OMRON

PCB Relay

G8P

Compact, Low-cost 30-A Power Relay for PC Board or Panel-mounted Applications



- Compact, yet capable of switching up to 30-A loads.
- Complies with UL873 and UL508 column A spacings (1/8" through air, 1/4" over surface).
- UL Class F insulation standard.
- Withstands of up to 6,000 V under 1.2 × 50 μs impulse wave or ring wave.
- A selection of contact forms: SPDT and SPST-NO.
- Quick-connect terminals versions ideal for PC board and panel mounting.
- Flanged mounting available.
- Ideal for home and industrial appliances, HVAC (heating, ventilating, and air conditioning), and many other applications.

RoHS Compliant Refer to pages 16 to 17 for details.

Ordering Information

Classification		Contact form	Enclosure ratings		
Mounting style	Terminals		Open	Unsealed	Fully sealed
PCB mounting	PCB	SPST-NO	G8P-1AP	G8P-1A2P	G8P-1A4P
		SPDT	G8P-1CP	G8P-1C2P	G8P-1C4P
	Quick-connect and PCB	SPST-NO	G8P-1ATP	G8P-1A2TP	G8P-1A4TP
		SPDT	G8P-1CTP	G8P-1C2TP	G8P-1C4TP
Flanged mounting	Quick-connect	SPST-NO	---	G8P-1A2T-F	---
		SPDT	---	G8P-1C2T-F	---

Note: When ordering, add the rated coil voltage to the model number
Example: G8P-1AP 12 VDC
Rated coil voltage

Model Number Legend

G8P -□ □ □ □ -□ □ VDC
1 2 3 4 5 6

1. Number of Poles
1: 1 pole

2. Contact Form
A: SPST-NO
C: SPDT

3. Enclosure Ratings
None: Open
2: Unsealed
4: Fully-Sealed

4. Terminals
P: Straight PCB for contacts and coil
T: Quick-connect (#250 terminals for contacts and #187 terminals for coil)
TP: Quick-connect (#250 terminals) and straight PCB for contacts, and straight PCB for coil

5. Mounting
None: PCB mounting
F: Flanged mounting

6. Rated Coil Voltage
5, 9, 12, 24, 48, 110
Other rated coil voltages available.

Specifications

■ Coil Ratings

Rated voltage	5 VDC	9 VDC	12 VDC	24 VDC	48 VDC	110 VDC
Rated current	185 mA	93 mA	77 mA	36 mA	19 mA	9 mA
Coil resistance	27 Ω	97 Ω	155 Ω	660 Ω	2,480 Ω	12,400 Ω
Must operate voltage	75% max. of rated voltage					
Must release voltage	10% min. of rated voltage					
Max. voltage	120% of rated voltage					
Power consumption	Approx. 900 mW					

Note: The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of ±10%.

■ Contact Ratings

Item	SPST-NO	SPDT
Load	Resistive load (cosϕ = 1)	
Rated load	30 A at 250 VAC; 20 A at 28 VDC	20 A/10 A (See note.) at 250 VAC; 20 A/10 A (See note.) at 28 VDC
Contact material	Ag Alloy (Cd free)	
Rated carry current	30 A	20 A/10 A (See note.)
Max. switching voltage	250 VAC, 28 VDC	
Max. switching current	AC: 30 A, DC: 20 A	AC: 20 A/10 A, DC: 20 A/10 A (See note.)
Max. switching capacity	7,500 VA, 560 W	5,000/2,500 VA, 560/280 W (See note.)

Note: NO contact/NC contact

■ Characteristics

Contact resistance	100 mΩ max.
Operate time	15 ms max.
Release time	10 ms max.
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 360 operations/hr (under rated load)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	2,500 VAC, 50/60 Hz for 1 min between coil and contacts 1,500 VAC, 50/60 Hz for 1 min between contacts of same polarity
Impulse withstand voltage	6,000 V (1.2/50 μs) between coil and contacts
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.825-mm single amplitude (1.65-mm double amplitude) for 2 hours Malfunction: 10 to 55 to 10 Hz, 0.825-mm single amplitude (1.65-mm double amplitude) for 5 minutes
Shock resistance	Destruction: 1,000m/s^2 (approx. 100G) Malfunction: 100 m/s^2 (approx. 10G)
Endurance	Mechanical: 10,000,000 operation min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at rated load)
Ambient temperature	-55° to 105°C, cold coil condition (with no icing) -55° to 85°C, hot coil condition (hot start) (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight	G8P-1CP: Approx. 21 g, G8P-1CTP: Approx. 24 g G8P-1C4P: Approx. 28 g, G8P-1C4TP: Approx. 31 g

Note: The data shown above are initial values.

