



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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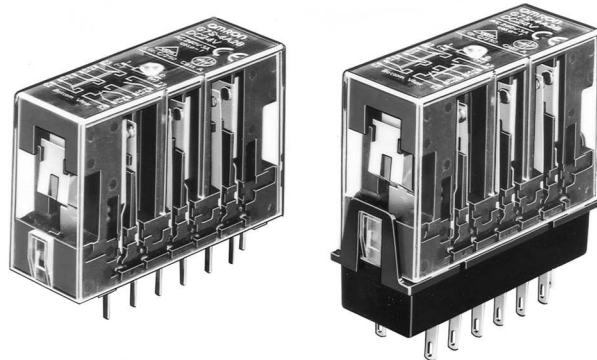
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Plug-In Safety Relay

Safety Relay for Machine Control Conforms to EN Standard

- Suitable for safety circuits in press machinery, machine tools, and other production machinery
- Positive, force-guided contacts
- A minimum of 0.5 mm between contacts even when one contact is welded (prEN50205 Class A)
- DIN rail-mounting and panel-mounting sockets are available



Note: Be sure to refer to the *Precautions* section.



Ordering Information

■ SAFETY RELAYS

| Number of contacts | NO contacts | NC contacts | Contact form | Rated voltage (V) | Part number |
|--------------------|-------------|-------------|-------------------|-------------------|---------------|
| 6 poles | 4 | 2 | 4PST-NO + DPST-NC | 24 VDC | G7S-4A2B DC24 |
| | 3 | 3 | 3PST-NO + 3PST-NC | | G7S-3A3B DC24 |

■ ACCESSORIES

| Description | Part number | |
|-------------------------|---|----------|
| Mounting sockets | DIN-rail mounting and screw mounting | P7S-14F |
| | Solder terminals | P7S-14A |
| | PCB terminals | P7S-14P |
| Socket mounting plate | For solder terminal sockets, holds 10 sockets | P7S-A10 |
| Relay removal tool | Removes relay from sockets | P7S-B |
| DIN rail mounting track | 50 cm (1.64 ft) length | PFP-50N |
| | 1 m (3.28 ft) length | PFP-100N |
| | Spacer | PFP-S |
| | End plate | PFP-M |

Specifications

■ RATINGS

Operation Coil

| Rated voltage | Rated current | Coil resistance | Minimum operate voltage | Release voltage | Max. voltage | Power consumption |
|---------------|---------------|-----------------|-------------------------|-----------------|--------------|-------------------|
| 24 VDC | 30 mA | 800 Ω | 80% max. (V) | 10% (V) | 110% (V) | Approx. 0.8 W |

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of ±15%.

2. Performance characteristics are based on a coil temperature of 23°C

3. The maximum voltage is based on an ambient operating temperature of 23°C maximum.

Switching Section (Contact Ratings)

| Load type | Resistive load (cos φ = 1) | Inductive load (cos φ = 0.4, L/R = 7 ms) |
|--|----------------------------|--|
| Rated load | 240 VAC: 3 A, 24 VDC: 3 A | 240 VAC: 3 A, 24 VDC: 1 A |
| Maximum switching voltage | 250 VAC, 24 VDC | |
| Maximum switching current | 6 A | |
| Maximum switching capacity (reference value) | 1,440 VA, 144 W | |
| Min. permissible load (See note.) | 5 VDC, 10 mA | |
| Contact material | Ag + Au | |

Note: The above values are based on an operating frequency of 60 operations/min.

■ CHARACTERISTICS

| | | |
|----------------------------------|---|---|
| Contact resistance (See Note 2.) | 100 mΩ max. | |
| Operate time (See Note 3.) | 50 ms max. | |
| Release time (See Note 3.) | 50 ms max. | |
| Maximum operating frequency | Mechanical | 18,000 operations/hr |
| | Rated load | 1,800 operations/hr |
| Insulation resistance | 100 MΩ min. (at 500 VDC) | |
| Dielectric strength | 2,500 VAC, 50/60 Hz for 1 min (1,500 VAC between contacts of same polarity) | |
| Vibration | Mechanical | 10 to 55 Hz, 1.5-mm double amplitude |
| | Electrical | 10 to 55 Hz, 0.75-mm double amplitude |
| Shock | Mechanical | 1,000 m/s ² (approx. 100G) |
| | Electrical | 100 m/s ² (approx. 10G) |
| Life expectancy | Mechanical | 10,000,000 operations min. (at approx. 18,000 operations/hr) |
| | Electrical | 100,000 operations min. (at the rated load and approx. 1,800 operations/hr) |
| Ambient temperature | Operating | -10°C to 70°C (14°F to 158°F) no icing |
| | Storage | -25°C to 70°C (-13°F to 158°F) no icing |
| Relative humidity | 35% to 85% RH | |
| Ambient storage humidity | 35% to 85% RH | |
| Weight | Approx. 65 g | |

Note: 1. The values given above are initial values.

