

### 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 ( $\cos\phi = 1$ )	
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 <sup>2</sup> (approx. 100G) Malfunction: 100 m/s <sup>2</sup> (approx. 10G)
Endurance	Mechanical: 10,000,000 operation min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at rated load)
Ambient temperature	Operating: -55°C to 105°C (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

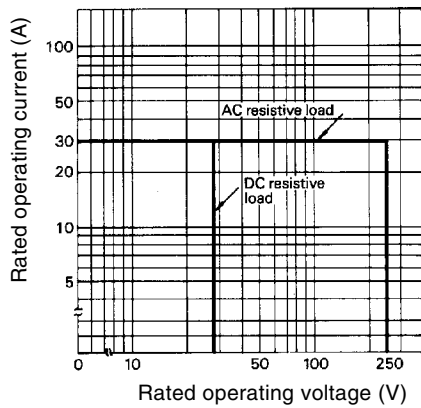
UL (File No. E41643)/CSA (File No. LR34815-101)

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 ops (NO) and 50 k ops (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)

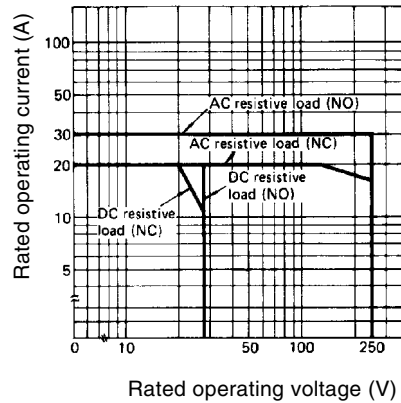
## Engineering Data

### Maximum Switching capacity

#### SPST-NO

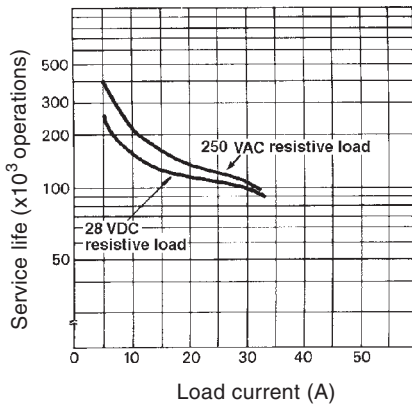


#### SPDT

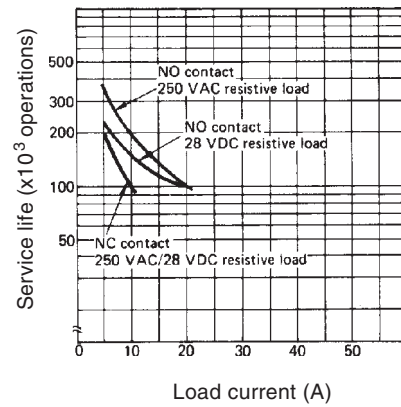


### Endurance

#### SPST-NO



#### SPDT

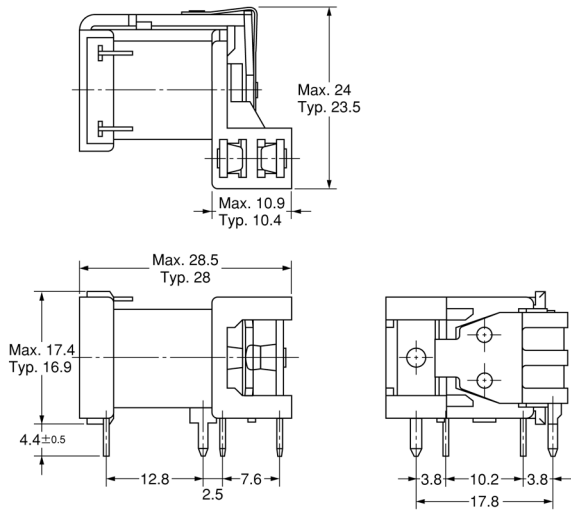


# Dimensions

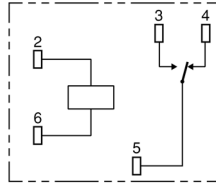
Note: All units are in millimeters unless otherwise indicated.

