

VDE UL CSA S A

1

Model Number Legend

G2R - - - VDC
 1 2 3 4 5 6 7 8 9 10

1. Relay Function

None: Single-side stable

K: Double-winding latching.

2. Number of Poles

1: 1 pole

2: 2 poles

3. Contact Form

None: ☐PDT

A: ☐PST-NO

4. Contact Type

None: Single

Z: Bifurcated

3: Bifurcated crossbar

5. Enclosure Ratings

None: Flux protection

4: Fully sealed

6. Terminals

None: Straight PCB

S: Plug-in

T: Quick-connect (upper bracket mounting)

7. Classification

None: General-purpose

E: High-capacity

H: High-sensitivity

N: LED indicator

D: Diode

ND: LED indicator and diode

8. Test button

I: Test button

Note: Applied for only SN and SND type

9. Contact Material

None: AgCdO

ASI: AgSnIn

10. Rated Coil Voltage

Refer to *Coil Ratings*.

■ Accessories (Order Separately)

Connecting Sockets

Number of poles	Applicable Relay model	Track/surface-mounting Socket	Back-mounting Socket	
			Terminals	Model
1 pole	G2R-1-S(N)(D)(ND)(NI)(NDI)G2R-13-S (G2R-1A3-S)	P2RF-05-E P2RF-05	PCB terminals	P2R-05P, P2R-057P
			Solder terminals	P2R-05A
2 poles	G2R-2-S(N)(D)(ND)(NI)(NDI)	P2RF-08-E P2RF-08	PCB terminals	P2R-08P, P2R-087P
			Solder terminals	P2R-08A

Note: See *Dimensions* for details on socket size.

Mounting Track

Applicable socket	Description	Model
Track connecting socket	Mounting track	50 cm (l) x 7.3 mm (t): PFP-50N 1 m (l) x 7.3 mm (t): PFP-100N 1 m (l) x 16 mm (t): PFP-100N2
	End plate	PFP-M
	Spacer	PFP-S
Back connecting socket	Mounting plate	P2R-P*

*Used to mount several P2R-05A and P2R-08A connecting sockets side by side.

Specifications

■ Coil Ratings

Rated voltage		12 VAC	24 VAC	100/ (110) VAC	120 VAC	200/ (220) VAC	220 VAC	230 VAC	240 VAC
Rated current	50 Hz	93 mA	46.5 mA	11 mA	9.3 mA	5.5 (4.0) mA	5.1 mA	4.7 (3.7) mA	4.7 mA
	60 Hz	75 mA	37.5 mA	9/ (10.6) mA	7.5 mA	4.5 (5.3) mA	4.1 mA	3.8 (3.1) mA	3.8 mA
Coil resistance		65 Ω	260 Ω	4,600 Ω	6,500 Ω	20,200 (25,000) Ω	25,000 Ω	26,850 (30,000) Ω	30,000 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.19	0.81	13.34	21	51.3	57.5	62	65.5
	Armature ON	0.39	1.55	26.84	42	102	117	124	131
Must operate voltage		80% max. of rated voltage							
Must release voltage		30% min. of rated voltage							
Max. voltage		140% of rated voltage (at 23°C)							
Power consumption		Approx. 0.9 VA at 60 Hz (approx. 0.7 VA at 60 Hz)							

Note: 1. Rated voltage of bifurcated crossbar contact type: 100/(110) VAC, 200/(220) VAC, 230 VAC (Approx. 0.7 VA at 60 Hz)
 2. Depending on the type of Relay, some Relays do not have coil specifications. Contact your OMRON representative for more details.

Rated voltage		5 VDC	6 VDC	12 VDC	24 VDC	48 VDC	100 VDC
Rated current (50/60 Hz)		106 mA	88.2 mA	43.6 mA	21.8 mA	11.5 mA	5.3 mA
Coil resistance		47 Ω	68 Ω	275 Ω	1,100 Ω	4,170 Ω	18,860 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.20	0.28	1.15	4.27	13.86	67.2
	Armature ON	0.39	0.55	2.29	8.55	27.71	93.2
Must operate voltage		70% max. of rated voltage					
Must release voltage		15% min. of rated voltage					
Max. voltage		170% of rated voltage (at 23°C)					
Power consumption		Approx. 0.53 W					

Note: Rated voltage of bifurcated crossbar contact type: 12 VDC, 24 VDC

High-sensitivity Relays

Rated voltage		5 VDC	6 VDC	12 VDC	24 VDC	48 VDC
Rated current (50/60 Hz) (see note 1.)		71.4 mA	60 mA	30 mA	15 mA	7.5 mA
Coil resistance (see note 1.)		70 Ω	100 Ω	400 Ω	1,600 Ω	6,400 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.37	0.53	2.14	7.80	31.20
	Armature ON	0.75	1.07	4.27	15.60	62.40
Must operate voltage		70% max. of rated voltage				
Must release voltage		15% min. of rated voltage				
Max. voltage		170% of rated voltage (at 23°C)				
Power consumption		Approx. 0.36 W				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $+15\%$ / -20% (AC rated current) or $\pm 10\%$ (DC coil resistance).
 2. LEDs are used for the built-in operation indicator. For models equipped with these indications, the VAC rated current must be increased by approximately 1 mA; the VDC rated current, by approximately 4 mA.
 3. Operating characteristics are measured at a coil temperature of 23°C.

Double-winding Latching Relays

Rated voltage			5 VDC	6 VDC	12 VDC	24 VDC
Set coil	Rated current (see note 1.)		167 mA	138 mA	70.6 mA	34.6 mA
	Coil resistance (see note 1.)		30 Ω	43.5 Ω	170 Ω	694 Ω
	Coil inductance (H) (ref. value)	Armature OFF	0.073	0.104	0.42	1.74
		Armature ON	0.146	0.208	0.83	3.43
Reset coil	Rated current		119 mA	100 mA	50 mA	25 mA
	Coil resistance		42 Ω	60 Ω	240 Ω	960 Ω
	Coil inductance (H) (ref. value)	Armature OFF	0.003	0.005	0.018	0.079
		Armature ON	0.006	0.009	0.036	0.148
Must set voltage			70% max. of rated voltage			
Must reset voltage			70% max. of rated voltage			
Max. voltage			140% of rated voltage (at 23°C)			
Power consumption			Set coil: Approx. 850 mW; Reset coil: Approx. 600 mW			

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

■ Contact Ratings

PCB/Flux Protection, Plug-in, Quick-connect Terminal Relays

Item	General-purpose, quick-connect terminal				High-capacity	
Number of poles	1 pole		2 poles		1 pole	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)
Rated load	10 (1) A at 250 VAC; 10 (1) 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	16 A at 250 VAC; 16 A at 30 VDC	8 A at 250 VAC; 8 A at 30 VDC
Rated carry current	10 (1) A		5 A		16 A	
Max. switching voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	10 (1) A		5 A		16 A	
Max. switching power	2,500 (250) VA, 300 (30) W	1,875 VA, 150 W	1,250 VA, 150 W	500 VA, 90 W	4,000 VA, 480 W	2,000 VA, 240 W
Failure rate (reference value)	100 mA at 5 VDC (1 mA at 5 VDC)		10 mA at 5 VDC		100 mA at 5 VDC	

Note: 1. P level: $\lambda_{60} = 0.1 \times 10^{-6}/\text{operation}$
 2. (): Bifurcated crossbar contact type.

PCB/Flux Protection Relays

Item	Bifurcated contacts		High-sensitivity			
Number of poles	1 pole		1 pole		2 poles	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)
Rated load	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC	3 A at 250 VAC; 3 A at 30 VDC	1 A at 250 VAC; 1.5 A at 30 VDC
Rated carry current	5 A		5 A		3 A	
Max. switching voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	5 A		5 A		3 A	
Max. switching power	1,250 VA, 150 W	500 VA, 90 W	1,250 VA, 150 W	500 VA, 90 W	750 VA, 90 W	250 VA, 45 W
Failure rate (reference value)	1 mA at 5 VDC		100 mA at 5 VDC		10 mA at 5 VDC	

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

PCB/Fully sealed Relays

Item	General-purpose (single contact)				Bifurcated contact	
Number of poles	1 pole		2 poles		1 pole	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)
Rated load	8 A at 250 VAC; 8 A at 30 VDC	6 A at 250 VAC; 4 A at 30 VDC	4 A at 250 VAC; 4 A at 30 VDC	1.5 A at 250 VAC; 2.5 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	8 A		4 A		5 A	
Max. switching voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	8 A		4 A		5 A	
Max. switching power	2,000 VA, 240 W	1,500 VA, 120 W	1,000 VA, 120 W	375 VA, 75 W	1,250 VA, 150 W	500 VA, 90 W
Failure rate (reference value)	100 mA at 5 VDC		10 mA at 5 VDC		1 mA at 5 VDC	

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

Latching Relays

Number of poles	1 pole		2 poles	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)
Rated load	5 A at 250 VAC; 5 A at 30 VDC	3.5 A at 250 VAC; 2.5 A at 30 VDC	3 A at 250 VAC; 3 A at 30 VDC	1.5 A at 250 VAC; 2 A at 30 VDC
Rated carry current	5 A		3 A	
Max. switching voltage	380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	5 A		3 A	
Max. switching power	1,250 VA, 150 W	875 VA, 75 W	750 VA, 90 W	375 VA, 60 W
Failure rate (reference value)	100 mA at 5 VDC		10 mA at 5 VDC	

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

■ Characteristics

Standard Relays

Item	1 pole	2 poles
Contact resistance	30 mΩ max. (high-capacity type: 100 mΩ max.)	50 mΩ max.
Operate (set) time	15 ms max.	
Release (reset) time	AC: 10 ms max.; DC: 5 ms max. (w/built-in diode: 20 ms max.)	
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity	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: 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: 1,000 m/s ² Malfunction: 200 m/s ² when energized; 100m/s ² when no energized	
Endurance	Mechanical: AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load)	
Ambient temperature	Operating: -40°C to 70°C (with no icing)	
Ambient humidity	Operating: 5% to 85%	
Weight	Approx. 17 g (plug-in terminal: approx. 20 g)	

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

*2,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A socket is mounted.