■ Approved Standards

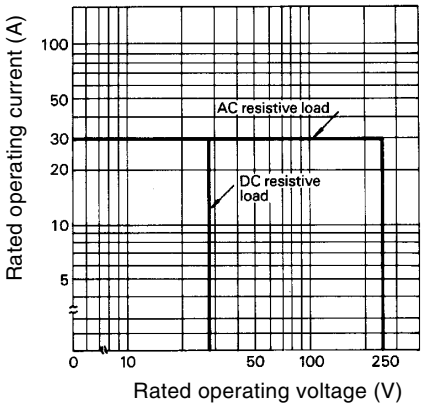
UL (File No. E41643)/CSA (File No. LR34815-101)

Type	Contact form	Coil ratings	Contact ratings
G8P-1A	SPST-NO	5 to 110 VDC	30 A, 277 VAC (G.P./Res.) 30 A, 250 VAC, 100 k ops. (Res.) 20 A, 120-240 VAC, 70°C, 100 k ops. (G.P./Res.) 20 A, 28 VDC (Res.) 20 A, 240 VAC, 105°C, 100 k ops. (Res.) 1 hp, 125-250 VAC 2 hp, 250 VAC A300 Pilot Duty 12FLA/72LRA, 250 VAC, 100 k ops. 20 FLA/96 LRA, 125 VAC, 100 k ops. 5 A, 250 VAC (Tungsten) 20 A, 120-277 VAC (Ballast)
G8P-1C	SPDT	5 to 110 VDC	30 A/30 A, 250 VAC (Res.) 30 A/30 A, 277 VAC, 40°C, 100 k opns (NO) and 50 k opns (NC) 20 A/15 A, 120-240 VAC, 105°C, 100 k ops. (Res.) 20 A/10 A, 120-240 VAC, 70°C, 100 k ops. (G.P./Res.) 20 A/10 A, 28 VDC (Res.) 1/2 hp/ 1/2 hp, 125 VAC, 100 k ops. 2 hp/ 1/2 hp, 250 VAC 1 hp/ 1/4 hp, 125 VAC B150 Pilot Duty 5 A/3 A, 250 VAC (Tungsten) 6 A/3 A, 277 VAC (Ballast)

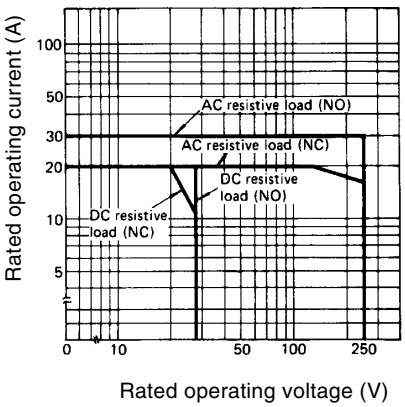
Engineering Data

Maximum Switching capacity

SPST-NO

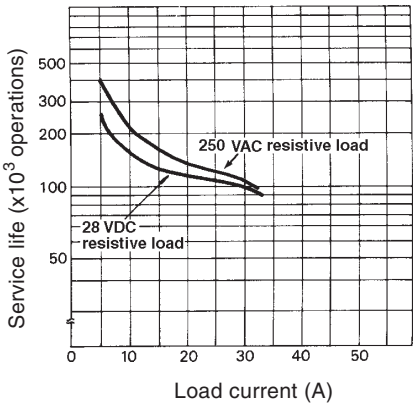


SPDT

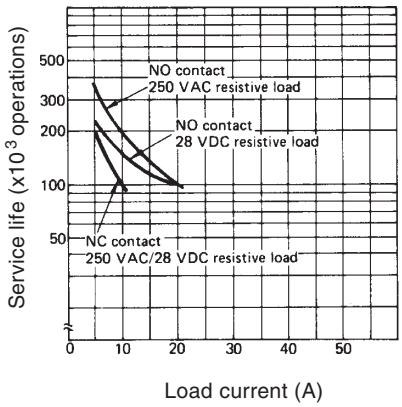


Endurance

SPST-NO



SPDT

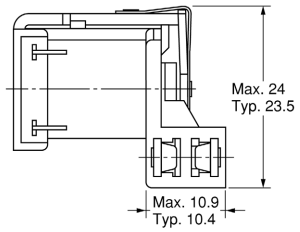


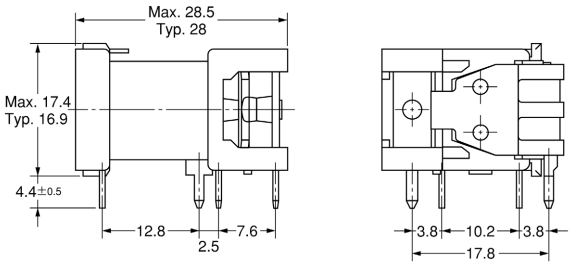
Dimensions

Note: All units are in millimeters unless otherwise indicated.

