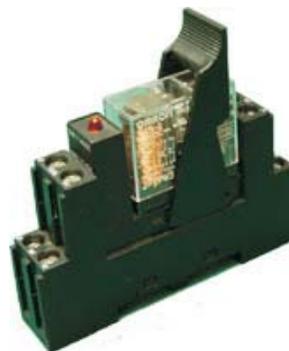


G2R

- Creepage distance of 8.0 mm (0.31) 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.
- UL, CSA approved
UL File No.E41643; CSA File No.LR31928
- Current draw:31.6ma@12V DC;71.4ma@24V



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

Construction	Model
Semi-sealed	G2R-1
Semi-sealed	G2R-1A
Semi-sealed	G2R-1-E
	G2R-1A-E
	G2R-1-H
Semi-sealed	G2R-1A-H

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

Terminal	Model
Plug-in	G2R-1-S
	G2R-1-SN
	G2R-1-SD
	G2R-1-SND
Quick connect	G2R-1-T
	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.

6. CE mark only on plug-in and quick connect types (G2R- -S).

7. The Plug-in/Quick Connect versions shown here have been discontinued. They have been replaced by the new G2R-S(S) Power Relays. For complete specifications see the data sheet at Omron's Knowledge Center at www.knowledge.omron.com.

2-Pole - PCB Types

Contact form	Construction	Model
DPDT	Semi-sealed	G2R-2
DPST-NO	Semi-sealed	G2R-2A
DPDT	Semi-sealed	G2R-2-H
DPST-NO	Semi-sealed	G2R-2A-H

2 Pole - Plug-in/Quick-connect Types

Type	Contact material	Contact form	Terminal	Model
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.

• Characteristics

Item		Non-latching	Latching
Contact resistance		100 mΩ	
Operate (set) time		15 ms. max.	20 ms max.
Release (reset) time		AC: 10 ms max.; DC: 5 ms max.	
Bounce time	Operate	---	Mean value approx. 3 ms
	Release	---	Mean value approx. 8 ms
Operating frequency	Mechanical	18,000 operations/hour	
	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) double amplitude	
	Malfunction durability	10 to 55 Hz; 1.50 mm (0.06) double amplitude	
Shock	Mechanical durability	1,000 m/s ² (approx. 100G)	
	Malfunction durability	200 m/s ² (approx. 20 G) when energized 100 m/s ² (approx. 10 G) when de-energized	500 m/s ² (approx. 50 G) at set 100 m/s ² (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)	10,000,000 operations min. (at 18,000 operations/hour)
	Electrical	See Characteristics Data	
Weight		Approx. 17 g (0.60 oz.)	Approx. 17 g (0.60 oz.)

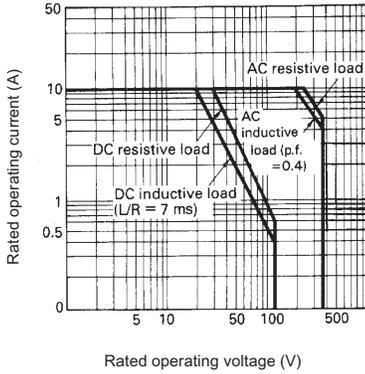
Note: Data shown are of initial value.

Characteristic Data

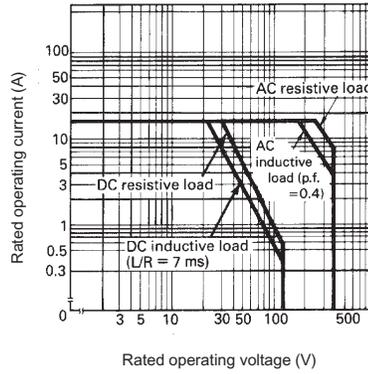
Maximum Switching Capacity - Non-latching Types

PCB: Single-pole general purpose
Semi-sealed

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

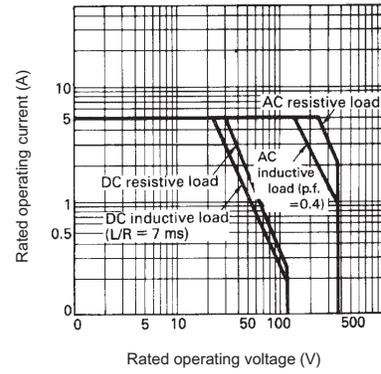


High capacity

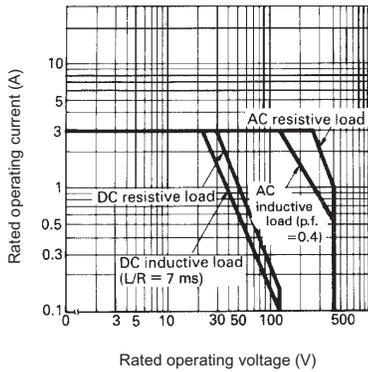


PCB: Single-pole high sensitivity
Two-pole general purpose

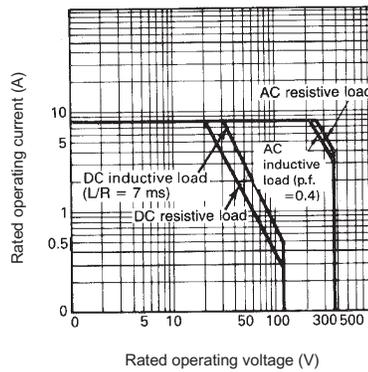
Plug-in: Two-pole single button



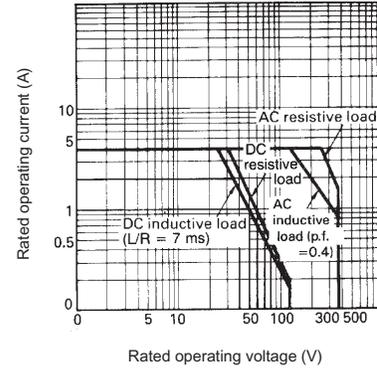
PCB: Two-pole high sensitivity



PCB: Single-pole general purpose
Sealed



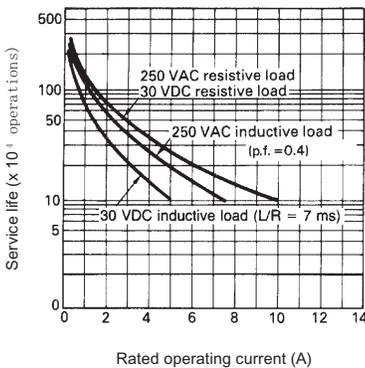
PCB: Two-pole general purpose
Sealed



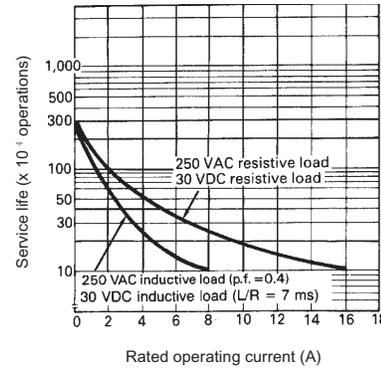
Electrical Service Life - Non-latching Types