Double-winding Latching Relays

Item	1 pole	2 poles
Contact resistance	30 mΩ max.	50 mΩ max.
Set time	20 ms max.	
Reset time	20 ms max.	
Min. set/reset signal width	30 ms max.	
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same pole; 1,000 VAC, 50/60 Hz for 1 min between set and reset coil	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 poles 1,000 VAC, 50/60 Hz for 1 min between contacts of same pole 1,000 VAC, 50/60 Hz for 1 min between set and reset coil
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: 1,000 m/s ² (approx. 100G) Malfunction: Set: 500 m/s ² (approx. 50G); 200m/s ² (approx. 20G) Reset: 100 m/s ² (approx. 10G)	
Endurance	Mechanical: 10,000,000 operations min (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load)	
Ambient temperature	Operating: -40°C to 70°C (with no icing)	
Ambient humidity	Operating: 5% to 85%	
Weight	Approx. 17 g	

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

*2,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A socket is mounted.

■ Approved Standards

UL 508 (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings
G2R-1 G2R-14 G2R-1-H G2R-1-S G2R-1-T	SPDT	3 to 110 VDC 3 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-1A G2R-1A4 G2R-1A-H G2R-1A-S G2R-1A-T	SPST-NO		
G2R-1-E	SPDT		16 A, 30 VDC (resistive, NO contact only) 16 A, 250 VAC (general use, NO contact only) TV-3 (NO contact only); 1/3 hp, 120 VAC
G2R-1A-E	SPST-NO		
G2R-2 G2R-24 G2R-2-H G2R-2-S	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-2A G2R-2A4 G2R-2A-H G2R-2A-S	DPST-NO		
G2R-1A-ASI	SPST-NO		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-5/TV-8 (NO contact only)

CSA 22.2 No.0, No.14 (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings
G2R-1 G2R-14 G2R-1-H G2R-1-S G2R-1-T	SPDT	3 to 110 VDC 3 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) T-3 (NO contact only)
G2R-1A G2R-1A4 G2R-1A-H G2R-1A-S G2R-1A-T	SPST-NO		
G2R-1-E	SPDT		16 A, 30 VDC (resistive, N.O only) 16 A, 250 VAC (general use, NO contact only) TV-3 (NO contact only)
G2R-1A-E	SPST-NO		
G2R-2 G2R-24 G2R-2-H G2R-2-S	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-2A G2R-2A4 G2R-2A-H G2R-2A-S	DPST-NO		
G2R-1A-ASI	SPST-NO		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-8 (NO contact only); 1/4 hp, 125 VAC

SEV

Contact form	Coil ratings	Contact ratings
1 pole	3 to 110 VDC 3 to 240 VAC	16 A, 250 VAC1 (AgSnIn contact) 16 A, 30 VDC1 (AgSnIn contact) 10 A, 250 VAC1 5 A, 250 VAC3 10 A, 30 VDC1
2 poles	3 to 110 VDC 3 to 240 VAC	5 A, 250 VAC1 2 A, 380 VAC1 5 A, 30 VDC1

SEMKO

Contact form	Coil ratings	Contact ratings
1 pole	3 to 110 VDC 6 to 240 VAC	10/80 A, 250 VAC 3/100 A, 250 VAC 16/128 A, 250 VAC (AgSnIn contact)
2 poles		5/40 A, 250 VAC

TÜV (IEC 255)

Contact form	Coil ratings	Contact ratings
1 pole	3 to 110 VDC, 6 VAC to 240 VAC (for Standard coil) 3 to 48 VDC (for K, U coil) 3 to 70 VDC (for H coil)	10 A, 250 VAC ($\cos\phi = 1.0$) 10 A, 30 VDC (0 ms) 16 A, 250 VAC ($\cos\phi = 1.0$) (AgSnIn contact)
2 poles		8 A, 250 VAC ($\cos\phi = 0.4$) 5 A, 250 VAC ($\cos\phi = 1.0$) 5 A, 30 VDC (0 ms) 2.5 A, 250 VAC ($\cos\phi = 0.4$)

VDE (IEC 255, VDE 0435), IMQ

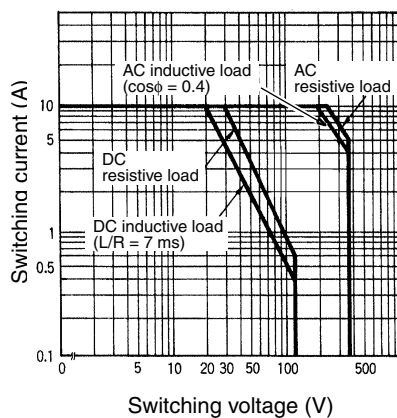
Contact form	Coil ratings	Contact ratings
1 pole	5, 6, 9, 12, 18, 24, 48, 60, 100, 110 VDC 12, 18, 24, 48, 50, 100/(110), 110, 120, 200/(220), 220, 230, 240 VAC	10 A, 250 VAC ($\cos\phi = 1.0$) 10 A, 30 VDC (0 ms) 16 A, 250 VAC ($\cos\phi = 1.0$)
2 poles	5, 6, 9, 12, 18, 24, 48, 60, 100, 110 VDC 12, 18, 24, 48, 50, 100/(110), 110, 120, 200/(220), 220, 230, 240 VAC	5 A, 250 VAC ($\cos\phi = 1.0$) 5 A, 30 VDC (0 ms)

Engineering Data

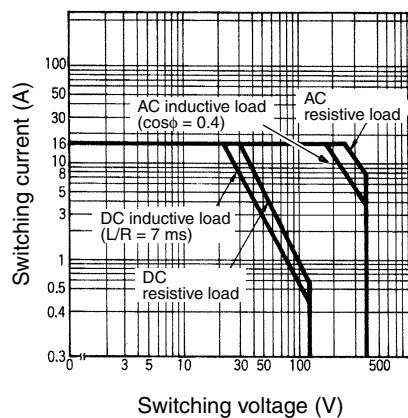
Maximum Switching Power

Flux Protection/Plug-in Relays

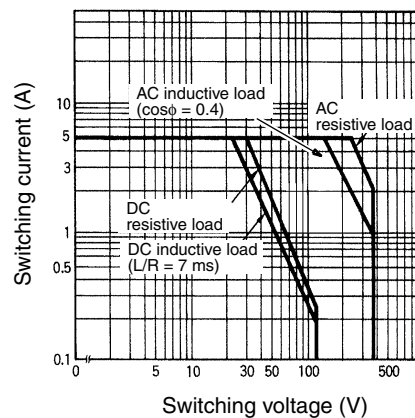
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G2R-1A-T



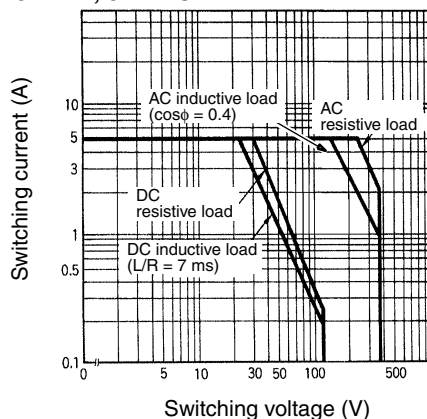
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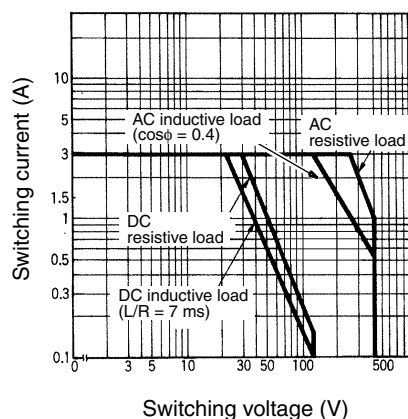
G2R-1Z, G2R-1AZ



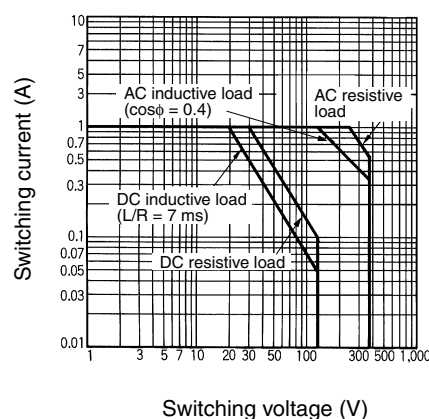
G2R-1-H, G2R-1A-H, G2R-2
G2R-2A, G2R-2-S