2. Measurement conditions: 5 VDC, 10 mA, voltage drops.

3. Measurement conditions:

Rated voltage operation

Ambient operating temperature: 23°C (73.4°F)

Does not include bounce time.

CHARACTERISTICS OF SAFETY RELAY SOCKET

| Model | Continuous current | Dielectric strength | Insulation resistance |
|---------|--------------------|---------------------------------------|--------------------------|
| P7S-14□ | 6 A | 2000 VAC for 1 min. between terminals | 1000 MΩ min. (See note.) |

Note: Measurement conditions: Measurement of the same points as for the dielectric strength at 500 VDC.

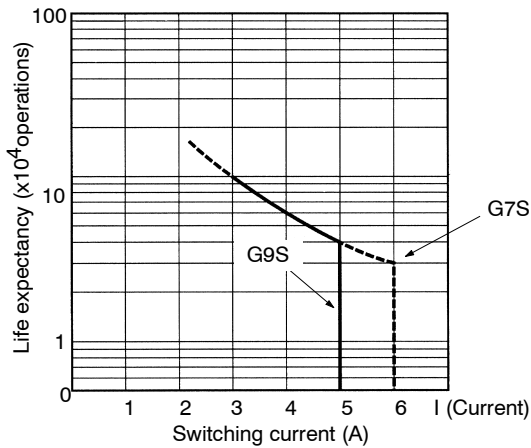
APPROVED STANDARDS

VDE0435 (Electrical Relays); Approved by VDE
 IEC255 (Electrical Relays); Approved by VDE
 prEN50205 (Electrical Relays); Approved by VDE
 UL508 (Industrial Control Device)
 CSA22.2 No.14 (Industrial Control Device)

Engineering Data

ELECTRICAL LIFE EXPECTANCY

(240 VAC; $\cos\phi=0.4$, $\cos\phi=1$)



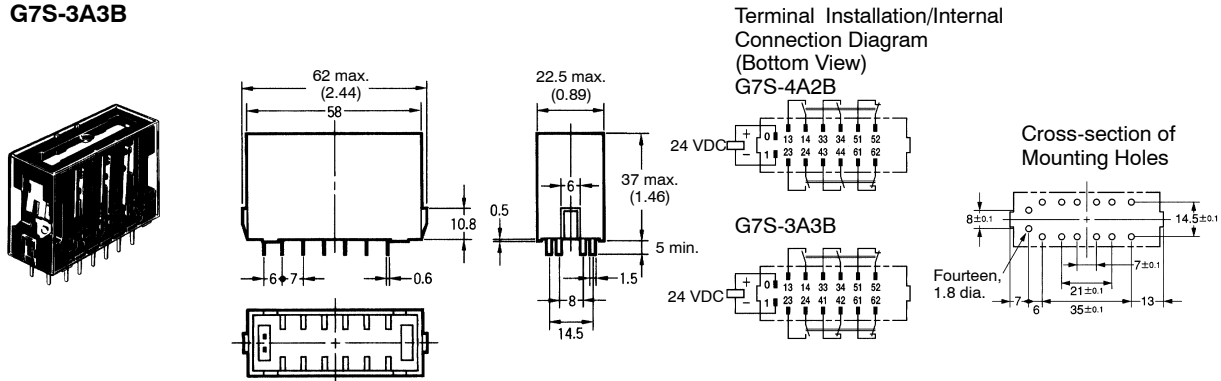
Dimensions

Unit: mm (inch)

