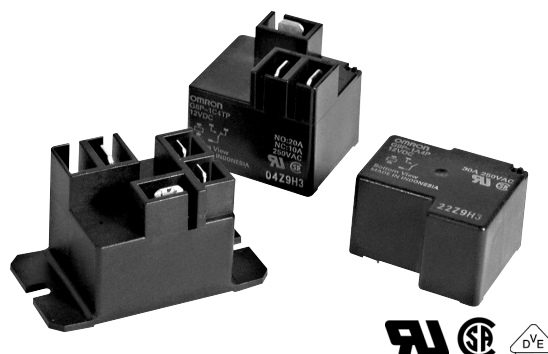


# Power PCB Relay G8PT

- Up to 30 A switching capacity in compact package.
- **NEW** G8P-1A4P-BG with 2.0 mm contact gap and high dielectric strength of 4,000 VAC
- Available with quick-connect contact terminals for easy load connecting with either QC or PCB coil terminals.
- UL Class F coil insulation standard
- Minimum 6 kV Impulse Surge Withstand.
- Ideal for home and industrial appliances, HVAC and many other applications.
- UL recognized / CSA certified. VDE approved.
- RoHS Compliant



## Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G8P-1A4P-DC12).

| Mounting type                        | Contact form | Construction              | Model       |
|--------------------------------------|--------------|---------------------------|-------------|
| PCB                                  | SPST-NO      | Open frame                | G8P-1AP     |
|                                      |              | Sealed with ventable nib* | G8P-1A4P-BG |
|                                      |              |                           | G8P-1A4P    |
|                                      | SPDT         | Open frame                | G8P-1CP     |
|                                      |              | Sealed with ventable nib* | G8P-1C4P    |
|                                      |              |                           |             |
| PCB & Quick Connect load terminals   | SPST-NO      | Open frame                | G8P-1ATP    |
|                                      |              | Sealed with ventable nib* | G8P-1A4TP   |
|                                      |              |                           |             |
|                                      | SPDT         | Open frame                | G8P-1CTP    |
|                                      |              | Sealed with ventable nib* | G8P-1C4TP   |
|                                      |              |                           |             |
| Flange mount Quick Connect terminals | SPST-NO      | Vented                    | G8P-1A2T-F  |
|                                      | SPDT         | Vented                    | G8P-1C2T-F  |

- Note:** 1. Load terminals are .250" Quick Connect. Coil terminals on Flange Mount versions are .187" Quick Connect.  
 2. "-BG" version available with 12 VDC and 24 VDC coils, only.  
 3. Packaged with 50 pcs per tray.

\* Sealed and vented optional.

## Specifications

### Contact Data

| Type                    | SPST-NO                                                    | SPDT                                    |
|-------------------------|------------------------------------------------------------|-----------------------------------------|
| Rated load              | 30 A 250 VAC (-BG: 20 A 250 VAC), 20 A 28 VDC (-BG: - - -) | 20/10 A* at 250 VAC, 20/10 A* at 28 VDC |
| Contact material        | Ag-Alloy (Cd free)                                         |                                         |
| Rated Carry current     | 30 A max. (-BG: 20 A)                                      | 20/10 A*                                |
| Max. operating voltage  | 250 VAC, 28 VDC (-BG: 250 VAC)                             |                                         |
| Max. operating current  | AC 30 A, DC 20 A (-BG: AC 20 A)                            | AC 20/10 A, DC 20/10 A*                 |
| Max. switching capacity | 7,500 VA, 560 W (-BG: 5,000 VA)                            | 5,000/2,500 VA, 560/280 W*              |
| Min. permissible load   | 500 mA @ 5 VDC (See note 1), 100 mA @ 5 VDC (See note 2)   |                                         |

\* NO contact/NC contact

- Note:** 1. Applicable for G8P-1A4TP, G8P-1CP, G8P-1C4P, G8P-1C4TP and G8P-1C2T-F versions.  
 2. Applicable for G8P-1AP, G8P-1A4P(-BG), G8P-1ATP and G8P-1CTP versions.

