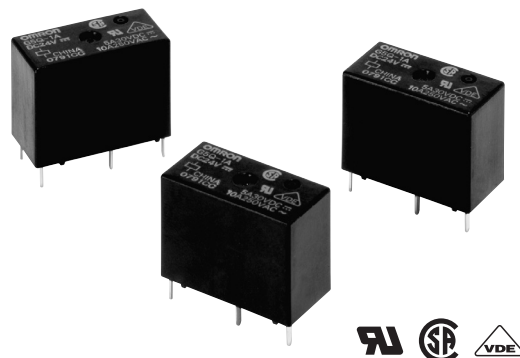


# PCB Relay G5Q

## 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	Flux protection	G5Q-1A
		Fully-sealed	G5Q-1A4
	SPDT	Flux protection	G5Q-1
		Fully-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:**
1. Rated current and coil resistance are measured at 23°C with a tolerance of ±10%.
  2. The operating characteristics are measured at a coil temperature of 23°C.
  3. The “Maximum voltage” is the maximum voltage that can be applied to the relay coil.

## ■ Contact Ratings

Item	SPDT	SPST-NO
Rated load (resistive)	10 A at 125 VAC (NO) 3 A at 250 VAC (NO) 3 A at 125 VAC (NO) 5 A at 30 VDC (NO) 3 A at 250 VAC (NC) 3 A at 125 VAC (NC) 3 A at 30 VDC (NC)	10 A at 125 VAC 3 A at 250 VAC 3 A at 125 VAC 5 A at 30 VDC
Contact type	Single	
Contact material	Ag alloy (Cd free)	
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) 750 VA, 90 W (NC)	
Min. permissible load (120 operations/minute)	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, 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: 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	NO 50,000 operations: 10 A at 125 VAC resistive load (operations: ON for 1 sec, OFF for 3 sec.) 200,000 operations: 3 A at 125 VAC resistive load (operations: ON for 1 sec, OFF for 1 sec.) 100,000 operations: 3 A at 250 VAC resistive load (operations: ON for 1 sec, OFF for 1 sec.) 100,000 operations: 5 A at 30 VDC resistive load (operations: ON for 1 sec, OFF for 1 sec.)  NC 200,000 operations: 3 A at 125 VAC resistive load (operations: ON for 1 sec, OFF for 1 sec.) 100,000 operations: 3 A at 250 VAC resistive load (operations: ON for 1 sec, OFF for 1 sec.) 100,000 operations: 3 A at 30 VDC resistive load (operations: ON for 1 sec, OFF for 1 sec.)
Ambient temperature	Operating & storage	-40°C to 105°C with no icing or condensation
Ambient humidity	Operating & storage	5% to 85%
Weight	Approx. 6.5 g	

**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 was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.

**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

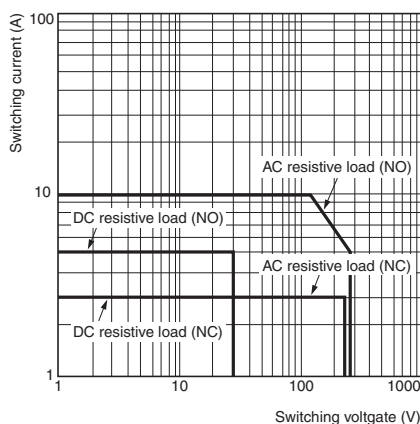
Model	Contact Form	Coil ratings	Contact ratings	Number of test operations
G5Q	SPST-NO (1a) SPDT (1c)	5 to 48 VDC	10 A 250 VAC N.O. only (resistive)	6,000
			10 A 30 VDC N.O. only (resistive)	
			4 A 120 VAC N.O. only (resistive)	100,000
			3 A 250 VAC N.C. only (resistive)	6,000
3 A 30 VDC N.O. only (resistive)				