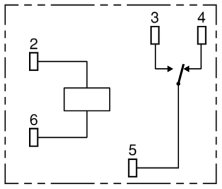
■ Open Types

G8P-1CP/1AP

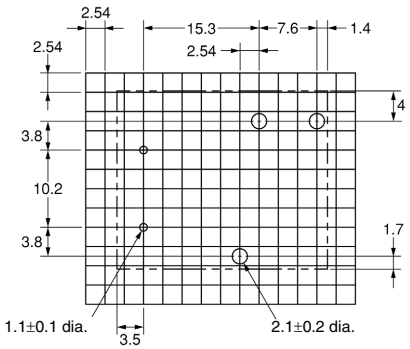




Terminal Arrangement/ Internal Connections (Bottom View)

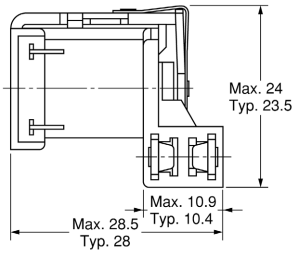


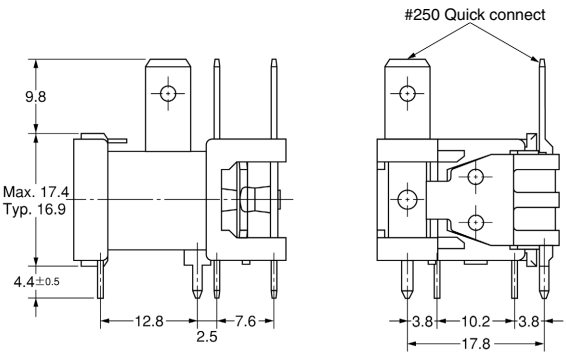
Mounting Holes (Bottom View)



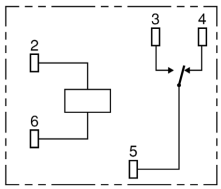
Note: Pin #4 is omitted on G8P-1AP

G8P-1CTP/1ATP

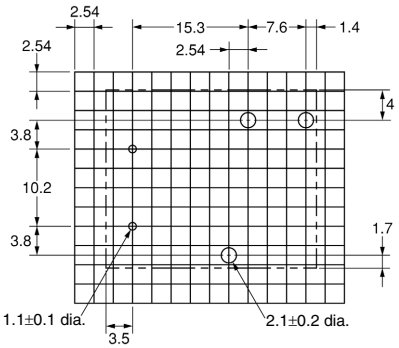




Terminal Arrangement/ Internal Connections (Bottom View)



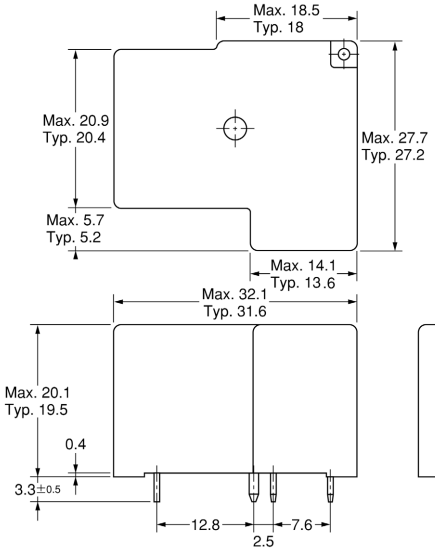
Mounting Holes (Bottom View)



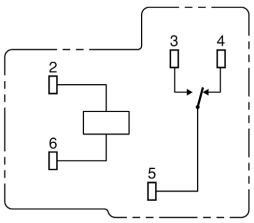
Note: Pin #4 is omitted on G8P-1ATP

■ Fully-Sealed Types/Unsealed Types

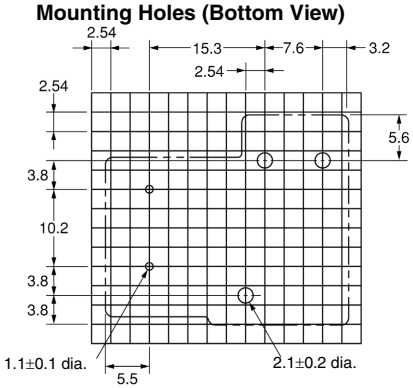
G8P-1C4P/1A4P/1C2P/1A2P



Terminal Arrangement/ Internal Connections (Bottom View)