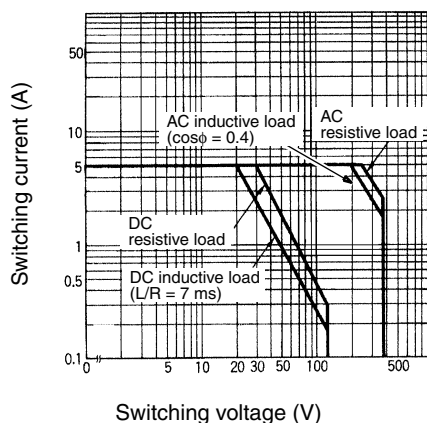
G2R-2-H, G2R-2A-H



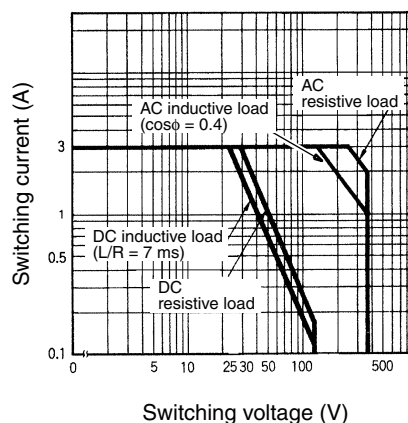
G2R-13-S, G2R-1A3-S



G2RK-1A, G2RK-1

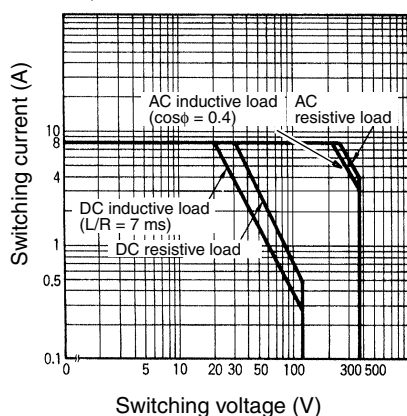


G2RK-2A, G2RK-2

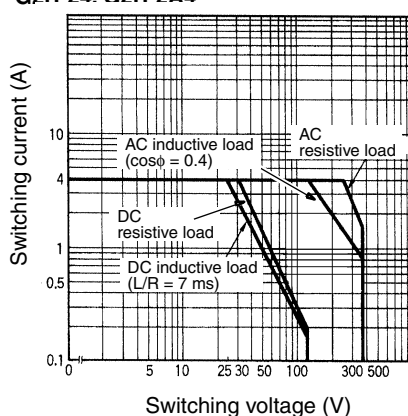


Fully Sealed Relays

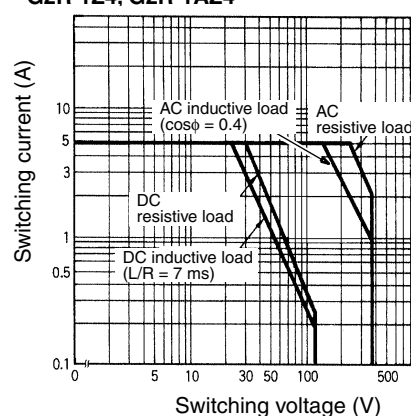
G2R-14, G2R-1A4



G2R-24, G2R-2A4



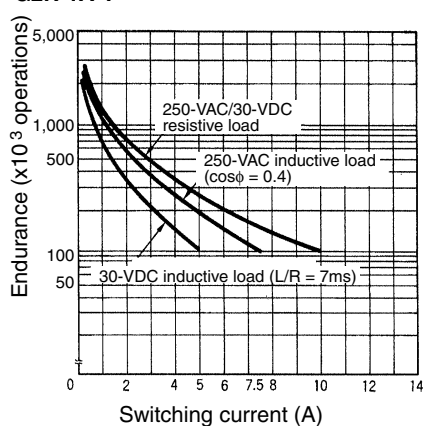
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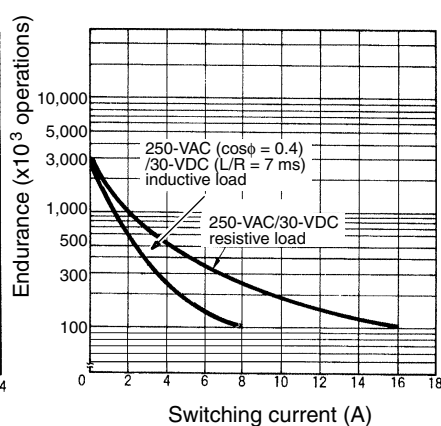
Endurance

Flux Protection/Plug-in Relays

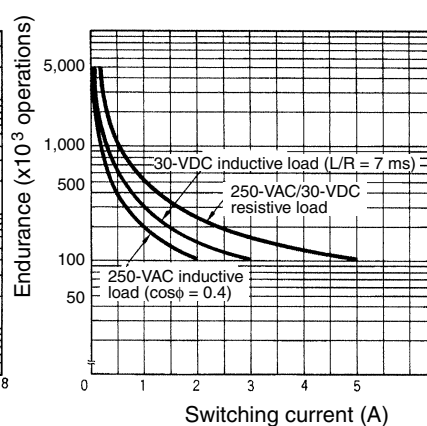
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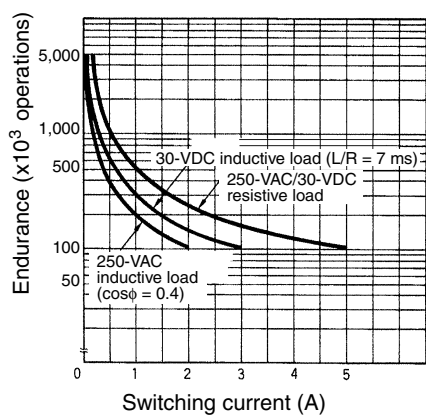
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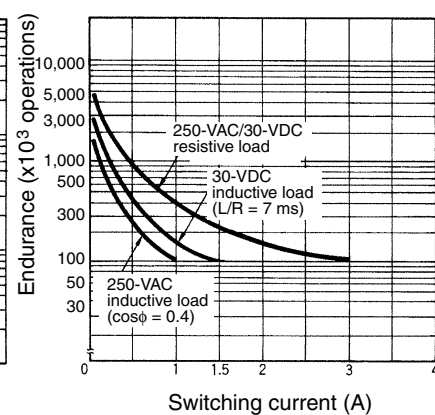
G2R-1Z, G2R-1AZ



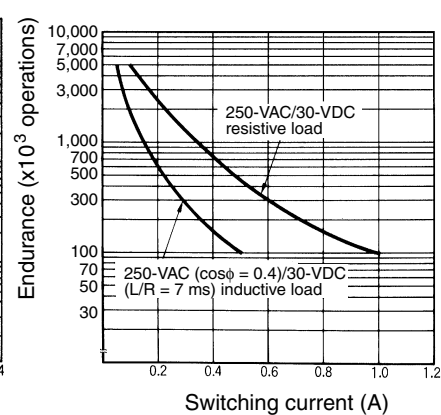
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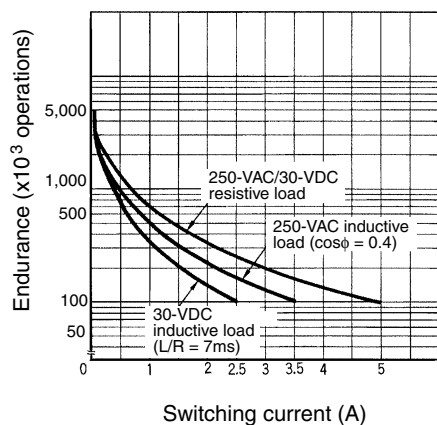
G2R-2-H, G2R-2A-H



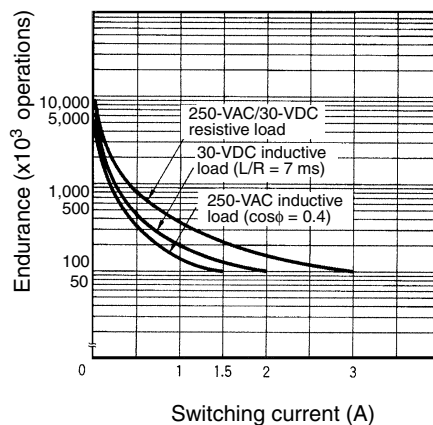
G2R-13-S, G2R-1A3-S



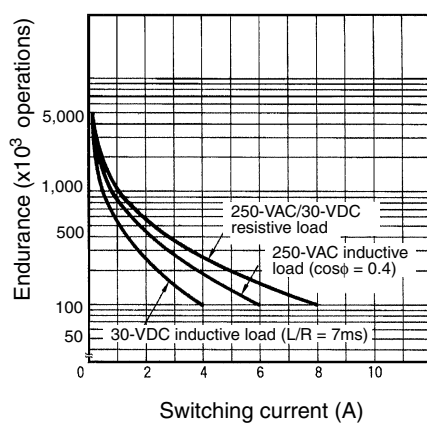
G2RK-1A, G2RK-1



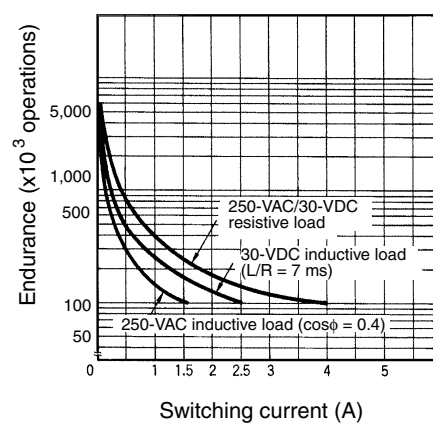
G2RK-2A, G2RK-2

**Fully sealed Relays**

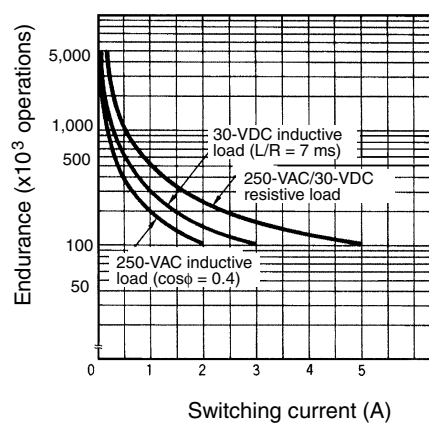
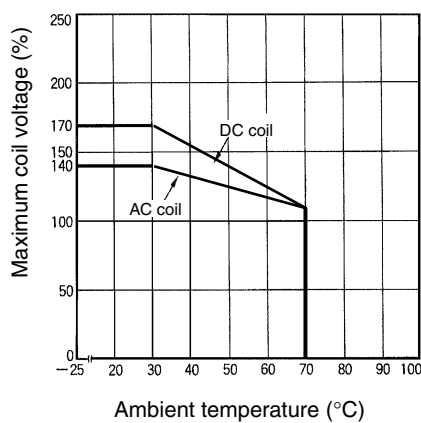
G2R-14, G2R-1A4



G2R-24, G2R-2A4



G2R-1Z4, G2R-1AZ4

**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.

Dimensions

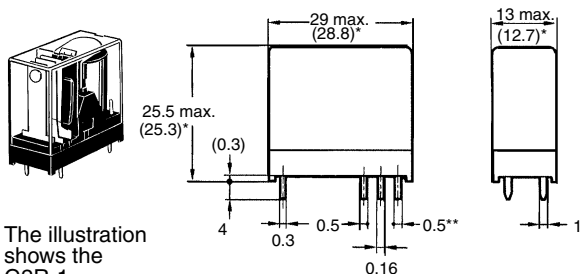
Note: 1. All units are in millimeters unless otherwise indicated.

2. Orientation marks are indicated as follows:  

Relays with PCB Terminals

SPDT Relays

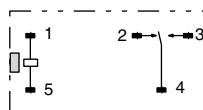
G2R-1, G2R-1Z, G2R-1-H



The illustration shows the G2R-1.