## ■ Open Types

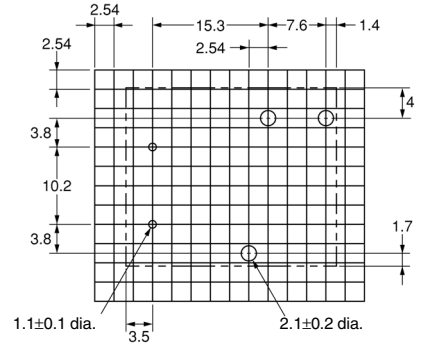
### G8P-1CP/1AP



Terminal Arrangement/  
Internal Connections  
(Bottom View)

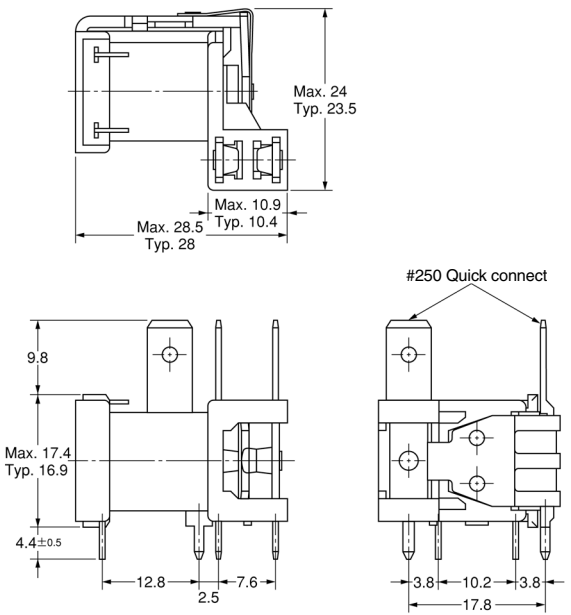


Mounting Holes (Bottom View)

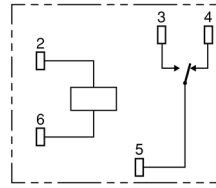


Note: Pin #4 is omitted on G8P-1AP

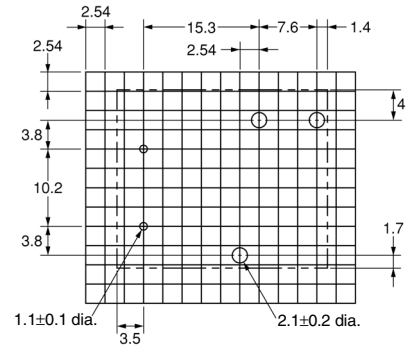
### G8P-1CTP/1ATP



Terminal Arrangement/  
Internal Connections  
(Bottom View)



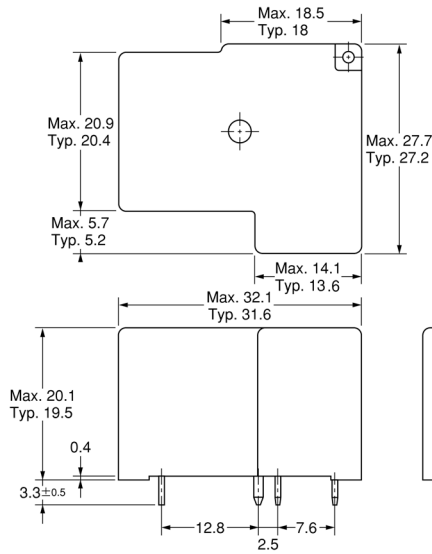
Mounting Holes (Bottom View)



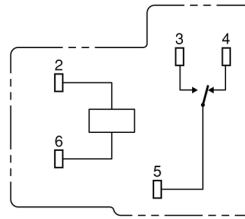
Note: Pin #4 is omitted on G8P-1ATP

■ Fully-Sealed Types/Unsealed Types

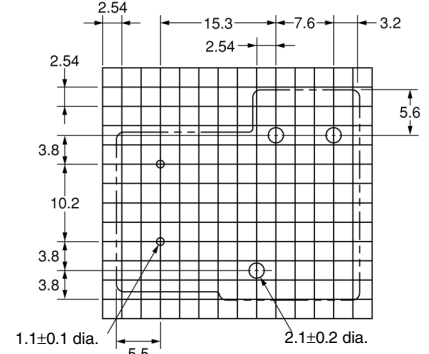
G8P-1C4P/1A4P/1C2P/1A2P



Terminal Arrangement/  
Internal Connections  
(Bottom View)

