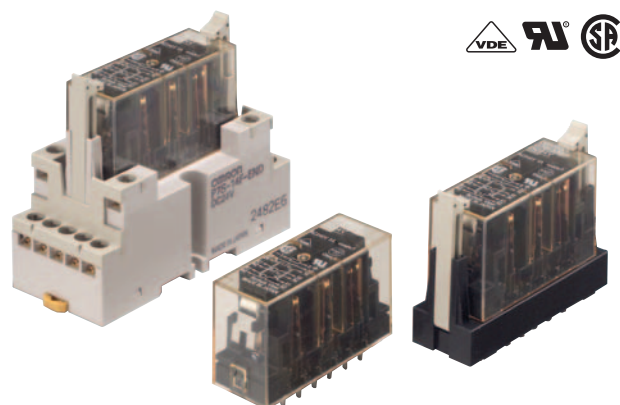



## Relays with Forcibly Guided Contacts and High Switching Capacity of 10A

- Relays with forcibly guided contacts (EN50205 Class A, certified by VDE).
- Supports the CE marking of machinery (Machinery Directive).
- Helps avoid hazardous machine status when used as part of an interlocking circuit.
- Track-mounting and Back-mounting Sockets are available.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

 Be sure to read the “Safety Precautions” on page 4 and the “Precautions for All Relays with Forcibly Guided Contacts”.

## Model Number Structure

### Model Number Legend

G7S-□A□B-E  
1 2

#### 1. NO Contact Poles

- 4: 4PST-NO
- 3: 3PST-NO

#### 2. NC Contact Poles

- 2: DPST-NC
- 3: 3PST-NC

## Ordering Information

### Relays with Forcibly Guided Contacts

| Type     | Poles   | Contact configuration | Rated voltage | Model      |
|----------|---------|-----------------------|---------------|------------|
| Standard | 6 poles | 4PST-NO, DPST-NC      | 24 VDC        | G7S-4A2B-E |
|          |         | 3PST-NO, 3PST-NC      |               | G7S-3A3B-E |

### Sockets

| Type4          | Rated voltage                                | Model       |
|----------------|--|-------------|
| Track-mounting | Common for track mounting and screw mounting | 24 VDC      |
| Back-mounting  | PCB terminals                                | ---         |
|                |  | P7S-14F-END |
|                |  | P7S-14P-E   |

## Specifications

### Ratings

#### Coil

| Rated voltage | Item | Rated current (mA) | Coil resistance (Ω) | Max. voltage (V) | Power consumption (W) |
|---------------|------|--------------------|---------------------|------------------|-----------------------|
| 24 VDC        |      | 30                 | 800                 | 110%             | Approx. 0.8           |

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

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

## Contacts

| Item                      | Load       | Resistive load                    |
|---------------------------|------------|-----------------------------------|
| Rated load                | NO contact | 10 A at 250 VAC<br>10 A at 30 VDC |
|                           | NC contact | 6 A at 250 VAC<br>6 A at 30 VDC   |
| Rated carry current       | NO contact | 10 A                              |
|                           | NC contact | 6 A                               |
| Maximum switching voltage |            | 250 VAC, 30 VDC                   |
| Maximum switching current | NO contact | 10 A                              |
|                           | NC contact | 6 A                               |

## G7S-□-E Characteristics of Sockets

| Model                 | P7S-14F-END                           | P7S-14P-E   |
|-----------------------|---------------------------------------|-------------|
| Continuous current    | 10 A                                  |             |
| Dielectric strength   | 2000 VAC for 1 min. between terminals |             |
| Insulation resistance | 1000 MΩ min. *                        |             |
| Weight                | Approx. 110g                          | Approx. 25g |

**Note:** Use the P7S-14F-END in the ambient humidity range of 25 to 85%, the P7SA-14P-E in the ambient humidity range of 5 to 85%.