SAFETY RELAYS

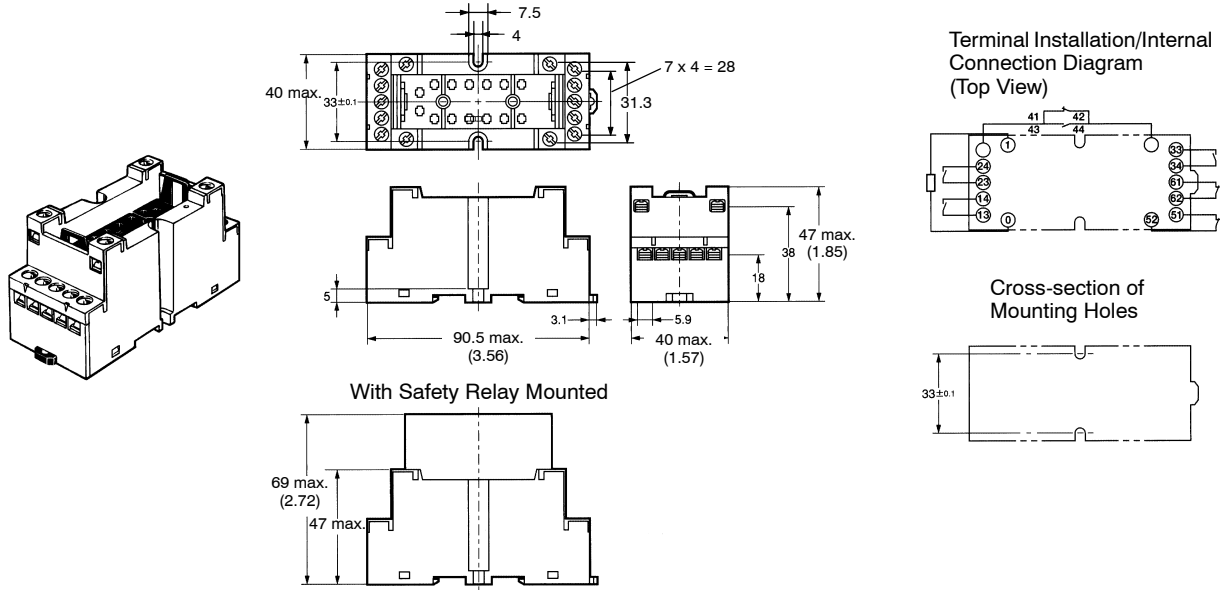
G7S-4A2B

G7S-3A3B

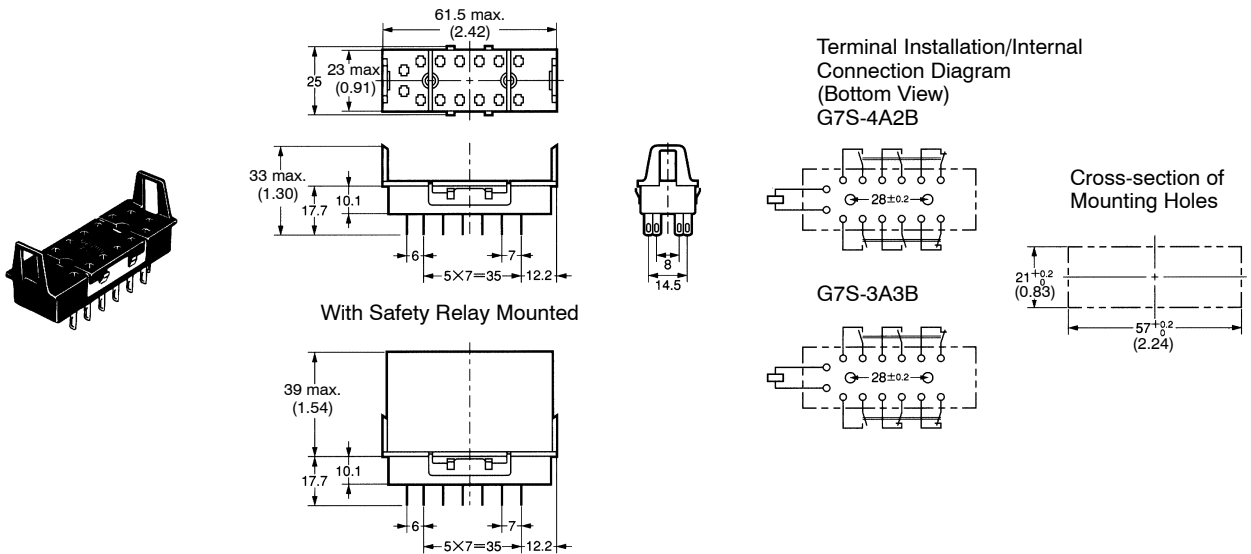


■ SAFETY RELAY SOCKETS

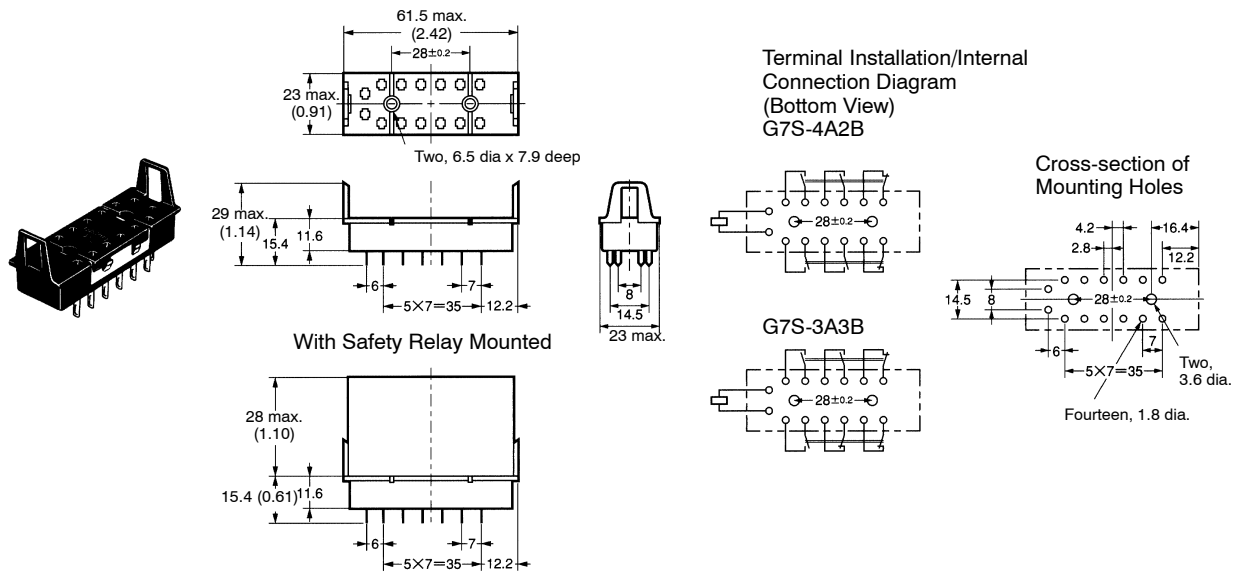
P7S-14F DIN Rail-mounting Socket or Screw Mounting



