

# OMRON ELECTRONICS

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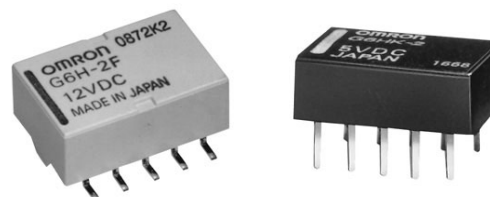
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# Low Signal Relay G6H

- Compact size and low 5 mm (0.20 in) profile.
- Low thermoelectromotive force.
- Low magnetic interference enables high-density mounting.
- Utilizes Omron's moving-loop design.
- Bifurcated contacts for high sensitivity.
- Available in surface mount.
- Highly stable magnetic circuit for latching endurance and excellent resistance to vibration and shock.
- High sensitivity with low nominal power consumption.
- Single or double coil winding types available.



## Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G6H-2-DC6).

### ■ Non-latching

Type	Contact form	Model
Standard	DPDT	G6H-2
High-reliability		G6H-2-100
Surface mount		G6H-2F

### ■ Latching

Type	Contact form	Model	
		Single coil latching	Dual coil latching
Standard	DPDT	G6HU-2	G6HK-2
High-reliability		G6HU-2-100	G6HK-2-100

## Specifications

### ■ Contact Data

Load	Resistive load (p.f. = 1)
Rated load	0.50 A at 125 VAC, 1 A at 30 VDC
Contact material	Ag (Au clad)
Carry current	1 A
Max. operating voltage	125 VAC, 110 VDC
Max. operating current	1 A
Max. switching capacity	62.50 VA, 33 W
Min. permissible load	10 $\mu$ A, 10 mVDC

## ■ Coil Data

### Standard and High Reliability Non-latching Type (G6H-2, G6H-2-100)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	46.70	64.30	0.03	0.02	75% max.	10% min.	200% max.	Approx. 140
5	28.10	178	0.07	0.06				
6	23.30	257	0.11	0.09				
9	15.50	579	0.24	0.20				
12	11.70	1,028	0.43	0.37				
24	8.30	2,880	1.20	0.98				
48	6.30	7,680	—	—	170% max.	Approx. 200		
					110% max.	Approx. 300		

### Surface Mount Non-latching Type (G6H-2-F)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	46.70	64.30	0.03	0.03	75% max.	10% min.	200% max. 23° C (73° F)	Approx. 140
5	28.10	178	0.07	0.06				
6	23.30	257	0.11	0.09				
9	15.50	579	0.24	0.20				
12	11.70	1,028	0.43	0.37				
24	8.30	2,880	1.20	0.98				
48	5.80	8,228	—	—	170% 23° C (73° F)	Approx. 200		
					105% 85° C (185° F)	Approx. 280		

### Single Coil Latching Type (G6HU-2, G6HU-2-100)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
			% of rated voltage			
3	33.30	90	75% max.	75% max.	190% max.	Approx. 100
5	20	250				
6	16.70	360				
9	11.10	810				
12	8.30	1,440				
24	6.25	3,840				
						Approx. 150

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23° C (73° F) with a tolerance of ±10%.

2. The operating characteristics are measured at a coil temperature of 23° C (73° F).

### Dual Coil Latching Type (G6HK-2, G6HK-2-100)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
			% of rated voltage			
3	66.70	45	75% max.	75% max.	150% max.	Approx. 200
5	40	125				
6	33.30	180				
9	22.20	405				
12	16.70	720				
24	12.50	1,920				
						Approx. 300

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23° C (73° F) with a tolerance of ±10%.