EC/IEC, VDE (Certified / No.40003467) - - Ambient Temp = 105°C

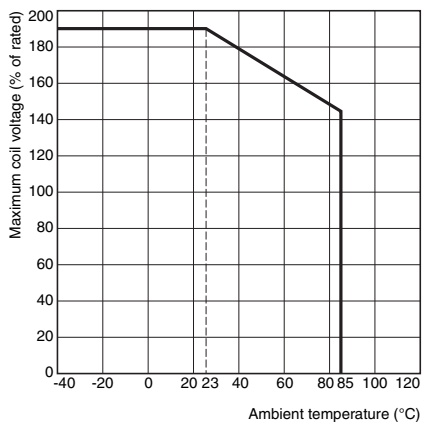
Model	Contact Form	Coil ratings	Contact ratings	Number of test operations
G5Q	SPST-NO (1a) SPDT (1c)	5, 9, 12, 24 VDC	10 A 250 VAC (cosφ=1)(N.O.) 5 A 30 VDC (0 ms)(N.O.) 3 A 30 VDC (0 ms)(N.C.)	10,000

## Engineering Data

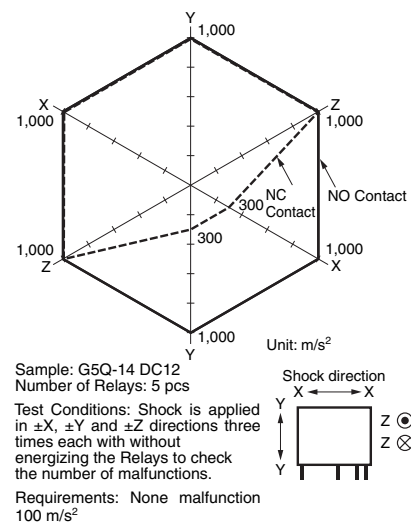
Maximum Switching Capacity



Ambient Temperature vs Maximum Coil Voltage



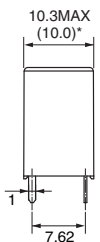
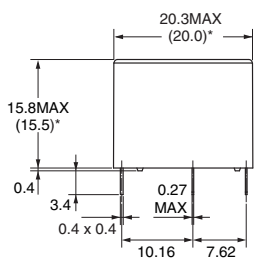
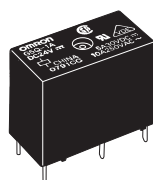
Shock Malfunction



# Dimensions

Note: All units are in millimeters unless otherwise indicated.

## G5Q-1A G5Q-1A4

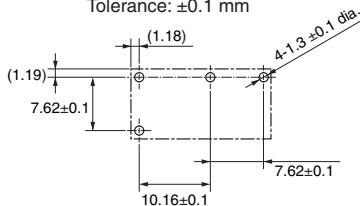


\* Average value

### PCB Mounting Holes

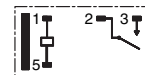
(Bottom View)

Tolerance:  $\pm 0.1$  mm



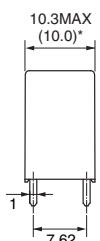
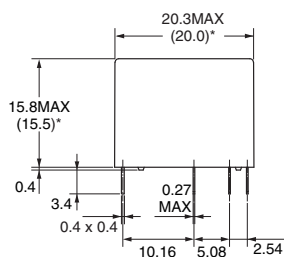
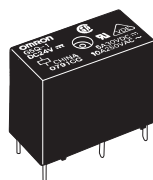
### Terminal Arrangement/ Internal Connections

(Bottom View)



(No coil polarity)

## G5Q-1 G5Q-14

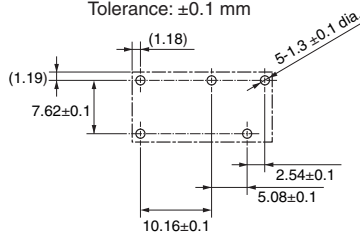


\* Average value

### PCB Mounting Holes

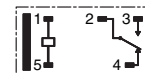
(Bottom View)

Tolerance:  $\pm 0.1$  mm



### Terminal Arrangement/ Internal Connections

(Bottom View)



(No coil polarity)

# Precautions

Be sure to read the precautions and information common to all Electromechanical Relays, contained in the Technical User's Guide, "Electromechanical Relays, Technical Information" for correct use.



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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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Specifications subject to change without notice

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