

# **Miniature Power Relay for** Switching 8 A

- Low-profile height of 15 mm (approx. 60% the height of the Omron G2R model).
- Capable of switching with 8 A at 250 VAC despite its small size.
- High sensitivity with 220mW power consumption.
- · Offers high insulation with insulation distance of 8 mm and impulse withstand voltage of 10kV between coil and contacts.
- Satisfies ambient operating temperature requirement of 85°C.
- Standard model conforms to VDE standards.

#### **RoHS Compliant**

### Model Number Legend



None: SPDT (1c)

A: SPST-NO (1a)

### Ordering Information

Classification	Enclosure rating	Contact form	Terminal shape	Model	Rated coil voltage	Minimun packing unit
Standard	Fully sealed	SPST-NO (1a)	PCB terminals	G6RN-1A	5, 6, 12 VDC 24 VDC	20 pcs/tube
		SPDT (1c)		G6RN-1	5, 6, 12 VDC 24 VDC	20 pcs/lube

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

Example: G6RN-1A DC5

Rated coil voltage

However, the notation of the coil voltage on the product case will be marked as \_\_\_VDC.

### Ratings

#### • Coil

Item Rated voltage	Rated current (mA)	Coil resistance (Ω)	Must operate voltage (V)	Must release voltage (V) of rated voltage	Max. voltage (V) ge	Power consumption (mW)
5 VDC	43.9	114				
6 VDC	36.6	164	70% max.	10% min.	150%	Approx. 220
12 VDC	18.3	655	70 /o max.	10 /8 11111.	(at 23°C)	Appiox. 220
24 VDC	9.2	2,620				

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

\*2. The operating characteristics are measured at a coil temperature of 23°C.

\*3. The "Max. voltage" is the maximum voltage that can be applied to the relay coil.

#### Contacts

Load Item	Resistive load
Contact type	Single
Contact material	Ag-Alloy + gold plating (Cd free)
Rated load	8 A at 250 VAC 5 A at 30 VDC
Rated carry current	8 A
Max. switching voltage	250 VAC, 30 VDC
Max. switching current	8 A



