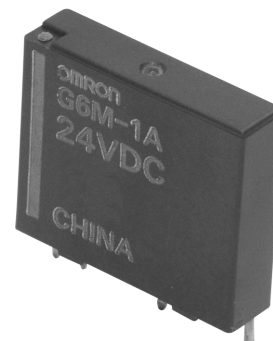


PCB Power Relay

G6M

Slim, Miniature Relay, Capable of Relaying Programmable Controller and Temperature Controller Outputs

- Slim 5-mm width, and miniature size.
- Reduced mounting area ideal for high-density mounting.
- Highly efficient magnetic circuit for high sensitivity (40% higher than the G6D, with power consumption of 120 mW).
- Satisfies IEC61131-2 and IEC61010 requirements.
- SIL (single-in-line) terminal pitch.
- UL, CSA approved. VDE approval pending.
- RoHS Compliant.



Ordering Information

Classification	Contact form	Enclosure ratings	Model
Standard	SPST-NO	Fully sealed	G6M-1A

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

Example: G6M-1A DC 12

Rated coil voltage

Model Number Legend

G6M- -DC
 1 2 3

1. Number of Poles

1: 1 pole

2. Contact Form

A: SPST-NO

3. Rated Coil Voltage

5, 12, 24 VDC

Specifications

■ Coil Ratings

Rated voltage	5 VDC	12 VDC	24 VDC
Rated current	24 mA	10 mA	5 mA
Coil resistance	208 Ω	1,200 Ω	4,800 Ω
Must operate voltage	75% max. of rated voltage		
Must release voltage	5% min. of rated voltage		
Max. voltage	160% of rated voltage (at 23°C)		
Power consumption	Approx. 120 mW		

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

2. Operating characteristics are measured at a coil temperature of 23°C.

3. The maximum allowable voltage is the maximum possible value of the voltage that can be applied to the relay coil. It is not the maximum voltage that can be applied continuously.

4. The must operate voltage is 72% or less of the rated voltage if the relay is mounted vertically and the terminals are pointed downwards.

■ Contact Ratings

Rated load	3 A at 250 VAC, 3 A at 30 VDC
Rated carry current	5 A
Max. switching voltage	270 VAC, 125 VDC
Max. switching current	5 A
Max. switching power	750 VAC, 90 W
Min. permissible load	10 mA at 5 VDC (at 120 operations/min)

Note: P level: $\lambda_{60} = 0.1 \times 10^{-6}/\text{operation}$

■ 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	3,000 VAC, 50/60 Hz for 1 min between coil and contacts 750 VAC, 50/60 Hz for 1 min between contacts of same polarity
Impulse withstand voltage	5,080 V (1.2 x 50 μs) between coil and contacts
Vibration resistance	Destruction: 10 to 55 Hz, 2.5-mm single amplitude (5.0-mm double amplitude) Malfunction: 10 to 55 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)
Shock resistance	Destruction: 1,000 m/s ² Malfunction: 100 m/s ²
Endurance	Mechanical: 20,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (3A at 250 VAC/30 VDC, resistive load)
Ambient temperature	Operating: -40°C to 85°C (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight approx.	4 g

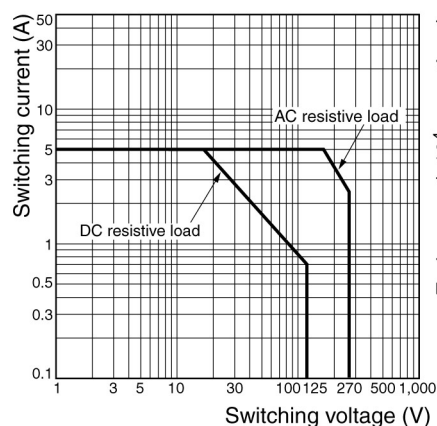
■ Approved Standards

UL508 (File No. E41515)/CSA C22.2 (No. 14) (File No. LR31928)

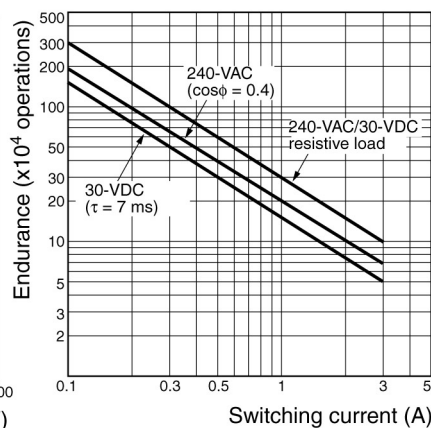
Model	Coil ratings	Contact ratings
G6M-1A	4.5 to 24 VDC	5A, 250 VAC (resistive load, 6,000 operations) 5 A, 24 VDC (resistive load, 6,000 operations) 3 A, 250 VAC (general use, 100,000 operations) 3 A, 24 VDC (general use, 100,000 operations)

Engineering Data

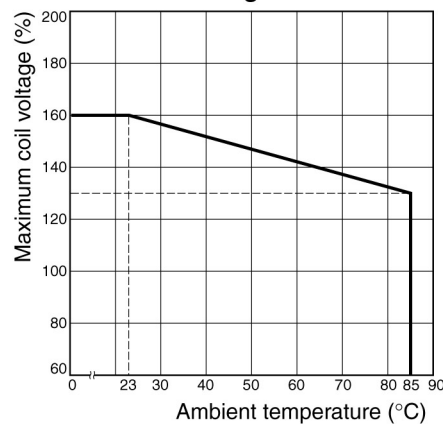
Maximum Switching Power



Endurance



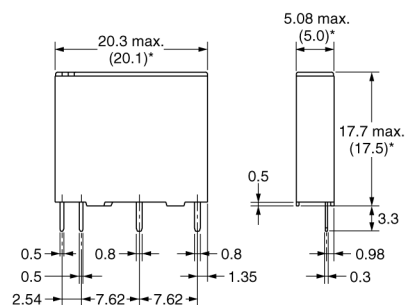
Ambient Temperature vs. Maximum Coil Voltage



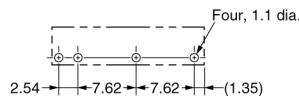
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Dimensions

G6M-1A

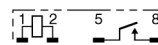


Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

Tolerance: ± 0.1



*Average value

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 (SO₂), hydrogen sulfide (H₂S), 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.

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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8. Cancellation; Etc. Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Seller fully against all costs or expenses arising in connection therewith.
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10. Shipping; Delivery. Unless otherwise expressly agreed in writing by Seller:
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 2. Such carrier shall act as the agent of Buyer and delivery to such carrier shall constitute delivery to Buyer;
 3. All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Seller), at which point title to and all risk of loss of the Products shall pass from Seller to Buyer, provided that Seller shall retain a security interest in the Products until the full purchase price is paid by Buyer;
 4. Delivery and shipping dates are estimates only.
 5. Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
11. Claims. Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier must be presented in writing to Seller within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Products from Seller in the condition claimed.
12. Warranties. (a) Exclusive Warranty. Seller's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Seller (or such other period expressed in writing by Seller). Seller disclaims all other warranties, express or implied. (b) Limitations. SELLER MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. Seller further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Seller's sole obligation hereunder shall be to replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product or, at Seller's election, to repay or credit Buyer an amount equal to the purchase price of the Product; provided that in no event shall Seller be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Seller's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Seller before shipment. Seller shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies, or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing are not to be construed as an amendment or addition to the above warranty.
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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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