

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

- ROHS compliant.
- 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 1.250 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.



## Ordering Information

Classification		Contact Form	Enclosure Rating		
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
		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:** 1. The contacts described above are AgCdO.  
 2. When ordering, add the rated coil voltage to the model number  
 Example: G8P-1AP 12 VDC



### 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* at 250 VAC; 20 A/10 A* at 28 VDC
Contact material	Ag3SnIn	
Rated carry current	30 A	20 A/10 A*
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*
Max. switching capacity	7,500 VA, 560 W	5,000/2,500 VA, 560/280 W*

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
Insulation Distance	Creepage (Typ) 4.08 mm (min.)
	Clearance (Typ) 1.6 mm (min.)
Tracking Resistance (CTI)	175 V
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: 1,000 m/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

■ Approved Standards

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

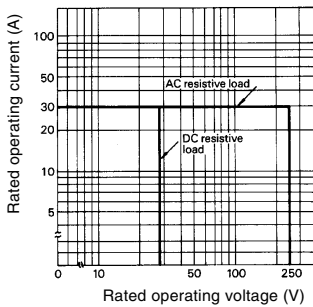
EN 61810-1 (VDE Reg No. 40004714)

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) 25A, 250VAC
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)

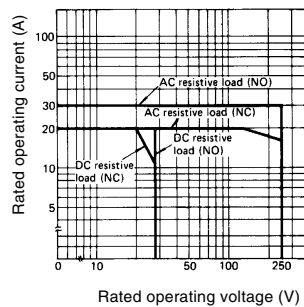
Engineering Data

Maximum Switching Capacity

SPST-NO

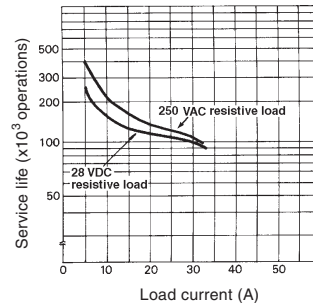


SPDT

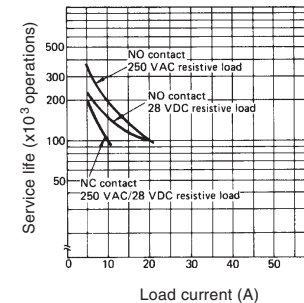


Endurance

SPST-NO



SPDT

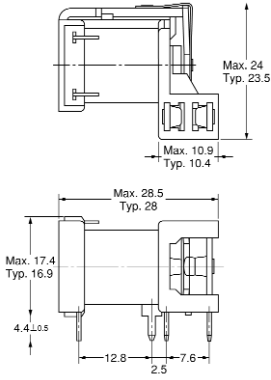


## Dimensions

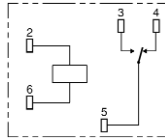
Note: All units are in millimeters unless otherwise indicated.

### ■ Open Types

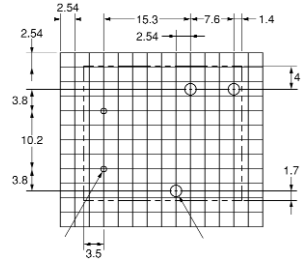
#### G8P-1CP/1AP



Terminal Arrangement/Internal Connections (Bottom View)

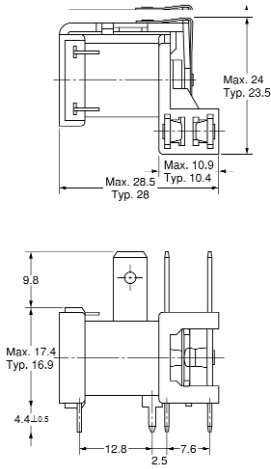


Mounting Holes (Bottom View)

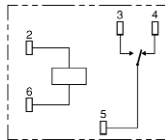


Note: Pin #4 is omitted on G8P-1AP.

