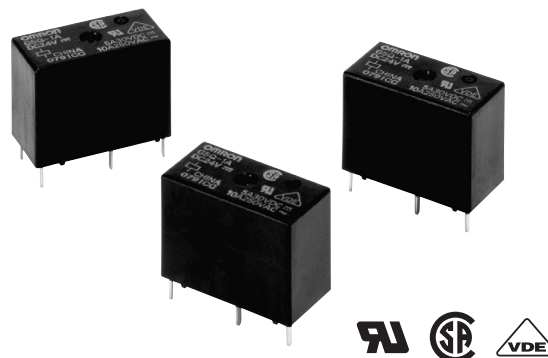


# PCB Relay G5Q

## Compact, High Isolation Relay

- Compact single pole relay with high isolation between coil and contacts.
- Ensures a withstand impulse voltage of 8,000V between the coil and contacts.
- Low coil power consumption.
- UL class F coil insulation.
- UL recognized / CSA certified. EN approved.
- Ideal for appliance and HVAC controls
- RoHS Compliant



## Ordering Information

To Order: Select the part number and add the desired coil voltage and rating. (e.g., G5Q-14 DC12)

Classification		Enclosure rating	Model
Single contact, class F coil insulation	SPST-NO	Vented	G5Q-1A
		Sealed	G5Q-1A4
	SPDT	Vented	G5Q-1
		Sealed	G5Q-14

**Note:** Add “-EU” before the coil voltage to obtain versions with CTI > 250. (e.g., G5Q-1A4-EU DC12)  
Specifications for “EU” type differ from standard models. Contact Omron for more details

## Specifications

### ■ Coil Ratings

Rated voltage (V)		Rated coil current (mA)	Coil resistance (Ω)	Pick-up voltage	Drop-out voltage	Maximum voltage	Power consumption (mW)
				Percent of rated voltage			
SPDT	DC 5	80	63	75% max	5% min	190% @ 23°C	400
	DC 9	44.4	202				
	DC 12	33.3	360				
	DC 24	16.7	1440				
SPST-NO	DC 5	40	125	75% max	5% min	190% @ 23°C	200
	DC 9	22.2	405				
	DC 12	16.7	720				
	DC 24	8.3	2880				

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

## ■ Contact Ratings

Item	SPDT	SPST-NO
Rated load (resistive)	10 A at 125 VAC (NO) 3 A at 250 VAC (NO) 5 A at 30 VDC (NO) 3 A at 125 VAC (NC) 3 A at 30 VDC (NC)	10 A at 125 VAC 3 A at 250 VAC 5 A at 30 VDC
Contact material	Ag alloy	
Rated carry current	10 A (NO)/3 A (NC)	
Max. switching voltage	277 VAC, 30 VDC	
Max. switching current	AC: 10 A (NO)/3 A (NC) DC: 5 A (NO)/3 A (NC)	
Max. switching capacity	1250 VA, 150 W (NO) 375 VA, 90 W (NC)	
Min. permissible load	10 mA at 5 VDC (P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation)	

## ■ Characteristics

Contact resistance (See note 2.)	100 mΩ max.	
Operate time	10 ms max.	
Release time	5 ms max.	
Insulation resistance (See note 3.)	1,000 mΩ min.	
Dielectric strength	4,000 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	
Impulse withstand voltage	8 kV (1.2 × 50 μs) between coil and contacts	
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 1.5-mm double amplitude Malfunction: 10 to 55 to 10 Hz, 1.5-mm double amplitude	
Shock resistance	Destruction: 1000 m/s <sup>2</sup> (approx. 100G) Malfunction: 100 m/s <sup>2</sup> (approx. 10G)	
Life expectancy (See Note 4)	Mechanical	10,000,000 operations (18,000 operations per hour)
	Electrical	200,000 operations: 3 A (NO)/3 A (NC) at 125 VAC, resistive load 100,000 operations: 3 A (NO)/3 A (NC) at 250 VAC, 5 A (NO)/3 A (NC) at 30 VDC, resistive load 50,000 operations: 10 A at 125 VAC (900 operations per hour)
Ambient temperature	Operating & storage	-40°C to 105°C (-40°F to 221°F) with no icing or condensation
Ambient humidity	Operating & storage	5% to 85%

Note: 1. The data shown above are initial values.

2. The contact resistance is measured with 1 A applied at 5 VDC using a fall-of-potential method.

3. The insulation resistance is measured between coil and contacts and between contacts of the same polarity at 500 VDC.

4. The electrical life data items shown are possible at 23°C

## ■ Approved Standard

UL Recognized (File No. E41515) / CSA Certified (File No. LR31928) - - Ambient Temp = 40°C

