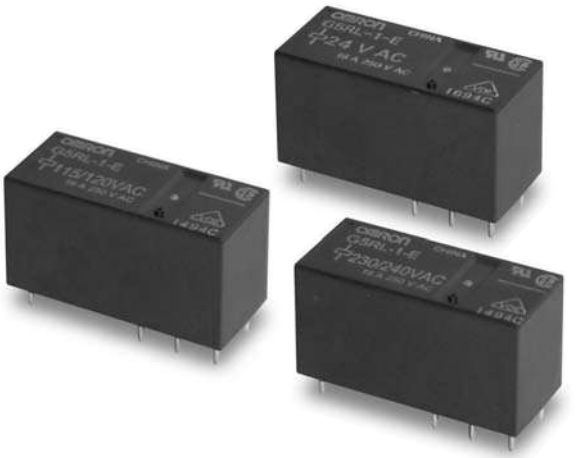
PCB Relay
G5RL

A Single-pole, 16-A Power Relay

- Low profile: 15.7 mm in height
- Clearance and creepage distance
  Between coil and contacts: 8 mm/8 mm
  Between contacts of the same polarity:
  3 mm/4 mm
- Inrush peak currents up to 100 A (DC models only)
- RoHS Compliant



Ordering Information

Classification		Enclosure ratings	Special Function	Coil Ratings	Contact form	
					SPST-NO	SPDT
Class F	High capacity	Flux protection	---	AC coil	---	G5RL-1-E
			High inrush	DC coil	G5RL-1A-E-HR	G5RL-1-E-HR

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

Examples: G5RL-1-E-HR 12 VDC
└ Rated coil voltage

G5RL-1-E 100 VAC
└ Rated coil voltage

■ Model Number Legend:

G5RL-□□□-□ □VDC (VAC)
1 2 3 4 5

1. **Number of Poles**
   1: 1 pole
2. **Contact Form/Contact Construction**
   None: SPDT
   A: SPST-NO
3. **Classification**
   E: High-capacity
4. **Special function**
   HR: High-inrush (DC models only)
5. **Rated Coil Voltage**
   Refer to “Coil Ratings” on page 2.

Specifications

■ Coil Ratings

Rated voltage (AC coil)	24 VAC	100 VAC	115 VAC/120 VAC		200 VAC	230 VAC/240 VAC	
Rated current at 50 Hz (mA)	31.30	7.50	5.85	6.25	3.75	3.00	3.13
Rated current at 60 Hz (mA)	28.30	6.88	5.35	5.70	3.45	2.76	2.88
Coil resistance (Ω)	443	8,220	11,600		33,000	47,600	
Must operate voltage	75% of rated voltage (max.)						
Must release voltage	15% of rated voltage (min.)						
Max. voltage	90% to 110% of rated voltage						
Power consumption	Approx. 0.75 VA						

Note: 1. The above items are measured at a coil temperature of 23°C.
2. The tolerance of the rated current is +15%/−20%.
3. Power consumption drop was measured at 50 Hz.
4. Coil resistances are provided as reference values.

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

Note: 1. The above items are measured at a coil temperature of 23°C.
2. The tolerance of the rated current is ±10%.

■ Contact Ratings

Contact material	Ag alloy (Cd free)
Load	Resistive load (cos ϕ=1)
Rated load	16 A at 250 VAC (NO), 16 A at 24 VDC (NO), 5 A at 250 VAC (NC), 5 A at 24 VDC (NC)
Rated carry current	16 A (NO), 5 A (NC)
Max. switching voltage	250 VAC, 24 VDC
Max. switching current	16 A (NO), 5 A (NC)
Max. switching power	4,000 VA AC (NO), 1,250 VA AC (NC) 384 W DC (NO), 120 W DC (NC)
Failure rate (reference value)	40 mA at 24 VDC

