

G2RG

PCB Power Relay

Miniature Power Relay with 3 mm Contact Gap (when double-pole wiring 1.5 mm N.O. contact in series)

- 2.8-mm contact gap (EN50091-1) satisfies the European requirement of UPS (uninterrupted power supply).
- Offers high insulation with insulation distance above 8 mm and impulse withstand voltage of 10 kV between coil and contacts.
- Standard model conforms to VDE standards.

RoHS Compliant

Model Number Legend

G2RG-□□□
1 2 3

1. Number of Poles 2. Contact Form 3. Enclosure rating
2: 2-pole A: N.O. contact 4: Fully sealed
DPST-NO (2a)

Ordering Information

Contact form	Model	Rated coil voltage	Minimum packing unit
DPST-NO (2a)	G2RG-2A4	12 VDC 24 VDC	50 pcs/tray

Ratings

Coil

Item	Rated current (mA)	Coil resistance (Ω)	Must-operate voltage (V)	Must-release voltage (V)	Maximum voltage (V)	Power consumption (mW)
			% of rated voltage			
Rated voltage						
12 VDC	66.6	180			140% (at 23°C)	Approx. 800
24 VDC	33.3	720	80% max.	10% min.		

Note 1. The rated current and coil resistance are for a coil temperature of 23°C and have a tolerance of ±10%.

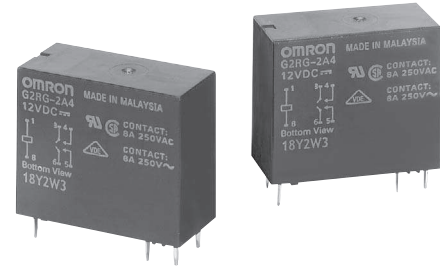
Note 2. The operating characteristics given in the above table are for a coil temperature of 23°C.

Note 3. The maximum allowable voltage is the maximum possible value of the voltage that can be applied to the relay coil.

Contacts

Item	Load	Resistive load
Contact type	Single	
Contact material	Ag-alloy (Cd free)	
Rated load	8 A at 250 VAC	
Rated carry current	8 A	
Maximum switching voltage	380 VAC, 125 VDC	
Maximum switching current	8 A	
Failure rate (P level) (reference value*)	10 mA at 5 VDC	

* This value was measured at a switching frequency of 120 operations/min.



Application Examples

- Home appliances
- OA equipments
- Industrial machinery

Characteristics

Contact resistance *1	100 mΩ max.	
Operate time	15 ms max.	
Release time	5 ms max.	
Max. switching frequency	Mechanical	18,000 operations/hr
	Electrical	1,800 operations/hr
Insulation resistance *2	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min
	Between contacts of different polarity	3,000 VAC, 50/60 Hz for 1 min
	Between contacts of the same polarity	1,000 VAC, 50/60 Hz for 1 min
Impulse withstand voltage	10 kV (1.2 ~ 50 μs)	
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	1,000 m/s ²
	Malfunction	200 m/s ² when energized, 100 m/s ² when de-energized
Durability	Mechanical	1,000,000 operations min. (at 18,000 operations/hr)
	Electrical	10,000 operations min. (at 1,800 operations/hr under rated load)
Ambient operating temperature	-40 to 70 °C (with no icing or condensation)	
Ambient operating humidity	5% to 85%	
Weight	Approx. 17.2 g	

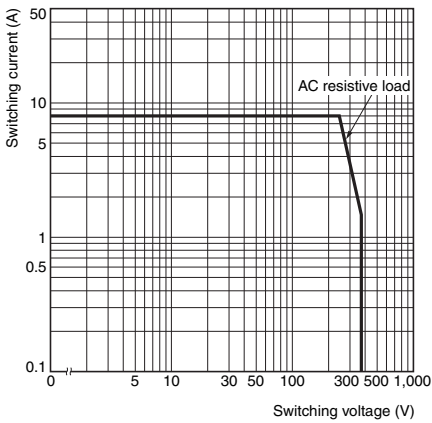
Note. The above values are initial values (at an ambient temperature of 23°C.)