## ■ Coil Data

| Rated voltage (VDC) | Rated current (mA) | Coil resistance (Ω) | Pick-up voltage    | Dropout voltage | Maximum voltage | Power consumption (mW) |
|---------------------|--------------------|---------------------|--------------------|-----------------|-----------------|------------------------|
|                     |                    |                     | % of rated voltage |                 |                 |                        |
| 5                   | 185                | 27                  | 75% max.           | 10% min.        | 120% max.       | Approx. 900            |
| 9                   | 93                 | 97                  |                    |                 |                 |                        |
| 12                  | 77                 | 155                 |                    |                 |                 |                        |
| 24                  | 36                 | 660                 |                    |                 |                 |                        |
| 48                  | 19                 | 2,480               |                    |                 |                 |                        |
| 110                 | 9                  | 12,400              |                    |                 |                 |                        |

- Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of ±10%.  
2. The operating characteristics are measured at a coil temperature of 23°C.  
3. The "Maximum Voltage" is the maximum voltage that can be applied to the relay coil.

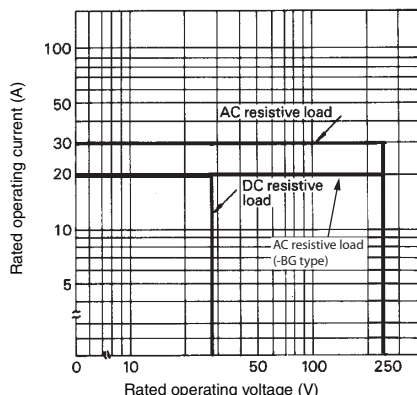
## ■ Characteristics

|                                           |                    |                                                                                                                                                            |
|-------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact resistance</b>                 |                    | 100 mΩ max. (measured with 5 VDC, 1 A, voltage drop method)                                                                                                |
| <b>Operate time</b>                       |                    | 15 ms. max. (-BG: 20 ms max.)                                                                                                                              |
| <b>Release time</b>                       |                    | 10 ms. max.                                                                                                                                                |
| <b>Insulation resistance (See note 2)</b> |                    | 100 MΩ min. (at 500 VDC)                                                                                                                                   |
| <b>Dielectric strength</b>                |                    | 2,500 VAC, 50/60 Hz for 1 minute (between coil and contacts), (-BG: 4,000 VAC)<br>1,500 VAC, 50/60 Hz for 1 minute (between contacts of the same polarity) |
| <b>Impulse surge withstand</b>            |                    | 6,000 V between coil and contacts (1.2/50 μs)                                                                                                              |
| <b>Vibration resistance</b>               | <b>Destruction</b> | 10 to 55 Hz, 1.65 mm double amplitude for 2 hours<br>(-BG: 10 to 55 Hz, 1.5 mm double amplitude for 2 hours)                                               |
|                                           | <b>Malfunction</b> | 10 to 55 Hz, 1.65 mm double amplitude for 5 minutes                                                                                                        |
| <b>Shock resistance</b>                   | <b>Destruction</b> | 1,000 m/s <sup>2</sup> (approx. 100 G)                                                                                                                     |
|                                           | <b>Malfunction</b> | 100 m/s <sup>2</sup> (approx. 10 G)                                                                                                                        |
| <b>Ambient operating temperature</b>      |                    | -55° to 105°C, cold coil condition (with no icing)<br>-55° to 85°C, hot coil condition (hot start) (with no icing)                                         |
| <b>Ambient operating humidity</b>         |                    | 5% to 85% RH                                                                                                                                               |
| <b>Service life</b>                       | <b>Mechanical</b>  | 10 million operations minimum at 18,000 ops/hour. (-BG: 5 million operations min.)                                                                         |
|                                           | <b>Electrical</b>  | 100,000 operations approx. at 360 ops/hr. (-BG: 40,000 operations min.)                                                                                    |
| <b>Weight</b>                             |                    | Approx. 24 g to 31 g                                                                                                                                       |

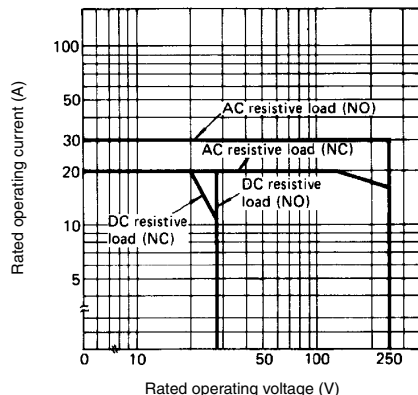
- Note:** 1. Data shown are of initial value. Operate and release times excluding bounce.  
2. Measurement conditions: Measured at the same points as the dielectric strength using a 500 VDC ohmmeter.  
3. Please vent sealed relays after processing in order to achieve rated electrical service life, by removing the vent nib.

