

## A Cubic, Single-pole 10-A Power Relay

- ROHS compliant.
- Subminiature 'sugar cube' relay with universal terminal footprint.
- Conforms to EN 61810-1, UL508, CSA22.2.
- High switching power: 10 A. 250 VAC
- Two types of seal available; flux protection and fully sealed.
- Withstands impulse of up to 4,500 V.
- Coil power consumption: 360 mW
- Tracking resistance: CTI >250



## Ordering Information

Enclosure ratings	Contact form	Model
Flux protection	SPDT	G5LC-1-EU
	SPST-NO	G5LC-1A-EU
Fully sealed	SPDT	G5LC-14-EU
	SPST-NO	G5LC-1A4-EU

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

Example: G5LC-1-EU 12 VDC  
 Rated coil voltage

### Model Number Legend

G5LC -       - EU   VDC  
1   2   3   4

#### 1. Number of Poles

1: 1 pole

#### 2. Contact Form

None: SPDT

A: SPST-NO

#### 3. Enclosure Ratings

None: Flux protection

4: Fully sealed

#### 4. Rated Coil Voltage

5, 12, 24 VDC

## Coil Ratings

<b>Rated voltage</b>	5 VDC	12 VDC	24 VDC
<b>Rated current</b>	71.5mA	30 mA	15.1 mA
<b>Coil resistance</b>	69.9 Ω	390 Ω	1.585 Ω
<b>Must operate voltage</b>	75% max. of rated voltage		
<b>Must release voltage</b>	10% min. of rated voltage		
<b>Max. voltage</b>	110% of rated voltage at 85°C		
<b>Power consumption</b>	Approx. 360 mW		

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

## ■ Contact Ratings

Load	Resistive load ( $\cos\phi = 1$ )
Rated Load	10 A at 250 VAC (NO), 12 A at 120 VAC (NO), 5 A at 120 VAC (NO/NC) 10 A at 24 VDC (NO), 5 A at 24 VDC (NO/NC)
Contact material	AgSnO <sub>2</sub>
Rated Carry Current	12 A
Max. switching voltage	250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied)
Max. switching current	AC: 12 A; DC: 12 A
Max. switching power	1,200 VA, 240 W
Failure rate (reference value)	100 mA at 5 VDC (P level: $\lambda_{60} = 0.1 \times 10^{-6}$ operation)

## ■ Characteristics

Contact resistance		100 mΩ max.
Operate time		10 ms max.
Release time		5 ms max.
Insulation resistance		1,000 MΩ min. (at 500 VDC)
Dielectric strength		2,000 VAC, 50/60 Hz for 1 min between coil and contacts 750 VAC, 50/60 Hz for 1 min between contacts of same polarity
Insulation Distance	Creepage (Typ)	3.3 mm
	Clearance (Typ)	2.7 mm
Tracking Resistance (CTI)		250 V
Impulse withstand voltage		4,500 V (1.2 x 50 ms) between coil and contacts
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/s² Malfunction: 100 m/s²
Endurance		Mechanical: 10,000,000 operations min. (at 36,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr)
Ambient temperature		Operating: -25°C to 85°C (with no icing)
Ambient humidity		Operating: 5% to 85%
Weight		Approx. 12 g

## ■ Approved Standards

UL508, UL873 (File No. E41643)/CSA C22.2 No. 14, No. 0 (File No. LR31928)

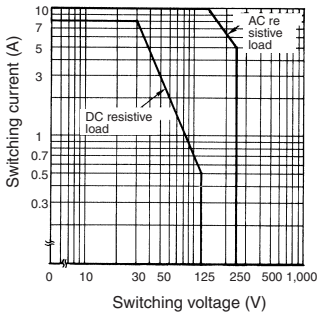
Model	Coil ratings	Contact ratings
G5LC-EU	5 to 24 VDC	NO: 10 A, 250 VAC (general use) 10 A, 24 VDC (resistive load) 1/8 hp, 120 VAC (50,000 cycles) 12 A, 120 VAC (resistive load) NC: 1/8 hp, 120 VAC (50,000 cycles)

## EN 61810-1 (VDE Reg. no 40002435)

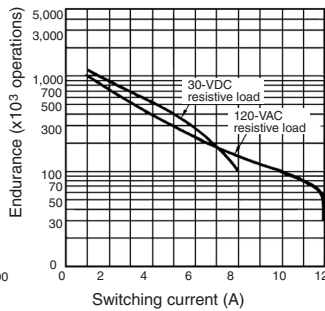
Model	Coil ratings	Contact ratings
G5LC-EU	Approx. 360 mW 5, 12, 24 VDC	5 A, 250 VAC (NC) 10 A, 250 VAC (NO)

## Engineering Data

**Maximum Switching Power  
G5LC**

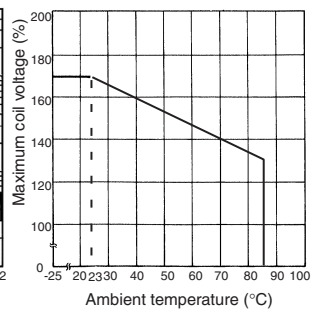


**Endurance  
G5LC**



**Note:** Same curve as for 250-VAC resistive load


**Ambient Temperature vs.  
Maximum Coil Voltage**



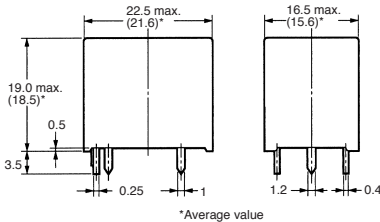
**Note:** The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

## Dimensions

**Note:** 1. All units are in millimeters unless otherwise indicated.

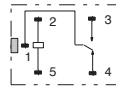
2. Orientation marks are indicated as follows:  

**G5LC-EU**



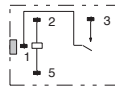
**Terminal  
Arrangement/Internal  
Connections (Bottom View)**

**SPDT**



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

**SPST-NO**

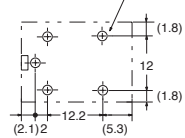


**Mounting Holes  
(Bottom View)**

Tolerance:  $\pm 0.1$  mm unless specified

**SPDT**

Five,  $1.3^{+0.2}_{-0.2}$  dia. holes

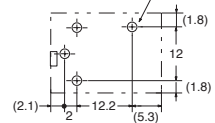


**Mounting Holes  
(Bottom View)**

Tolerance:  $\pm 0.1$  mm unless specified

**SPST-NO**

Four,  $1.3^{+0.2}_{-0.2}$  dia. holes



### Precautions

#### Basic Information

Before actually committing any component to a mass-production situation, OMRON strongly recommends situational testing, in as close to actual production situations as possible. One reason is to confirm that the product will still perform as expected after surviving the many handling and mounting processes involved in mass production. Also, even though OMRON relays are individually tested a number of times, and each meets strict requirements, a certain testing tolerance is permissible. When a high-precision product uses many components, each depends upon the rated performance thresholds of the other components. Thus, the overall performance tolerance may accumulate into undesirable levels. To avoid problems, always conduct tests under the actual application conditions.

#### General

To maintain the initial characteristics of a relay, exercise care that it is not dropped or mishandled. For the same reason, do not remove the case of the relay; otherwise, the characteristics may degrade. Avoid using the relay in an atmosphere containing sulfuric acid (SO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S), or other corrosive gases. Do not continuously apply a voltage higher than the rated maximum voltage to the relay. Never try to operate the relay at a voltage and a current other than those rated.

Do not use the relay at temperatures higher than that specified in the catalog or data sheet.