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

## Characteristics

|   |             |   |
|---|-------------|---|
| Contact resistance *1                                 |             | 100 mΩ max.   |
| Operating time *2                                     |             | 50 ms max.  |
| Release time *2                                       |             | 50 ms max.  |
| Must operate voltage                                  |             | 80% max.  |
| Must release voltage                                  |             | 10% min.  |
| Maximum operating frequency                           | Mechanical  | 18,000 operations/h   |
|   | Rated load  | 1,800 operations/h  |
| Insulation resistance *3                              |             | 100 MΩ min.   |
| Dielectric strength *4 *5                             |             | Between coil and contacts:<br>Between coil and pole 3 or coil and pole 4: 4,000 VAC, 50/60 Hz for 1 min<br>Other than the above: 2,500 VAC, 50/60 Hz for 1 min<br>Between different poles:<br>Between pole 1, 3, or 5 and pole 2, 4, or 6: 4,000 VAC, 50/60 Hz for 1 min<br>Other than the above: 2,500 VAC, 50/60 Hz for 1 min<br>Between contacts of same polarity: 1,500 VAC, 50/60 Hz for 1 min |
| Vibration resistance                                  | Destruction | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)   |
|   | Malfunction | 10 to 55 to 10 Hz, 0.375-mm single amplitude (0.75-mm double amplitude)   |
| Shock resistance                                      | Destruction | 1,000 m/s <sup>2</sup>  |
|   | Malfunction | 100 m/s <sup>2</sup>  |
| Durability *6   | Mechanical  | 10,000,000 operations min. (at approx. 18,000 operations/h)   |
|   | Electrical  | 100,000 operations min. (at the rated load and approx. 1,800 operations/h)  |
| Inductive load switching capability *7 (IEC60947-5-1) | NO Contact  | AC15 AC240V 5A<br>DC13 DC24V 2A   |
|   | NC Contact  | AC15 AC240V 3A<br>DC13 DC24V 2A   |
| Failure rate (P level) (reference value *8)           |             | 5 VDC, 1 mA   |
| Ambient operating temperature                         |             | –25 to 70°C (with no icing or condensation)   |
| Ambient operating humidity                            |             | 5% to 85%   |
| Weight  |             | Approx. 65 g  |

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

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

\*1. Measurement conditions: 5 VDC, 10 mA, voltage drop method.

\*2. Measurement conditions: Rated voltage operation

Ambient operating temperature: 23°C

Contact bounce time is not included.

\*3. The insulation resistance was measured with a 500-VDC megohmmeter at the same locations as the dielectric strength was measured.

\*4. When using a P7S Socket, the dielectric strength between coil and contacts and between different poles is 2,000 VAC, 50/60 Hz for 1 min.

\*5. The coil refers to terminals 0-1, pole 1 refers to terminals 13–14, pole 2 refers to terminals 23–24, pole 3 refers to terminals 33–34, pole 4 refers to terminals 41–42 or 43–44, pole 5 refers to terminals 51–52, and pole 6 refers to terminals 61–62.

\*6. The durability is for an ambient temperature of 15 to 35°C and an ambient humidity of 25% to 75%.

