers, and temperature controllers

## Ordering Information

Classification	Enclosure rating	Contact form	Model
Standard	Flux protection	SPST-NO	G6RL-1A
		SPDT	G6RL-1

**Note:** When ordering, add the rated coil voltage to the model number.

Examples: G6RL-1A 12 VDC  
└─ Rated coil voltage

### Model Number Legend:

G6RL-   VDC  
1 2 3

#### 1. Number of Poles

1: 1 pole

#### 2. Contact Form/Contact Construction

None: SPDT

A: SPST-NO

#### 3. Rated Coil Voltage

3, 5, 6, 12, 24, 48 VDC

## Specifications

### Coil Ratings

Rated voltage	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC	48 VDC
Rated current	73.3 mA	44.0 mA	36.7 mA	18.3 mA	9.2 mA	5.0 mA
Coil resistance	40.9 Ω	113.6 Ω	163.6 Ω	654.5 Ω	2,618 Ω	9,600 Ω
Must operate voltage	70% max. of rated voltage					
Must release voltage	10% min. of rated voltage					
Max. voltage	150% of rated voltage					
Power consumption	Approx. 220 mW					Approx. 240 mW

**Note:** 1. The above items are measured at a coil temperature of 23°C.  
 2. The tolerance of the rated current is ±10%.

## ■ Contact Ratings

<b>Load</b>	Resistive load ( $\cos \phi = 1$ )
<b>Rated load</b>	8 A at 250 VAC, resistive load 5 A at 24 VDC, resistive load
<b>Rated carry current</b>	10 A at 250 VAC 5 A at 30 VDC
<b>Max. switching voltage</b>	400 VAC, 300 VDC
<b>Max. switching current</b>	NO: 10 A, NC: 8 A
<b>Max. switching power</b>	NO: 2,500 VA, NC: 2,000 VA 150 W
<b>Failure rate (reference value)</b>	10 mA at 5 VDC (P Level)

Note: P level:  $\lambda_{60} = 0.1 \times 10^{-6}$  / operations

## ■ Characteristics

<b>Contact resistance</b>	100 m $\Omega$ max.
<b>Operate time</b>	10 ms max.
<b>Release time</b>	5 ms max.
<b>Insulation resistance</b>	1,000 M $\Omega$ min. (at 500 VDC)
<b>Dielectric strength</b>	5,000 VAC, 50/60 Hz for 1 min between coil and contacts 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity
<b>Impulse withstand voltage</b>	10 kV between coil and contacts ( $1.2 \times 50 \mu\text{s}$ )
<b>Vibration resistance</b>	Destruction: 10 to 55 to 10 Hz, 1.5-mm double amplitude Malfunction: 10 to 55 to 10 Hz, 0.825-mm single amplitude (1.65-mm double amplitude) when energized. 10 to 55 to 10 Hz, 0.4-mm single amplitude (0.8-mm double amplitude) when not energized.
<b>Shock resistance</b>	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 200 m/s <sup>2</sup> NO, 50 m/s <sup>2</sup> NC when not energized
<b>Endurance (Mechanical)</b>	10,000,000 operations min. (at 18,000 operations/h)
<b>Ambient temperature</b>	Operating: -40°C to 85°C (with no icing)
<b>Ambient humidity</b>	Operating: 5% to 85%
<b>Weight</b>	Approx. 7.8 g

## ■ Other data

<b>Insulation material group</b>	IIIa	
<b>Rated insulation voltage</b>	250 V	
<b>Pollution degree</b>	3	2
<b>Rated voltage system</b>	250 V	400 V
<b>Over-voltage category</b>	III	
<b>Contact material</b>	AgNi	
<b>Creepage distance</b>	10 mm	
<b>Clearance distance</b>	10 mm	
<b>RoHS</b>	Compliant	
<b>Tracking index of relay base</b>	PTI 250	
<b>Flammability class according to UL94</b>	V-0	
<b>Flammability-flame</b>		
<b>GWFI (IEC 60695-2-12)</b>	850°C	
<b>GWIT (IEC 60695-2-13)</b>	750°C	
<b>Ball pressure test (IEC 60695-10-2)</b>	170°C	