P7S-14A Panel-mounting Socket (Solder Terminals)

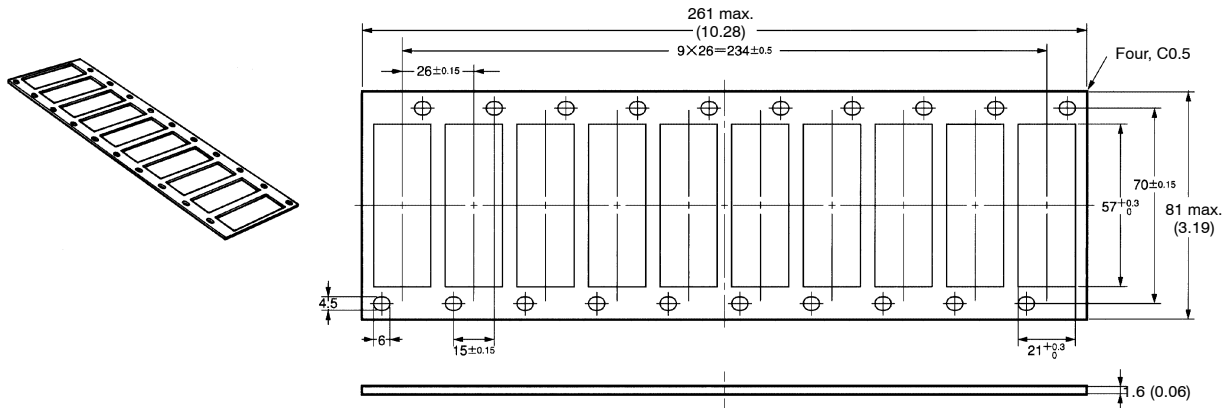


**P7S-14P PCB-mounting Socket
(PCB Terminals)**



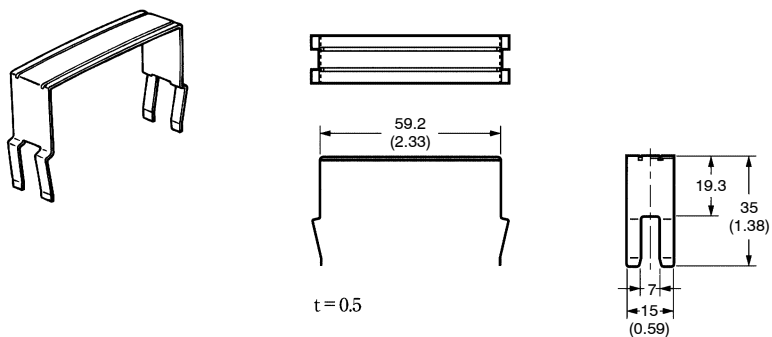
■ **SOCKET MOUNTING PLATE**

P7S-A10 (Special Mounting Plate for P7S-14A)



■ **RELAY REMOVAL TOOL**

P7S-B



Precautions

■ FORCIBLY GUIDED CONTACTS

When NO contacts are welded, the coil will be non-energized so all NC contacts will maintain a distance between the contacts of 0.5 mm minimum. Likewise if NC contacts are welded, the coil will be energized so all contacts will maintain a distance between each other of 0.5 mm minimum.



Caution

Do not touch the terminal area of the Relays or the socket terminal area (charged area) while power is ON. Electric shock will result.

■ SAFETY RELAYS

A Safety Relay is a relay with which a safety circuit can be configured. For common precautions when using and handling relays, consult Omron.

■ CONTACTS

The coil terminals have polarity (positive and negative). Operation is not possible if these are connected in reverse.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4

OMRON

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