# Application Examples

Control equipments

## ■Characteristics

Operate time     15 ms max.       Release time     5 ms max.       Insulation resistance *2     1,000 MΩ min.       Join and coll and contacts     4,000 VAC, 50/60 Hz for 1 min contacts of the same polarity       Impulse withstand voltage (between coll and contacts)     1,000 VAC, 50/60 Hz for 1 min contacts of the same polarity       Insulation distance     Between coll and contacts     1,000 VAC, 50/60 Hz for 1 min contacts of the same polarity       Insulation distance     Between coll and contacts     10,000 V (1.2 x 50 µs)       Vibration resistance     Between coll and contacts     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       NC: 0.75 mm single amplitude (0.8 mm double amplitude)     NC: 0.75 mm single amplitude (0.8 mm double amplitude)       NC: 0.4 mm single amplitude (0.8 mm double amplitude)     NC: 100 m/s²       NC: 50 m/s²     NC: 50 m/s²       Durability     Electrical *3     50,000 operations min. (at 36,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr) under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC	Contact res	istance *1	100 mΩ max.		
Insulation resistance *2     5 ms max.       Insulation resistance *2     1,000 MΩ min.       Dielectric strength     Between coil and contacts     4,000 VAC, 50/60 Hz for 1 min contacts of the same polarity       Impulse withstand voltage (between coil and contacts)     1,000 VAC, 50/60 Hz for 1 min contacts of the same polarity     10,000 V (1.2 x 50 µs)       Insulation distance     Between coil and contacts     10,000 V (1.2 x 50 µs)       Insulation distance     Destruction     Clearance: 8 mm, Creepage: 8 mm       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Vibration resistance     Destruction     10 to 55 to 10 Hz       Malfunction     NC: 0.4 mm single amplitude (1.5 mm double amplitude)       NC: 0.4 mm single amplitude (0.8 mm double amplitude)     NC: 100 m/s²       NC: 0.5 mm Single amplitude (0.8 mm double amplitude)     NC: 100 m/s²       NDurability     Electrical *3     50,000 operations min. (8 A at 250 VAC, resistive load) (5 A at 30 VDC, resistive load) (at 360 operations/hr) (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%					
Insulation resistance *2   1,000 MΩ min.     Dielectric strength   Between coil and contacts   4,000 VAC, 50/60 Hz for 1 min     Between contacts   1,000 VAC, 50/60 Hz for 1 min   1,000 VAC, 50/60 Hz for 1 min     Impulse withstand voltage (between coil and contacts)   1,000 VAC, 50/60 Hz for 1 min     Insulation distance   Between coil and contacts   10,000 V (1.2 x 50 µs)     Insulation distance   Destruction   Clearance: 8 mm, Creepage: 8 mm     Vibration resistance   Destruction   10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)     N0: 0.5 to 10 Hz   N0: 0.5 to 10 Hz   N0: 0.75 mm single amplitude (1.5 mm double amplitude)     Shock resistance   Destruction   N0: 00 m/s²     Malfunction   N0: 100 m/s²   N0: 100 m/s²     NDurability   Mechanical   10,000 operations min. (a 36,000 operations min. (a 36,000 operations min. (a 36,000 operations min. (a 360 operations/hr) under rated load)     Failure rate (P level) (reference value) *4   10 mA at 5 VDC     Ambient operating humidity   5% to 85%					
Between coil and contacts     4,000 VAC, 50/60 Hz for 1 min       Dielectric strength     Between contacts of the same polarity     1,000 VAC, 50/60 Hz for 1 min       Impulse wit>stand voltage (between coil and contacts)     1,000 VAC, 50/60 Hz for 1 min       Insulation distance     Between coil and contacts     1,000 V (1.2 x 50 µs)       Insulation distance     Between coil and contacts     10,000 V (1.2 x 50 µs)       Insulation distance     Destruction contacts     Clearance: 8 mm, Creepage: 8 mm       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Malfunction     N0: 0.75 mm single amplitude (1.5 mm double amplitude)     N0: 0.75 mm single amplitude (1.5 mm double amplitude)       Shock resistance     Destruction     10000 m/s²       Malfunction     N0: 100 m/s²       NC: 50 m/s²     NC: 50 m/s²       Durability     Electrical *3     50,000 operations min. (8 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)     50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%					
strength     coil and contacts     4,000 VAC, 50/60 Hz for 1 min       Dielectric strength     Between contacts of the same polarity     1,000 VAC, 50/60 Hz for 1 min       Impulse wit>stand voltage (between coil and contacts)     10,000 V (1.2 x 50 µs)     10,000 V (1.2 x 50 µs)       Insulation distance     Between coil and contacts     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) (1.5 mm double) (1.5 mm d	modiation it		1,000 1122 11111		
Dielectric strength     contacts Between contacts of the same polarity     1,000 VAC, 50/60 Hz for 1 min       Impulse withstand voltage (between coil and contacts)     1,000 V (1.2 x 50 µs)       Insulation distance     Between coil and contacts     10,000 V (1.2 x 50 µs)       Insulation distance     Between coil and contacts     Clearance: 8 mm, Creepage: 8 mm       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Malfunction     No: 0.75 mm single amplitude (1.5 mm double amplitude)       Shock resistance     Destruction     10000 m/s²       Malfunction     NO: 100 m/s²       Malfunction     NO: 000 operations min. (at 36,000 operations min. (at 36,000 operations min. (at 360 operations min. (5 A at 350 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr) under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%			4 000 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 (between coil and contacts)     1,000 VAC, 50/60 Hz for 1 min       Insulation distance     Between coil and contacts     10,000 V (1.2 x 50 µs)       Insulation distance     Between coil and contacts     Clearance: 8 mm, Creepage: 8 mm       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)       No: 0.75 mm single amplitude (0.8 mm double amplitude)       NC: 0.4 mm single amplitude (0.8 mm double amplitude)       NC: 0.75 mm single amplitude (1.5 mm double amplitude)       NC: 0.4 mm single amplitude (1.5 mm double amplitude)       NC: 0.5 m /s²       Malfunction     NC: 100 m/s²       NC: 50 m/s²       Malfunction     10,000,000 operations min. (a 36,000 operations min. (5 A at 30 VDC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%					
