

Power PCB Relay

G2R

- Creepage distance of 8.0 mm (0.31 in) min. between coil and contact
- Dual-winding latching type available
- Plug-in and quick-connect terminals available
- High sensitivity (360 mW) and high capacity (16 A) types available
- Highly stable magnetic circuit for latching endurance and excellent resistance to vibration and shock
- Safety-oriented design assuring high surge resistance: 10,000 V min. between coil and contacts















Ordering Information_____

To Order: Select the part number and add the desired coil voltage rating (e.g., G2R-14-DC12).

■ NON-LATCHING

1-Pole - PCB types

Туре	Contact material	Contact form	Construction	Part number
General purpose	AgCdO	SPDT	Semi-sealed	G2R-1
			Sealed	G2R-14
		SPST-NO	Semi-sealed	G2R-1A
			Sealed	G2R-1A4
High capacity		SPDT	Semi-sealed	G2R-1-E
		SPST-NO		G2R-1A-E
High sensitivity		SPDT		G2R-1-H
			Sealed	G2R-14-H
		SPST-NO	Semi-sealed	G2R-1A-H
			Sealed	G2R-1A4-H

1-Pole - Plug-in/Quick-connect types

Туре	Contact material	Contact form	Terminal	Part number
General purpose	AgCdO	SPDT	Plug-in	G2R-1-S
LED indicator				G2R-1-SN
Surge suppression diode				G2R-1-SD
LED indicator and surge suppression diode				G2R-1-SND
Upper-mount Bracket		SPDT	Quick Connect	G2R-1-T
		SPST-NO		G2R-1A-T

Note: 1. AgInSn and gold plated contacts available.

- 2. Bifurcated button available.
- 3. For individual product agency approvals consult factory.
- 4. Class B coil insulation available.
- 5. Push to test button available on plug-in type. Consult Omron for details.

■ NON-LATCHING (continued)

2-Pole - PCB types

Туре	Contact material	Contact form	Construction	Part number
General Purpose	AgCdO	DPDT	Semi-sealed	G2R-2
			Sealed	G2R-24
		DPST-NO	Semi-sealed	G2R-2A
			Sealed	G2R-2A4
High Sensitivity		DPDT	Semi-sealed	G2R-2-H
			Sealed	G2R-24-H
		DPST-NO	Semi-sealed	G2R-2A-H
			Sealed	G2R-2A4-H

2-Pole - Plug-in/Quick-connect types

Туре	Contact material	Contact form	Terminal	Part number
General purpose	AgCdO	DPDT	Plug-in	G2R-2-S
LED indicator				G2R-2-SN
Surge suppression diode				G2R-2-SD
LED indicator and surge suppression diode				G2R-2-SND

Note: 1. AgInSn and gold plated contacts available.

- 2. Bifurcated button available.
- 3. For individual product agency approvals consult factory.
- 4. Class B coil insulation available.
- 5. Push to test button available on plug-in type. Consult Omron for details.

■ LATCHING

Туре	Contact form	Construction	Part number
Dual coil latching	SPDT	Semi-sealed	G2RK-1
	SPST-NO		G2RK-1A
	DPDT		G2RK-2
	DPST-NO		G2RK-2A

■ ACCESSORIES

Track mounted sockets/tracks

	Part number	
Relay	Socket	Mounting track
G2R-1-S□□ (1-pole)	P2RF-05-E	PFP-100N or
G2R-2-S□□ (2-pole)	P2RF-08-E	PFP-50N and
		PFP-M end plate
		PFP-S (optional spacer)

Back connecting sockets/plate

		Part number	
Relay	Terminal	Socket	Socket mounting plate
G2R-1-S□□ (1-pole)	Solder	P2R-05A	P2R-P
	PC	P2R-05P	
G2R-2-S□□ (2-pole)	Solder	P2R-08A	
	PC	P2R-08P	

Specifications.

