■Ordering Information

Terminal Shape	Market Code	Classification	Contact Form	Enclosure Rating	Model	Rated Coil Voltage	Minimum Packing Unit
				Flux protection	G2RL-1A	5, 12, 24, 48 VDC	
			SPST-NO (1a)	riux protection	G2RL-1A-PW1	5, 12, 24 VDC	
				Sealed	G2RL-1A4	5, 12, 24, 48 VDC	
				Flux protection	G2RL-1	5, 12, 24, 46 VDC	
			SPDT (1c)	riux protection	G2RL-1-PW1	5, 12, 24 VDC	
				Sealed	G2RL-14	5, 12, 24, 48 VDC	1
		Standard		Flux protection	G2RL-2A	5, 12, 24, 46 VDC	
			DPST-NO (2a)	r lux protection	G2RL-2A-PW1	5, 12, 24 VDC	
				Sealed	G2RL-2A4		
					G2RL-2	5, 12, 24, 48 VDC	
			DPDT (2c)		G2RL-2-ASI		
	General		DI DI (20)		G2RL-2-PW1	5, 12, 24 VDC	
	Purpose			Sealed	G2RL-24	5, 12, 24, 48 VDC	20 pcs/tube
		High-capacity	SPST-NO (1a)	Flux protection	G2RL-1A-E		
PCB terminals					G2RL-1A-E-ASI		
1 OD terminais					G2RL-1A-E-CV	5, 12, 24 VDC	
					G2RL-1A-E-PW1		
				Sealed	G2RL-1A4-E		
			SPDT (1c)		G2RL-1-E	5, 12, 24, 48 VDC	
				Flux protection	G2RL-1-E-ASI		
			31 01 (10)		G2RL-1-E-PW1	5, 12, 24 VDC	
				Sealed	G2RL-14-E	5, 12, 24, 48 VDC	
		High-sensitivity	SPST-NO (1a)		G2RL-1A-H		
		r light-sensitivity	SPDT (1c)		G2RL-1-H		
			SPDT (1c)		G2RL-1-HA	5, 12, 24 VDC	
		Standard on High-capacity	DPST-NO (2a)	Flux protection	G2RL-2A-HA		
	Home		DPDT (2c)		G2RL-2-HA		
	Application		SPST-NO (1a)		G2RL-1A-E-HA		
					G2RL-1A-E-CV-HA		
			SPDT (1c)		G2RL-1-E-HA		

Note 1. When ordering, add the rated coil voltage to the model number.

Example: G2RL-1A DC5

Rated coil voltage

However, the notation of the coil voltage on the product case will be marked as □□VDC.

Note 2. Place your order in tube (20 pcs/tube) units.

Note 3. Contact your OMRON sales representative for sealed models.

■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)	Power consumption (mW)
Standard,	5 VDC	80.0	62.5	70% max.	10% min. 10 to 41%*	130% - (at 85°C)	Approx. 400
	12 VDC	33.3	360				Approx. 400 Approx. 120*
High- capacity	24 VDC	16.7	1,440				Арріох. 120
capacity	48 VDC	8.96	5,358				Approx. 430
High- sensitivity	5 VDC	50	96	75% max.	10%	(at 65 C)	
	12 VDC	20.8	576				Approx. 250
Sensitivity	24 VDC	10.42	2,304				

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

●Contacts: Flux Protection Type

	Classification Standard type		e (resistive load)	High-capacity type (resistive load)	High-sensitivity type (resistive load)			
Item	Model	1-pole	2-pole	1-	pole			
Contact ty	Contact type Single							
Contact m	aterial		Ag-alloy (Cd free)					
Rated load		12 A at 250 VAC 12 A at 24 VDC (See note)			10 A at 250 VAC (See note)			
Rated carry current		12 A (See note)	12 A (See note) 8 A (70°C)/5 A (85°C) (See note)		10 A (See note)			
Max. switc	ching voltage	440 VAC, 300 VDC						
Max. switching current		12 A	8 A	16 A	10 A			
Failure rat (reference	te (P level) e value*)	40 mA at 24 VDC						

^{*} This value was measured at a switching frequency of 120 operations/min. Note: Contact your OMRON representative for the ratings on sealed models.

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.

^{*} These numbers are only for -PW1 type. Power consumption with holding voltage is approx.120mW. Please confirm the detail in page 8 coil voltage reduction (holding voltage).

