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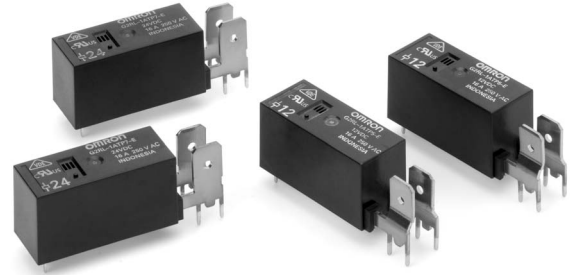
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G2RL-TP

PCB Power Relay

Low Profile Relay with Quick-connect Terminals and High Switching Capacity of 16A at 105°C

- High switching capacity: 250 VAC, 16 A at 105°C.
- Ideal for high temperature applications.
- Standard model conforms to UL class F.
- Easy wiring with quick-connect terminals (#250).
- Model with 5-mm pitch (RAST5) is also available.



RoHS Compliant

Model Number Legend

G2RL-□□□-□
 1 2 3 4

- Number of Poles**
1: 1-pole
- Contact Form**
A: SPST-NO (1a)
- Quick-connect Terminal Pitch**
TP5: 5 mm pitch (#250)
TP7: 7.5 mm pitch (#250)
- Classification**
E: High-capacity

Note. The model number with 3. TP is suitable for both quick-connect terminals (#250) and PCB terminals.

Application Examples

- Heater switching for home cooking appliances and industrial equipments
- Power supplies etc.

Ordering Information

Classification	High-capacity			Minimum packing unit
	Enclosure Ratings	Flux protection		
Contact form	Pitch between terminals	Model	Rated coil voltage	
SPST-NO (1a)	5 mm pitch	G2RL-1ATP5-E	12 VDC	50 pcs/tray
			24 VDC	
	7.5 mm pitch	G2RL-1ATP7-E	12 VDC	
			24 VDC	

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

Example: G2RL-1ATP5-E 12 VDC

Rated coil voltage

Ratings

Coil

Item	Rated current (mA)	Coil resistance (Ω)	Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (mW)
Rated voltage			% of rated voltage			
12 VDC	33.3	360	70% max.	10% min.	130% (at 105°C)	Approx. 400
24 VDC	16.7	1,440				

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

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

Note 3. The "Max. voltage" is the maximum 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		16 A at 250 VAC
Rated carry current		16 A
Max. switching voltage		440 VAC
Max. switching current		16 A
Failure rate (P level) (reference value *)		40mA at 24 VDC

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

Characteristics

Contact resistance *1		100 mΩ max.
Operate time		15 ms max.
Release time		5 ms max.
Insulation resistance *2		1,000 MΩ min.
Dielectric strength	Between coil and contacts	5,000 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 contact)		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	1000 m/s ²
	Malfunction	100 m/s ²
Durability	Mechanical	20,000,000 operations min. (at 18,000 operations/hr)
	Electrical	50,000 operations min. (at 900 operations/hr)
Ambient operating temperature		-40°C to 105°C (with no icing or condensation)
Ambient operating humidity		5% to 85%
Weight		Approx. 12 g

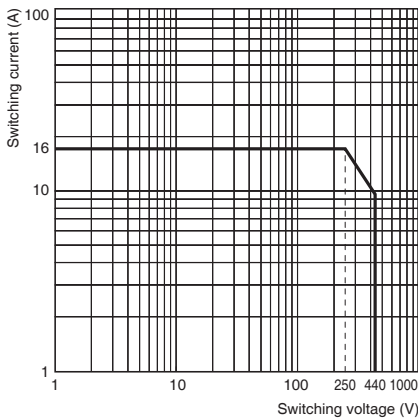
Note. Values in the above table are the initial values.

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

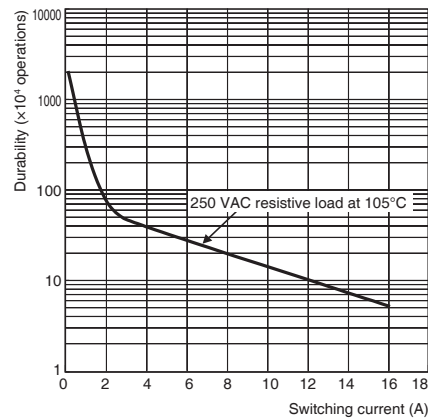
*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.