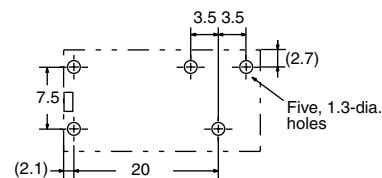
*Average value
**0.3 (-H Type)

Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

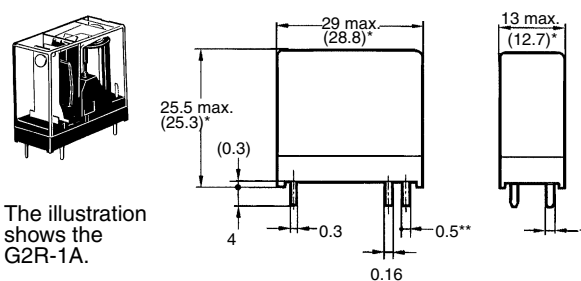
Tolerance: ± 0.1



(No coil polarity)

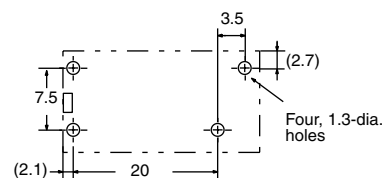
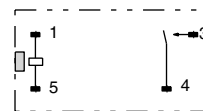
SPST-NO Relays

G2R-1A, G2R-1AZ, G2R-1A-H



The illustration shows the G2R-1A.

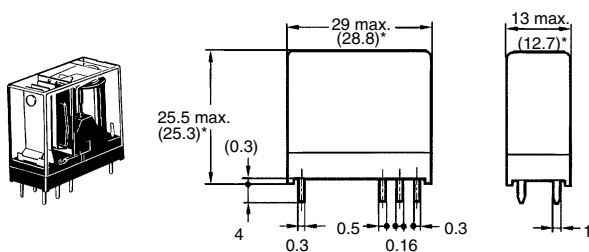
*Average value
**0.3 (-H Type)



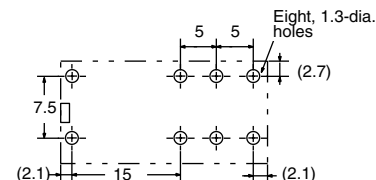
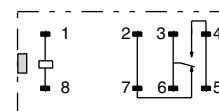
(No coil polarity)

SPDT/High-capacity Relays

G2R-1-E



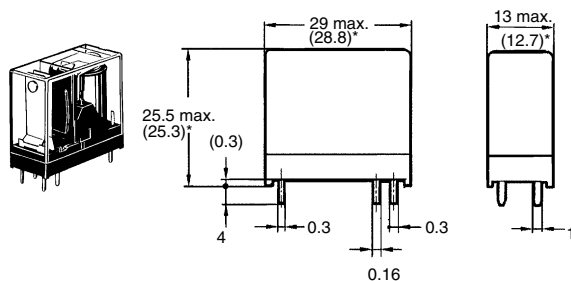
*Average value



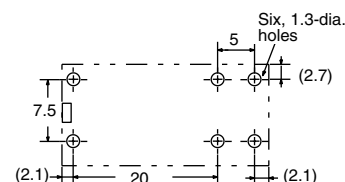
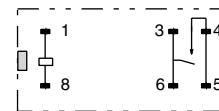
(No coil polarity)

SPST-NO/High-capacity Relays

G2R-1A-E



*Average value

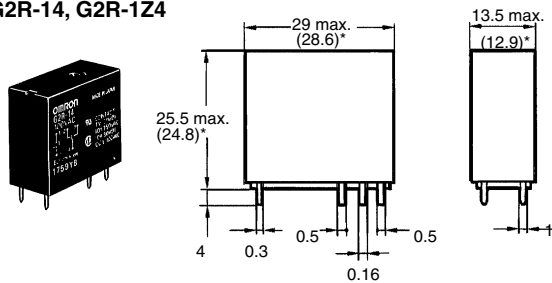


(No coil polarity)

Relays with PCB Terminals

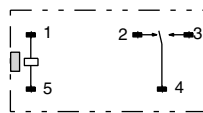
SPDT Relays

G2R-14, G2R-1Z4



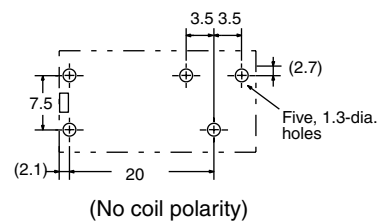
*Average value

Terminal Arrangement/ Internal Connections (Bottom View)



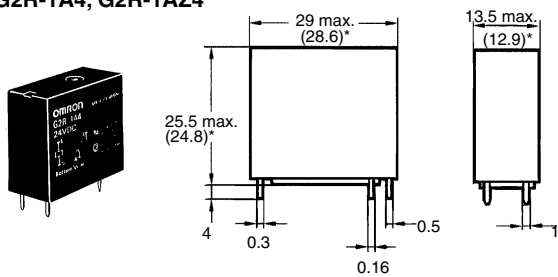
Mounting Holes (Bottom View)

Tolerance: ± 0.1

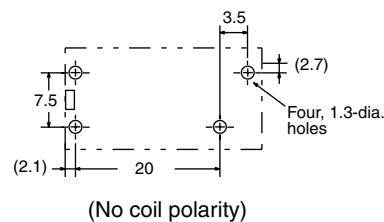
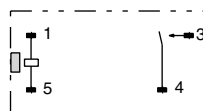


SPST-NO Relays

G2R-1A4, G2R-1AZ4



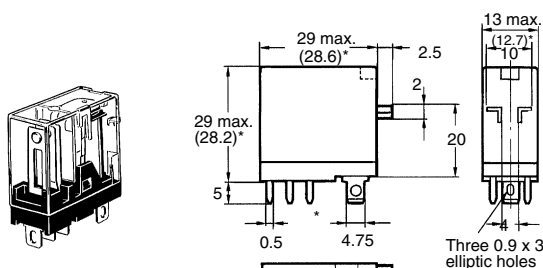
*Average value



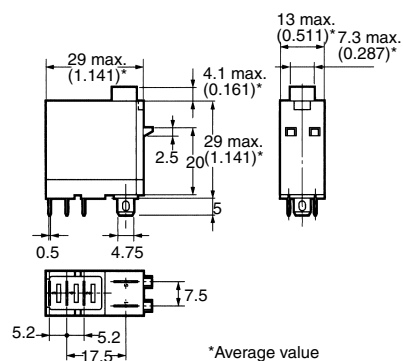
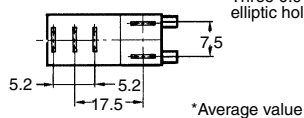
Relays with Plug-in Terminals

SPDT Relays

G2R-1-S, G2R-1-SD, G2R-1-SN, G2R-1-SND, G2R-1-SNI, G2R-1-SNDI
G2R-13-S, G2R-13-SD, G2R-13-SN, G2R-13-SND

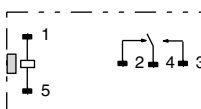


*This terminal is SPDT only.

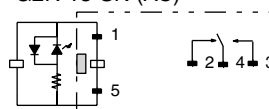


Terminal Arrangement/Internal Connections (Bottom View)

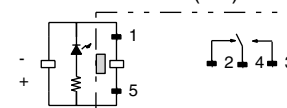
G2R-1-S, G2R-13-S



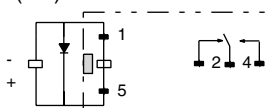
G2R-1-SN, G2R-1-SNI,
G2R-13-SN (AC)



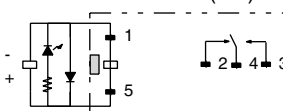
G2R-1-SN, G2R-1-SNI,
G2R-13-SN (DC)



G2R-1-SD, G2R-13-SD
(DC)

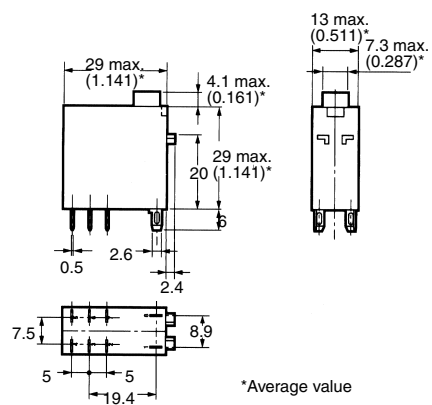
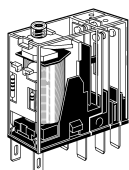
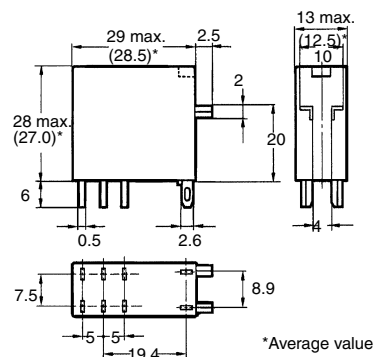
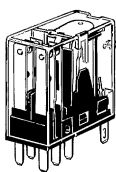


G2R-1-SND, G2R-1-SNDI,
G2R-13-SND (DC)

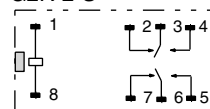


(After confirming coil
polarity, wire correctly.)
(Except G2R-1-S,
G2R-13-S)

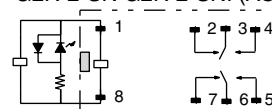
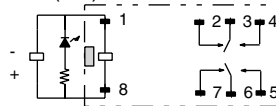
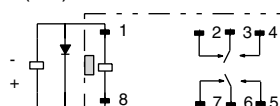
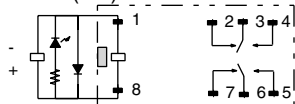
DPDT Relays

G2R-2-S, G2R-2-SD, G2R-2-SN, G2R-2-SNI, G2R-2-SNDI
G2R-2-SNDTerminal Arrangement/Internal Connections
(Bottom View)

G2R-2-S



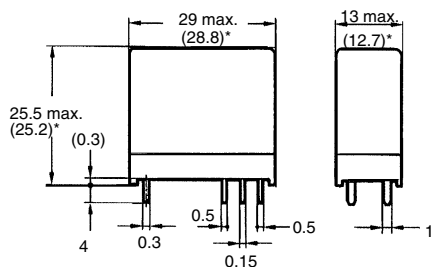
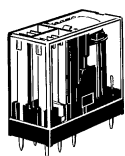
G2R-2-SN G2R-2-SNI (AC)

G2R-2-SN G2R-2-SNI
(DC)G2R-2-SD
(DC)G2R-2-SND G2R-2-SNDI
(DC)

(After confirming coil polarity, wire correctly.)