■Characteristics

●Flux Protection Type

Classification		Standa	ard type	High-capacity type	High-sensitivity type			
Item	Number of poles	1-pole	2-pole	1-pole				
Contact res	sistance *1	100 mΩ max.						
Operate tim	ne		15 m	s max.				
Release tim	ne		5 ms	s max.				
Insulation re	esistance *2		1,000	M Ω min.				
	Between coil and contacts		5,000 VAC, 50	0/60 Hz for 1min				
Dielectric strength	Between contacts of the same polarity	1,000 VAC, 50/60 Hz for 1min						
	Between contacts of different polarity	-	2,500 VAC, 50/60 Hz for 1min		-			
Impulse wit	hstand voltage	10 kV (1.2 x 50 µs)						
Vibration	Destruction		10 to 55 to 10 Hz, 0.75 mm single a	amplitude (1.5 mm double amplitude)				
resistance	Malfunction		10 to 55 to 10 Hz, 0.75 mm single a	amplitude (1.5 mm double amplitude)				
Shock	Destruction		1,00	0 m/s ²				
resistance	Malfunction		Energized: 100 m/s²,	De-energized: 100 m/s ²				
	Mechanical		20,000,000 operations (at 18,000 operations/hr)					
Durability	Electrical *3 (resistive load)	G2RL-1A, G2RL-1(-HA, -PW1): 50,000 operations at 250 VAC, 12 A 30,000 operations at 24 VDC, 12 A	30,000 operations at 250 VAC, 8 A 30,000 operations at 30 VDC, 8 A	G2RL-1A-E(-ASI, -HA, -PW1), G2RL-1-E(-ASI, -HA, -PW1): 30,000 operations at 250 VAC, 16 A 30,000 operations at 24 VDC, 16 A G2RL-1A-E-CV(-HA): 50,000 operations at 250 VAC, 16 A at 105°C	G2RL-1(A)-H: 50,000 operations at 250 VAC, 10 A			
Ambient operating temperature		-40°C to 85°C (with no icing or condensation) -40°C to 105°C (with no icing or condensation) by G2RL-1A-E-CV						
	erating humidity	5% to 85% (with no icing or condensation)						
Weight		Approx. 12 g						

Note 1. Values in the above table are the initial values at 23°C.

Note 2. Contact your OMRON sales representative for sealed models.

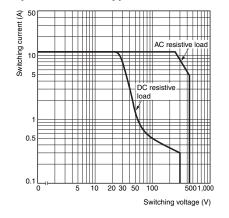
*1. Measurement conditions: 5 VDC, 1 A, voltage drop method

*2. Measurement conditions: Measured at the same points as the dielectric strength using a 500 VDC ohmmeter.

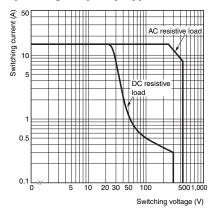
*3. 1,800 operations per hour.

■Engineering Data

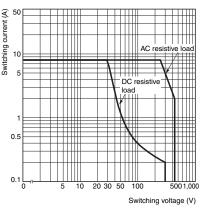
●Maximum Switching Capacity 1-pole Standard Type



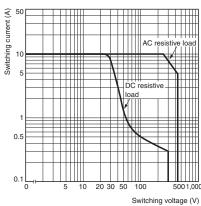
1-pole High-capacity Type



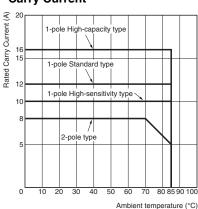
2-pole Type



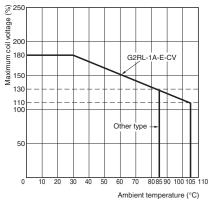
High-sensitibity Type



Ambient Temperature vs. Rated Carry Current

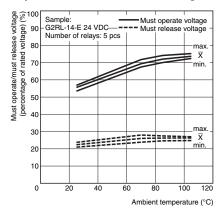


● Ambient Temperature vs. Maximum Coil Voltage



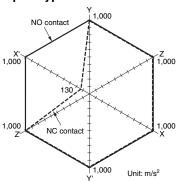
Note. The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

●Ambient Temperature vs. Must Operate and Must Release Voltages



●Shock Malfunction

1-pole type



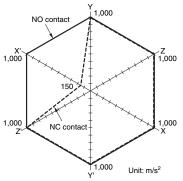
Sample: G2RL-14 12 VDC Number of relays: 5 pcs Test conditions: Shock is applied in +X +Y and +7 directions three

lest conditions: Snock is applied in ±X, ±Y, and ±Z directions three times each with without energizing the relays to check the number of malfunctions.