PCB: Single-pole general purpose
Semi-sealed

Plug-in: Single-pole single button
Quick connect

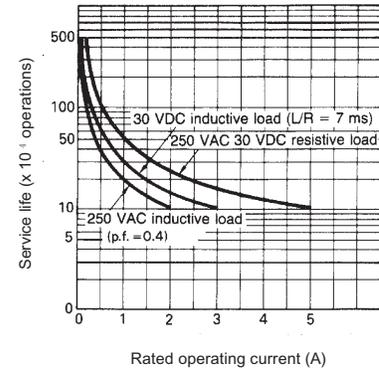


High capacity

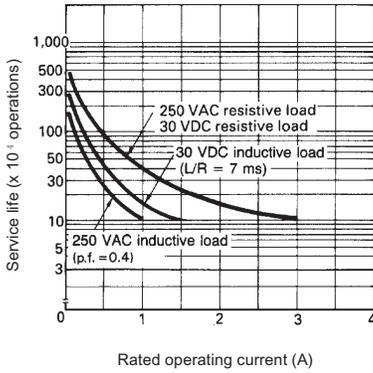


PCB: Single-pole high sensitivity
Two-pole general purpose

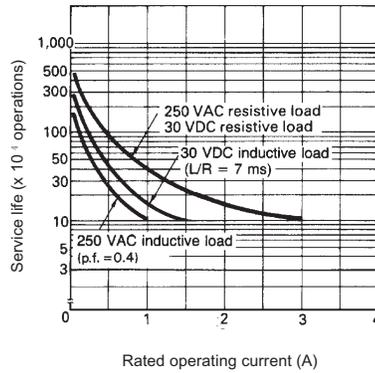
Plug-in: Two-pole single button



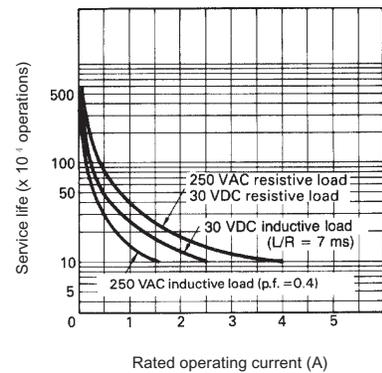
PCB: Two-pole high sensitivity



PCB: Single-pole general purpose Sealed

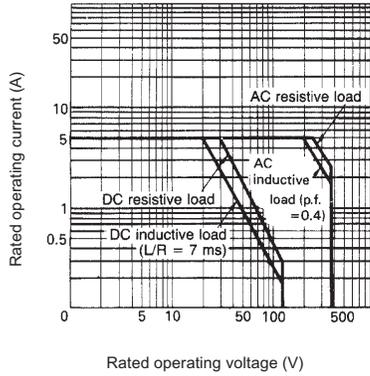


PCB: Two-pole general purpose Sealed

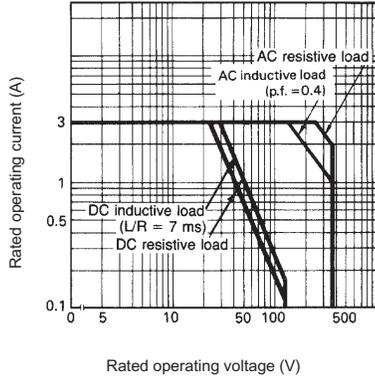


Maximum Switching Capacity - Latching Types

One pole

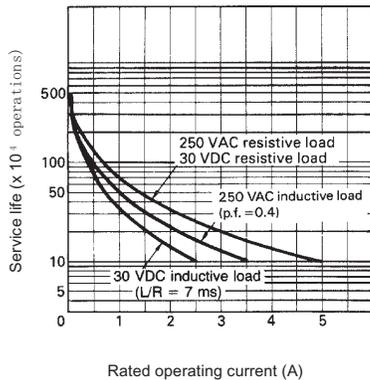


Two-pole

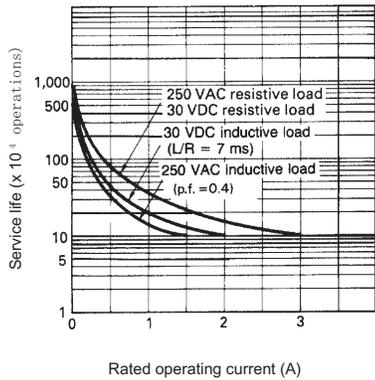


Electrical Service Life - Latching Types

One pole



Two-pole

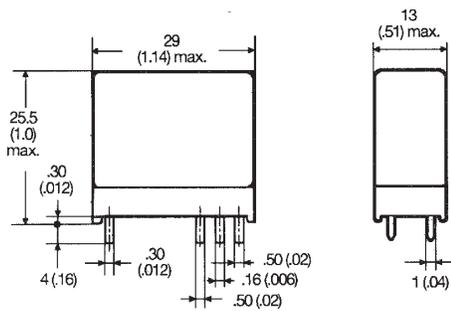


Dimensions

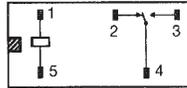
Unit: mm (inch)

Non-latching

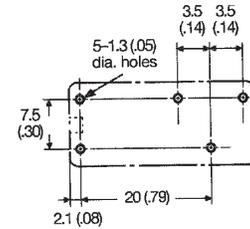
PCB Terminal: SPDT, general purpose & high sensitivity



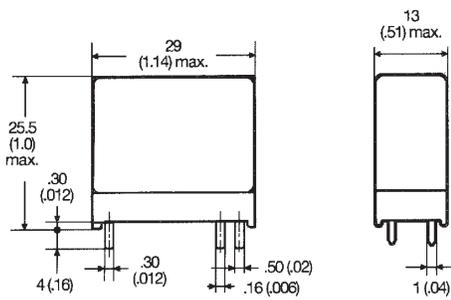
Terminal arrangement/
Internal connections
(Bottom view)



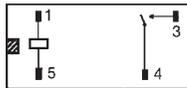
Mounting holes
(Bottom view)



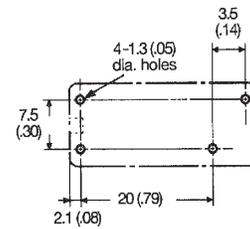
PCB Terminal: SPST-NO, general purpose & high sensitivity



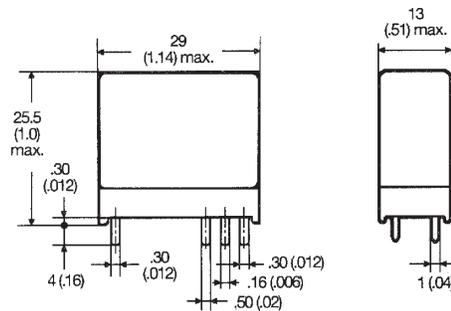
Terminal arrangement/
Internal connections
(Bottom view)



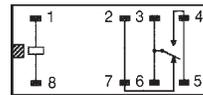
Mounting holes
(Bottom view)



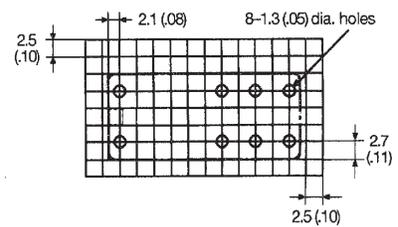
PCB Terminal: SPDT, high capacity



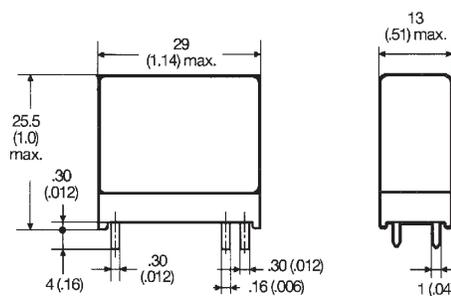
Terminal arrangement/
Internal connections
(Bottom view)



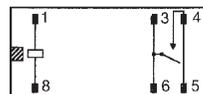
Mounting holes
(Bottom view)



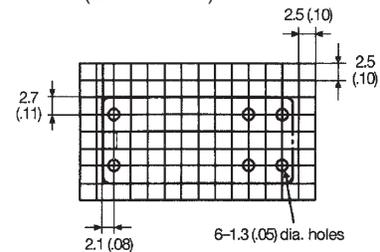
PCB Terminal: SPST-NO, high capacity



Terminal arrangement/
Internal connections
(Bottom view)

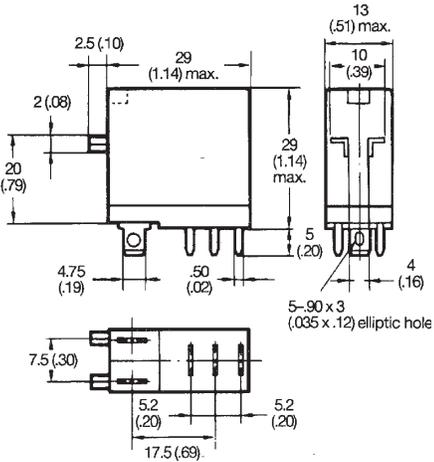


Mounting holes
(Bottom view)



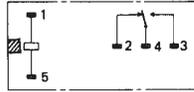
- Note: 1.  and  indicate mounting orientation marks.
2. A tolerance of 0.10 (0.004) applies to the above dimensions.

