General-purpose Relay G2RS-(S)

Slim and Space-saving Power Plug-in Relay

- · Lockable test button models now available.
- Built-in mechanical operation indicator.
- Provided with nameplate.
- AC type is equipped with a coil-disconnection selfdiagnostic function (LED type).
- High switching power (1-pole: 10 A).
- Environment-friendly (Cd, Pb free).
- Wide range of Sockets also available.
- · RoHS Compliant.



Model Number Structure

■ Model Number Legend

G2R					-		-	(S)
	1	2	3	4	5	6	7	-

1. Relay Function

Blank:General-purpose

2. Number of Poles

1: 1 pole 2: 2 poles

3. Contact Form

Blank:SPDT

4. Contact Type

Blank:Single

5. Terminals

S: Plug-in

6. Classification

Blank: General-purpose

N: LED indicator

D: Diode

ND: LED indicator and diode

NI: LED indicator with test button

NDI: LED indicator and diode with test button

7. Rated Coil Voltage

Ordering Information

■ List of Models

Classification		Enclosure	Coil ratings	Contact form/Model	
		rating		SPDT	DPDT
Plug-in terminal	General-purpose	Unsealed	AC/DC	G2R-1-S	G2R-2-S
	LED indicator			G2R-1-SN	G2R-2-SN
	LED indicator with test button]		G2R-1-SNI	G2R-2-SNI
	Diode]	DC	G2R-1-SD	G2R-2-SD
	LED indicator and diode]		G2R-1-SND	G2R-2-SND
	LED indicator and diode with test button			G2R-1-SNDI	G2R-2-SNDI

Note: When ordering, add the rated coil voltage and "(S)" to the model number. Rated coil voltages are given in the coil ratings table.

Example: G2R-1-S DC12 (S) —— New model
Rated coil voltage

■ Accessories (Order Separately) Connecting Sockets

Applicable Relay model	Track/surface-moun	ting Socket	Back-mounting Socket		
	Screwless clamp terminal (See note.)	Screw terminal	Terminals	Model	
1 pole	P2RF-05-S	P2RF-05-E	PCB terminals	P2R-05P, P2R-057P	
G2R-1-S(N)(D)(ND)(NI)(NDI)	+ P2CM-S	P2RF-05	Solder terminals	P2R-05A	
2 poles	P2RF-08-S	P2RF-08-E	PCB terminals	P2R-08P, P2R-087P	
G2R-2-S(N)(D)(ND)(NI)(NDI)	+ P2CM-S	P2RF-08	Solder terminals	P2R-08A	

Note: 1. Use of P2CM Clips are optional. However, use of the P2CM Clip & Release Lever is recommended to ensure stable mounting.

Accessories for Screwless Clamp Terminal Socket (Option)

Name	Model				
Clip & Release Lever	P2CM-S				
Nameplate	R99-11 Nameplate for MY				
Socket Bridge	P2RM-SR (for AC), P2RM-SB (for DC)				

Mounting Tracks

Applicable Socket	D	escription	Model
Mounting track and accessories	Mounting track	()	PFP-50N PFP-100N PFP-100N2
	End plate		PFP-M
	Spacer		PFP-S
Mounting plate*	Back-connecting S	ockets	P2R-P

^{*}Used to mount several P2R-05A and P2R-08A Connecting Sockets side by side.