Requirement: None malfuction 100 m/s²



2-pole type



Sample: G2RL-24 12 VDC Number of relays: 5 pcs Test conditions: Shock is applied in ±X, ±Y, and ±Z directions three

in ±X, ±Y, and ±Z directions three times each with without energizing the Relays to check the number of malfunctions.

Requirement: None malfuction 100 m/s²



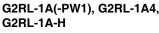
■Electrical Endurance Data (Reference Value)

G2RL-1-E	8 A 250 VAC (cos \$\phi = 0.4) 8 A 30 VDC (L/R=7 ms)	200,000 operation min. (NO) 10,000 operation min. (NO)		
G2RL-1	5 A 250 VAC (cosφ=0.4) 5 A 30 VDC (L/R=7 ms)	150,000 operation min. (NO) 10,000 operation min. (NO)		
G2RL-2	8 A 250 VAC (cosφ=1) 8 A 30 VDC	30,000 operation min. 10,000 operation min.		
G2RL-1A-E	Pilot duty (A300), 250 VAC 250,000 operation min. Pilot duty (A300), 125 VAC 150,000 operation min.			

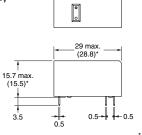
Note. The results shown reflect values at ambient temperature 23°C. Electrical endurance will vary depending on the test conditions.

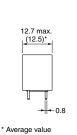
Contact your OMRON representative if you require more detailed information for the electrical endurance under your test condition.

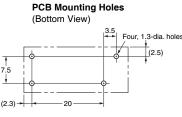
■Dimensions (Unit: mm)



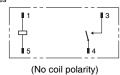


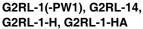




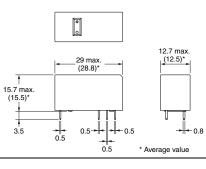


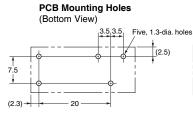
Terminal Arrangement/ Internal Connections (Bottom View)