■ CONTACT DATA

Non-latching general purpose, plug-in, plug-in operation indicator self-contained, plug-in diode self-contained, and upper-mount bracket

	1-pole type	1-pole type		
Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)	Resistive load (p.f. = 1)	Inductive load (p.f. = 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
Contact material	AgCdO	·		
Carry current	10 A		5 A	
Max. operating voltage	380 VAC, 125 VDC			
Max. operating 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
Min. permissible load	100 mA, 5 VDC		10 mA, 5 VDC	

Non-latching high capacity 1-pole type

Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)
Rated load	16 A at 250 VAC 16 A at 30 VDC	8 A at 250 VAC 8 A at 30 VDC
Contact material	AgCdO	
Carry current	16 A	
Max. operating voltage	380 VAC, 125 VDC	
Max. operating current	16 A	
Max. switching capacity	4,000 VA, 480 W	2,000 VA, 240 W
Min. permissible load	100 mA, 5 VDC	

Non-latching high-sensitivity

	1-pole type		2-pole type	
Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)	Resistive load (p.f. = 1)	Inductive load (p.f. = 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	3 A at 250 VAC 3 A at 30 VDC	1 A at 250 VAC 1.50 A at 30 VDC
Contact material	AgCdO			
Carry current	5A		3 A	
Max. operating voltage	380 VAC, 125 VDC			
Max. operating current	5 A		3 A	
Max. switching capacity	1,250 VA, 150 W	500 VA, 90 W	750 VA, 90 W	250 VA, 45 W
Min. permissible load	100 mA, 5 VDC		10 mA, 5 VDC	

Latching

	1-pole type		2-pole type	
Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)
Rated load	5 A at 250 VAC 5 A at 30 VDC	3.50 A at 250 VAC 2.50 A at 30 VDC	3 A at 250 VAC 3 A at 30 VDC	1.50 A at 250 VAC 2 A at 30 VDC
Contact material	AgCdO			
Carry current	5A	5A		
Max. operating voltage	380 VAC, 125 VDC			
Max. operating current	5 A	5 A		
Max. switching capacity	1,250 VA, 150 W 875 VA, 75 W		750 VA, 90 W 375 VA, 60 W	
Min. permissible load	100 mA, 5 VDC		10 mA, 5 VDC	

Note: 1. P standard: $\lambda_{50} = 0.10 \text{ x } 10^{-6} \text{ operation.}$

- 2. AgInSn contacts available.
- 3. For individual product agency approvals consult factory.

■ COIL DATA

Non-latching DC coil

Rated				Pick-up	Dropout	Maximum	Power	
voltage	current	resistance	Armature	Armature	voltage	voltage	voltage	consumption
(VDC)	(mA)	(Ω)	OFF	ON	% of rated vo	ltage		(mW)
3	176	17	0.07	0.14	70% max.	15% min.	110% max.	Approx. 530
5	106	47	0.20	0.39			at 70°C	
6	88.20	68	0.28	0.55			(158°F)	
12	43.60	275	1.15	2.29				
24	21.80	1,100	4.27	8.55				
48	11.50	4,170	13.86	22.71				
100	5.30	18,860	67.20	93.20				
110	4.80	22,900	81.50	110.60				

Non-latching AC coil

Rated	Rated	Coil	Coil inductance (ref. value) (H)		Pick-up	Dropout	Maximum	Power
voltage	current	resistance	Armature	Armature	voltage	voltage	voltage	consumption
(VAC)	(mA)	(Ω)	Ω) OFF	ON	% of rated voltage			(VA)
6	150	16	0.05	0.10	80% max.	30% min.	110% max.	Approx. 0.9
12	75	65	0.19	0.39			at 70°C	
24	37.50	260	0.81	1.55			(158°F)	
50	18	1,130	3.25	6.73				
110	10.60	4,600	13.34	26.84				
120	7.50	6,500	21	42				
220	5.30	22,000	51.30	102				
240	3.80	30,000	65.50	131				

Non-latching high-sensitivity DC coil

Rated	Rated	Coil	Coil inductance (ref. value) (H)		Pick-up	Dropout	Maximum	Power
voltage	current	resistance	Armature	Armature	voltage	voltage	voltage	consumption (mW)
(VDC)	(mA)	(Ω)	Ω) OFF	ON	% of rated vo	% of rated voltage		
3	120	25	0.13	0.26	70% max.	15% min.	110% max.	Approx. 360
5	71.40	70	0.37	0.75			at 70°C	
6	60	100	0.53	1.07			(158°F)	
12	30	400	2.14	4.27				
24	15	1,600	7.80	15.60				
48	7.50	6,400	31.20	62.40				

■ COIL DATA (continued)