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

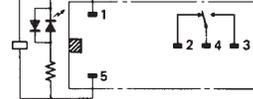


Terminal arrangement/Internal connections
(Bottom view)

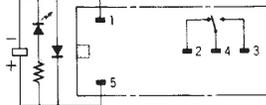
G2R-1-S



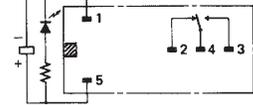
G2R-1-SN(AC)



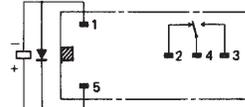
G2R-1-SND(DC)



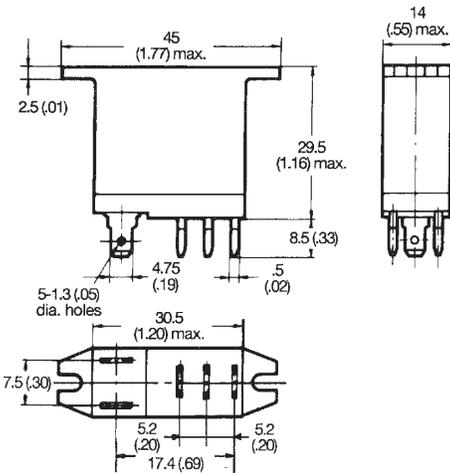
G2R-1-SN(DC)



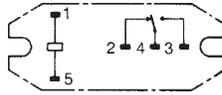
G2R-1-SD(DC)



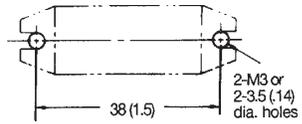
Quick-connect: SPDT



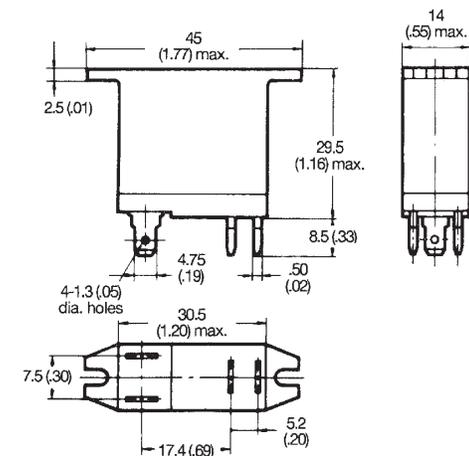
Terminal arrangement/
Internal connections
(Bottom view)



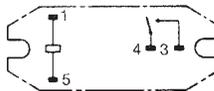
Mounting holes
(Bottom view)



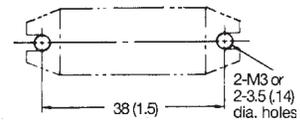
Quick-connect: SPST-NO



Terminal arrangement/
Internal connections
(Bottom view)



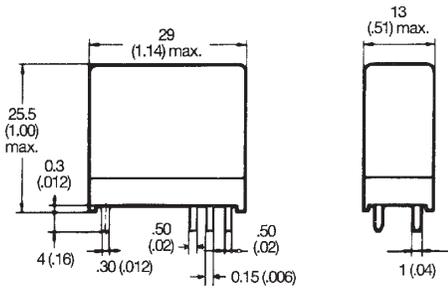
Mounting holes
(Bottom view)



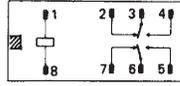
Note: 1. and indicate mounting orientation marks.

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

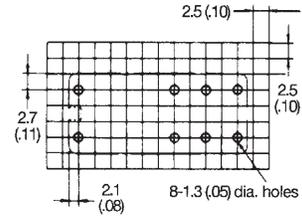
PCB Terminal: DPDT, general purpose & high sensitivity



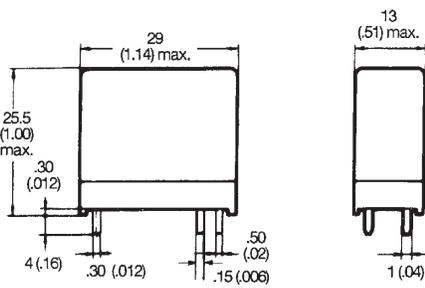
Terminal arrangement/
Internal connections
(Bottom view)



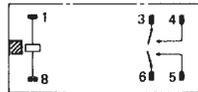
Mounting holes
(Bottom view)



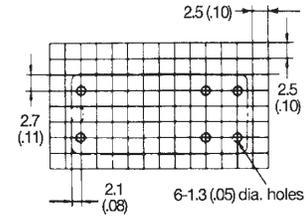
PCB Terminal: DPST-NO, general purpose & high sensitivity



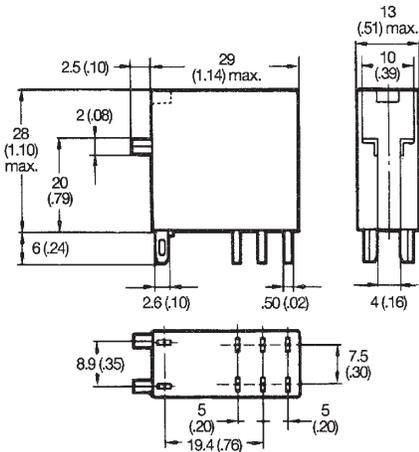
Terminal arrangement/
Internal connections
(Bottom view)



Mounting holes
(Bottom view)

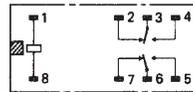


Plug-in: DPDT

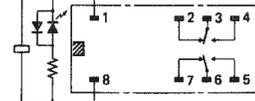


Terminal arrangement/Internal connections
(Bottom view)

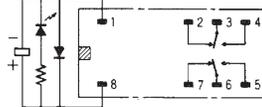
G2R-2-S



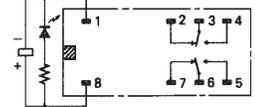
G2R-2-SN(AC)



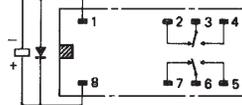
G2R-2-SND(DC)



G2R-2-SN(DC)



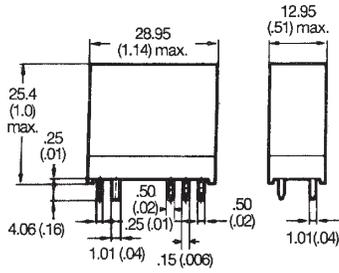
G2R-2-SD(DC)



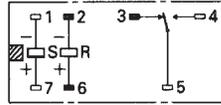
- Note: 1.  and  indicate mounting orientation marks.
2. A tolerance of 0.10 (0.004) applies to the above dimensions.