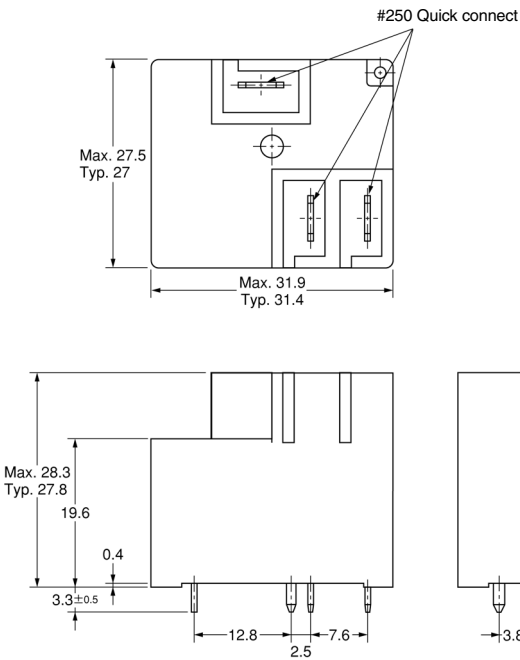


Mounting Holes (Bottom View)

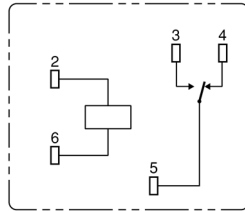


Note: Pin #4 is omitted on G8P-1A4P/1A2P

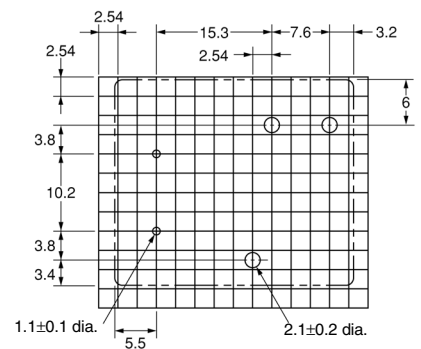
G8P-1C4TP/1A4TP/1C2TP/1A2TP



Terminal Arrangement/  
Internal Connections  
(Bottom View)



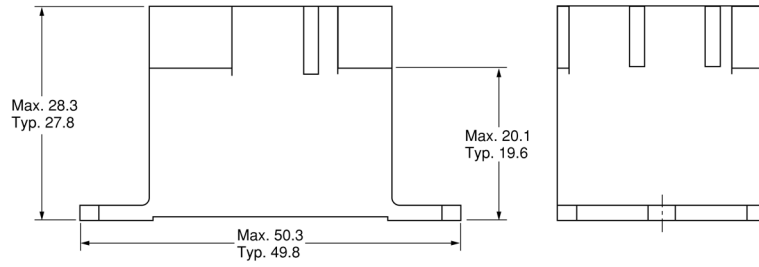
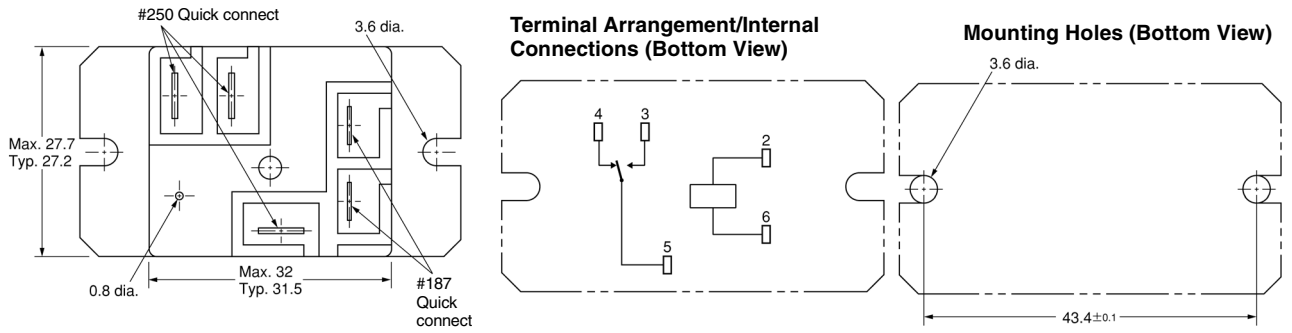
Mounting Holes (Bottom View)



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

## ■ Flange Mounting Types

### G8P-1C2T-F/1A2T-F



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

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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

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