2. The operating characteristics are measured at a coil temperature of 23° C (73° F).

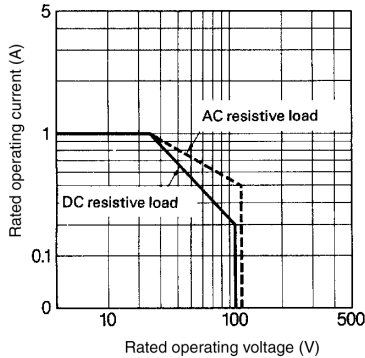
## ■ Characteristics

Contact resistance		50 mΩ max. (standard); 60 mΩ max. (surface mount)
Operate (set) time		3 ms max. (mean value: approx. 2.0 ms)
Release (reset) time		2 ms max. (mean value: approx. 1.0 ms)
Operating frequency	Mechanical	36,000 operations/hour
	Electrical	1,800 operations/hour (under rated load)
Insulation resistance		1,000 MΩ max. (at 500 VDC)
Dielectric strength		1,000 VAC, 50/60 Hz for 1 minute between coil and contacts
		1,000 VAC, 50/60 Hz for 1 minute between contacts of different poles
		750 VAC, 50/60 Hz for 1 minute between contacts of same pole
Surge withstand voltage		1,500 V 10 x 160 μs between contacts of same polarity (conforms to FCC Part 68)
Vibration	Mechanical durability	10 to 55 Hz; 5 mm (0.20 in) double amplitude
	Malfunction durability	10 to 55 Hz; 3 mm (0.12 in) double amplitude
Shock	Mechanical durability	1,000 m/s <sup>2</sup> (approx. 100 G)
	Malfunction durability	500 m/s <sup>2</sup> (approx. 50 G)
Ambient temperature		Standard: -40° to 70° C (-40° to 158° F); Surface mount: -40° to 85° C (-40° to 185° F)
Humidity		10% to 85% RH
Service life	Mechanical	100 million operations min.
	Electrical	See "Characteristic Data"
Weight		Approx. 1.5 g (0.05 oz)

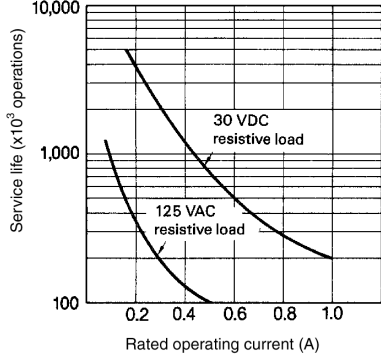
**Note:** Data shown are of initial value.

## ■ Characteristic Data

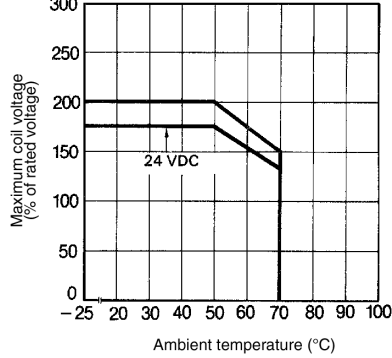
**Maximum Switching Capacity**



**Electrical Service Life**



**Ambient Temperature vs. Maximum Voltage (reference only)**

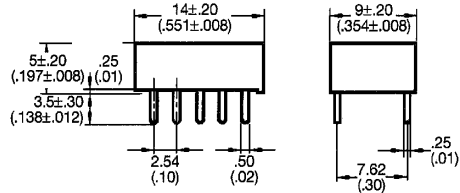


# Dimensions

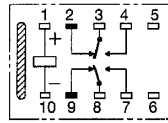
Unit: mm (inch)

## ■ Non-latching

### Standard

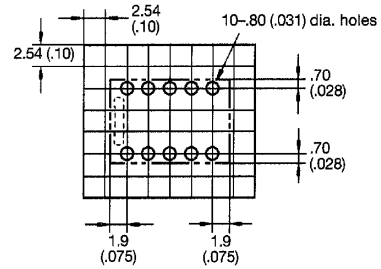


Terminal arrangement/  
Internal connections  
(Bottom view)

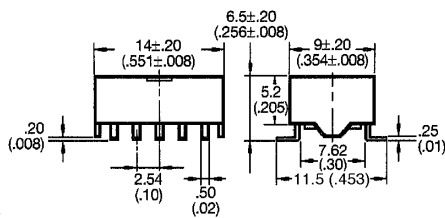


### Mounting holes

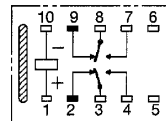
(Bottom view, dimensional tolerance  $\pm 0.1$ )