Latching

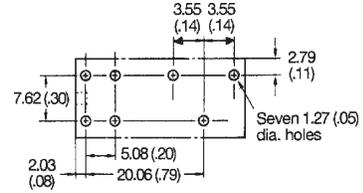
SPDT, Dual coil latching
G2RK-1



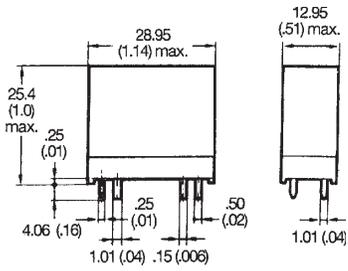
Dual coil



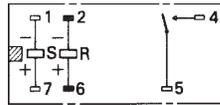
Dual coil



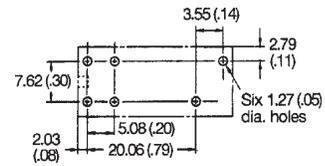
SPST-NO, Dual coil latching
G2RK-1A



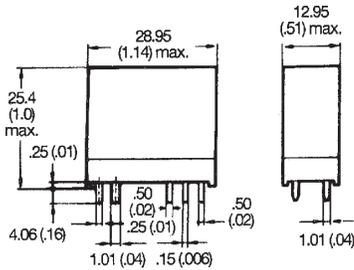
Dual coil



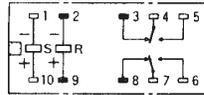
Dual coil



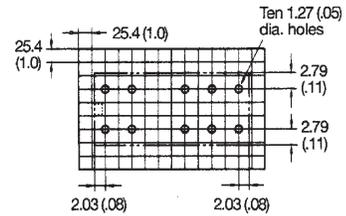
DPDT, Dual coil latching
G2RK-2



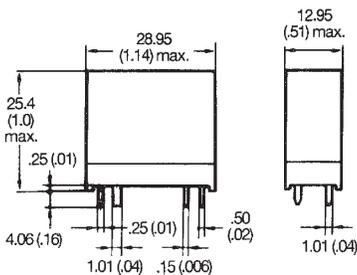
Dual coil



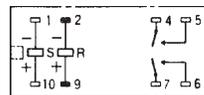
Dual coil



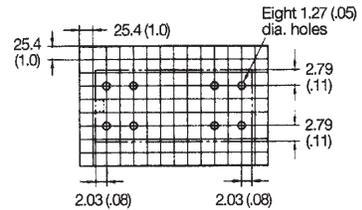
DPST-NO, Dual coil latching
G2RK-2A



Dual coil



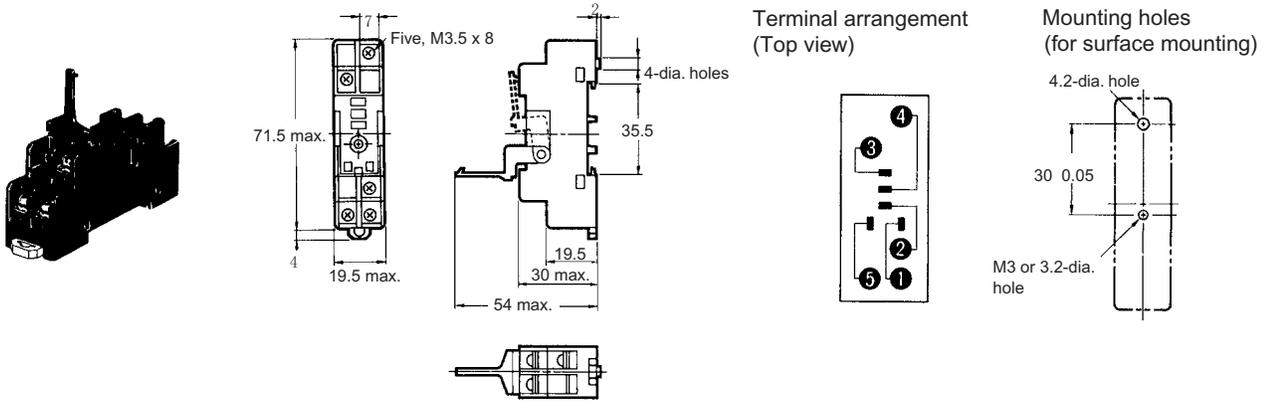
Dual coil



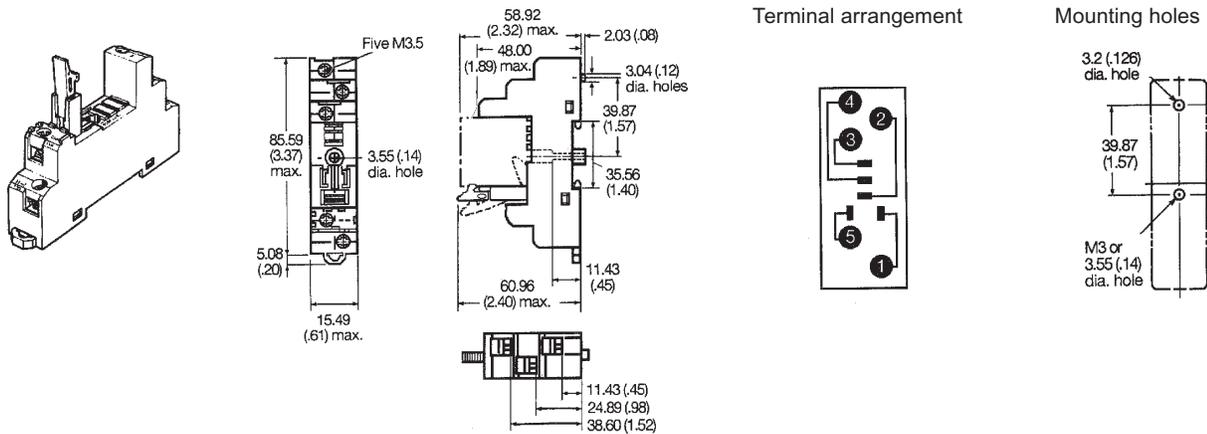
- Note: 1. and indicate mounting orientation marks.
2. A tolerance of 0.10 (0.004) applies to the above dimensions.

Accessories

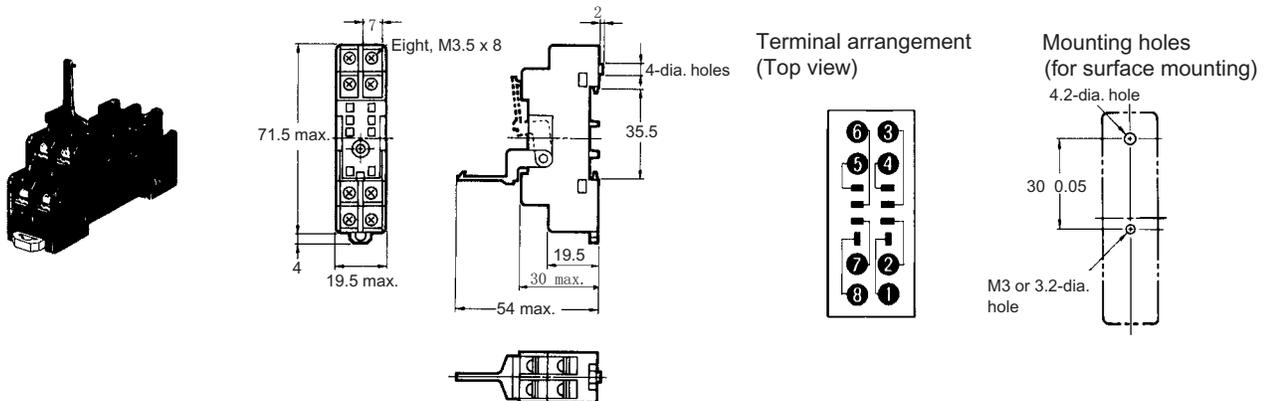
Track mounted socket
P2RF-05 (UL E87929/CSA LR31928)



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

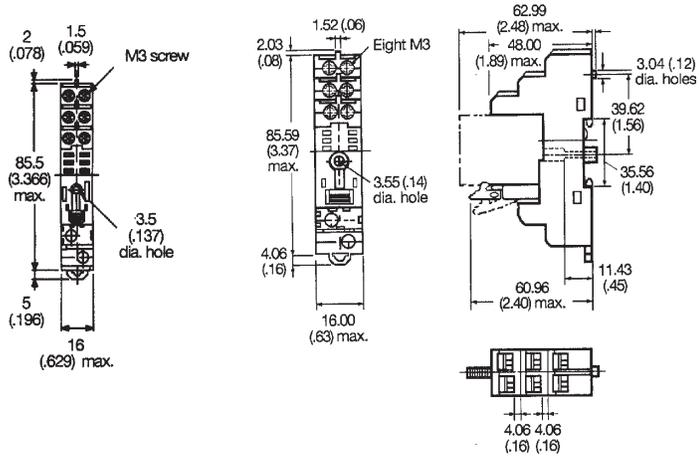


Track mounted socket
P2RF-08 (UL E87929/CSA LR31928)

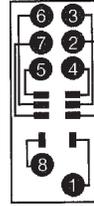


- Note: 1.  and  indicate mounting orientation marks.
2. A tolerance of 0.10 (0.004) applies to the above dimensions.