## ■ Characteristic Data

Maximum switching capacity  
SPST-NO

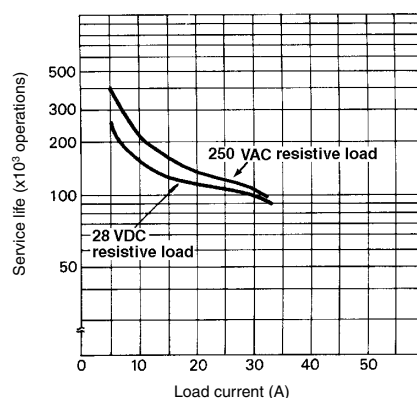


SPDT



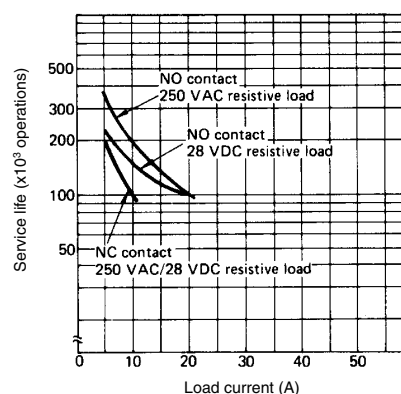
# Characteristic Data

Electrical service life  
SPST-NO



\*Except (-BG) type

SPDT



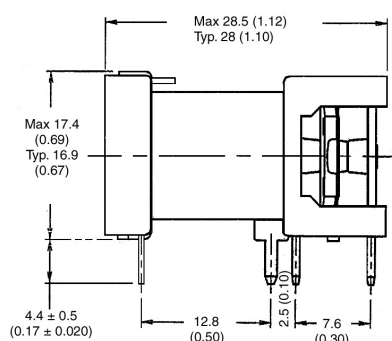
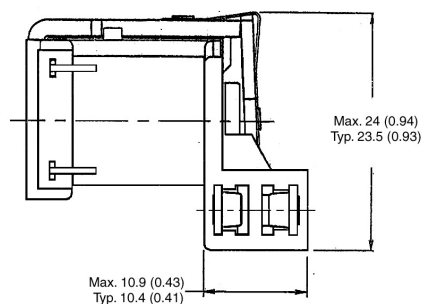
# Dimensions

Unit: mm (inch)

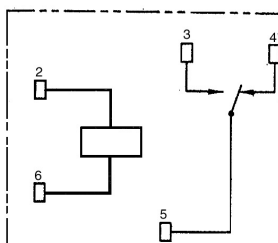
# Relays

G8P-1CP / 1AP

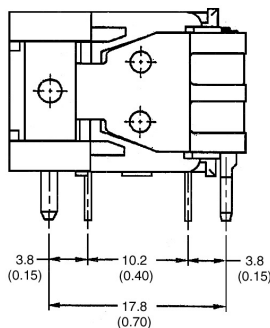
Open frame, PCB terminals



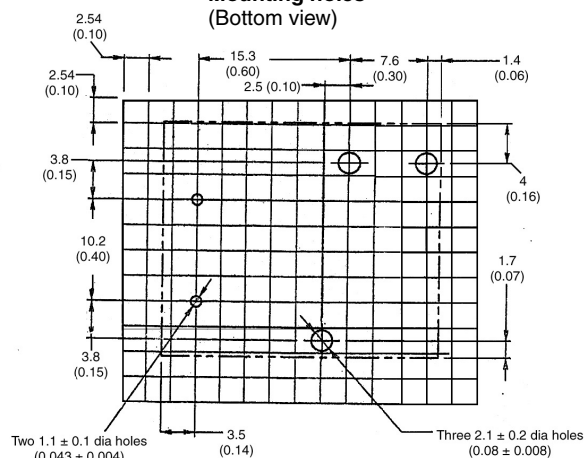
Terminal arrangement/  
Internal connections  
(Bottom view)



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



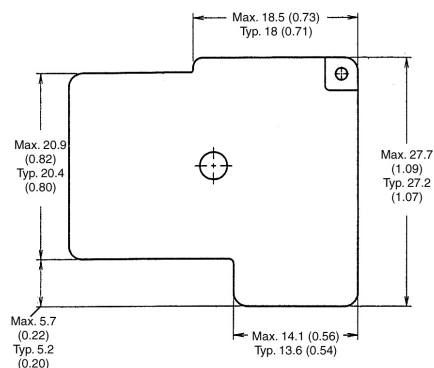
Mounting holes  
(Bottom view)