### Surface mount

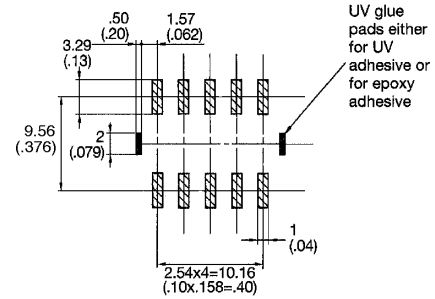


Terminal arrangement/  
Internal connections  
(Top view)



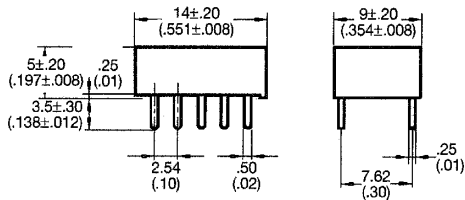
### Mounting holes

(Top view)

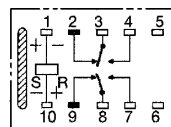


## ■ Latching

### Single coil latching

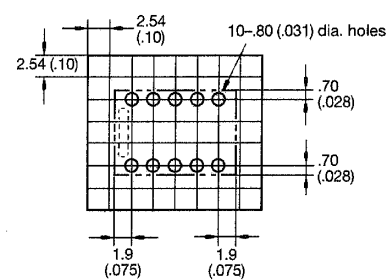


Terminal arrangement/  
Internal connections  
(Bottom view)

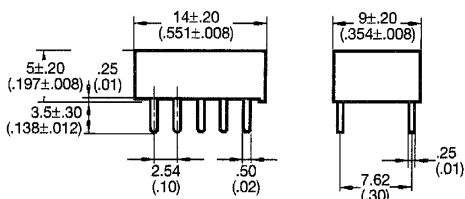


### Mounting holes

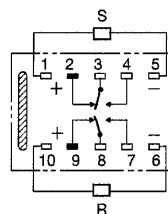
(Bottom view, dimensional tolerance  $\pm 0.1$ )



### Dual coil latching

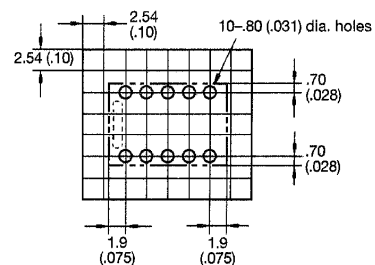


Terminal arrangement/  
Internal connections  
(Bottom view)



### Mounting holes

(Bottom view, dimensional tolerance  $\pm 0.1$ )



Note: 1. and indicate mounting orientation marks.

2. A tolerance of  $\pm 0.4$  ( $0.016$  in) applies to all dimensions, unless otherwise indicated.

## ■ Approvals

### UL (File No. E41515)/CSA (File No. LR31928)

Type	Contact form	Coil rating	Contact ratings
G6H-2 G6H-2F G6H-2-100 G6HU-2 G6HK-2 G6HU-2-100 G6HK-2-100	DPDT	1.50 to 48 VDC	2 A, 30 VDC 0.30 A, 110 VDC 0.50 A, 125 VAC

- Note:**
1. The rated values approved by each of the safety standards (e.g., UL, CSA, TUV) may be different from the performance characteristics individually defined in this catalog.
  2. In the interest of product improvement, specifications are subject to change.
  3. Complies with UL1950 Basic Insulation at 125 V (pollution degree 1 for internal spacings, pollution degree 2 for external spacings).

## ■ High Temperature Usage

Use the G6H-2-100 for high-temperature applications. [After testing at 70°C (158°F), (28 VDC, 100 mA resistive load, open and closed 1 million times), the contact resistance was 1 Ω maximum for the G6H-2 and 200 mΩ maximum for the G6H-2-100].

# Omron Electronic Components, LLC

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### I. GENERAL

- Definitions:** The words used herein are defined as follows.
  - Terms:** These terms and conditions
  - Seller:** Omron Electronic Components LLC and its subsidiaries
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  - Products:** Products and/or services of Seller
  - Including:** Including without limitation
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  - Delivery and shipping dates are estimates only; and
  - Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
- Claims:** Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier must be presented in detail in writing to Seller within 30 days of receipt of shipment.

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  - Use in consumer Products or any use in significant quantities.

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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.

**OMRON**<sup>®</sup>

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