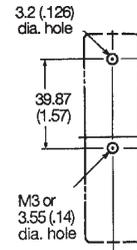
Track mounted socket
P2RF-08-E (UL E87929/CSA LR31928)



Terminal arrangement

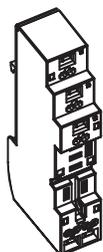


Mounting holes

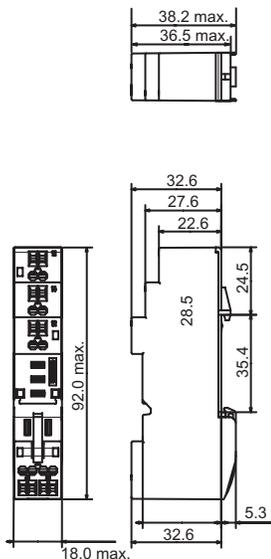


- Note: 1.  and  indicate mounting orientation marks.
2. A tolerance of 0.10 (0.004) applies to the above dimensions.

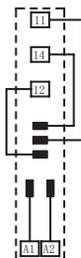
Screwless Clamp Terminal Socket P2RF-05-S (UL E8729/CSA LR31928)



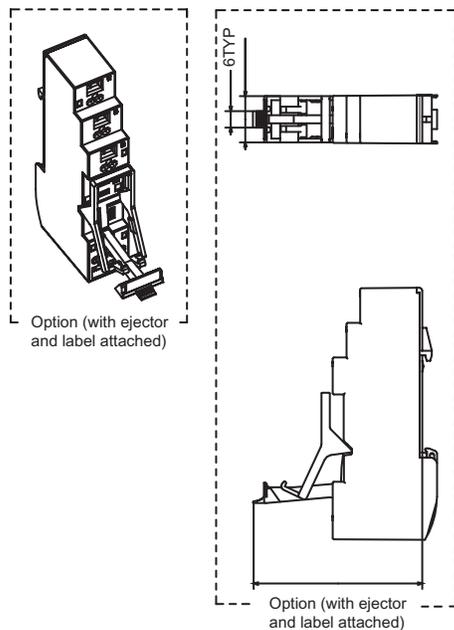
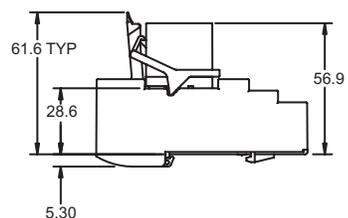
Standard Model



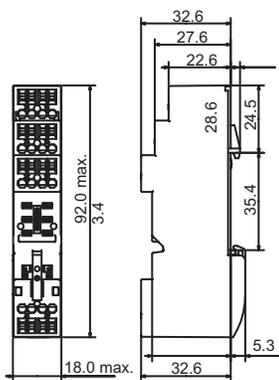
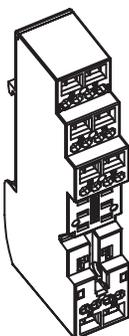
Terminal Arrangement



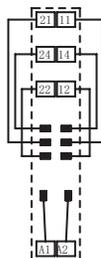
Mounting Height (with lever)



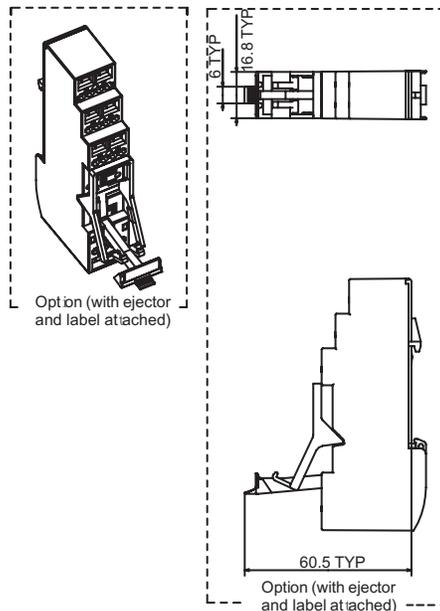
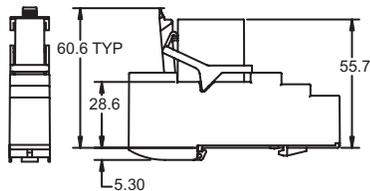
Screwless Clamp Terminal Socket P2RF-08-S (UL E8729/CSA LR31928)



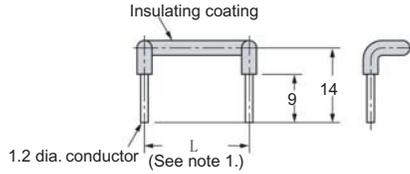
Terminal Arrangement



Mounting Height (with lever)



Socket Bridge



Note: 1. The relationship between the model, the length L, and the color of the insulating coating is shown in the following table.

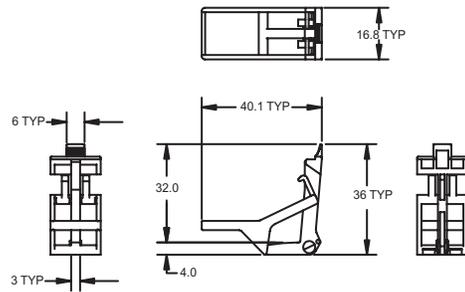
Model	Length (L) mm	Color of insulating coating
P2RM-SR	14.3	Red
P2RM-SB		Blue

- The insulating coating must be able to withstand a voltage of 3,000 V for 1 minute. Use either PE or PA as the material of the insulating coating.
- The positions of the ends of the insulating coating must not vary more than 0.5 mm.

4. The characteristics of the socket bridge are shown in the following table.

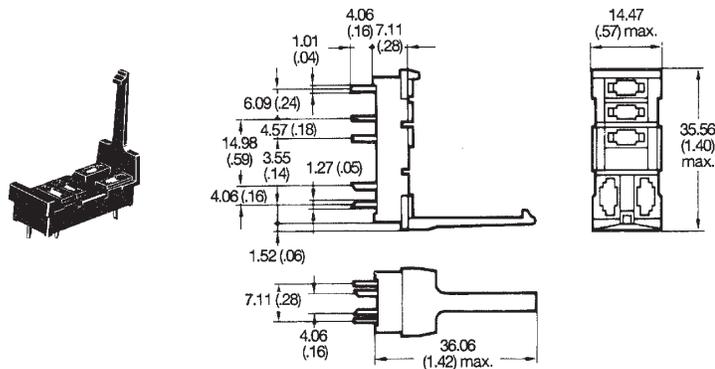
Item	Characteristic
Rated ON current	10 A
Rated insulation voltage	250 VAC
Temperature rise	35 C max.
Dielectric strength	3,000 VAC for 1 minute
Ambient operating temperature	-55 to 70 C

Clip and Release Lever

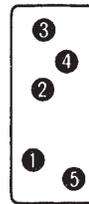


Back connecting socket

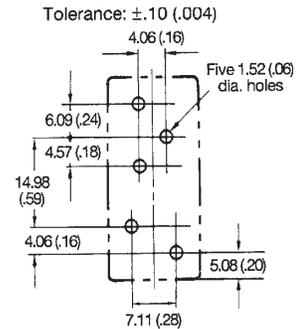
P2R-05P (1-pole) (UL E87929/CSA LR31928)