Latching dual coil type - Set coil

Rated	Rated	Coil	Coil inductance (ref. value) (H)		Set pick-up	Reset dropout	Maximum	Power
voltage	current	resistance	Armature	Armature	voltage	voltage	voltage	consumption
(VDC)	(mA)	(Ω)	OFF	ON	% of rated voltage			(mW)
3	227	10.80	0.026	0.052	70% max.	70% max.	110% max.	Approx. 850
5	167	30	0.073	0.146			at 70°C	
6	138	43.50	0.104	0.208			(158°F)	
12	70.60	170	0.42	0.83				
24	34.60	694	1.74	3.43				

Latching dual coil type - Reset coil

Rated	Rated	Coil	Coil inductance (ref. value) (H)		Set pick-up	Reset dropout	Maximum	Power
voltage	current	resistance	Armature	Armature	voltage	voltage	voltage	consumption
(VDC)	(mA)	(Ω)	OFF	ON	% of rated voltage			(mW)
3	200	15	0.001	0.002	70% max.	70% max.	110% max.	Approx. 600
5	119	42	0.003	0.006			at 70°C	
6	100	60	0.005	0.009			(158°F)	
12	50	240	0.018	0.036				
24	25	960	0.079	0.148				

Note: 1. The rated current and coil resistance are measured at a coil temperature of $23^{\circ}C$ ($73^{\circ}F$) with a tolerance of $\pm 10\%$.

2. The operating characteristics are measured at a coil temperature of 23°C (73°F).

■ CHARACTERISTICS

		Non-latching	Latching		
Contact resistance		100 m Ω max.			
Operate (set) time		15 ms max.	20 ms max.		
Release (reset) time		AC: 10 ms max.; DC: 5 ms max.	20 ms max.		
Bounce time	Operate	_	Mean value approx. 3 ms		
	Release	_	Mean value approx. 8 ms		
Operating	Mechanical	18,000 operations/hour			
frequency	Electrical	1,800 operations/hour (under rated load)			
Insulation resistance		1,000 MΩ min. (at 500 VDC)			
Dielectric strength		5,000 VAC, 50/60 Hz for 1 minute between coil and contacts			
		1,000 VAC, 50/60 Hz for 1 minute across contacts of same pole			
		3,000 VAC, 50/60 Hz for 1 minute between contact sets, 2-pole non-latching			
		1,000 VAC, 50/60 Hz for 1 minute between set and reset coils of dual coil latching			
Vibration	Mechanical durability	10 to 55 Hz; 1.50 mm (0.06 in) double amplitude			
	Malfunction durability	10 to 55 Hz; 1.50 mm (0.06 in) double amplitude			
Shock	Mechanical durability	1,000 m/s ² (approx. 100 G)			
Malfunction durability		200 m/s² (approx. 20 G) when energized 100 m/s² (approx.10 G) when de-energized	500 m/s² (approx. 50 G) at set 100 m/s² (approx. 10 G) at reset		
Ambient temperature		-40 to 70°C (-40° to 158°F)			
Humidity		35% to 85% RH			
Service life	Mechanical	AC: 10,000,000 operations min. DC: 20,000,000 operations min. (at 18,000 operations/hour) (at 18,000 operations/hour)			
	Electrical	See "Characteristic Data"			
Weight		Approx. 17 g (0.60 oz)	Approx. 17 g (0.60 oz)		

Note: Data shown are of initial value.

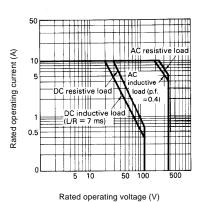
■ CHARACTERISTIC DATA

Maximum switching capacity — non-latching types

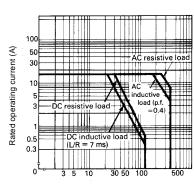
PCB: Single-pole general purpose

Semi-sealed

Plug-in: Single-pole single buttom Quick-connect



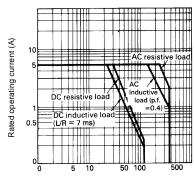
High capacity



OMRON

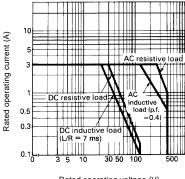
Rated operating voltage (V)

PCB: Single-pole high sensitivity
Two-pole general purpose
Plug-in: Two-pole single button



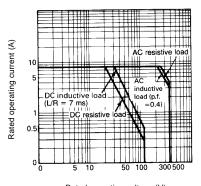
Rated operating voltage (V)

PCB: Two-pole high sensitivity



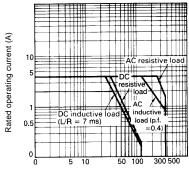
Rated operating voltage (V)