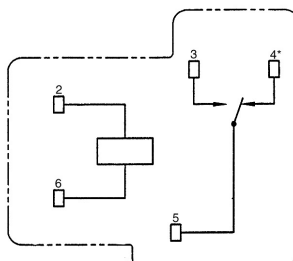
Unit: mm (inch)

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

Sealed/Ventable, PCB terminals

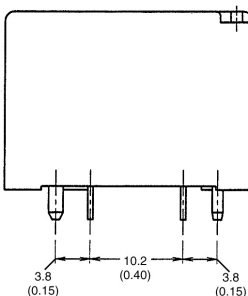
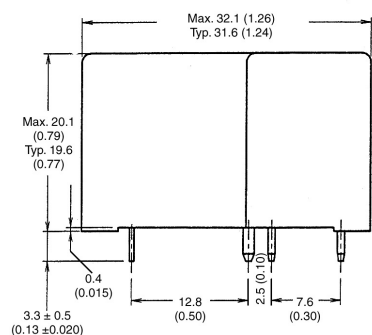
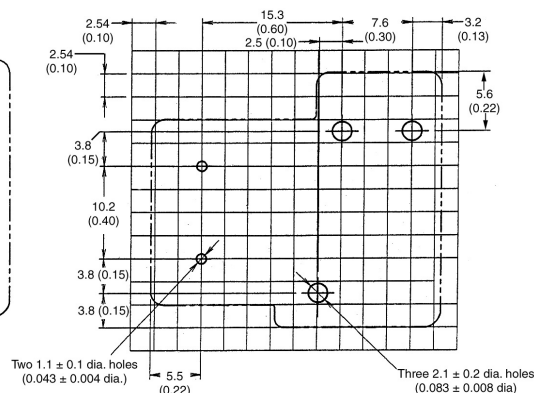


Terminal arrangement/  
Internal connections  
(Bottom view)



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

Mounting holes  
(Bottom view)



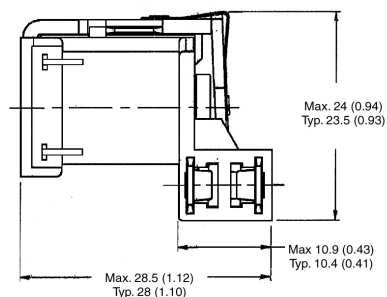
Pin Dimensions

large = 1.6 x 1.2; 1.2 x 0.8 x 3.3L

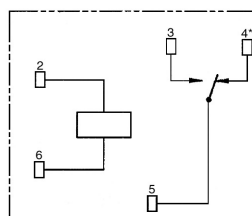
small = 0.6 x 0.5 x 3.3L

## G8P-1CTP / 1ATP

Open frame, PCB with  
Quick Connect terminals

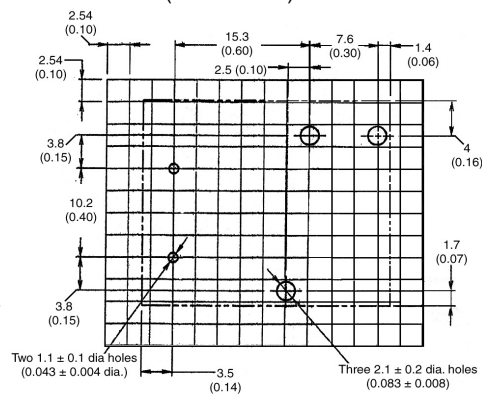


Terminal arrangement/  
Internal connections  
(Bottom view)



Note: Terminal #4 is omitted  
on G8P-1ATP.