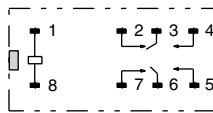
Relays with PCB Terminals

DPDT Relays G2R-2, G2R-2-H



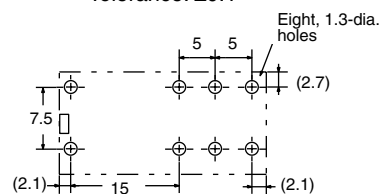
*Average value

Terminal Arrangement/ Internal Connections (Bottom View)



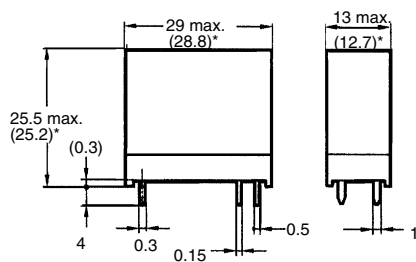
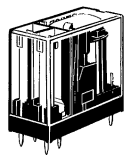
Mounting Holes (Bottom View)

Tolerance: ± 0.1

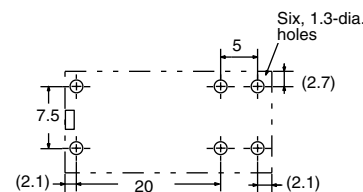
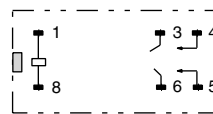


(No coil polarity)

DPST-NO Relays G2R-2A, G2R-2A-H

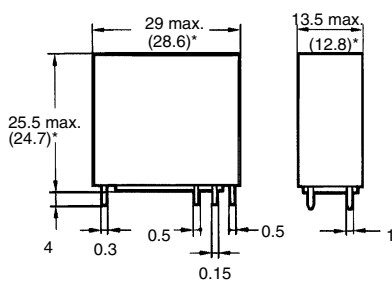


*Average value

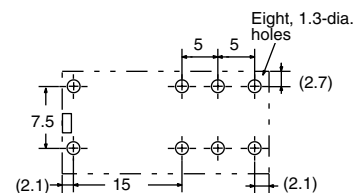
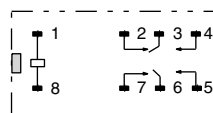


(No coil polarity)

DPDT Relays G2R-24

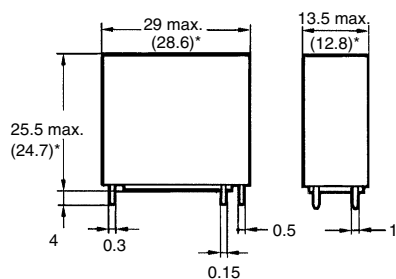


*Average value

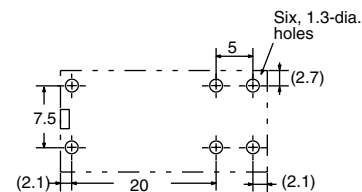
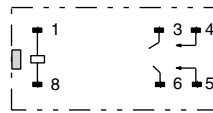


(No coil polarity)

DPST-NO Relays G2R-2A4



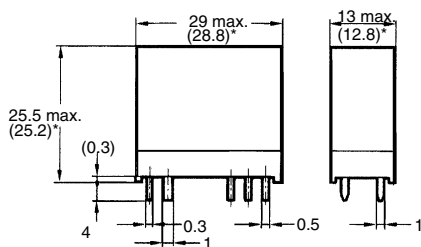
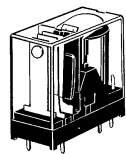
*Average value



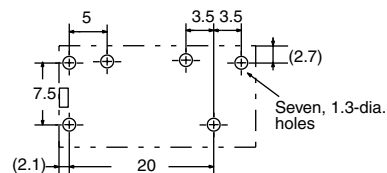
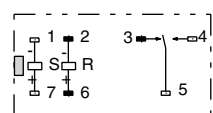
(No coil polarity)

Double-winding Latching Relays with PCB Terminals

SPDT Relays G2RK-1



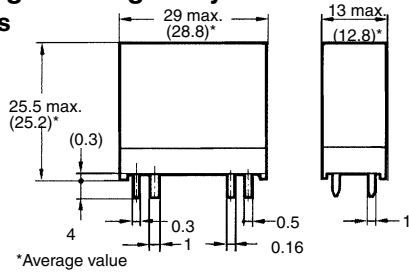
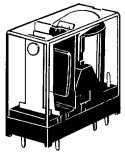
*Average value



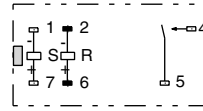
(After confirming coil polarity, wire correctly.)

Double-winding Latching Relays with PCB Terminals

SPST-NO Relays G2RK-1A

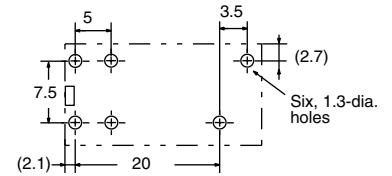


Terminal Arrangement/ Internal Connections (Bottom View)



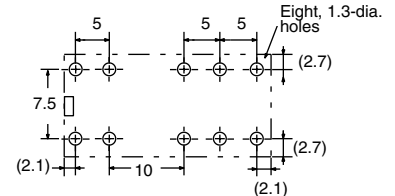
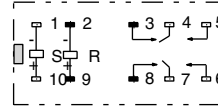
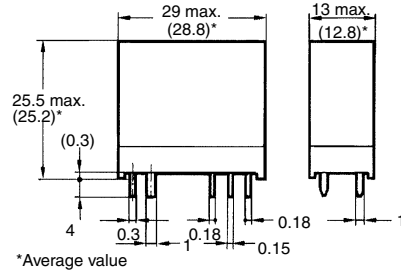
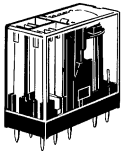
Mounting Holes (Bottom View)

Tolerance: ± 0.1



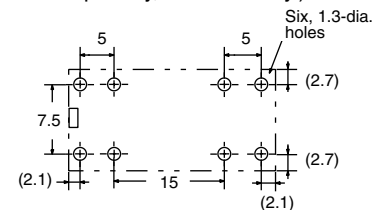
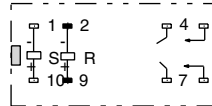
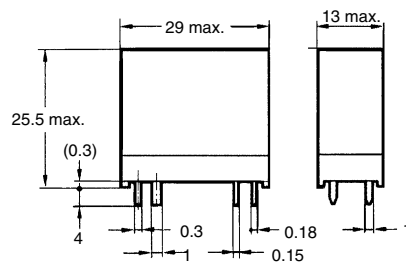
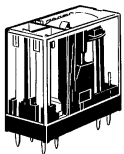
(After confirming coil polarity, wire correctly.)

DPDT Relays G2RK-2



(After confirming coil polarity, wire correctly.)

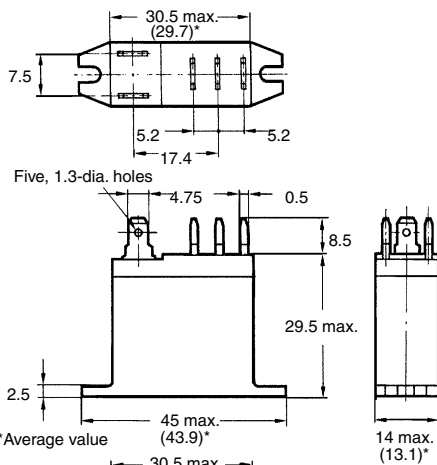
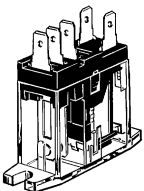
DPST-NO Relays G2RK-2A



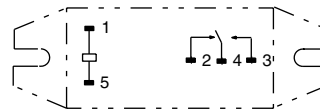
(After confirming coil polarity, wire correctly.)

Relays with Quick-connect Terminals

SPDT Relays G2R-1-T



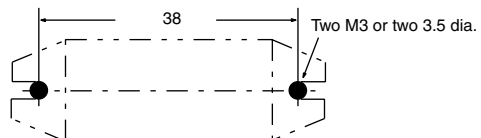
Terminal Arrangement/Internal Connections (Bottom View)



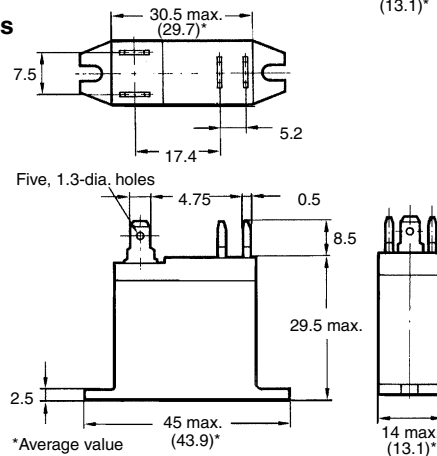
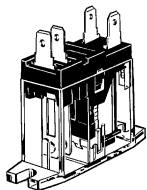
(No coil polarity)

Mounting Holes (Bottom View)

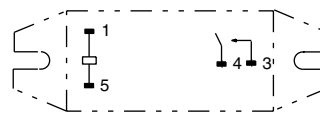
Tolerance: ± 0.1



SPST-NO Relays G2R-1A-T

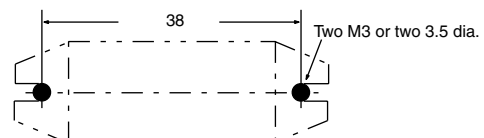


Terminal Arrangement/Internal Connections (Bottom View)



(No coil polarity)

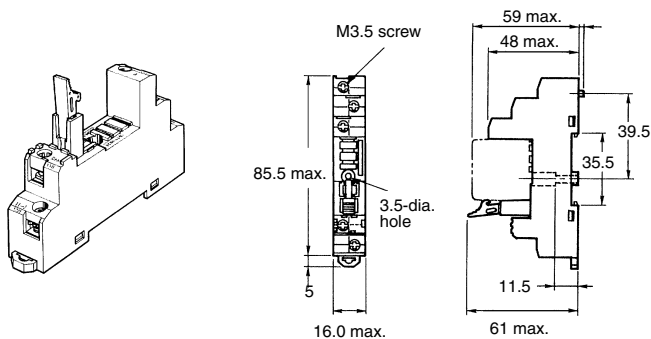
Mounting Holes (Bottom View)



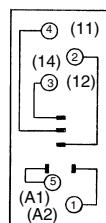
Note: Model number of quick-connect terminal is 187.