contacts of the same polarity     1,000 VAC, 50/60 Hz for 1 min       Impulse withstand voltage (between coil and contacts)     10,000 V (1.2 x 50 μs)       Insulation distance     Between coil and contacts     10,000 V (1.2 x 50 μs)       Insulation distance     Between coil and contacts     Clearance: 8 mm, Creepage: 8 mm       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)       No: 0.75 mm single amplitude (0.8 mm double amplitude)       NC: 0.4 mm single amplitude (0.8 mm double amplitude)       NO: 100 m/s²       Malfunction     NO: 100 m/s²       Malfunction     NO: 000 operations min. (at 36,000 operations/hr)       Solo00 operations min. (8 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%		Between			
Impulse withstand voltage (between coil and contacts)     10,000 V (1.2 x 50 μs)       Insulation distance     Between coil and contacts     Clearance: 8 mm, Creepage: 8 mm       Insulation distance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       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)       No: 0.75 mm single amplitude (0.8 mm double amplitude)       NC: 0.4 mm single amplitude (0.8 mm double amplitude)       NC: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Mechanical     10,000,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (5 A at 30 VDC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr) under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)	strength	contacts of	4.000 \/40 50/00 \ = for 4 min		
Impulse withstand voltage (between coil and contacts)     10,000 V (1.2 x 50 μs)       Insulation distance     Between coil and contacts     Clearance: 8 mm, Creepage: 8 mm       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Shock resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Malfunction     NO: 0.75 mm single amplitude (0.8 mm double amplitude)       NO: 100 m/s²     NO: 100 m/s²       Malfunction     NO: 100 m/s²       Mechanical     10,000,000 operations min. (at 36,000 operations min. (b A at 250 VAC, resistive load) 50,000 operations min. (c A at 250 VAC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%		the same	1,000 VAC, 50/60 Hz lor 1 min		
voltage (between coil and contacts)   10,000 V (1.2 x 50 μs)     Insulation distance   Between coil and contacts   Clearance: 8 mm, Creepage: 8 mm     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   10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)     Malfunction   NO: 0.75 mm single amplitude (0.8 mm double amplitude)     No: 0.4 mm single amplitude (0.8 mm double amplitude)     No: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Malfunction   NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Mechanical   10,000,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (5 A at 30 VDC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr) under rated load)     Failure rate (P level) (reference value) <sup>*</sup> 4   10 mA at 5 VDC     Ambient operating humidity   -40°C to 85°C (with no icing or condensation)		polarity			
and contacts   Ensulation coil and contacts   Clearance: 8 mm, Creepage: 8 mm     Insulation distance   Destruction   10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)     Vibration resistance   Destruction   10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)     Malfunction   NO: 0.75 mm single amplitude (0.8 mm double amplitude)     NO: 0.75 mm single amplitude (0.8 mm double amplitude)     NC: 0.4 mm single amplitude (0.8 mm double amplitude)     NO: 100 m/s <sup>2</sup> Malfunction   NO: 100 m/s <sup>2</sup> Mechanical   10,000,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (5 A at 32 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)     Failure rate (P level) (reference value) *4   10 mA at 5 VDC     Ambient operating humidity   -40°C to 85°C (with no icing or condensation)	Impulse wit	hstand			
Insulation distance     Between coil and contacts     Clearance: 8 mm, Creepage: 8 mm       Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Malfunction     Malfunction     10 to 55 to 10 Hz NO: 0.75 mm single amplitude)       Shock resistance     Destruction     10 to 55 to 10 Hz NO: 0.75 mm single amplitude) (1.5 mm double amplitude)       Shock resistance     Destruction     1,000 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Electrical *3     50,000 operations min. (8 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)			10,000 V (1.2 x 50 μs)		
Insulation distance     coil and contacts     Clearance: 8 mm, Creepage: 8 mm       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     10 to 55 to 10 Hz NO: 0.75 mm single amplitude (0.8 mm double amplitude)       Shock resistance     Destruction     1,000 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NO:: 50 m/s <sup>2</sup> Malfunction     NO: 00 operations min. (at 36,000 operations min. (5 A at 30 VDC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)	and contact	-7			
distance     coil and contacts     Creepage: 8 mm       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 NO: 0.75 mm single amplitude (1.5 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplitude) NC: 0.4 mm single amplitude) NC: 0.4 mm single amplitude (0.8 mm double amplitude) NC: 0.4 mm single amplitude) NC: 0.75 mm single amplitude (0.8 mm double amplitude) NC: 0.75 mm single amplitude) (0.8 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplitude) NC: 0.4 mm single amplitude (0.8 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplit	Insulation		Clearance: 8 mm.		
Vibration resistance     Destruction     10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Wibration resistance     In to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)       Malfunction     In to 55 to 10 Hz NO: 0.75 mm single amplitude (1.5 mm double amplitude) NC: 0.4 mm single amplitude)       Shock resistance     Destruction     1.000 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Malfunction     NO: 000 operations min. (at 36,000 operations min. (at 36,000 operations min. (5 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%			,		
Destruction resistance     Destruction (1.5 mm double amplitude) (1.5 mm double amplitude)       Malfunction     10 to 55 to 10 Hz NC: 0.75 mm single amplitude (1.5 mm double amplitude) (1.5 mm double amplitude) (1.5 mm double amplitude)       Shock resistance     Destruction     1.000 m/s <sup>2</sup> NC: 0.4 mm single amplitude (0.8 mm double amplitude)       Malfunction     NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Mechanical     10,000,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (at 360 operations min. (5 A at 30 VDC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)		contacts			