Specifications

■ Coil Ratings

Rat	Rated voltage Rated current*		Coil resistance*		ctance (H) value)	Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)	
		50 Hz	60 Hz		Armature OFF	Armature ON	%	of rated volt	age	
AC	24 V	43.5 mA	37.4 mA	253 Ω	0.81	1.55	80% max.	30% min.	110%	0.9 VA at 60 Hz
	110 V	9.5 mA	8.2 mA	5,566 Ω	13.33	26.83				
	120 V	8.6 mA	7.5 mA	7,286 Ω	16.13	32.46				
	230 V	4.4 mA	3.8 mA	27,172 Ω	72.68	143.90				
	240 V	3.7 mA	3.2 mA	30,360 Ω	90.58	182.34				

Rated voltage Rated current*		Rated current*	Coil resistance*		ctance (H) value)	Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
				Armature OFF	Armature ON	%	of rated volt	age	
DC	6 V	87.0 mA	69 Ω	0.25	0.48	70% max.	15% min.	110%	0.53 W
	12 V	43.2 mA	278 Ω	0.98	2.35				
	24 V	21.6 mA	1,113 Ω	3.60	8.25				
	48 V	11.4 mA	4,220 Ω	15.2	29.82				

^{*} The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of ±10%.

^{2. &}quot;-E" models are of finger-safe product construction. Round terminals cannot be used. Use Y-shaped terminals.

■ Contact Ratings

Number of poles		1 pole	2	poles	
Load	Resistive load (cosφ = 1)	Inductive load (cos\(= 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	
Rated load	10 A at 250 VAC; 10 A at 30 VDC	7.5 A at 250 VAC; 5 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC	
Rated carry current	10 A		5 A		
Max. switching voltage	440 VAC, 125 VDC		380 VAC, 125 VDC		
Max. switching current	10 A		5 A		
Max. switching capacity	2,500 VA, 300 W	1,875 VA, 150 W	1,250 VA, 150 W	500 VA, 90 W	
Minimum permissible load	100 mA at 5 VDC		10 mA at 5 VDC		

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

■ Characteristics

Item		1 pole	2 poles	
Contact resistance	100 m Ω max.			
Operate (set) time	15 ms max.			
Release (reset) time	AC: 10 ms max.; E (w/built-in diode: 2		AC: 15 ms max.; DC: 10 ms max. (w/built-in diode: 20 ms max.)	
Max. operating frequency	Mechanical: Electrical:	18,000 operations/hr 1,800 operations/hr (under rate	ed load)	
Insulation resistance	1,000 M Ω min. (at	500 VDC)		
Dielectric strength	contacts*;	Hz for 1 min between coil and Hz for 1 min between contacts of	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 3,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity	
Vibration resistance	Destruction: Malfunction:		gle amplitude (1.5 mm double amplitude) gle amplitude (1.5 mm double amplitude)	
Shock resistance	Destruction: Malfunction:	1,000 m/s ² 200 m/s ² when energized; 100	m/s² when not energized	
Service life	Mechanical: Electrical:	AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr) 100,000 operations min. (at 1,800 operations/hr under rated load) (DC coil type)		
Ambient temperature	Operating:	-40°C to 70°C (with no icing or	condensation)	
Ambient humidity	Operating:	5% to 85%		
Weight	Approx. 21 g			

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

■ Approved Standards

UL Recognized (File No. E41643) - - Ambient Temp. = 40° C

Model	Contact form	Coil ratings	Contact ratings	Cycles
G2R-1-S	SPDT	5 to 110 VDC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³
G2R-2-S	DPDT	5 to 240 VAC	5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³

CSA Certified (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Cycles
G2R-1-S	SPDT		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³
G2R-2-S	DPDT	5 to 240 VAC	5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³

IEC/VDE (EN61810)

Contact form	Coil ratings	Contact ratings	Cycles
1 pole	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 440 VAC (cosφ = 1.0) 10 A, 250 VAC (cosφ = 1.0) 10 A, 30 VDC (0 ms)	100 x 10 ³
2 poles	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 250 VAC (cosφ =1.0) 5 A, 30 VDC (0 ms)	100 x 10 ³

LR

Numb of pol		Contact ratings	Cycles
1 pole	5 to 110 VDC 5 to 240 VDC	10 A, 250 VAC (general use) 7.5 A, 250 VAC (PF0.4) 10 A, 30 VDC (resistive) 5A, 30VDC (L/R=7ms)	100 x 10 ³
2 poles	5 to 110 VDC 5 to 240 VDC	5 A, 250 VAC (general use) 2 A, 250 VAC (PF0.4) 5 A, 30 VDC (resistive) 3A, 30VDC (L/R=7ms)	100 x 10 ³

^{*4,000} VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A Socket is used.