PCB: Single-pole general purpose Sealed



Rated operating voltage (V)

PCB: Two-pole general purpose Sealed



Rated operating voltage (V)

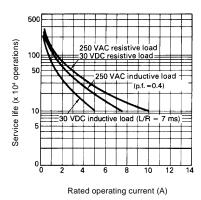
Electrical service life — non-latching types

PCB: Single-pole general purpose

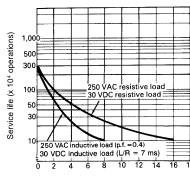
Semi-sealed

Plug-in: Single-pole single buttom

Quick connect

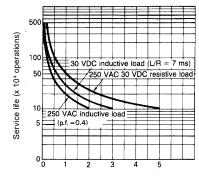


High capacity



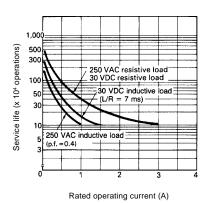
Rated operating current (A)

PCB: Single-pole high sensitivity
Two-pole general purpose
Plug-in: Two-pole single button

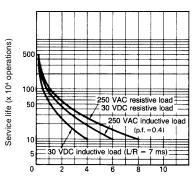


Rated operating current (A)

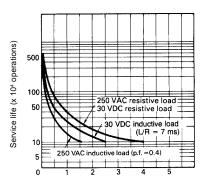
PCB: Two-pole high sensitivity



PCB: Single-pole general purpose Sealed



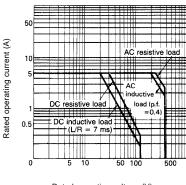
PCB: Two-pole general purpose Sealed



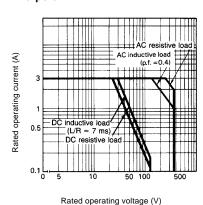
Rated operating current (A) Rated operating current (A)

Maximum switching capacity — latching types

One-pole



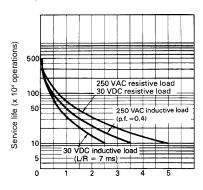
Two-pole



Rated operating voltage (V)

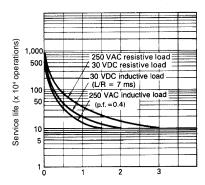
Electrical service life — latching types

One-pole



Rated operating current (A)

Two-pole



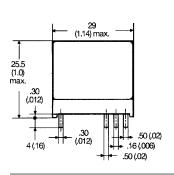
Rated operating current (A)

Dimensions.

Unit: mm (inch)

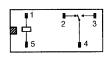
■ NON-LATCHING

PCB Terminal: SPDT, general purpose & high sensitivity

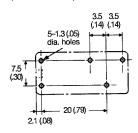




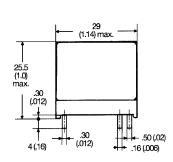
Terminal arrangement/ Internal connections (Bottom view)

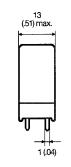


Mounting holes (Bottom view)

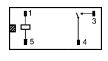


PCB Terminal: SPST-NO, general purpose & high sensitivity

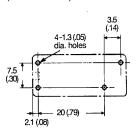




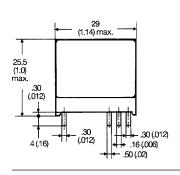
Terminal arrangement/ Internal connections (Bottom view)

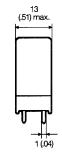


Mounting holes (Bottom view)

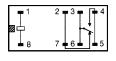


PCB Terminal: SPDT, high capacity



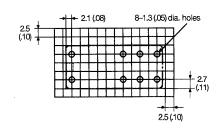


Terminal arrangement/ Internal connections (Bottom view)

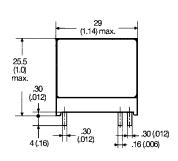


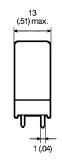
Mounting holes

(Bottom view)

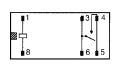


PCB Terminal: SPST-NO, high capacity

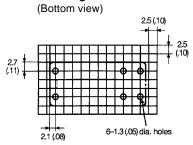




Terminal arrangement/ Internal connections (Bottom view)

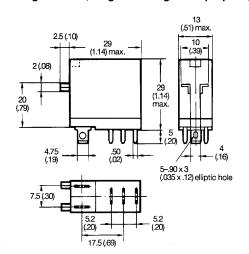


Mounting holes



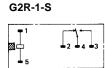
- Note: 1. ZZZZ and [_] indicate mounting orientation marks.
 - 2. A tolerance of ± 0.10 (0.004) applies to the above dimensions.