Track/Surface Mounting Sockets

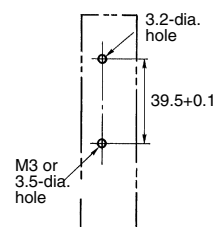
P2RF-05-E



Terminal Arrangement (Top View)

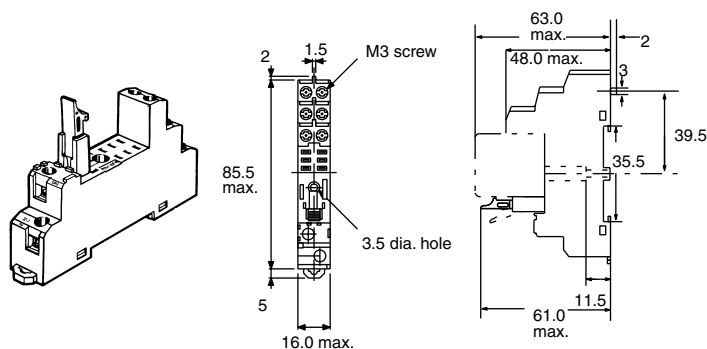


Mounting Holes (for Surface Mounting)

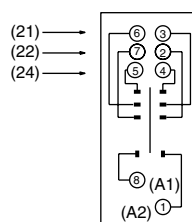


Note: Pin numbers in parentheses apply to DIN standard.

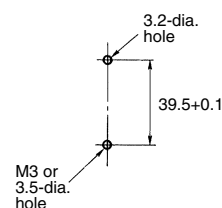
P2RF-08-E



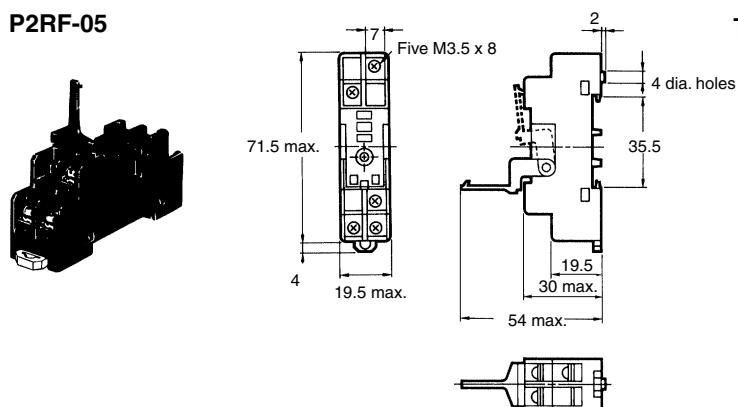
Terminal Arrangement (Top View)



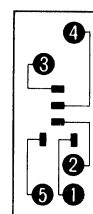
Mounting Holes (for Surface Mounting)



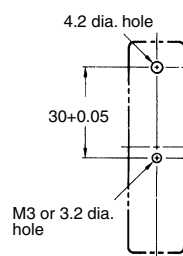
P2RF-05



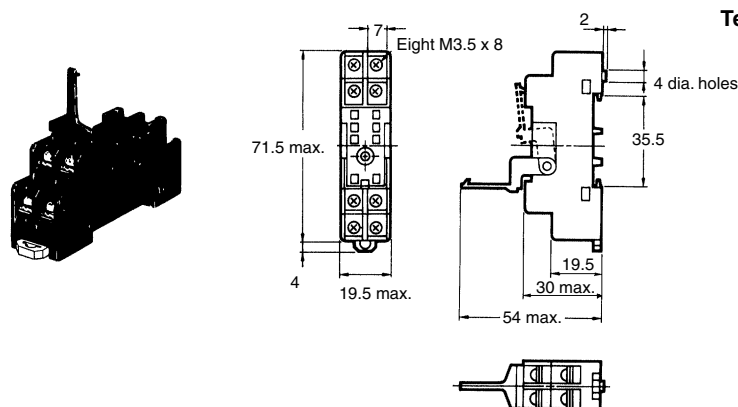
Terminal Arrangement



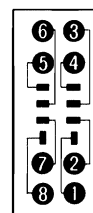
Mounting Holes (for Surface Mounting)



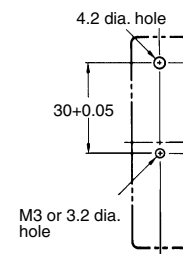
P2RF-08



Terminal Arrangement

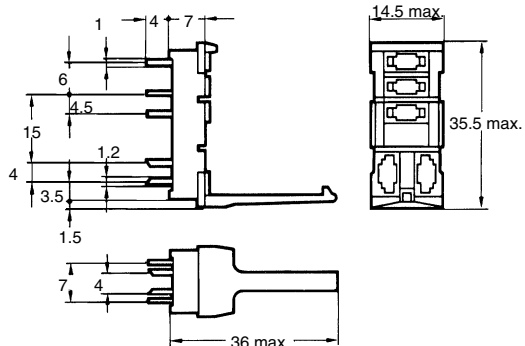
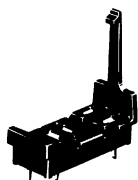


Mounting Holes (for Surface Mounting)

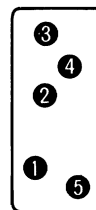


Back Connecting Sockets

P2R-05P (1-pole)

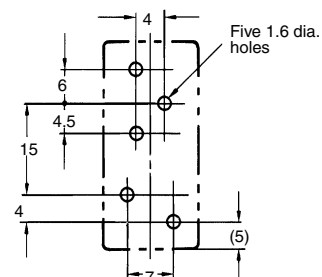


Terminal Arrangement

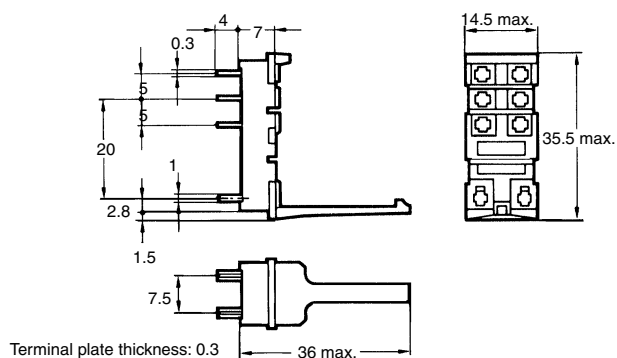
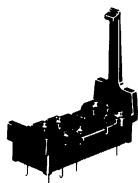


Mounting Holes

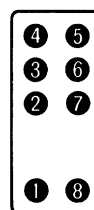
Tolerance: ± 0.1



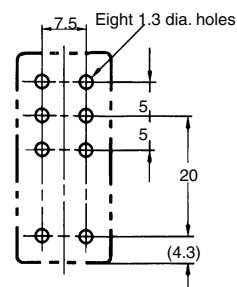
P2R-08P (2-pole)



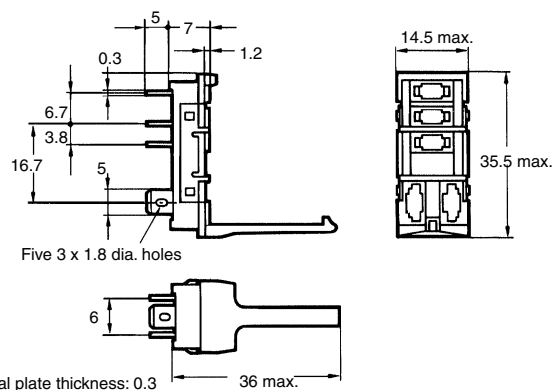
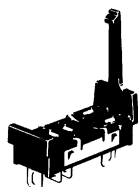
Terminal Arrangement



Mounting Holes



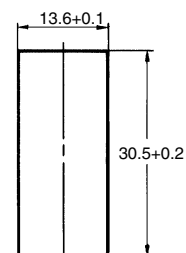
P2R-05A (1-pole)



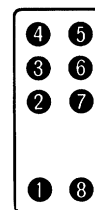
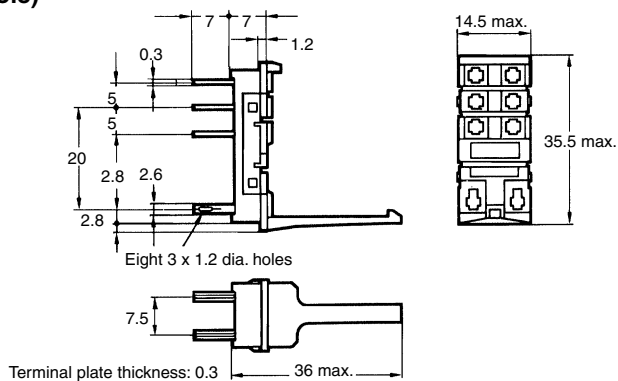
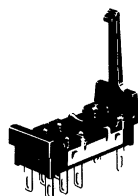
Terminal Arrangement



Panel Cutout

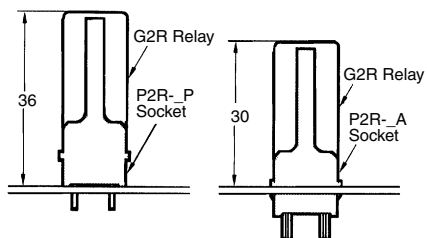


P2R-08A (2-pole)

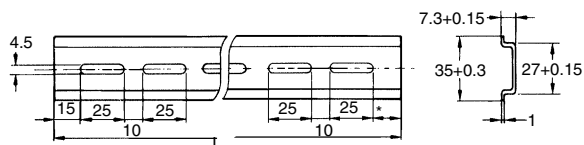
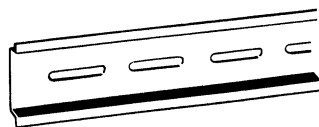


Recommended thickness of the panel is 1.6 to 2.0 mm

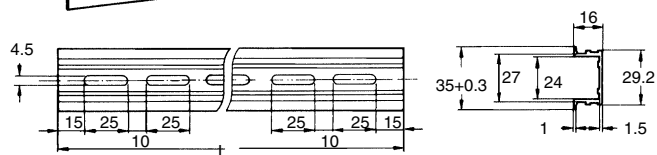
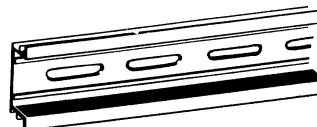
Mounting Height of Relay with Socket



Mounting Track PFP-100N, PFP-50N



PFP-100N2

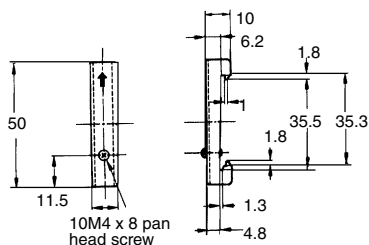
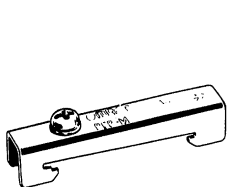


It is recommended to use a panel 1.6 to 2.0 mm thick.