Terminal arrangement



Mounting holes

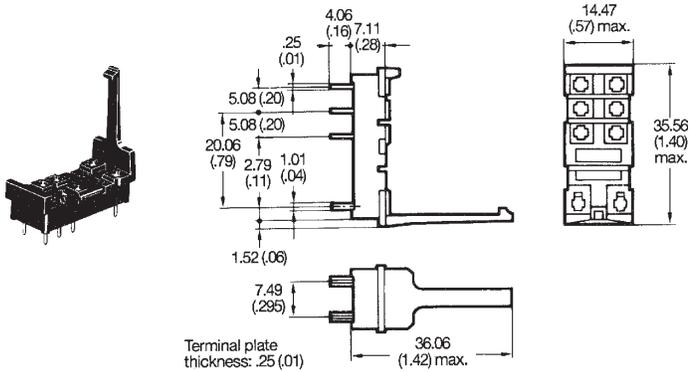


Note: 1.  and  indicate mounting orientation marks.

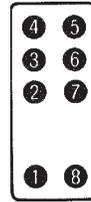
2. A tolerance of 0.10 (0.004) applies to the above dimensions.

G2R Relay

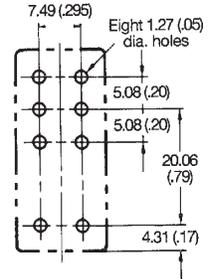
Back connecting socket
P2R-08P (2-pole) (UL E87929/CSA LR31928)



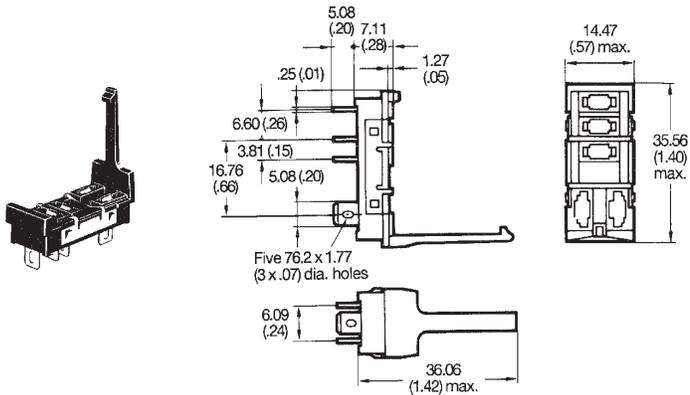
Terminal arrangement



Mounting holes



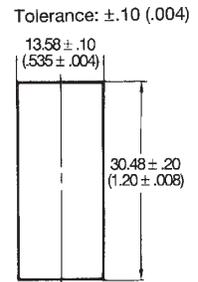
Back connecting socket
P2R-05A (1-pole) (UL E87929/CSA LR31928)



Terminal arrangement

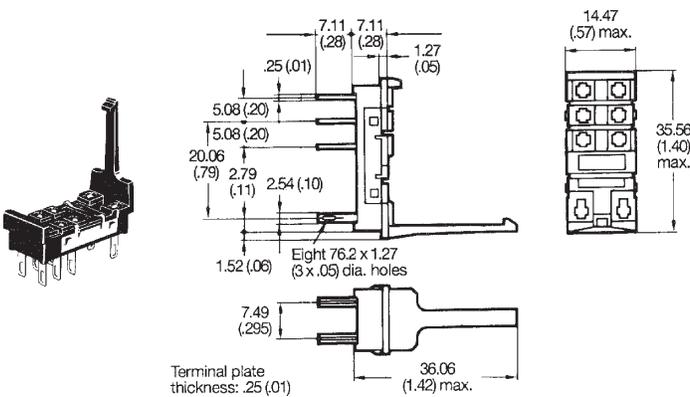


Mounting holes
(Bottom view)

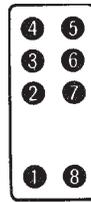


Recommended thickness of the panel is 1.52 (.06) to 2.03 (.08)

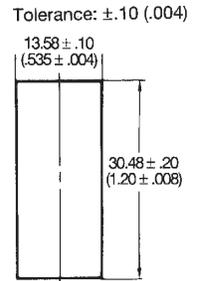
Back connecting socket
P2R-08A (2-pole) (UL E87929/CSA LR31928)



Terminal arrangement



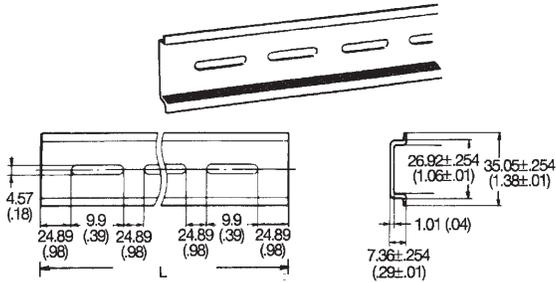
Mounting holes
(Bottom view)



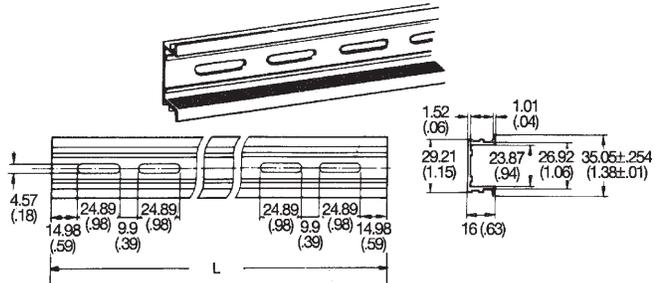
Recommended thickness of the panel is 1.52 (.06) to 2.03 (.08)

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

Mounting track
PFP-100N, PFP-50N

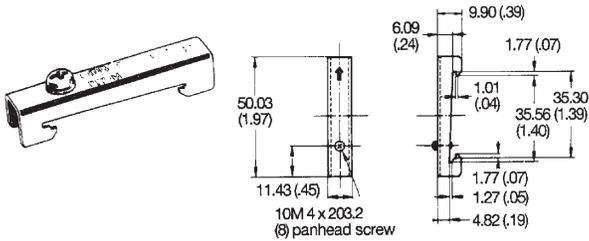


Mounting track
PFP-100N2

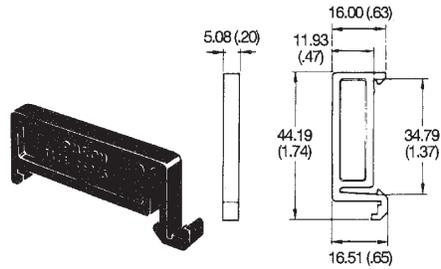


- Note: 1. It is recommended that a panel thickness of 0.06 to 0.08 mm (0.002 to 0.003 in) be used.
2. L = Length
PFP-100N L = 990.60 mm (39.00 in)
PFP-50N L = 497.84 mm (19.60 in)
PFP-100N2 L = 990.60 mm (39.00 in)

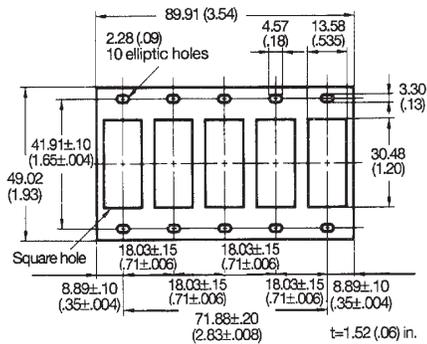
End plate
PFP-M



Spacer
PFP-S



Connecting socket mounting plate
P2R-P



Approvals

UL (File No. E41643)/ CSA (File No. 31928)

