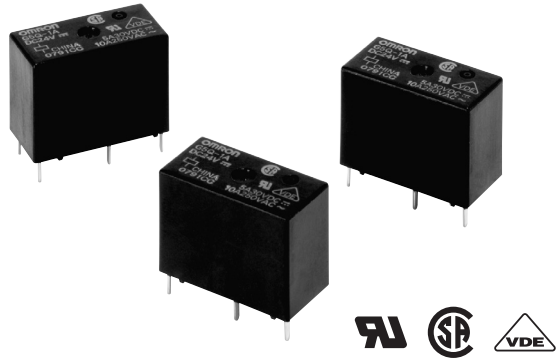
PCB Relay
G5Q

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				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 an 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^2 (approx. 100G) Malfunction: 100 m/s^2 (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

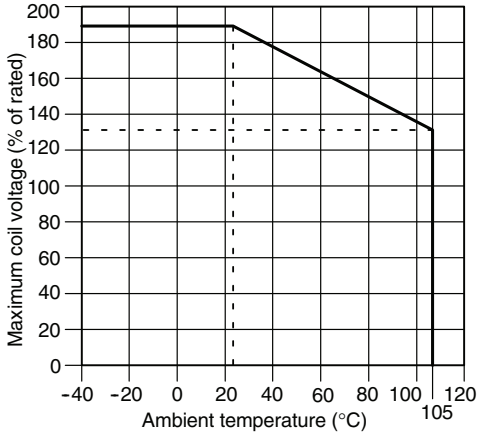
Model	Coil ratings	Contact ratings	
		NO contacts	NC contacts
G5Q	5 to 24 VDC	10 A at 250 VAC (Resistive), 6,000 ops 10 A at 30 VDC (Resistive), 6,000 ops 4 A at 120VAC (Resistive), 10,000 ops.	3 A at 250 VAC (Resistive), 6,000 ops. 3 A at 30 VDC (Resistive), 6,000 ops.

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

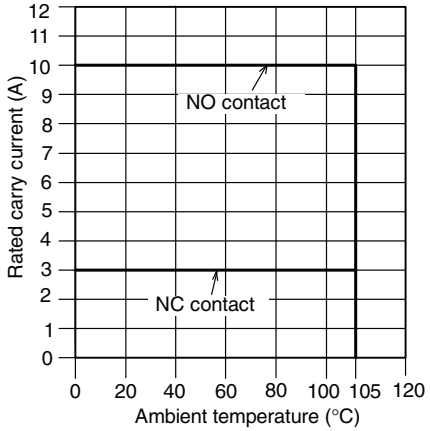
Model	Coil ratings	Contact ratings
G5Q	5, 9, 12, 24 VDC	10 A, 250 VAC cosϕ=1 (NO) 5 A, 30 VDC L/R=0 ms (NO) 3 A, 30 VDC L/R=0 ms (NC)

Engineering Data

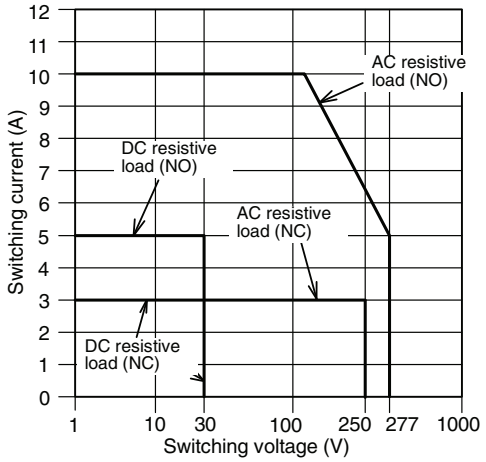
■ AMBIENT TEMPERATURE VS. MAXIMUM VOLTAGE



■ AMBIENT TEMPERATURE VS. RATED CARRY CURRENT



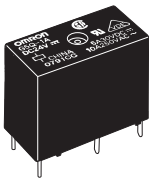
■ MAX. SWITCHING CAPACITY

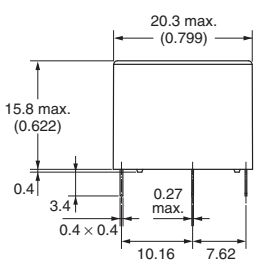


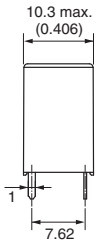
Dimensions

Note: All units are in millimeters unless otherwise indicated.