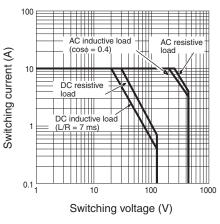
Engineering Data

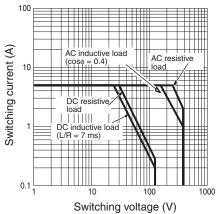
■ Maximum Switching Capacity

Plug-in Relays

G2R-1-S

G2R-2-S



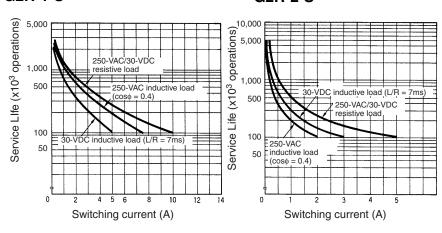


■ Electrical Service Life

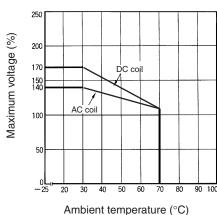
Plug-in Relays

G2R-1-S

G2R-2-S



Ambient Temperature vs. Maximum Coil Voltage



Note: The maximum voltage refers to the maximum value in a varying range of operating power

voltage, not a continuous voltage.

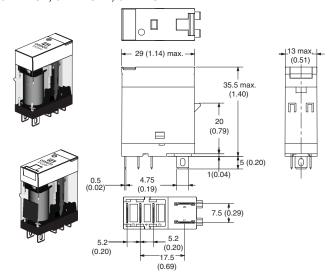
Dimensions

Unit: mm (inch)

■ Relays with Plug-in Terminals

SPDT Relays

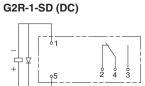
G2R-1-S, G2R-1-SN, G2R-1-SNI G2R-1-SD, G2R-1-SND, G2R-1-SNDI



Terminal Arrangement/Internal Connections (Bottom View)

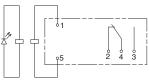
G2R-1-S

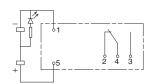
5 2 4 3



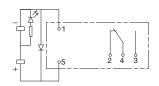
G2R-1-SN, G2R-1-SNI (DC)

G2R-1-SN, G2R-1-SNI (AC)



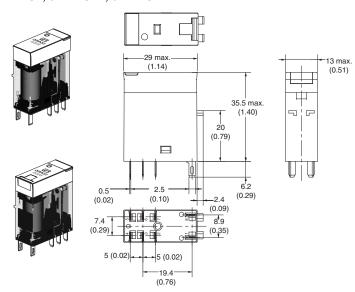


G2R-1-SND, G2R-1-SNDI (DC)



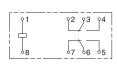
DPDT Relays

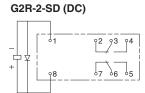
G2R-2-S, G2R-2-SN, G2R-2-SNI G2R-2-SD, G2R-2-SND, G2R-2-SNDI



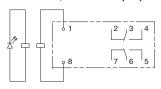
Terminal Arrangement/Internal Connections (Bottom View)

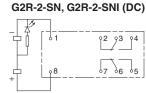
G2R-2-S



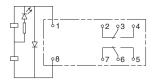


G2R-2-SN, G2R-2-SNI (AC)