Type	Contact form	Coil rating	Contact ratings
G2R-1 G2R-14 G2R-1-H G2R-14-H G2R-1-S G2R-1-T	SPDT	3 to 110 VDC 3 to 240 VDC	10 A, 30 VDC (Resistive) 10 A, 250 VAC (General purpose) 10 A, 277 VAC (General purpose) TV-3, 120 VAC (NO contact) 360 WT, 120 VAC (Tungsten) 1/3 HP, 125 VAC (NO contact) 1/2 HP, 250 VAC (NO contact) 1/2 HP, 277 VAC (NO contact) TV-8, 120 VAC (NO contact, ASI contacts) B300 (Pilot duty)
G2R-1A G2R-1A4 G2R-1A-H G2R-1A4-H G2R-1A-T	SPST-NO		
G2R-1-E	SPDT	3 to 110 VDC 3 to 240 VAC	20 A, 277 VAC (General purpose) 16 A, 30 VDC (Resistive) 16 A, 250 VAC (General purpose) 360 WT, 120 VAC (Tungsten) TV-3, 120 VAC (NO contact) 1/2 HP, 240 VAC 1 HP, 240 VAC TV-8, 120 VAC (No contact, ASI contacts)
G2R-1A-E	SPST-NO		
G2R-2 G2R-24 G2R-2-H G2R-24-H G2R-2-S G2R-2-A G2R-2A4 G2R-2A-H G2R-2A4-H	DPDT	3 to 110 VDC 3 to 240 VAC	10 A, 30 VDC (Resistive) 10 A, 277 VAC (General purpose) 5 A, 250 VAC (General purpose) TV-3, 120 VAC (NO contact) 1/6 HP, 120 VAC 1/3 HP, 240 VAC 1/3 HP, 265 VAC 250 VA, 120 VAC (Pilot duty) B300 (Pilot duty)
G2RK-1	SPDT	3 to 24 VDC	10 A, 30 VDC (Resistive) 10 A, 250 VAC (General purpose) TV-3 (NO contact) 1/6 HP, 120 VAC 1/2 HP, 120 VAC A300 (Pilot duty)
G2RK-1A	SPST-NO		
G2RK-2	DPDT	3 to 24 VDC	5 A, 30 VDC (Resistive) 5 A, 250 VAC (General purpose) TV-3 (NO contact) 1/6 HP, 120 VAC 1/3 HP, 240 VAC
G2RK-2A	DPST-NO		

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 Relay



- Reduces wiring work by 60% when combined with the P2RF- @-PU Push-In Plus Socket (according to actual OMRON measurements).
- Lockable test button models 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)



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					% of rated voltage
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.)
	50 Hz	60 Hz		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				

Note:

1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for the AC rated current and ±10% for the DC coil resistance.
2. The AC coil resistance and inductance values are reference values only (at 60 Hz).
3. Operating characteristics were measured at a coil temperature of 23°C.
4. The maximum voltage is the maximum possible value of the voltage that can be applied to the relay coil.

Coil Ratings

Number of poles	1 pole		2 poles	
Load	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)
Rated load	10 A at 250 VAC; 10 A at 30 VDC	7.5 A at 250 VAC; 5 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC
Rated carry current	10 A		5 A	
Max. switching voltage	440 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	10 A		5 A	
Max. switching 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:

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

* This value was measured at a switching frequency of 120 operations per minute.

Characteristics

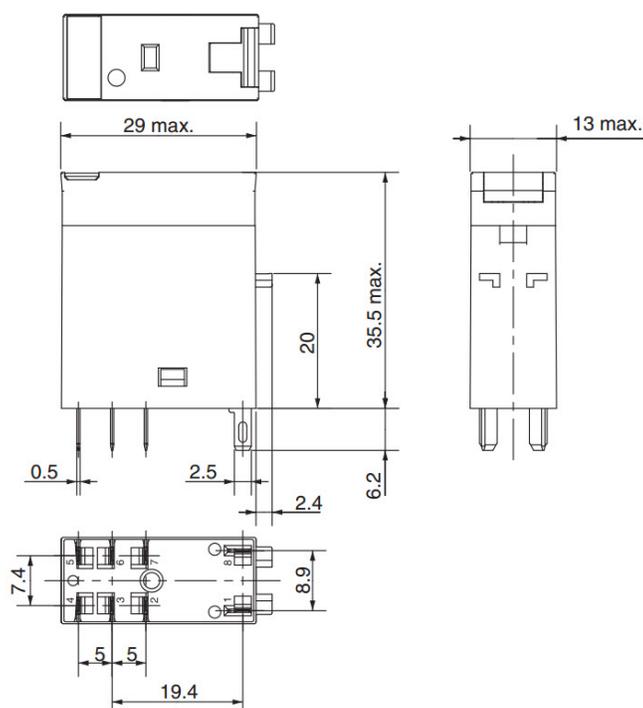
Item	1 pole	2 poles
Contact configuration	SPDT	
Contact structure	Single	
Contact resistance	100 mΩ max.	
Operate (set) time	15 ms max.	
Release (reset) time	AC: 10 ms max.; DC: 5 ms max. (w/built-in diode: 20 ms max.)	AC: 15 ms max.; DC: 10 ms max. (w/built-in diode: 20 ms max.)
Max. operating frequency	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)	
Ambient temperature	Operating: -40°C to 70°C (with no icing or condensation)	
Ambient humidity	Operating: 5% to 85%	
Weight	Approx. 20 g	

Note:

Values in the above table are the initial values.

* These values are relay only. Please refer to the “Products Related to Common Sockets and DIN Tracks Data Sheet” for connecting sockets.

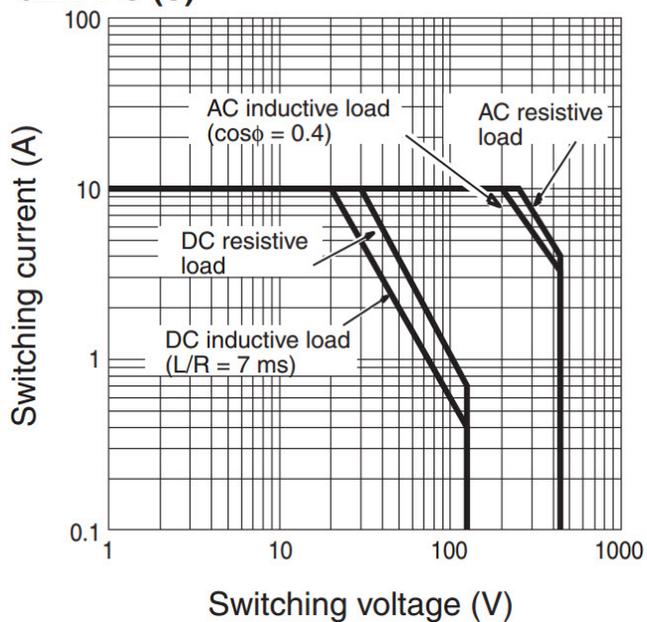
Dimension



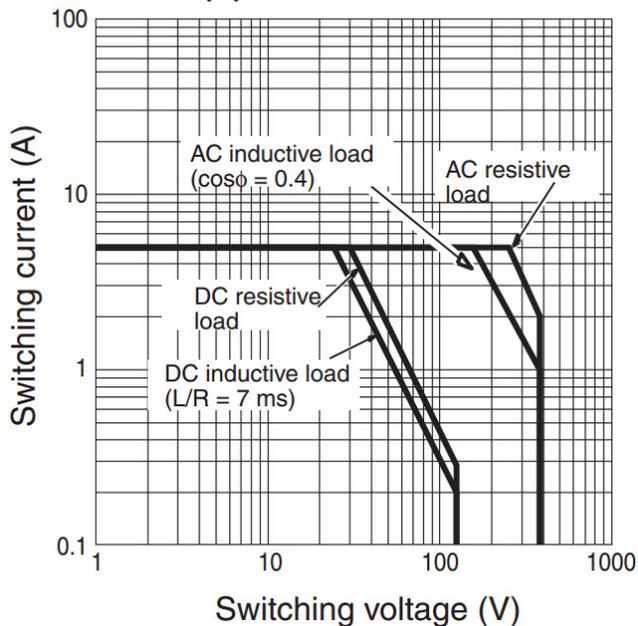
Engineering Data

Maximum Switching Power

G2R-1-S (S)