Plug-in: SPDT, single button general purpose, LED indicator, surge suppression diode

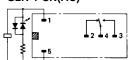


Terminal arrangement/Internal connections

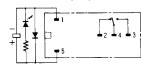
(Bottom view)



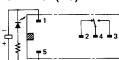
G2R-1-SN(AC)



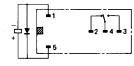
G2R-1-SND(DC)



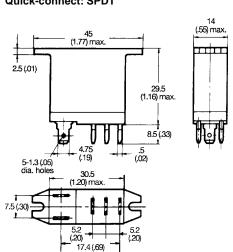
G2R-1-SN(DC)



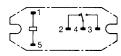
G2R-1-SD(DC)



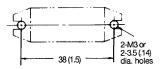
Quick-connect: SPDT



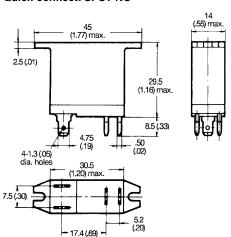
Terminal arrangement/ Internal connections (Bottom view)



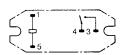
Mounting holes (Bottom view)



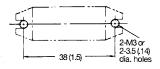
Quick-connect: SPST-NO



Terminal arrangement/ Internal connections (Bottom view)



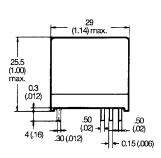
Mounting holes (Bottom view)

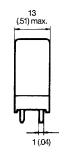


- Note: 1. ZZZZ and [__] indicate mounting orientation marks.
 - 2. A tolerance of ± 0.10 (0.004) applies to the above dimensions.

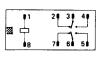
Unit: mm (inch)

PCB Terminal: DPDT, general purpose & high sensitivity



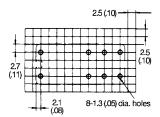


Terminal arrangement/ Internal connections (Bottom view)

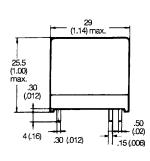


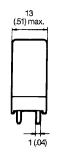
Mounting holes

(Bottom view)



PCB Terminal: DPST-NO, general purpose & high sensitivity



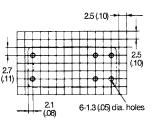


Terminal arrangement/ Internal connections (Bottom view)

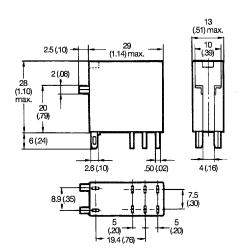


Mounting holes

(Bottom view)



Plug-in: DPDT



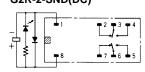
Terminal arrangement/Internal connections

(Bottom view)

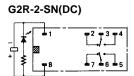
G2R-2-S



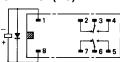
G2R-2-SND(DC)



G2R-2-SN(AC)



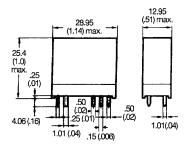
G2R-2-SD(DC)



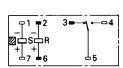
- Note: 1. Z and [] indicate mounting orientation marks.
 - 2. A tolerance of ± 0.10 (0.004) applies to the above dimensions.

■ LATCHING

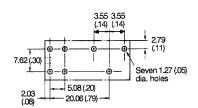
SPDT, Dual coil latching G2RK-1



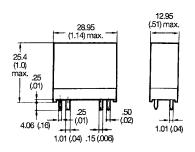
Dual coil



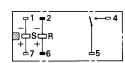
Dual coil



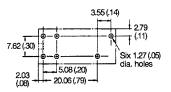
SPST-NO, Dual coil latching G2RK-1A



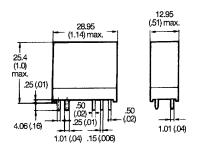
Dual coil



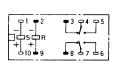
Dual coil



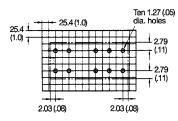
DPDT, Dual coil latching G2RK-2



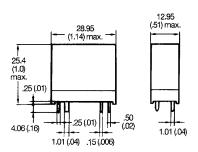
Dual coil



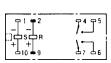
Dual coil



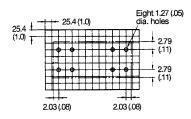
DPST-NO, Dual coil latching G2RK-2A



Dual coil



Dual coil

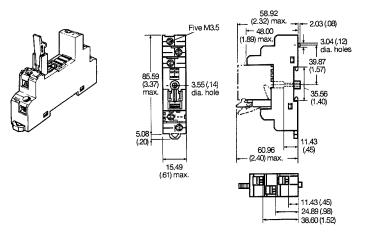


- Note: 1. Z and [] indicate mounting orientation marks.
 - 2. A tolerance of ± 0.10 (0.004) applies to the above dimensions.