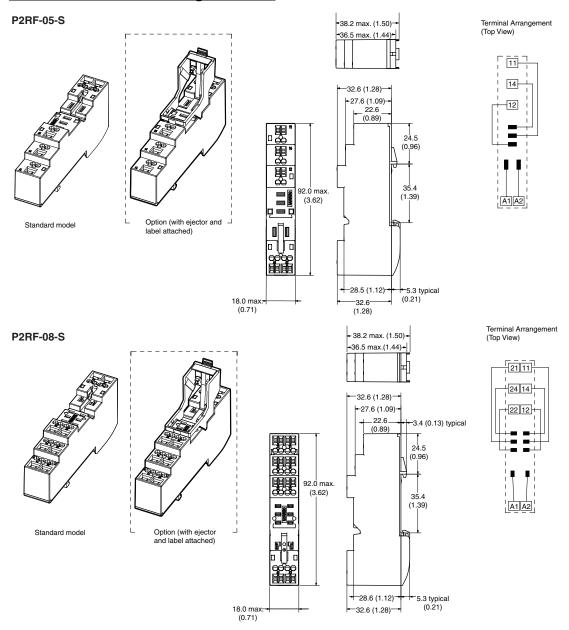




G2R-2-SND, G2R-2-SNDI (DC)

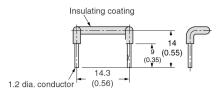


Track/Surface Mounting Sockets



Accessories for P2RF-□-S

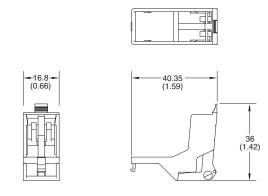
Socket Bridge



Note: The color of insulating coating indicates power type.

Model	Power	Color
P2RM-SR	AC	Red
P2RM-SB	DC	Blue

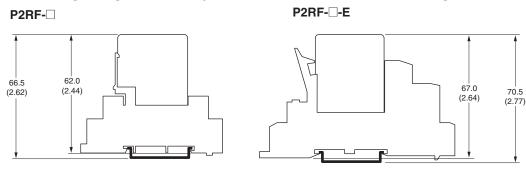
Clip and Release Lever

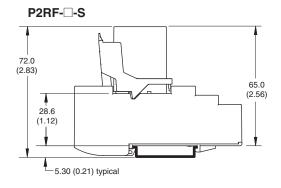


OMRON

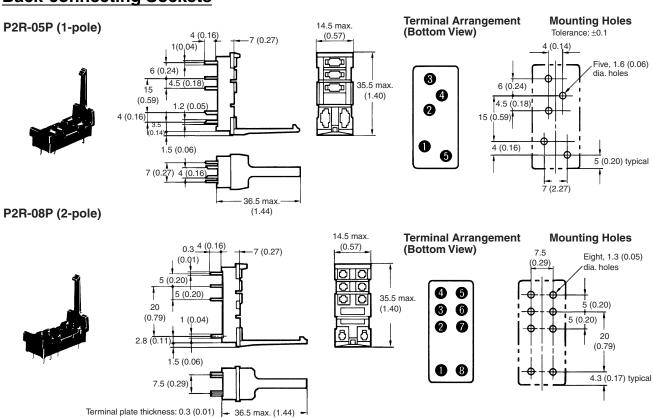
Terminal Arrangement Mounting Holes P2RF-05-E (Top View) (for Surface Mounting) 2 (0.08) Five, M3.5×7 48 max. (1.89)3.2 (0.13) **4** (11) dia. hole 39.5 (14) ② T (1.55) ر③ (12) 39.5±0.1 35.5 35.40) 85.5 max (1.55 ±0.004) (3.37)3.5 (0.14) dia. hole M3 or 3.5 (0.14) dia. -11.5 (0.20) (0.45)16.0 max. 61 max. (0.63)(2.40)Note: Pin numbers in parentheses apply to DIN standard. P2RF-08-E **Terminal Arrangement Mounting Holes** (Top View) (for Surface Mounting) 2 (0.08) (0.06) -2 (0.08) 48.0 max. Eight, M3×8 3 (0.12) (1.89) (21) 3.2 (0.13) (22) (12)39.5 dia. hole 35.5 (1.55)85.5 max (3.37) 39.5±0.1 (1.40) (1.55±0.004) L_{® (A1)} 3.5 (0.14) dia. hole (A2)1 M3 or 3.5 (0.14) 11.5 (0.45) dia. hole 61.0 max. (2.40) 16.0 (0.63) max. 2 (0.08) P2RF-05 **Terminal Arrangement Mounting Holes** Five, M3.5 x 8 (Top View) (for Surface Mounting) 4 (0.16) dia. holes 4.2 (0.16) dia. hole 71.5 max 35.5 (1.40)(2.81)30±0.05 (1.18±0.002) 0 19.5 (0.77) M3 or 3.2 (0.13) 19.5 max **60** (0.16)30 max.(1.18) dia. hole (0.77)54 max. (2.12)**P2RF-08** 2 (0.08) 7 (0.28) **Terminal Arrangement Mounting Holes** Eight, M3.5 x 8 4 (0.16) (Top View) (for Surface Mounting) dia. holes 4.2 (0.16) dia. hole 71.5 max 35.5 6 6 (2.89)(1.40)**6** 4 30±0.05 (1.18±0.002) -4 | -4 00 19.5 (0.77) 4 (0.16) 19.5 max. M3 or 3.2 (0.13) 30 max.(1.18) 0 O (0.77)dia. hole 54 max. (2.12)