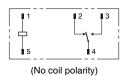


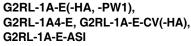




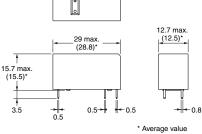


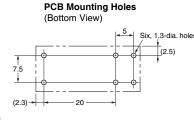


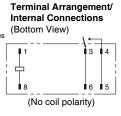


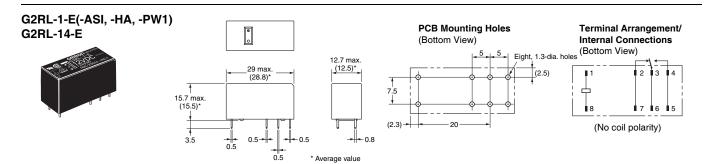


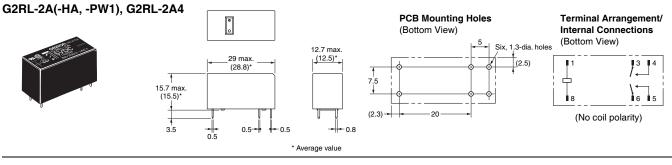


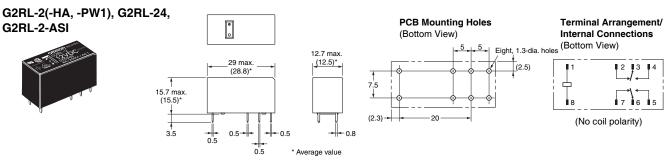












■Approved Standards

• The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

UL Recognized: (File No. 41643)
CSA Certified: (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RL-1A(-PW1)	SPST-NO (1a)	3 to 48 VDC	12 A, 250 VAC (General Use) 40°C	100,000
G2RL-1(-HA, -PW1)	SPDT (1c)	3 10 46 VDC	12 A, 24 VDC (Resistive) 40°C	50,000
G2RL-1A-E(-HA, -PW1)	SPST-NO (1a)	3 to 48 VDC	16 A, 250 VAC (General Use) 40°C	100,000
G2RL-1-E(-HA, -PW1)	SPDT (1c)	3 10 46 VDC	16 A, 24 VDC (Resistive) 40°C	50,000
G2RL-1A-E-ASI	SPST-NO (1a)	3 to 48 VDC	16 A, 250 VAC (Resistive) 85°C	30,000
G2RL-1-E-ASI	SPDT (1c)	3 10 46 VDC	TV-3 40°C	25,000
G2RL-1A-E-CV(-HA)	SPST-NO (1a)	3 to 48 VDC	16 A, 250 VAC (Resistive) 105°C	100,000
G2RL-1A-H	SPST-NO (1a)	3 to 48 VDC	10 A, 250 VAC (General Use) 40°C	50.000
G2RL-1-H	SPDT (1c)	3 10 46 VDC	10 A, 24 VDC (Resistive) 40°C	50,000
G2RL-2A(-HA, -PW1)	DPST-NO (2a)	3 to 48 VDC	8 A, 277 VAC (General Use) 40°C	100.000
G2RL-2(-HA, -PW1)	DPDT (2c)	3 10 46 VDC	8 A, 30 VDC (Resistive) 40°C	100,000
G2RL-2-ASI	DPDT (2c) 3 to 48 VI	2 to 49 VDC	8 A, 250 VAC (Resistive) 85°C	15,000
		3 10 46 VDC	8 A, 30 VDC (Resistive) 85°C	15,000

G2RL

EN/IEC, VDE Certified (Certificate No. 119650)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RL-1A(-PW1)	SPST-NO (1a)	5, 12, 24, 48	12 A, 250 VAC (cos¢=1) 85°C 12 A, 24 VDC (L/R=0 ms) 85°C	100,000
G2RL-1(-HA, -PW1)	SPDT (1c)	VDC	AC15: 3 A at 240 VAC at room temperature DC13: 2.5 A at 24 VDC, 50ms at room temperature	6,000
			16 A, 250 VAC (cosφ=1) 85°C	30,000
G2RL-1A-E(-HA, -PW1)	SPST-NO (1a)	5, 12, 24, 48	16 A, 24 VDC (L/R=0 ms) 85°C	15,000
G2RL-1-E(-HA, -PW1)	SPDT (1c)	VDC	AC15: 3 A at 240 VAC (NO) at room temperature, 1.5 A at 240V AC (NC) at room temperature DC13: 2.5 A at 24 VDC (NO), 50ms at room temperature	6,000
G2RL-1A-E-ASI G2RL-1-E-ASI	SPST-NO (1a) SPDT (1c)	5, 12, 24, 48 VDC	16 A, 250 VAC (cosφ=1) 85°C	30,000
G2RL-1A-E-CV(-HA)	SPST-NO (1a)	5, 12, 24, 48 VDC	16 A, 250 VAC (cosφ=1) 105°C	100,000
G2RL-1A-H	CDCT NO (1a)		10 A, 250 VAC (cosφ=1) 85°C	50,000
G2RL-1A-H	SPST-NO (1a) SPDT (1c)	5, 12, 24 VDC	10 A, 250 VAC (cosφ=1) 40°C	100,000
GZIIL-1-II	Si Di (10)		10 A, 24 VDC (L/R=0 ms) 85°C	50,000
G2RL-2A (-HA, -PW1)	DPST-NO (2a)		8 A, 250 VAC (cosφ=1) 85°C	30,000
G2HL-2A (-11A, -F W1)	DF31-NO (2a)	5, 12, 24, 48	8 A, 30 VDC (L/R=0 ms) 85°C	15,000
G2RL-2 (-HA, -PW1)	DPDT (2c)	VDC	AC15: 1.5 A at 240VAC at room temperature DC13: 2 A at 30 VDC, 50ms at room temperature	6,000
G2RL-2-ASI	DPDT (2c)	5, 12, 24, 48	8 A, 250V AC (Resistive) 85°C	15,000
GEITE-E-AGI	DI DI (20)	VDC	8 A, 30V DC (Resistive) 85°C	15,000