\*7. AC15:  $\cos\phi = 0.3$ , DC13: L/R = 96-ms

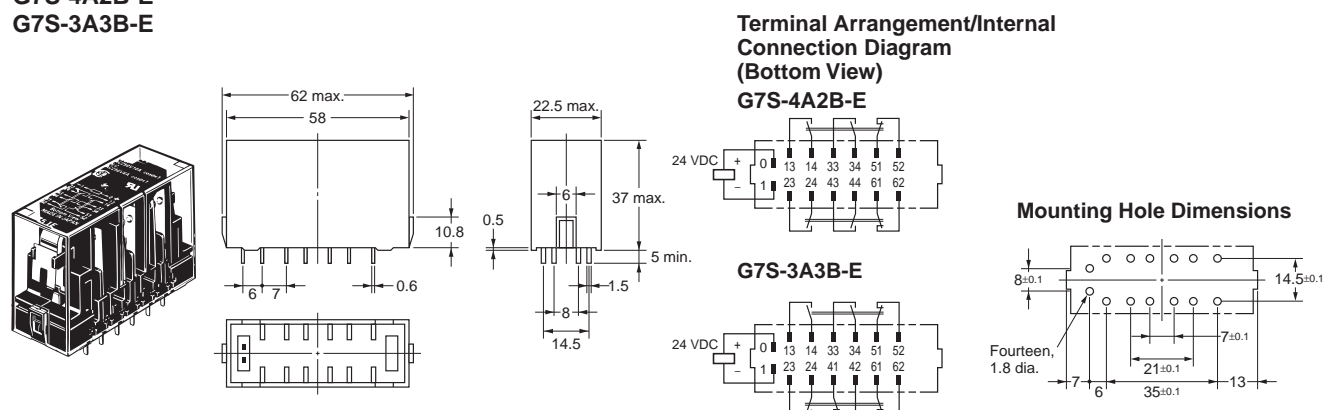
\*8. The failure rate is based on an operating frequency of 60 operations/min.