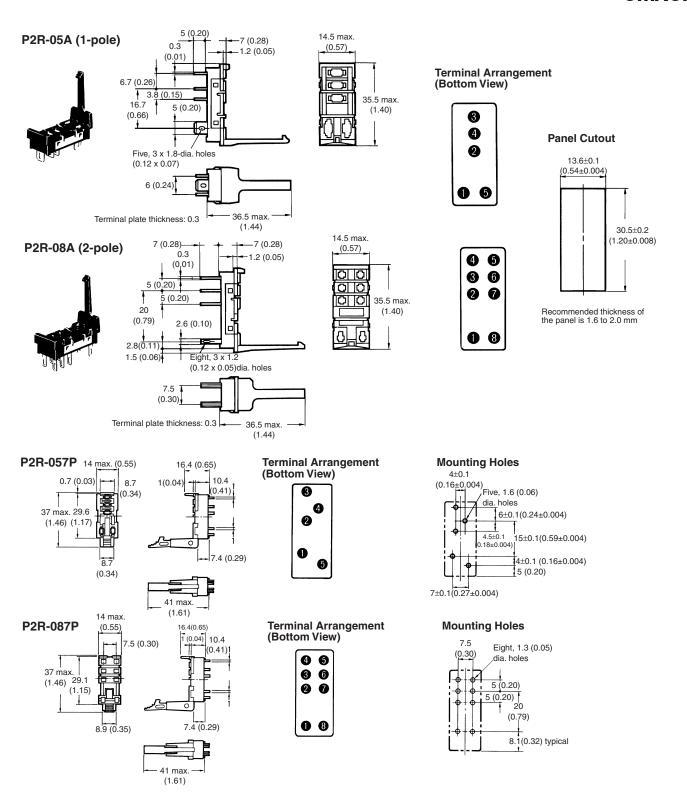
Mounting Height of Relay with Track/Surface Mounting Sockets



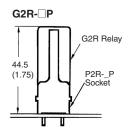


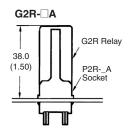
Back-connecting Sockets

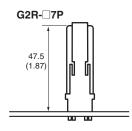




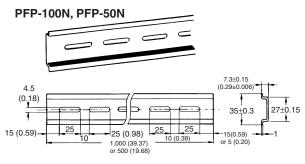
Mounting Height of Relay with Back-connecting Sockets