## ■ Approved Standards

### UL 508 (File No. E41643)

Model	Contact form	Coil rating	Contact rating	
G6RL-1A	SPST-NO	3 to 48 VDC	10 A at 250 VAC (NO)	6,000 operations
			8 A at 250 VAC 5 A at 30 VDC	
G6RL-1	SPDT			

### VDE (EN61810-1) (Reg. No. C266)

Model	Contact form	Coil rating	Contact rating	
G6RL-1A	SPST-NO	3, 5, 6, 12, 24, or 48 VDC	10 A at 250 VAC (NO)	10,000 operations at 85°C
G6RL-1	SPDT		8 A at 250 VAC	30,000 operations at 85°C
			5 A at 30 VDC	50,000 operations at 85°C

### VDE (60947-5-1) (Reg. No. C266)

Type	Contact rating	
	Utilization category	Rated voltage
G6RL-1(-1A)	AC-15	240 VAC
	DC-13	125 VDC

## Electrical Endurance Data

G6RL-1(A)	8 A at 250 VAC ( $\cos\phi = 1$ ) N.O.	50,000 operations min.
	8 A at 250 VAC ( $\cos\phi = 1$ ) N.C.	50,000 operations min.
	5 A at 24 VDC C.O.	50,000 operations min.
	5 A at 24 VDC N.O.	50,000 operations min.

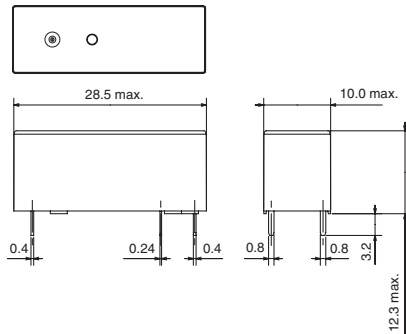
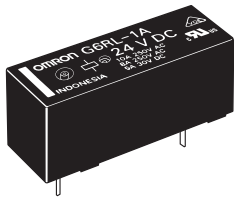
**Note:** The results shown reflect values measured using very severe test conditions, i.e., Duty: 3 s ON/OFF for AC loads and 1 s ON/OFF for DC loads.

Electrical endurance depends on the test conditions. Consult your OMRON representative for more detailed information on the electrical endurance under your test conditions.

# Dimensions

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

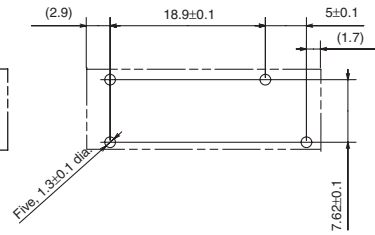
## G6RL-1A



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

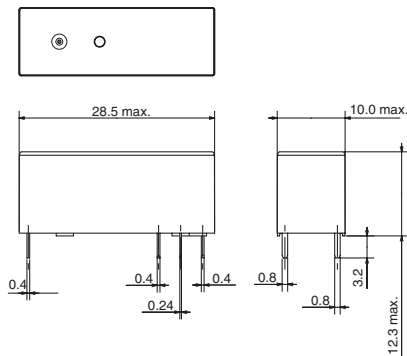
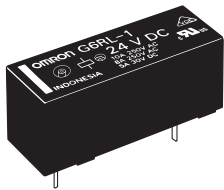


**Mounting Holes  
(Bottom View)**



**Note:** Indicates average dimensions.

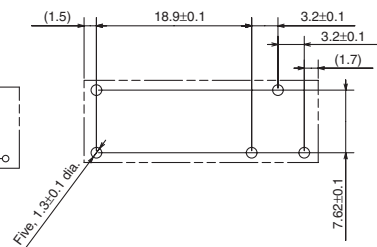
## G6RL-1



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



**Mounting Holes  
(Bottom View)**



**Note:** Indicates average dimensions.

# 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.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. K133-E1-01 **In the interest of product improvement, specifications are subject to change without notice.**

## OMRON RELAY & DEVICES Corporation

Power Relay Division  
Marketing Department

1110, Sugi, Yamaga-city, Kumamoto-Pref., 861-0596 Japan  
Tel: (81)968-44-4160/Fax: (81)968-44-4107

Printed in Japan  
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