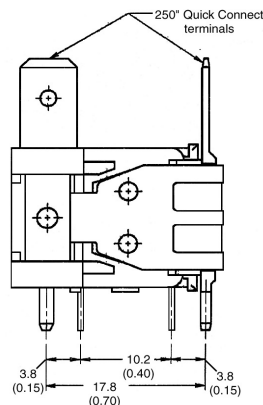
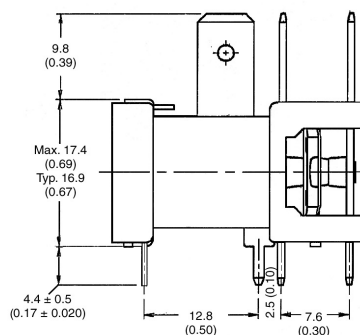
Mounting holes  
(Bottom view)



Pin Dimensions

large = 1.6 x 1.2; 1.2 x 0.8 x 3.3L

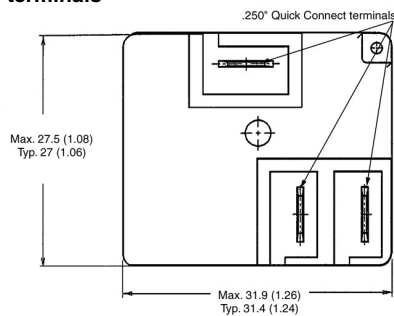
small = 0.6 x 0.5 x 3.3L



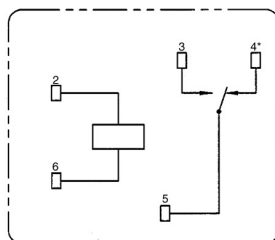
Unit: mm (inch)

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

Sealed/Ventable, PCB with Quick Connect terminals

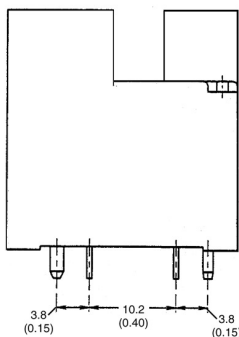
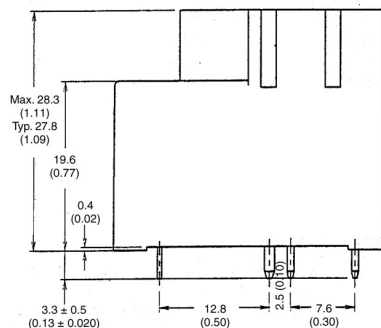
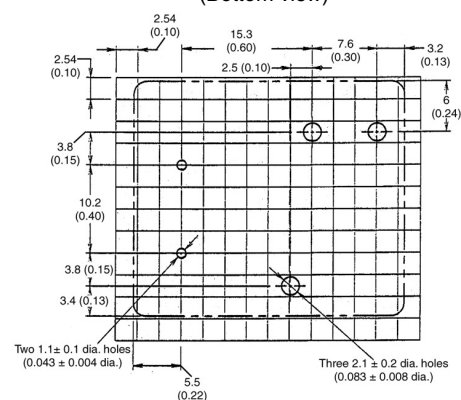


Terminal arrangement/  
Internal connections  
(Bottom view)



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

Mounting holes  
(Bottom view)

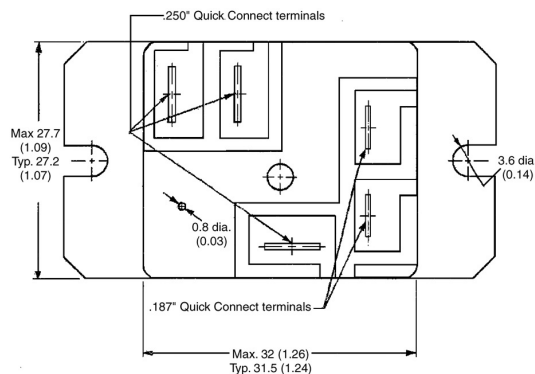


## Pin Dimensions

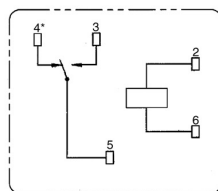
large = 1.6 x 1.2; 1.2 x 0.8 x 3.3L  
small = 0.6 x 0.5 x 3.3L

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

Flange mount

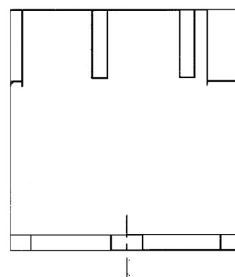
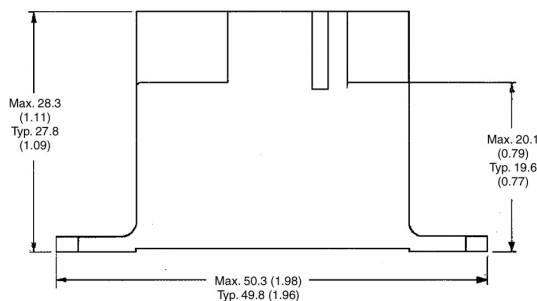
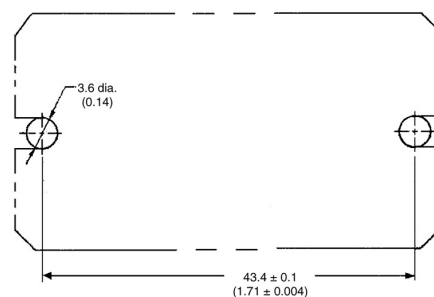