*1. Measurement conditions: 5 VDC, 1 A, voltage-drop method.

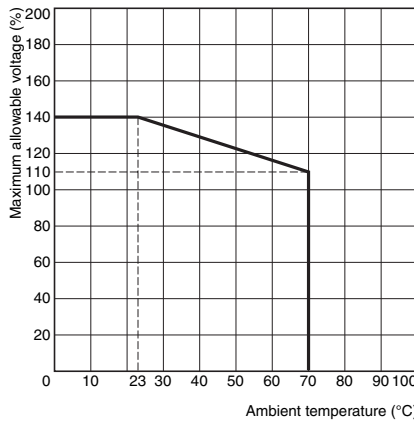
*2. Measurement conditions: Measured with a 500 VDC megohmmeter at the same places as the dielectric strength.

Engineering Data

Maximum Switching Capacity

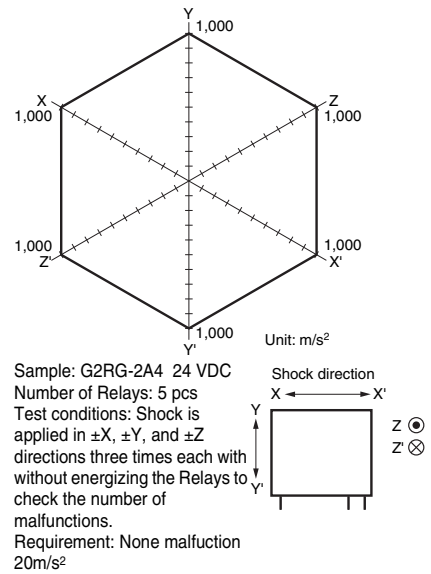


Ambient Temperature vs Maximum Coil Voltage



Note. The maximum allowable voltage is the maximum possible value of the voltage that can be applied to the relay coil.

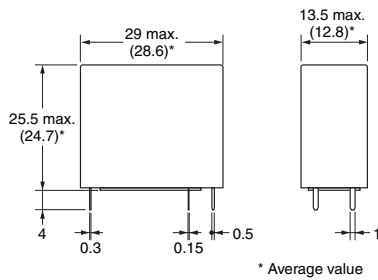
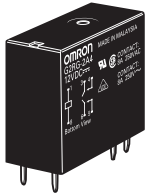
Shock Malfunction



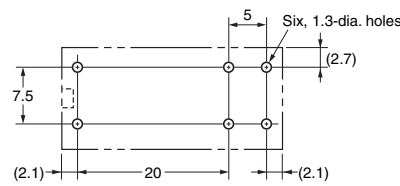
Dimensions

(Unit: mm)

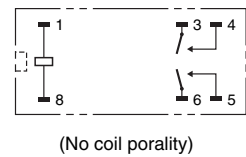
G2RG-2A4



PCB Mounting Holes (Bottom View)



Terminal Arrangement/ Internal Connections (Bottom View)



Approved Standards

The approved rated values for international standards are different to the individually specified characteristic values. Be sure to confirm that required standards are satisfied before actual use.

UL Recognized: (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RG-2A4	DPST-NO (2a)	12 to 24 VDC	8 A, 250 VAC (Resistive) 70°C	10,000

CSA Certified: (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RG-2A4	DPST-NO (2a)	12 to 24 VDC	8 A, 250 VAC (Resistive) 70°C	10,000

EN/IEC Certified Model (Approval/No. 6166)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RG-2A4	DPST-NO (2a)	12, 24 VDC	8 A, 250 VAC (cosφ=1) 70°C	10,000

Precautions

●Please refer to “PCB Relays Common Precautions” for correct use.

Correct Use

●Differences with the G2R

The G2RG-2A4 has the same terminal arrangement as the G2R-2A4 but the switching capacity and electrical endurance are different. Confirm that correct operation is possible in the actual operating conditions before using in applications.

- Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.