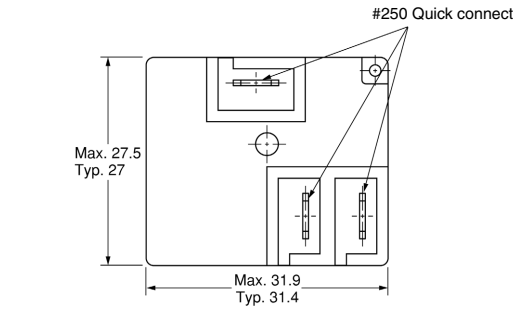


Mounting Holes (Bottom View)

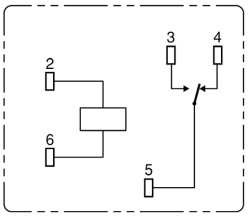


Note: Pin #4 is omitted on G8P-1A4P/1A2P

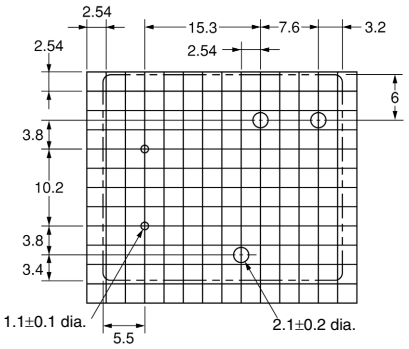
G8P-1C4TP/1A4TP/1C2TP/1A2TP



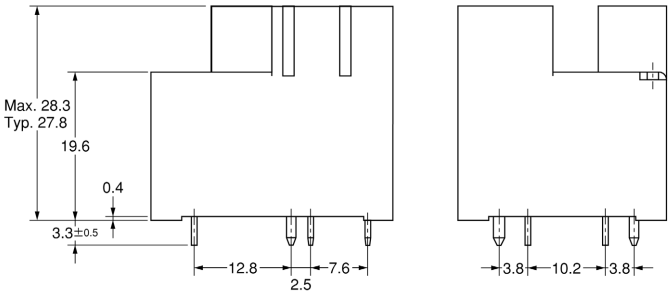
Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

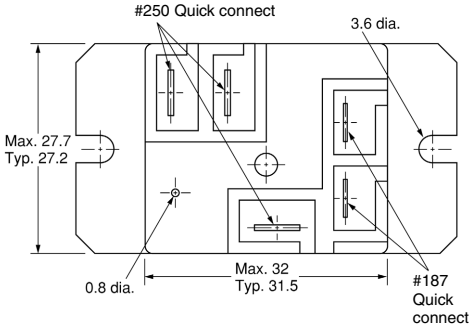


Note: Pin #4 is omitted on G8P-1A4TP/1A2TP

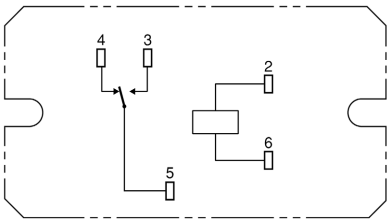


■ Flange Mounting Types

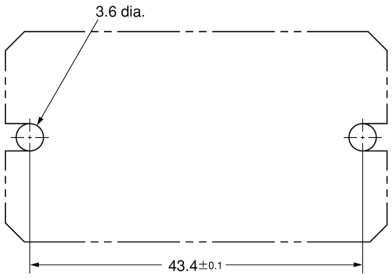
G8P-1C2T-F/1A2T-F



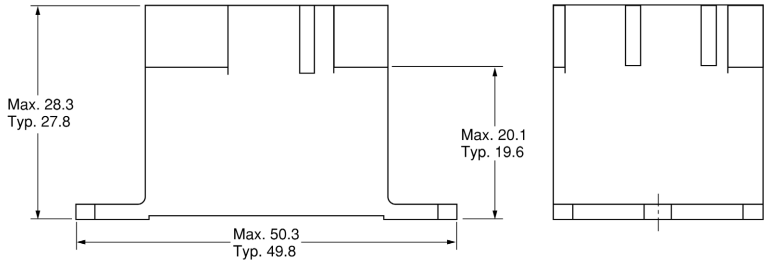
Terminal Arrangement/Internal Connections (Bottom View)



Mounting Holes (Bottom View)



Note: Pin #4 is omitted on G8P-1A2T-F



Note: Allow air circulation within the sealed type G8P by removing the knock off nib from the cover after soldering and cleaning is complete.

Precautions

Recommended soldering condition

Pre-heating 120°C maximum within 120seconds.
Soldering 265°C maximum within 6secnods.

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

Cat. No. K108-E1-03