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

■ Characteristics

Item	DC coil	AC coil
Contact resistance	100 mΩ max.	
Operate time	15 ms max.	20 ms max.
Release time	5 ms max.	20 ms max.
Max. switching frequency	Mechanical: 18,000 operations/h Electrical: 1,800 operations/h (under rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity 6,000 VAC, 50/60 Hz for 1 min between coil and contacts	
Impulse withstand voltage	10 kV between coil and contacts (1.2 × 50 μs)	
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 1.5-mm double amplitude Malfunction: 10 to 55 to 10 Hz, 1.5-mm double amplitude	
Shock resistance	Destruction: 1,000 m/s^2 (approx. 100 G) Malfunction: 100 m/s^2 (approx. 10 G)	
Endurance	Mechanical: 10,000,000 operations min. (at 18,000 operations/h) Electrical:50,000 operations min. (Resistive load, 16 A, 250 VAC, NO contact) (Resistive load, 16 A, 24 VDC, NO contact) (Resistive load, 5 A, 250 VAC, NC contact) (Resistive load, 5 A, 24 VDC, NC contact)	
Ambient temperature	Operating: −40°C to 85°C (with no icing)	Operating: −40°C to 70°C (with no icing)
Ambient humidity	Operating: 5% to 85%	
Weight	Approx. 10 g	

■ Approved Standards

UL 508 (File No. E41643 Vol. 4 Sec.38) and CSA C22.2 No. 1, C22.2 No. 14 (Certificate No.: 1419093)

Model	Coil Rating	Contact rating
G5RL-1(A)-E-HR	5 to 48 VDC	16 A, 277 VAC General, 50,000 operations - NO 16 A, 250 VAC General, 50,000 operations - NO TV-5, 25,000 operations - NO A300 Pilot Duty, 720 VA, 240 VAC, 30,000 operations - NO 1/2 Hp, 120 VAC, 6,000 operations - NO 60 LRA/10 FLA, 250 VAC, 6,000 operations - NO 5 A, 250 VAC General, 50,000 operations - NC 5 A, 24 VDC Resistive, 50,000 operations - NC
G5RL-1-E	24 to 240 VAC	

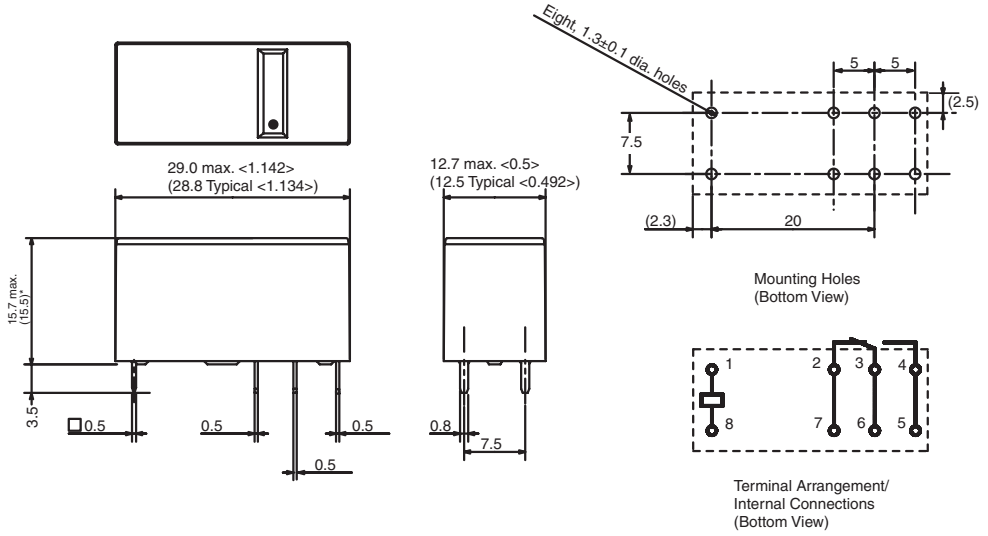
VDE DIN EN 61810-1 Edition 2 and EN60255-25 (Reg. No. A282)

Model	Coil Rating	Contact rating
G5RL-1(A)-E-HR	5, 12, 24, 48 V	16 A at 250 VAC cosϕ=1 15,000 operations - NO 240 VAC 100 A (0-P) Steady 10 A (rms) 50,000 operations - NO 240 VAC 50 A (0-P) Steady 5 A (rms) 10,000 operations - NO
G5RL-1-E	24, 100, 115/120, 200, 230/240 VAC (50 Hz)	16 A, 250 VAC 15,000 operations - NO

Dimensions

Note: All units are in millimeters unless otherwise indicated.





Precautions

Disclaimer:

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Omron Electronic Components, LLC

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