Vibration resistance     (1.5 mm double amplitude)       Malfunction     10 to 55 to 10 Hz NO: 0.75 mm single amplitude) (1.5 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplitude) NC: 0.4 mm single amplitude) (0.8 mm double amplitude) NC: 0.75 mm single amplitude) (0.8 mm double amplitude) NC: 0.75 mm single amplitude)       Shock resistance     Destruction     1.000 m/s <sup>2</sup> NC:: 50 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NC:: 50 m/s <sup>2</sup> Mechanical     10,000,000 operations min. (at 36,000 operations min. (5 A at 250 VAC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%		Destruction			
Vibration resistance     10 to 55 to 10 Hz NC: 0.75 mm single amplitude (1.5 mm double amplitude) NC: 0.4 mm single amplitude (0.8 mm double amplitude) NC: 0.0 m/s <sup>2</sup> Shock resistance     Destruction     1.000 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> Malfunction     NO: 000 operations min. (at 36,000 operations min. (b A at 250 VAC, resistive load) 50,000 operations min. (c A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%					
resistance Malfunction NO: 0.75 mm single amplitude (1.5 mm double amplitude) NC: 0.4 mm single amplitude (0.8 mm double amplitude)   Shock resistance Destruction 1,000 m/s <sup>2</sup> Malfunction NO: 100 m/s <sup>2</sup> Mechanical 10,000,000 operations min. (at 36,000 operations min. (b A at 250 VAC, resistive load) 50,000 operations min. (b A at 30 VDC, resistive load) (at 360 operations/hr under rated load)   Failure rate (P level) (reference value) *4 10 mA at 5 VDC   Ambient operating humidity -40°C to 85°C (with no icing or condensation)	Vibratian				
Malfunction     (1.5 mm double amplitude) NC: 0.4 mm single amplitude (0.8 mm double amplitude) (0.8 mm double amplitude)       Shock resistance     Destruction     1,000 m/s <sup>2</sup> Malfunction     NC: 50 m/s <sup>2</sup> Malfunction     NC: 50 m/s <sup>2</sup> Mechanical     10,000,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (5 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)		Malfunction			
MC: 0.4 mm single amplitude (0.8 mm double amplitude)       Shock resistance     Destruction     1,000 m/s²       Malfunction     NO: 100 m/s²     NC: 50 m/s²       Mechanical     10,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (b A at 250 VAC, resistive load) 50,000 operations min. (b A at 250 VAC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)	resistance				
Image: Weight of the system     Shock resistance     Destruction     1,000 m/s²       Shock resistance     Malfunction     NO:: 100 m/s²     NO:: 50 m/s²       Malfunction     NO:: 50 m/s²     NO:: 50 m/s²       Durability     Mechanical     10,000,000 operations min. (at 36,000 operations min. (at 36,000 operations min. (s A at 250 VAC, resistive load) 50,000 operations min. (s A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)		Manuffolion			
Bock resistance     Destruction     1,000 m/s <sup>2</sup> Malfunction     NO: 100 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> NC: 50 m/s <sup>2</sup> Durability     Mechanical     (a, 36,000 operations min. (at 36,000 operations min. (b, 36,000 operations min. (c) 4 at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     5% to 85%					
Shock resistance     Malfunction     NO: 100 m/s² NC:: 50 m/s²       Durability     Mechanical     10,000,000 operations min. (at 36,000 operations/hr)       Electrical *3     50,000 operations min. (8 A at 250 VAC, resistive load)       50,000 operations min. (8 A at 250 VAC, resistive load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operature     -40°C to 85°C (with no icing or condensation)       Ambient operaturg humidity     5% to 85%		Destruction			
Mc:: 50 m/s²       Purability     Mechanical     10,000,000 operations min. (at 36,000 operations/hr)       Burability     Electrical *3     50,000 operations min. (8 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)					
Mechanical     (at 36,000 operations/hr)       Durability     50,000 operations min. (8 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating humidity     -40°C to 85°C (with no icing or condensation)	resistance		NC:: 50 m/s <sup>2</sup>		
Durability     Interview of the second seco		Mashariasi	10,000,000 operations min.		
Durability     Electrical *3     (8 A at 250 VAC, resistive load) 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operature     -40°C to 85°C (with no icing or condensation)       Ambient operature     5% to 85%		Mechanical	(at 36,000 operations/hr)		
Durability     Electrical *3     50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)       Failure rate (P level) (reference value) *4     10 mA at 5 VDC       Ambient operating temperature     -40°C to 85°C (with no icing or condensation)       Ambient operating humidity     5% to 85%					
Electrical *3 50,000 operations min. (5 A at 30 VDC, resistive load) (at 360 operations/hr under rated load)   Failure rate (P level) (reference value) *4 10 mA at 5 VDC   Ambient operating temperature -40°C to 85°C (with no icing or condensation)   Ambient operating humidity 5% to 85%	Durability	Electrical *3			
Failure rate (P level) (reference value) *4 10 mA at 5 VDC   Ambient operating humidity -40°C to 85°C (with no icing or condensation)	Durability				
rated load)   Failure rate (P level) (reference value) *4 10 mA at 5 VDC   Ambient operating temperature -40°C to 85°C (with no icing or condensation)   Ambient operating humidity 5% to 85%					
Failure rate (P level) (reference value) *4 10 mA at 5 VDC   Ambient operating temperature -40°C to 85°C (with no icing or condensation)   Ambient operating humidity 5% to 85%					
(reference value) *4 10 mA at 5 VDC   Ambient operating temperature -40°C to 85°C (with no icing or condensation)   Ambient operating humidity 5% to 85%	-	(5)	rated load)		
Ambient operating temperature     -40°C to 85°C (with no icing or condensation)       Ambient operating humidity     5% to 85%			10 mA at 5 VDC		
temperature     condensation)       Ambient operating humidity     5% to 85%			-40°C to 85°C (with no joing or		
Ambient operating humidity 5% to 85%					
humidity 5% to 85%			,		
147.1.1		Ŭ	5% 10 85%		
Approx. 9 g	Weight		Approx. 9 g		