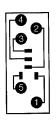
Unit: mm (inch)

■ ACCESSORIES

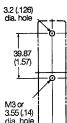
Track mounted socket P2RF-05-E (UL E87929/CSA LR31928)



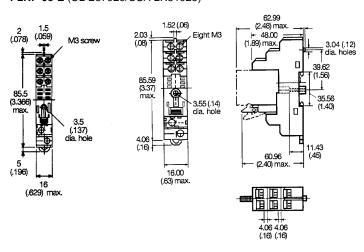
Terminal arrangement



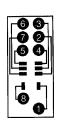
Mounting holes



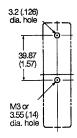
Track mounted socket P2RF-08-E (UL E87929/CSA LR31928)



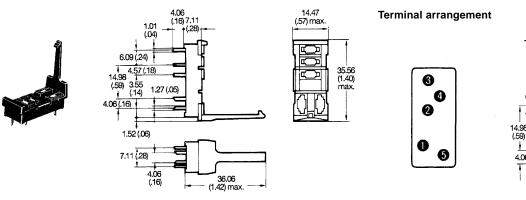
Terminal arrangement



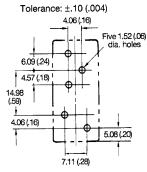
Mounting holes



Back connecting socket P2R-05P (1-pole) (UL E87929/CSA LR31928)

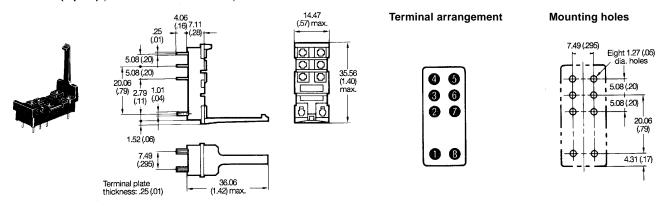


Mounting holes

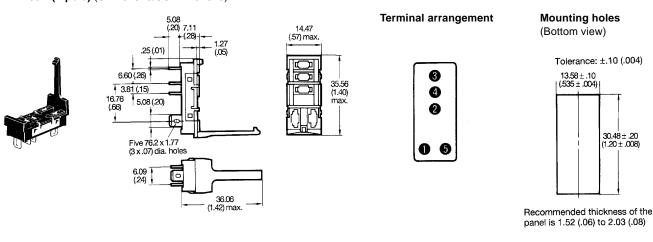


- Note: 1. Z and [] indicate mounting orientation marks.
 - 2. A tolerance of ± 0.10 (0.004) applies to the above dimensions.

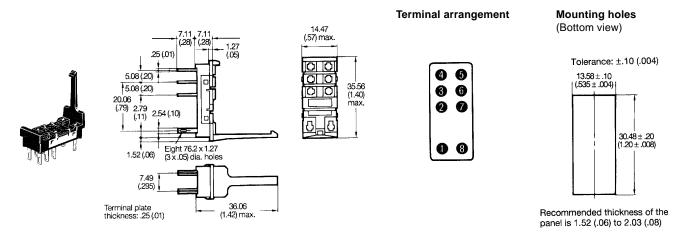
Back connecting socket P2R-08P (2-pole) (UL E87929/CSA LR31928)



Back connecting socket P2R-05A (1-pole) (UL E87929/CSA LR31928)



Back connecting socket P2R-08A (2-pole) (UL E87929/CSA LR31928)

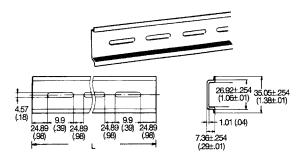


Note: 1. Z and [==] indicate mounting orientation marks.

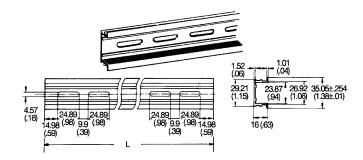
2. A tolerance of ± 0.10 (0.004) applies to the above dimensions.