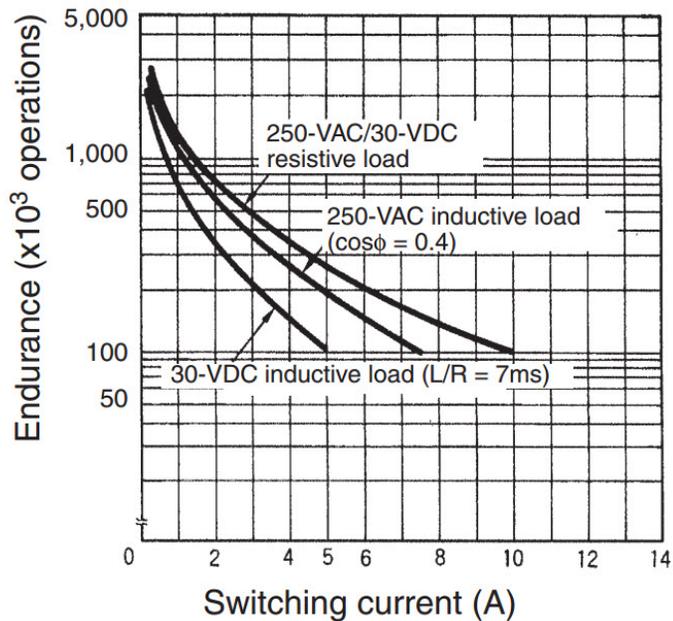


G2R-2-S (S)

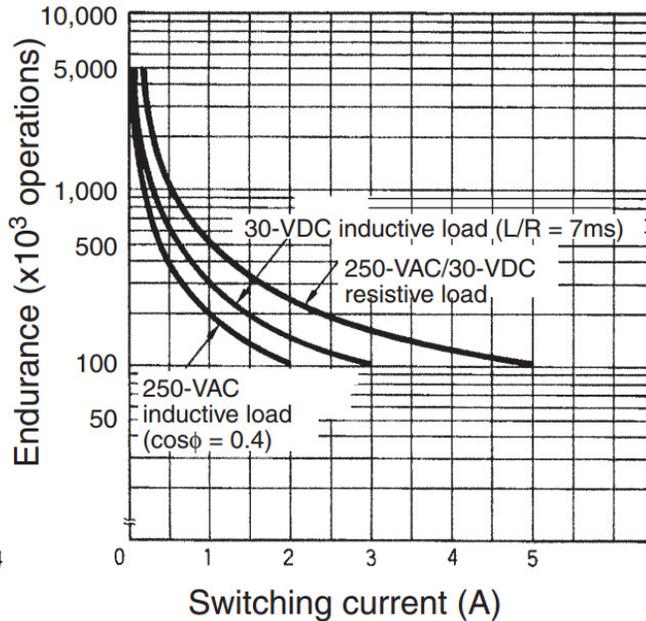


Endurance

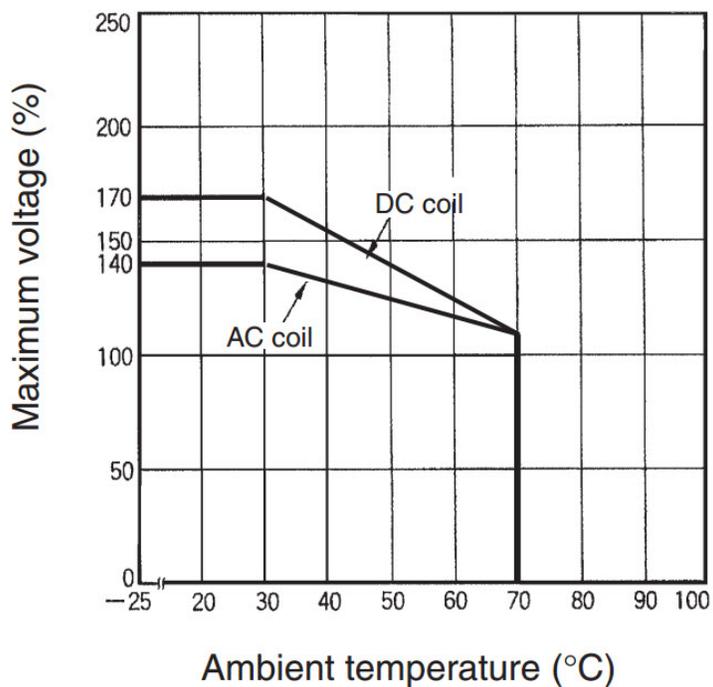
G2R-1-S (S)



G2R-2-S (S)

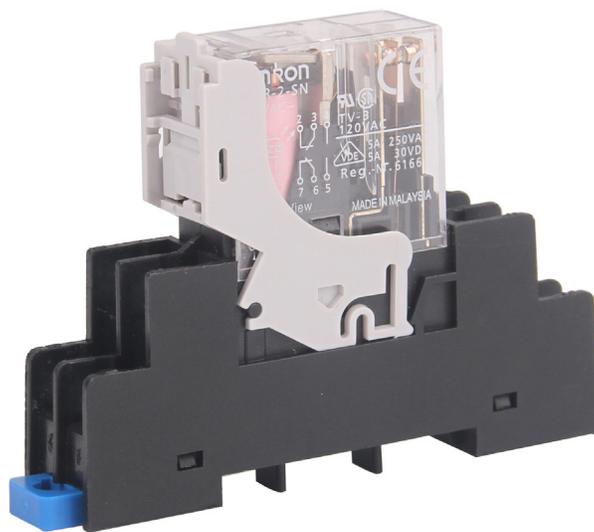
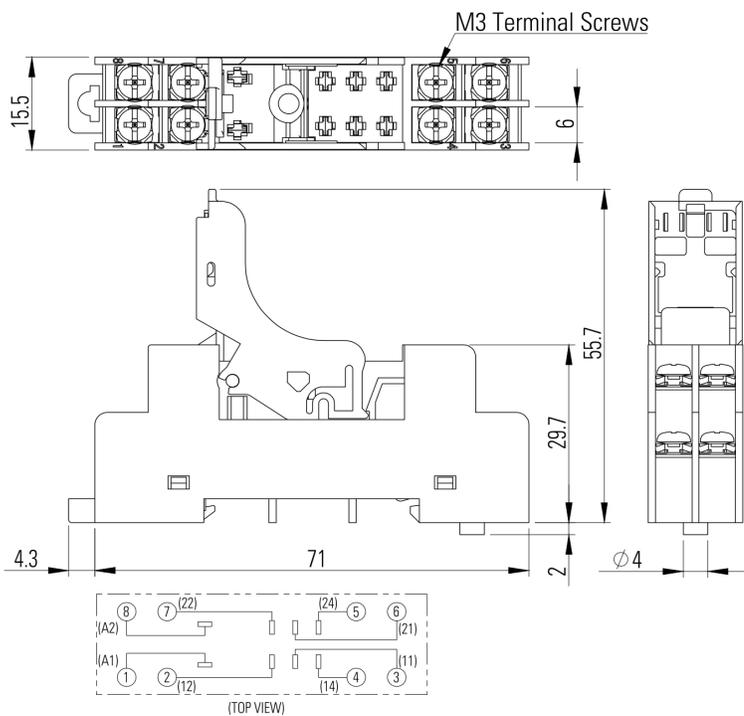


Ambient Temperature vs Maximum Coil Voltage



Track/Surface Mounting Sockets

Unit:mm



Mounting with relay