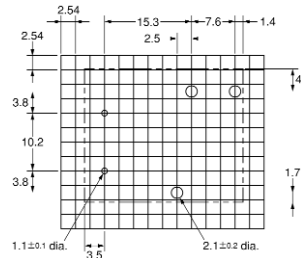
#### G8P-1CTP/1ATP



Terminal Arrangement/Internal Connections (Bottom View)

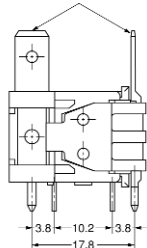


Mounting Holes (Bottom View)



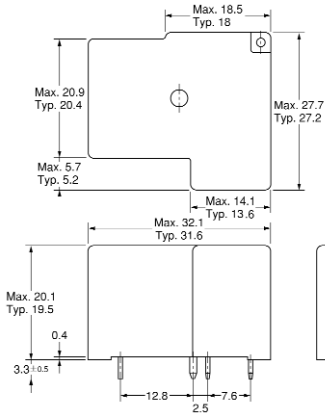
Note: Pin #4 is omitted on G8P-1ATP

#250 Quick connect

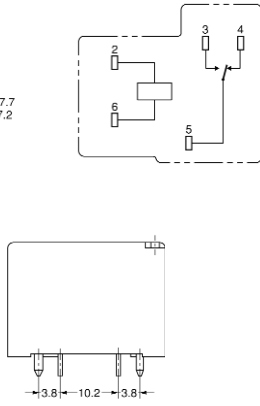


## ■ Fully-Sealed Types/Unsealed Types

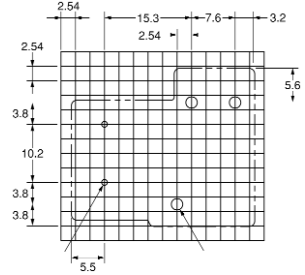
**G8P-1C4P/1A4P/1C2P/1A2P**



**Terminal Arrangement/Internal Connections (Bottom View)**

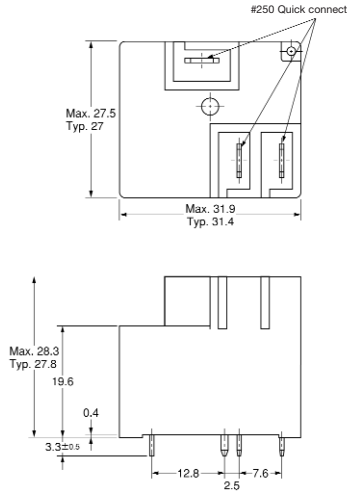


**Mounting Holes (Bottom View)**

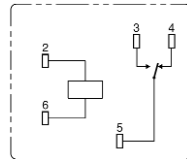


**Note:** Pin #4 is omitted on G8P-1A4P/1A2P

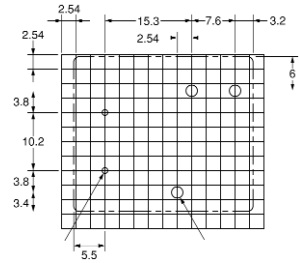
**G8P-1C4TP/1A4TP/1C2TP/1A2TP**



**Terminal Arrangement/Internal Connections (Bottom View)**



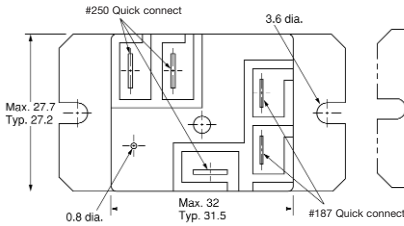
**Mounting Holes (Bottom View)**



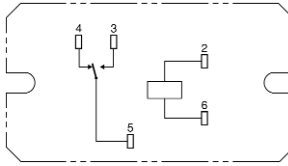
**Note:** Pin #4 is omitted on G8P-1A4TP/1A2TP

## ■ Flange Mounting Types

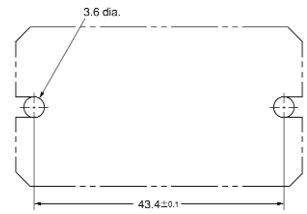
G8P-1C2T-F/1A2T-F



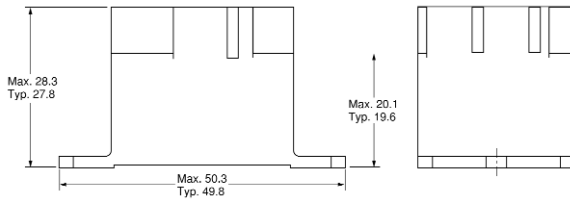
Terminal Arrangement/Internal Connections (Bottom View)



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

### Sealed Relays

Remove the vent hole tape seal from the cover after all soldering and cleaning have been completed to allow air circulation within sealed G8P Relays.