CQC Certified (Certificate No. CQC17002171904)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2RL-1A(-PW1)	SPST-NO (1a)		12 A, 250 VAC (cosφ=1) at room temperature	50,000
GZHL-TA(-FWT)	3F31-NO (1a)	5 to 48 VDC	12 A, 24 VDC (L/R=0 ms) at room temperature	30,000
CODI 1/ HA DW(1)	SPDT (1c)	5 10 46 VDC	12 A, 250 VAC (cosφ=1) at room temperature	50,000
G2RL-1(-HA, -PW1)	SPDT (TC)		12 A, 24 VDC (L/R=0 ms) at room temperature	30,000
G2RL-1A-E(-ASI, -HA, -PW1)	SPST-NO (1a)	- 5 to 48 VDC	16 A, 250 VAC (cosφ=1) at room temperature	30,000
G2RL-1A-E-CV(-HA)			16 A, 24 VDC (L/R=0 ms) at room temperature	30,000
CODI 1 E(ACI HA DW1)	SPDT (1c)		16 A, 250 VAC (cosφ=1) at room temperature	30,000
G2RL-1-E(-ASI,-HA, -PW1)			16 A, 24 VDC (L/R=0 ms) at room temperature	30,000
CORL 24 (4)(HA RW4)	DPST-NO (2a)		8 A, 250 VAC (cosφ=1) at room temperature	30,000
G2RL-2A (4)(-HA, -PW1)	DPS1-NO (2a)	5 to 48 VDC	8 A, 30 VDC (L/R=0 ms) at room temperature	30,000
CODI O(ACL HA DW4)	DDDT (0a)		3 A, 250 VAC (cosφ=1) at room temperature	30,000
G2RL-2(-ASI,-HA, -PW1)	DPDT (2c)		3 A, 30 VDC (L/R=0 ms) at room temperature	30,000

Creepage distance	8 mm min.
Clearance distance	8 mm min.
Insulation material group	Illa
Type of insulation coil-contact circuit	Reinforced
open contact circuit	Micro disconnection
Rated Insulation voltage	250 V
Pollution degree	3 (Flux protection / Sealed)
Rated voltage system	250 V / 400 V (Flux protection)
Over voltage category	
Category of protection according to IEC 61810-1	RT II (Flux protection) / RT III (Sealed)
Glow wire according to IEC 60335-1	<ha models="" only=""> GWT 750°C min. (IEC 60695-2-11) / GWFI 850°C min. (IEC 60695-2-12)</ha>
Tracking Index of relay base	PTI 250 V min. (housing parts)

■Precautions

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

Correct Use

Mounting Position Compared to G2R Model

 Although the G2RL model and the G2R model are both low profile relays, their characteristics such as switching capacity are different. Be sure to check operation under the actual operating conditions before use.

Cleaning

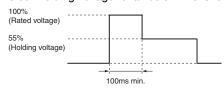
 The G2RL model is flux-resistant with two sealing holes on the case. Thus, do not clean the relay by boiling or soaking in water. Consult your Omron sales representative for sealed type relay.

Using Relays in an Atmosphere Containing Corrosive Gas

 Do not use relays in an atmosphere containing corrosive gas (sulfuric or organic gas). Otherwise, connection failure due to corrosion on the contact surface may lead to functional faults

corrosion on the contact surface may lead to functional faults. Coil Voltage Reduction (Holding Voltage) after Relay Operation

- If the coil voltage is reduced to the holding voltage after relay operation, first apply the rated voltage to the coil for at least 100 ms, as shown below.
- A voltage of at least 55% of the rated voltage is required for the coil holding voltage. Do not allow voltage fluctuations to cause the coil holding voltage to fall below this level.



	Applied coil voltage	Coil resistance*	Power consumption
Rated voltage	100%	62.5Ω (5 VDC) 360Ω (12 VDC)	Approx. 400 mW
Holding voltage	55%	1,440Ω (24 VDC)	Approx. 120 mW

The coil resistance were measured at a coil temperature of 23°C with tolerances of \pm 10%.

Power consumption reduction of coil with pulse width modulation (PWM)

- Models with PWM drive capability (-PW1) can reduce coil holding current with PWM control. This function reduces power consumption by reducing the current held by coil.
- Apply the rated voltage for at least 100 ms at the time of relay operation.
- The following are our verification conditions. When using, it be sure to check the actual machine under the actual usage conditions.
- ■Example of drive circuit

Applied coil voltage (100%)

Surge absorption diode

Pulse input

MOS-FET

- ■Conditions of validation carried out by OMRON
- Applied voltage: rated voltage
- Duty: 60% or more
- Frequency: 10 kHz or more
- Diode Vf: 0.4 V or less

Please check each region's Terms & Conditions by region website.

OMRON Corporation

Electronic and Mechanical Components Company

Regional Contact

Americas

https://www.components.omron.com/

Asia-Pacific

https://ecb.omron.com.sg/

Korea

https://www.omron-ecb.co.kr/

Europe

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China

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Japan

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In the interest of product improvement, specifications are subject to change without notice.

Cat. No. J117-E1-17 0621(0207)