## Dimensions

### Relays with Forcibly Guided Contacts

G7S-4A2B-E

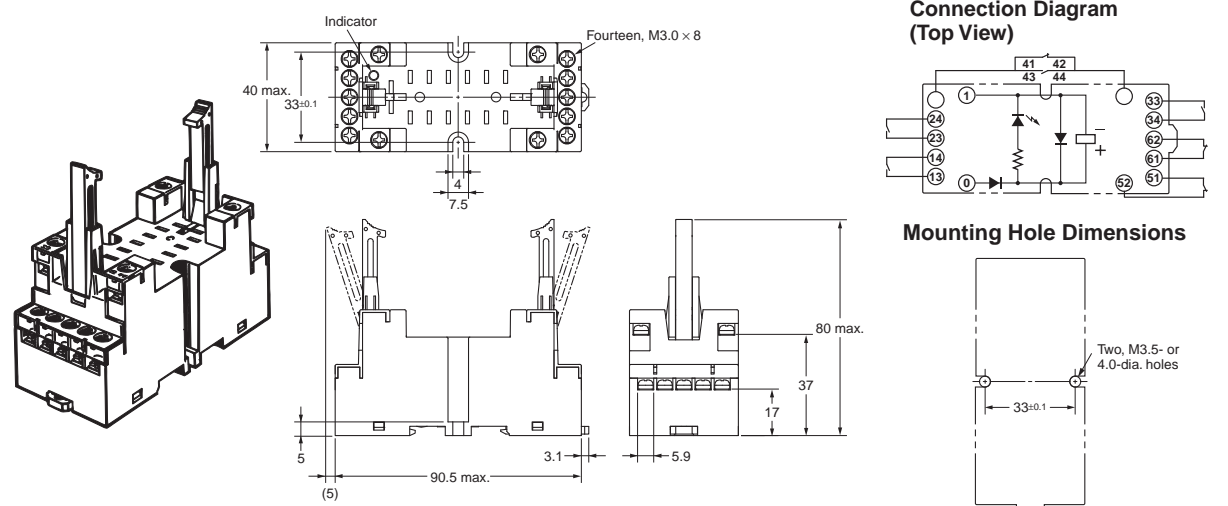
G7S-3A3B-E



## Sockets

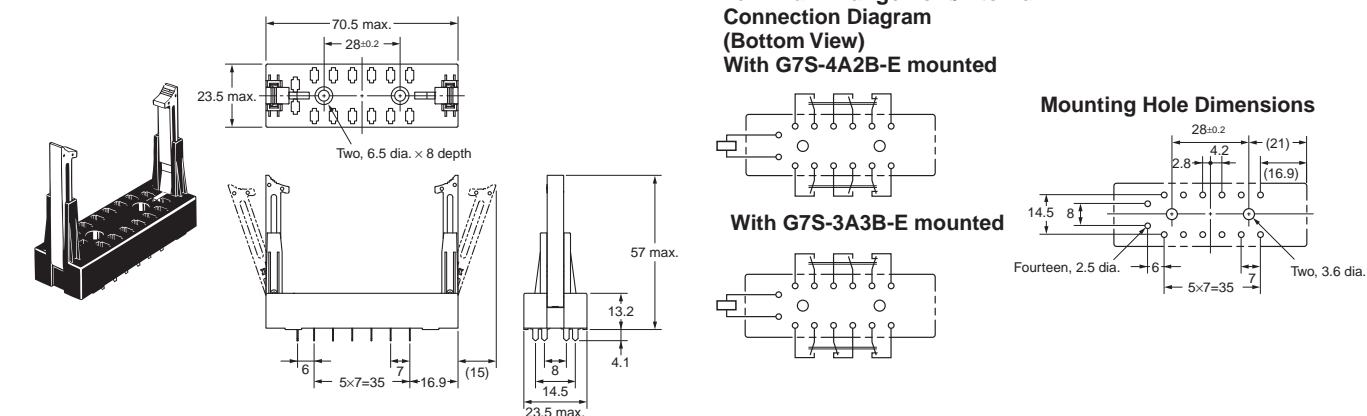
### Track-mounting Socket

P7S-14F-END



### Back-mounting Socket (PCB Terminals)

P7S-14P-E



## Certified Standards

### G7S-□-E

- EN standards, VDE certified
  - EN61810-1 (Electromechanical non-specified time all-or-nothing relays)
  - EN60255-23 (Contact performance)
  - EN50205 (Relays with forcibly guided (linked) contacts)
- UL standards: UL508 (Industrial Control Equipment)
- CSA standards: CSA C22.2 No.14 (Industrial Control Equipment)

### P7S-□-E

- UL standards: UL508 (Industrial Control Equipment)
- CSA standards: CSA C22.2 No.14 (Industrial Control Equipment)


## Forcibly Guided Contacts (from EN50205)

If an NO contact becomes welded, all NC contacts will maintain a minimum distance of 0.5 mm when the coil is not energized. Likewise if an NC contact becomes welded, all NO contacts will maintain a minimum distance of 0.5 mm when the coil is energized.

## Safety Precautions

Be sure to read the precautions for “*Precautions for All Relays*” and “*Precautions for All Relays with Forcibly Guided Contacts*” in the website at: <http://www.ia.omron.com/>.

### Indication and Meaning for Safe Use

|  |  |
|--|--|
|  <b>CAUTION</b> | Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage. |
| <b>Precautions for Safe Use</b>  | Supplementary comments on what to do or avoid doing, to use the product safely.  |

### CAUTION

Do not pass currents of 6 A or more when using this product in combination with the P7S-14F/14P/14A Socket. Doing so may result in fire. Use this product in combination with the P7S-14F-END/14P-E.



### Precautions for Correct Use

#### Wiring

- Use one of the following wires to connect to the P7S-14F-END.
  - Stranded wire: 0.75 to 1.5 mm<sup>2</sup>
  - Solid wire: 1.0 to 1.5 mm<sup>2</sup>
- Tighten each screw of the P7S-14F-END to a torque of 0.78 to 0.98 N·m.
- Wire the terminals correctly with no mistakes in coil polarity, otherwise the G7S will not operate.
- If you use the P7S-14F-END, the release time of the G7S will be longer because the P7S-14F-END has a built-in diode to absorb coil surge. Confirm operation under actual conditions before you use the P7S-14F-END.

#### Cleaning

The G7S is not of enclosed construction. Therefore, do not wash the G7S with water or detergent.

#### Mounting

The G7SA can be installed in any direction.

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