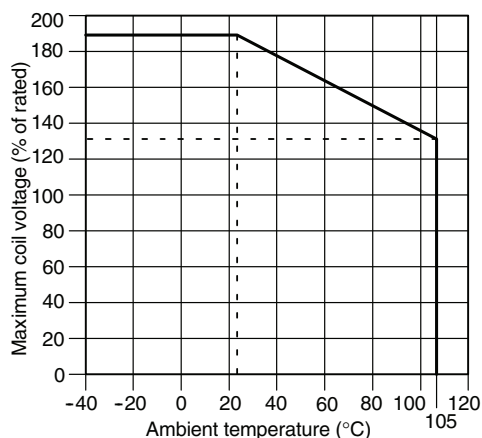
Model	Coil ratings	Contact ratings	
		NO contacts	NC contacts
G5Q	5 to 24 VDC	10 A at 250 VAC (Resistive), 6,000 ops 10 A at 30 VDC (Resistive), 6,000 ops 4 A at 120VAC (Resistive), 10,000 ops.	3 A at 250 VAC (Resistive), 6,000 ops. 3 A at 30 VDC (Resistive), 6,000 ops.

EN 61810-1 (VDE Reg. No. 125314)

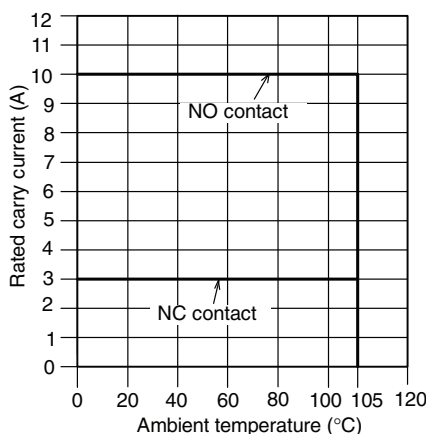
Model	Coil ratings	Contact ratings
G5Q	5, 9, 12, 24 VDC	10 A, 250 VAC $\cos\phi=1$ (NO) 5 A, 30 VDC L/R=0 ms (NO) 3 A, 30 VDC L/R=0 ms (NC)

## Engineering Data

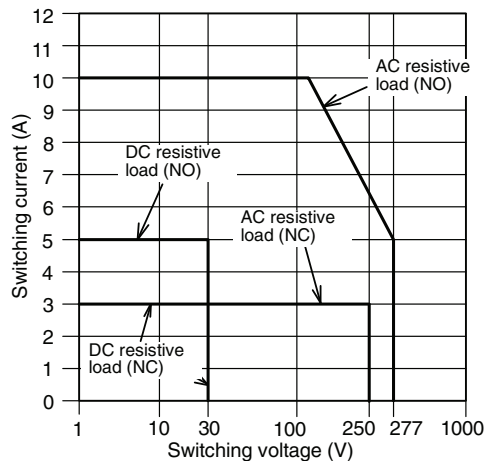
### ■ AMBIENT TEMPERATURE VS. MAXIMUM VOLTAGE



### ■ AMBIENT TEMPERATURE VS. RATED CARRY CURRENT



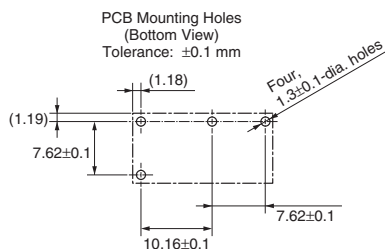
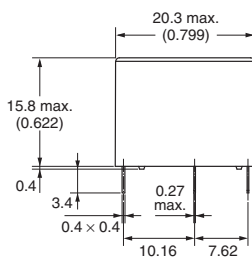
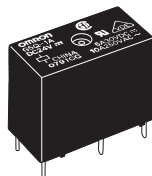
### ■ MAX. SWITCHING CAPACITY



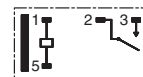
# Dimensions

Note: All units are in millimeters unless otherwise indicated.

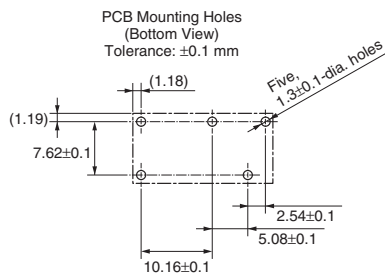
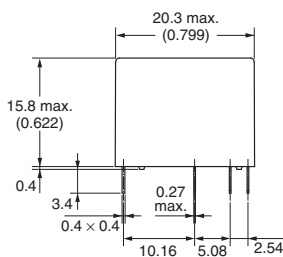
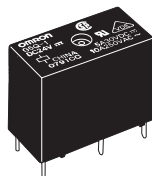
## G5Q-1A G5Q-1A4



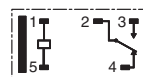
Terminal Arrangement/  
Internal Connections  
(Bottom View)



## G5Q-1 G5Q-14



Terminal Arrangement/  
Internal Connections  
(Bottom View)



# Omron Electronic Components, LLC

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- Definitions:** The words used herein are defined as follows.
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  - Including:** Including without limitation
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  - Delivery and shipping dates are estimates only; and
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  - (iii) Use in consumer products or any use in significant quantities.
  - (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this product.

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**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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

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**OMRON ELECTRONIC  
COMPONENTS LLC**

55 E. Commerce Drive, Suite B  
Schaumburg, IL 60173

**847-882-2288**

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