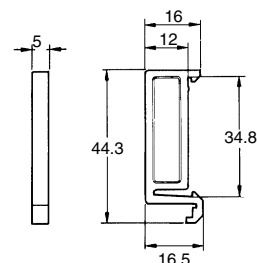
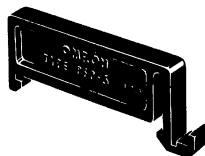
L: Length

1 m	PFP-100N
50 cm	PFP-50N
1 m	PFP-100N2

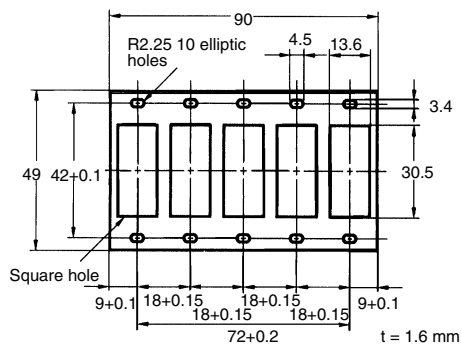
End Plates PFP-M



Spacers PFP-S



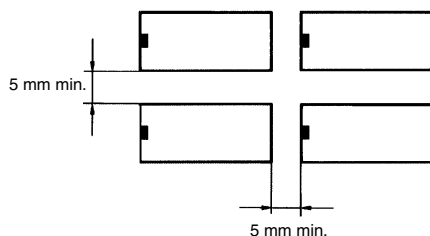
Mounting Plates P2R-P



Precautions

■ Mounting

When mounting a number of relays on a PCB, be sure to provide a minimum mounting space of 5 mm between the two juxtaposed relays as shown below.



The above minimum mounting space is necessary due to mutual thermal interference generated by the relays. This restriction may be ignored, however, depending on the operating conditions of the relays. Consult OMRON for details.

There is no restriction on the mounting direction of each relay on the PCB.

When using this circuit, confirm the set and reset states and then take into account the circuit constant.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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



■ Accessories (Order Separately)

Connecting Sockets

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

Note: 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	Description	Model
Track-connecting Socket	Mounting track	50 cm (ℓ) x 7.3 mm (t): PFP-50N 1 m (ℓ) x 7.3 mm (t): PFP-100N 1 m (ℓ) x 16 mm (t): PFP-100N2
	End plate	PFP-M
	Spacer	PFP-S
Back-connecting Socket	Mounting plate	P2R-P*

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

Specifications

■ Coil Ratings

Rated voltage		Rated current*		Coil resistance*	Coil inductance (H) (ref. value)		Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
		50 Hz	60 Hz		Armature OFF	Armature ON				
AC	24 V	43.5 mA	37.4 mA	253 Ω	0.81	1.55	80% max.	30% max.	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*		Coil resistance*	Coil inductance (H) (ref. value)		Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
					Armature OFF	Armature ON				
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%.

■ Contact Ratings

Number of poles	1 pole		2 poles	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; $L/R = 7$ 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 power	2,500 VA, 300 W	1,875 VA, 150 W	1,250 VA, 150 W	500 VA, 90 W
Failure rate (reference value)	100 mA at 5 VDC		10 mA at 5 VDC	

Note: $\bar{1}$: P level: $\lambda_{60} = 0.1 \times 10^{-6}/\text{operation}$

■ Characteristics

Item	1 pole	2 poles
Contact resistance	100 mΩ max.	
Operate (set) time	15 ms max.	
Release (reset) time	AC: 10 ms max.; DC: 5 ms max. (w/built-in diode: 20 ms max.)	AC: 15 ms max.; DC: 10 ms max. (w/built-in diode: 20 ms max.)
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity	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: 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: 1,000 m/s ² Malfunction: 200 m/s ² when energized; 100 m/s ² when not energized	
Endurance	Mechanical: AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr) Electrical: 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 given above are initial values

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

■ Approved Standards

UL 508 (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings	Operations
G2R-1-S	SPDT	5 to 110 VDC 5 to 240 VAC	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 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	Operations
1 pole	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 440 VAC ($\cos\phi = 1.0$) 10 A, 250 VAC ($\cos\phi = 1.0$) 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 ($\cos\phi = 1.0$) 5 A, 30 VDC (0 ms)	100 x 10 ³

CSA 22.2 No.0, No.14

(File No. LR31928)

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

LR

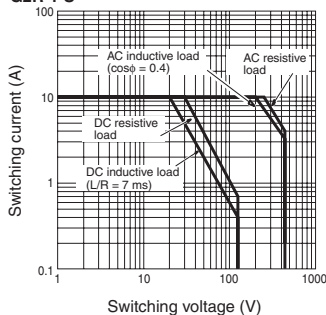
Number of poles	Coil ratings	Contact ratings	Operations
1 pole	5 to 110 VDC 5 to 240 VDC	10 A, 250 VAC (general use) 7.5 A, 250 VAC (PF0.4) 10 A, 30 VDC (resistive) 5A, 30VDC (L/R=7ms)	100 x 10 ³
2 poles	5 to 110 VDC 5 to 240 VDC	5 A, 250 VAC (general use) 2 A, 250 VAC (PF0.4) 5 A, 30 VDC (resistive)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

Engineering Data

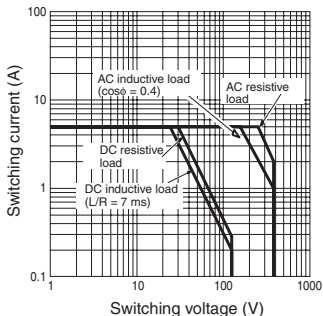
Maximum Switching Power

Plug-in Relays

G2R-1-S



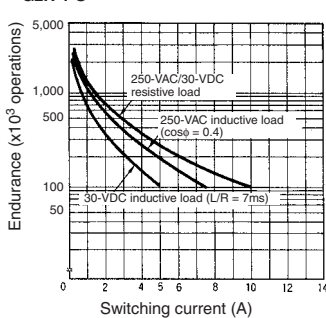
G2R-2-S



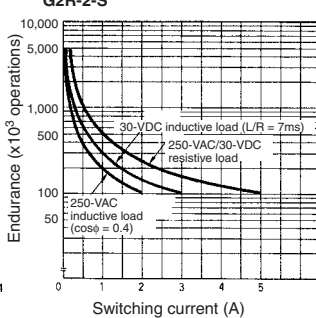
Endurance

Plug-in Relays

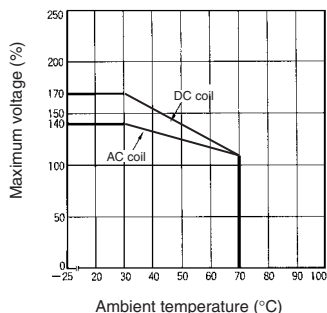
G2R-1-S



G2R-2-S



Ambient Temperature vs Maximum Coil Voltage



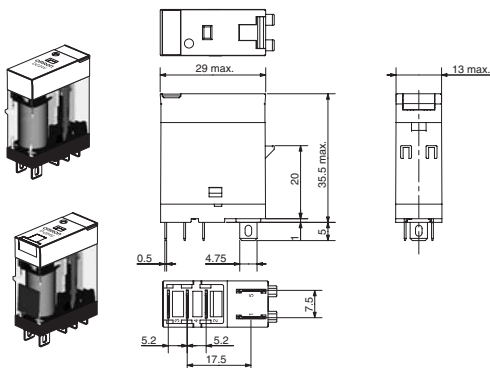
Note: The maximum voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Relays with Plug-in Terminals

Note: All units are in millimetres unless otherwise indicated.

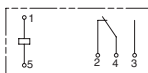
SPDT Relays

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

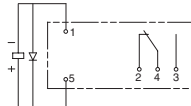


Terminal Arrangement/Internal Connections (Bottom View)

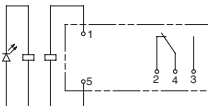
G2R-1-S



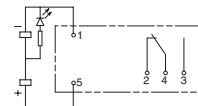
G2R-1-SD (DC)



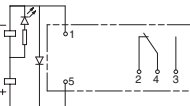
G2R-1-SN, G2R-1-SNI (AC)



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

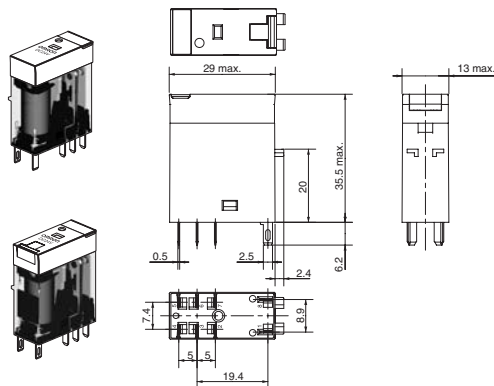


G2R-1-SND, G2R-1-SNDI (DC)



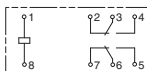
DPDT Relays

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

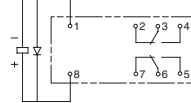


Terminal Arrangement/Internal Connections (Bottom View)

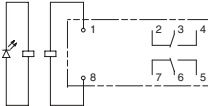
G2R-2-S



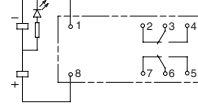
G2R-2-SD (DC)



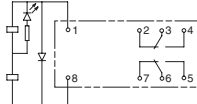
G2R-2-SN, G2R-2-SNI (AC)



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

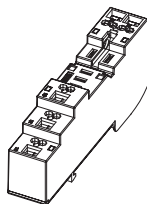


G2R-2-SND, G2R-2-SNDI (DC)