- Note. The data given above are initial values.
- Measurement conditions: 5 VDC, 1 A, voltage drop \*1. method.
- \*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.
- Test conditions: With diode \*3.
- \*4. This value was measured at a switching frequency of 120 operations/min.

# Engineering Data





# • Ambient Temperature vs.



#### Durability



#### • 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.





Number of Relays: 5 pcs Test conditions: The value at which malfunction occurred was measured after applying shock to the test piece 3 times each in 6 directions along 3 axes. Standard value: 100m/s<sup>2</sup> at contact A, 50m/s<sup>2</sup> at contact B

### Dimensions

G6RN-1





3.5

7.62

28.5±0.5

19 +5.1

15±0.5

#### PCB Mounting Holes (Bottom View) Five, 1.3-dia. hole ±(1.19)

3.2±0.1

Four, 1.3-dia. holes

5.1±0.1 (2.8)

7.62±0.1

(1.5)

3.2±0.1

(1.19)

±(1.19)

(1.19)

7.62±0.1

Terminal Arrangement/ Internal Connections (Bottom View)



G6RN-1A



(1.6) (Bottom View) 10±0.5

0.5

(1.6)



19±0

19±0.1

**Terminal Arrangement/** Internal Connections (Bottom View)



(No coil polarity)

G 6 R N

# ■Approved Standards

The rated values approved by each of the safety standards may be different from the performance characteristics individually defined in this catalog.
Percentized RN (File No. E41515)

UL Recognized 🦷	(File No. E41515)
CSA Certified	(File No. 31928)

Model	Number of poles	Coil ratings	Contact ratings	Number of test operations	
G6RN-1	1	5 to 24 VDC	8 A, 250 VAC 85°C 8 A, 30 VDC 85°C	6,000	

EN/TÜV Certified (Certificate No. 6135)

Model	Number of poles	Coil ratings	Contact ratings	Approved switching operations
G6RN-1 G6RN-1A	1	5, 6, 12, 24 VDC	8 A, 250 VAC (Resistive) 85°C	10,000

Creepage distance	8 mm
Clearance distance	8 mm
Insulation material group	Illa
Rated Insulation voltage	250 V
Pollution degree	2
Rated voltage system	250 V
Overvoltage category	
Tracking Index of relay base	PTI 250 V min. (housing parts)
Flammability class according to UL94	V-0
Ball pressure test (IEC 60695-10-2)	160°C

#### Precautions

•Please refer to "PCB Relays Common Precautions" for correct use.

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 improperty. 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.

OMRON Corporation Electronic and Mechanical Components Company

Contact: www.omron.com/ecb

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