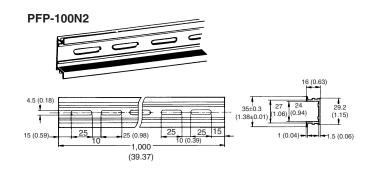




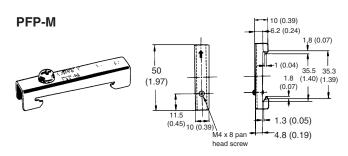
Mounting Tracks



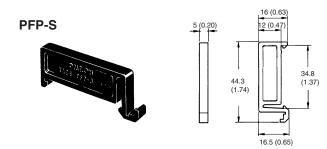
It is recommended to use a panel 1.6 to 2.0 mm thick.



End Plate



Spacer



Precautions

-/I\CAUTION-

Do not use the test button for any purpose other than testing. Be sure not to touch the test button accidentally as this will turn the contacts ON. Before using the test button, confirm that circuits, the load, and any other connected item will operate safely.

—∕!\CAUTION

Check that the test button is released before turning ON relay circuits.

—∕!\CAUTION

If the test button is pulled out too forcefully, it may bypass the momentary testing position and go straight into the locked position.

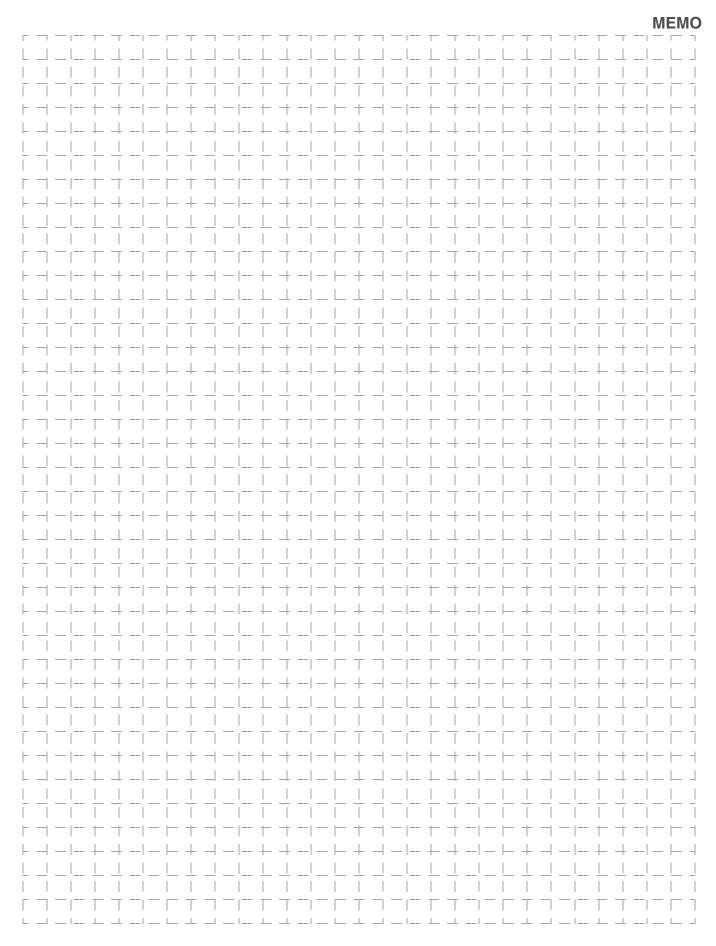
-/ CAUTION

Use an insulated tool when you operate the test button.

Precautions for P2RF-□**-S Connection**

- Do not move the screwdriver up, down, or from side to side while it is inserted in the hole. Doing so may cause damage to internal components (e.g., deformation of the clamp spring or cracks in the housing) or cause deterioration of insulation.
- Do not insert the screwdriver at an angle. Doing so may break the side of the socket and result in a short-circuit.







All sales are subject to Omron Electronic Components LLC standard terms and conditions of sale, which can be found at http://www.components.omron.com/components/web/webfiles.nsf/sales_terms.html

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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