Engineering Data

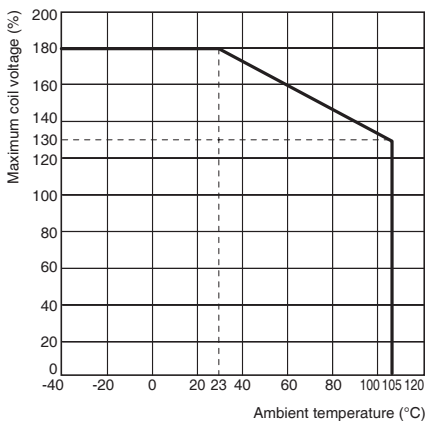
Maximum Switching Capacity



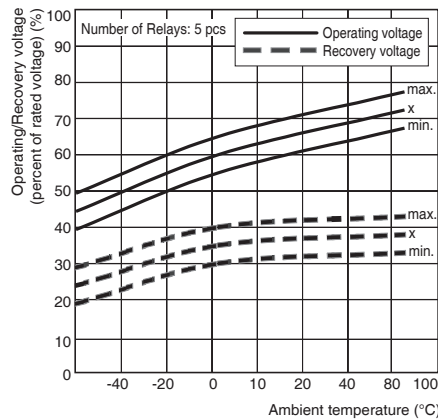
Durability



Ambient Temperature vs. Maximum Coil Voltage



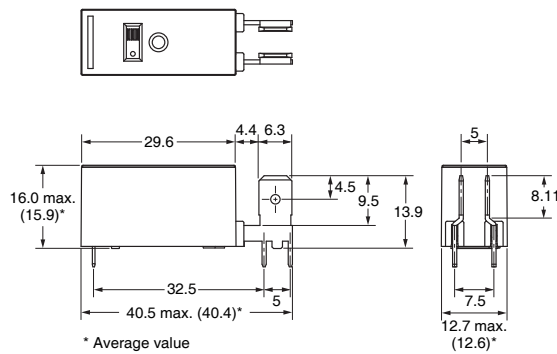
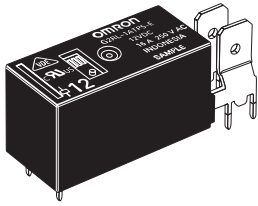
Ambient Temperature vs. Must Operate and Must Release Voltage



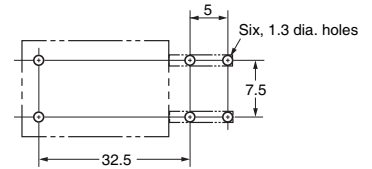
■Dimensions

(Unit: mm)

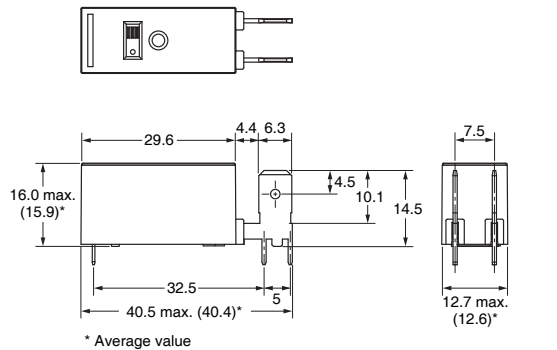
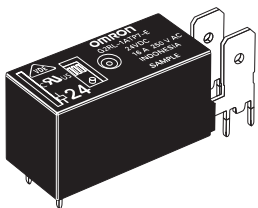
G2RL-1ATP5-E



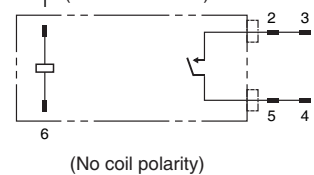
PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



G2RL-1ATP7-E



Terminal Arrangement/
Internal Connection
(BOTTOM VIEW)



■Approved Standards

UL Recognized: (File No. E41643)

CSA Certified: (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RL-1ATP7-E	SPST-NO (1a)	12 to 24 VDC	16 A at 250 VAC (General use) at 40°C	100,000
G2RL-1ATP5-E			16 A at 24 VDC (Resistive) at 40°C	50,000
			16 A at 250 VAC (Resistive) at 105°C	100,000

EN/IEC Certified/TÜV: (Certification No. 119650)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RL-1ATP7-E	SPST-NO (1a)	12, 24 VDC	16 A at 250 VAC (cosφ=1) at 105°C	100,000
G2RL-1ATP5-E				

■Precautions

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

Correct Use

●Terminals

The terminals fit FASTON receptacle 250 and are suitable for positive-lock mounting. Use only Faston terminals with the specified numbers.

Select leads for connecting Faston receptacles with wire diameters that are within the allowable range for the load current. Do not apply excessive force to the terminals when mounting or dismantling the Faston receptacle. Insert and remove terminals carefully one at a time. Do not insert terminals on an angle, or insert/remove multiple terminals at the same time. Refer to the right table for examples of positive-lock connectors made by AMP. Contact the manufacturer directly for details on connectors including availability.

Type	Receptacle terminals *	Positive housing
Terminal #250 (width: 6.35 mm)	AMP170330-1 (170327-1)	AMP172076-1(natural color)
	AMP170334-1 (170328-1)	AMP172076-4(yellow)
	AMP170335-1 (170329-1)	AMP172076-5(green)
		AMP172076-6(blue)

* The numbers shown in parentheses are for air-feeding.

- 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.

OMRON Corporation
Electronic and Mechanical Components Company

Contact: www.omron.com/ecb

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