Unit: mm (inch)

Mounting track PFP-100N, PFP-50N



Mounting track PFP-100N2

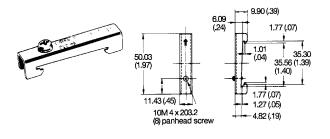


Note: 1. It is recommended that a panel thickness of 0.06 to 0.08 mm (0.002 to 0.003 in) be used.

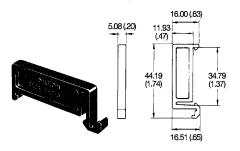
2. L = Length

PFP-100N L = 990.60 mm (39.00 in) PFP-50N L = 497.84 mm (19.60 in) PFP-100N2 L = 990.60 mm (39.00 in)

End plate PFP-M

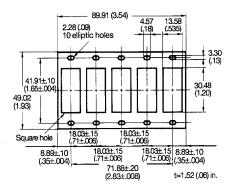


Spacer PFP-S



Connecting socket mounting plate P2R-P

Used to mount several connecting sockets side by side.



■ APPROVALS

UL (File No. E41643)/ CSA (File No. LR31928)

Туре	Contact form	Coil rating	Contact ratings
G2R-1	SPDT	3 to 110 VDC	10 A, 30 VDC (Resistive)
G2R-14		3 to 240 VAC	10 A, 250 VAC (General purpose)
G2R-1-H			10 A, 277 VAC (General purpose)
G2R-14-H			TV-3, 120 VAC (NO contact)
G2R-1-S			360 WT, 120 VAC (Tungsten)
G2R-1-T			1/3 HP, 125 VAC (NO contact)
G2R-1A	SPST-NO		1/2 HP, 250 VAC (NO contact)
G2R-1A4			1/2 HP, 277 VAC (NO contact)
G2R-1A-H			TV-8, 120 VAC (NO contact, ASI contacts)
G2R-1A4-H			
G2R-1A-T			
G2R-1-E	SPDT	3 to 110 VDC	20 A, 277 VAC (General purpose)
		3 to 240 VAC	16 A, 30 VDC (Resistive)
			16 A, 250 VAC (General purpose)
			360 WT, 120 VAC (Tungsten)
			TV-3, 120 VAC (NO contact)
G2R-1A-E	SPST-NO		1/2 HP, 240 VAC
			1 HP, 240 VAC
			TV-8, 120 VAC (NO contact, ASI contacts)
G2R-2	DPDT	3 to 110 VDC	10 A, 30 VDC (Resistive)
G2R-24		3 to 240 VAC	10 A, 277 VAC (General purpose)
G2R-2- H			5 A, 250 VAC (General purpose)
G2R-24-H			TV-3, 120 VAC (NO contact)
G2R-2-S			1/6 HP, 120 VAC
G2R-2-A			1/3 HP, 240 VAC
G2R-2A4			1/3 HP, 265 VAC
G2R-2A-H			250 VA, 120 VAC (Pilot duty)
G2R-2A4-H			
G2RK-1	SPDT	3 to 24 VDC	10 A, 30 VDC (Resistive)
G2RK-1A	SPST-NO		10 A, 250 VAC (General purpose)
			TV-3 (NO contact)
			1/6 HP, 120 VAC
			1/2 HP, 120 VAC
			A300 (Pilot duty)
G2RK-2	DPDT	3 to 24 VDC	5 A, 30 VDC (Resistive)
G2RK-2A	DPST-NO		5 A, 250 VAC (General purpose)
			TV-3 (NO contact)
			1/6 HP, 120 VAC
			1/3 HP, 240 VAC

Note: 1. The rated values approved by each of the safety standards (e.g., UL and CSA) may be different from the performance characteristics individually defined in this catalog.

2. In the interest of product improvement, specifications are subject to change.

G2R ______ OMRON _____ G2R

NOTE: DIMENSIONS ARE SHOWN IN MILLIMETERS. To convert millimeters to inches divide by 25.4.



OMRON ELECTRONICS, INC.

One East Commerce Drive Schaumburg, IL 60173

1-800-55-OMRON

Cat. No. GC RLY7

01/00

OMRON CANADA, INC.

885 Milner Avenue Scarborough, Ontario M1B 5V8

416-286-6465

Specifications subject to change without notice.

Printed in the U.S.A.