Terminal arrangement/  
Internal connections  
(Bottom view)



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

Mounting holes  
(Bottom view)



Note: Allow air circulation within the sealed type G8PT by removing the ventilation nib from the cover after soldering and cleaning is complete.

## ■ Approvals

UL Recognized (File No. E41643), CSA Certified (File No. LR31928)

| Model                                                      | Contact form | Coil ratings | Contact ratings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------|--------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G8P-1AP<br>G8P-1A4P<br>G8P-1ATP<br>G8P-1A4TP<br>G8P-1A2T-F | SPST-NO      | 5 to 110 VDC | 30 A, 240 VAC (G.P./Res.), 40°C, 50,000 cycles<br>20 A, 28 VDC (Res.), 40°C, 6,000 cycles<br>20 A, 240 VAC (Res.), 70°C, 100,000 cycles<br>23 A, 240 VAC (Res.), 85°C, 100,000 cycles<br>1 HP, 125-250 VAC, 40°C, 1,000 cycles<br>2 HP, 250 VAC, 40°C, 1,000 cycles<br>A300 Pilot Duty, 40°C, 6,000 cycles<br>20 FLA, 96 LRA, 125 VAC, 40°C, 100,000 cycles<br>5 A, 250 VAC (Tungsten), 40°C, 6,000 cycles<br>20 A, 120-277 VAC (Ballast), 40°C, 6,000 cycles<br>TV-5, 40°C, 25,000 cycles                                                                                                         |
| G8P-1A4P-BG                                                |              |              | 30 A, 277 VAC (Res.), 85°C, 30,000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| G8P-1CP<br>G8P-1C4P<br>G8P-1CTP<br>G8P-1C4TP<br>G8P-1C2T-F | SPDT         | 5 to 110 VDC | NO/NC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                            |              |              | 30 A/20 A, 277 VAC (Res.), 40°C, 100,000 cycles (N.O.) and 30,000 cycles (N.C.)<br>20 A/15 A, 250 VAC (Res.), 105°C, 100,000 cycles (N.O.) and 30,000 cycles (N.C.)<br>20 A/10 A, 28 VDC (Res.), 40°C, 6,000 cycles<br>30 A/30 A, 277 VAC(Res.), 40°C, 10,000 cycles<br>1/2 HP/1/2 HP, 125 VAC, 40°C, 100,000 cycles<br>2 HP/ 1/2 HP, 250 VAC, 40°C, 1,000 cycles<br>1 HP/ 1/4 HP, 125 VAC, 40°C, 1,000 cycles<br>B150 Pilot Duty, 40°C, 100,000 cycles<br>5 A/ 3 A, 250 VAC (Tungsten), 40°C, 6,000 cycles<br>6 A/ 3 A, 277 VAC (Ballast), 40°C, 6,000 cycles<br>TV-5 (N.O.), 40°C, 25,000 cycles |

VDE recognized type (Licence No. 40004714)

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

- For information on additional ratings not included in this catalog, contact your local Omron Representative.
- In the interest of product improvement, specifications are subject to change.
- Please contact Omron for details regarding VDE approvals.
- Meets requirements of pollution degree 2 with Material II & III.

## Precautions

### Recommended soldering condition

Pre-heat at 120°C maximum within 120 seconds.  
Complete solering at 265°C maximum within 6 seconds.

### Re: the Electrical Appliance and Material Safety Law (Japan)

The G8P series is not compliant with the Electrical Appliance and Material Safety Law of Japan. Pay careful attention to select a suitable Relay for the application.



All sales are subject to Omron Electronic Components LLC standard terms and conditions of sale, which can be found at [http://www.components.omron.com/components/web/webfiles.nsf/sales\\_terms.html](http://www.components.omron.com/components/web/webfiles.nsf/sales_terms.html)

**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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08//12

Specifications subject to change without notice

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