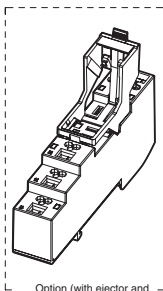


Track/Surface Mounting Sockets

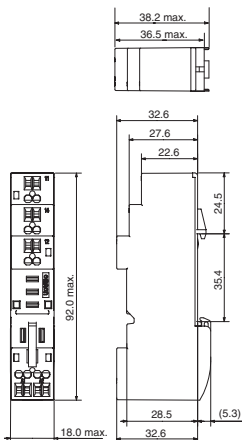
P2RF-05-S



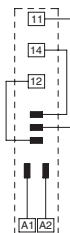
Standard model



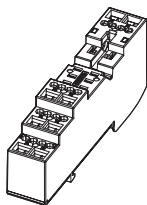
Option (with ejector and label attached)



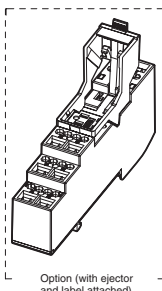
Terminal Arrangement
(Top View)



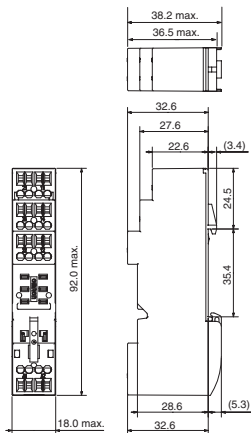
P2RF-08-S



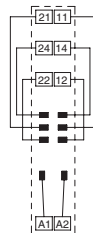
Standard model



Option (with ejector and label attached)

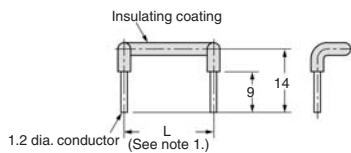


Terminal Arrangement
(Top View)

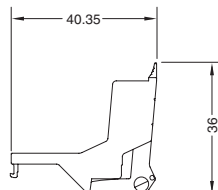


Accessories for P2RF-□-S

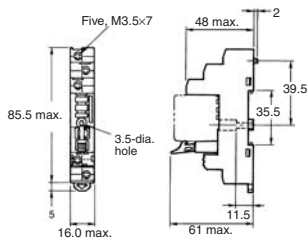
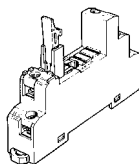
Socket Bridge



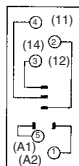
Clip and Reverse Lever



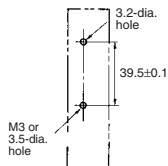
P2RF-05-E



Terminal Arrangement (Top View)

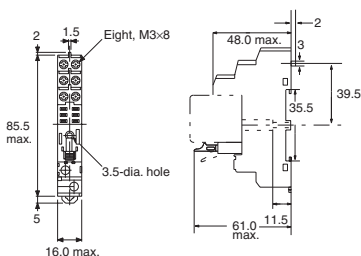
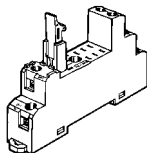


Mounting Holes (for Surface Mounting)

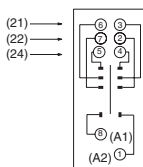


Note: Pin numbers in parentheses apply to DIN standard.

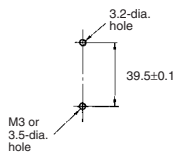
P2RF-08-E



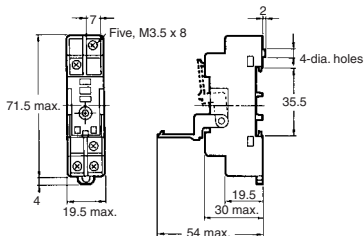
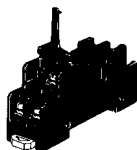
Terminal Arrangement (Top View)



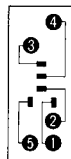
Mounting Holes (for Surface Mounting)



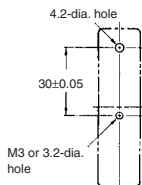
P2RF-05



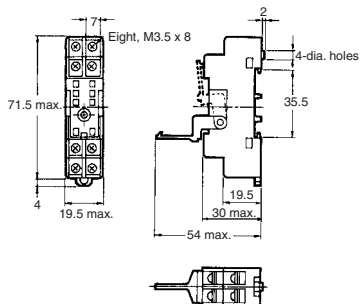
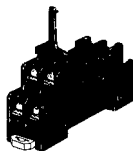
Terminal Arrangement (Top View)



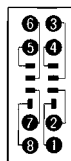
Mounting Holes (for Surface Mounting)



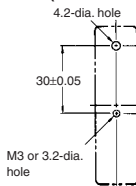
P2RF-08



Terminal Arrangement (Top View)

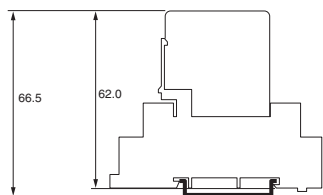


Mounting Holes (for Surface Mounting)

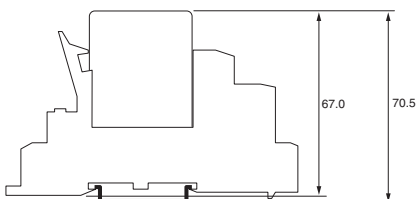


Mounting Height of Relay with Track/Surface Mounting Sockets

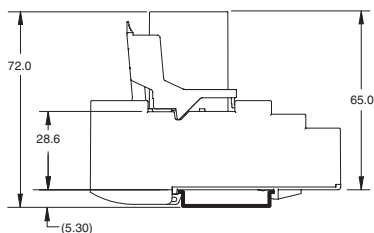
P2RF-□



P2RF-□-E

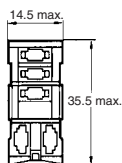
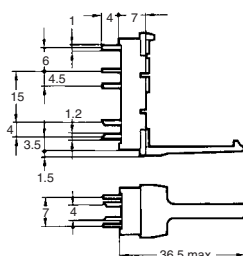
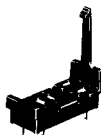
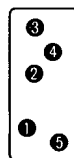


P2RF-□-S

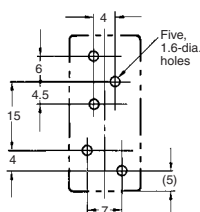


Back-connecting sockets

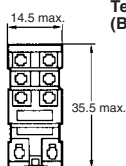
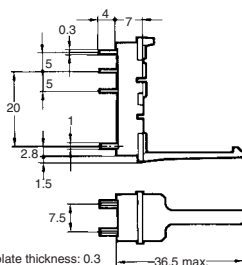
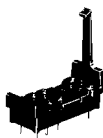
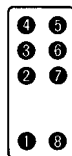
P2R-05P (1-pole)

Terminal Arrangement
(Bottom View)

Mounting Holes

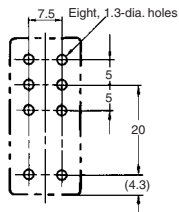
Tolerance: ± 0.1 

P2R-08P (2-pole)

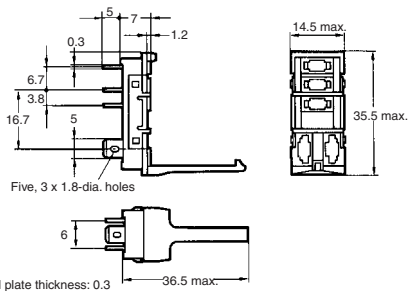
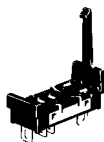
Terminal Arrangement
(Bottom View)

Mounting Holes

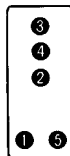
Eight, 1.3-dia. holes



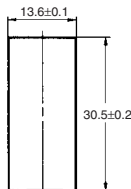
P2R-05A (1-pole)



Terminal Arrangement (Bottom View)

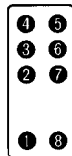
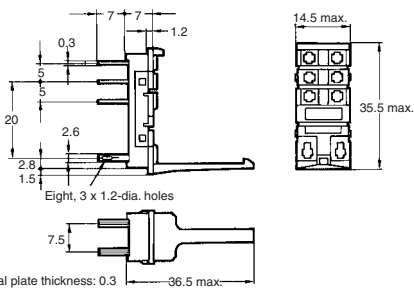
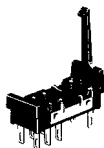


Panel Cutout

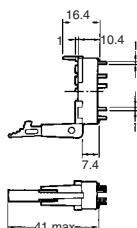
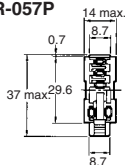


Recommended thickness of the panel is 1.6 to 2.0 mm

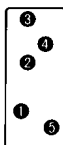
P2R-08A (2-pole)



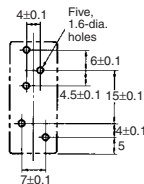
P2R-057P



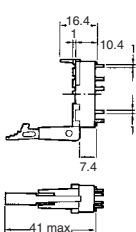
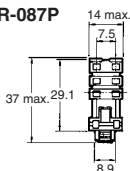
Terminal Arrangement (Bottom View)



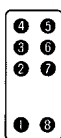
Mounting Holes



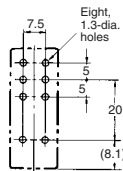
P2R-087P



Terminal Arrangement (Bottom View)

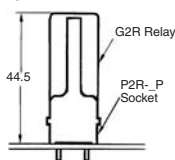


Mounting Holes

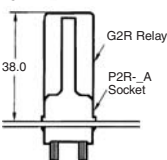


Mounting Height of Relay with Back-connecting Sockets

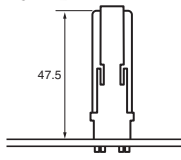
G2R-□P



G2R-□A



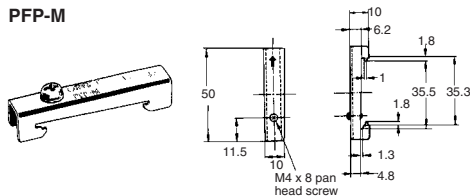
G2R-□7P



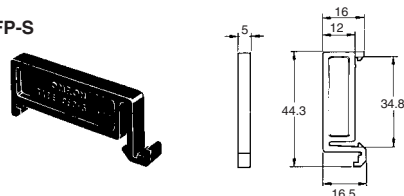
PFP-100N, PFP-50N



PFP-M



PFP-S



 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.



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



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



 Use an insulated tool when you operate the test button.

- 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.