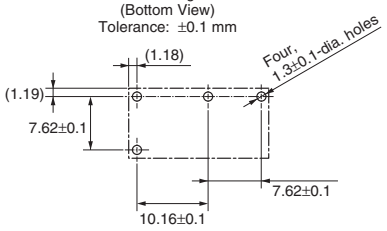
G5Q-1A
G5Q-1A4





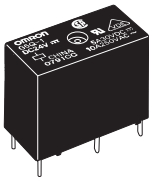


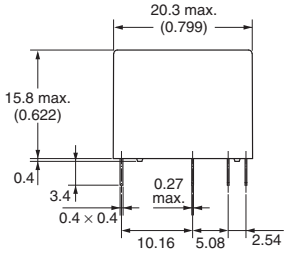
PCB Mounting Holes
(Bottom View)
Tolerance: ±0.1 mm

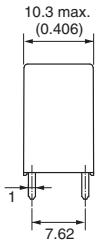


Terminal Arrangement/
Internal Connections
(Bottom View)

G5Q-1
G5Q-14







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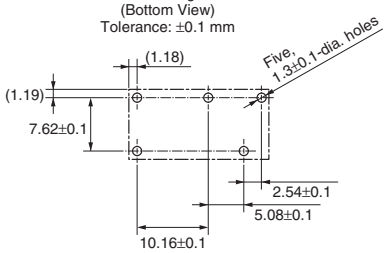

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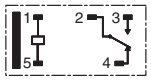
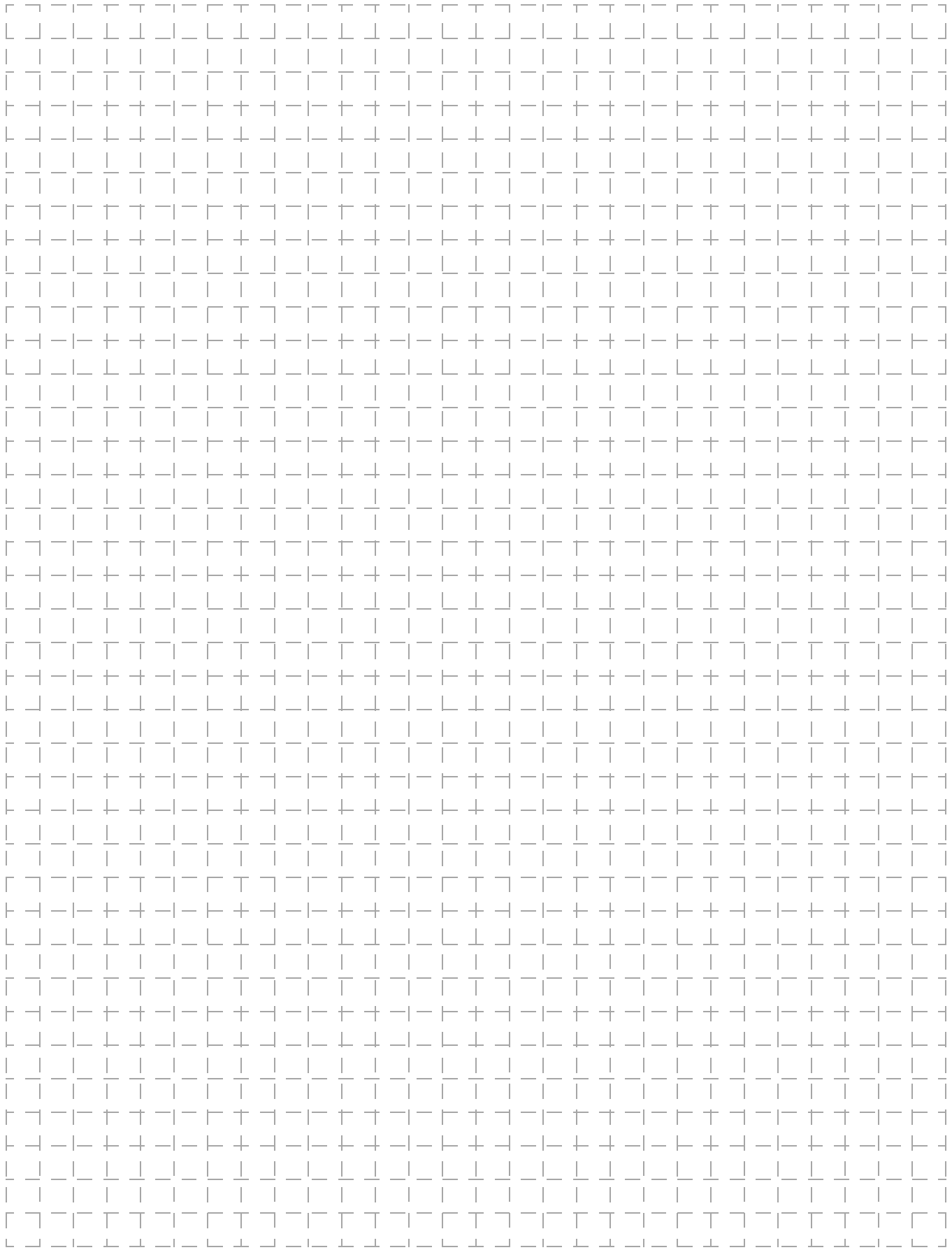


MEMO



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

OMRON ELECTRONIC COMPONENTS LLC
55 E. Commerce Drive, Suite B
Schaumburg, IL 60173
847-882-2288

OMRON ON-LINE
Global - http://www.omron.com
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