

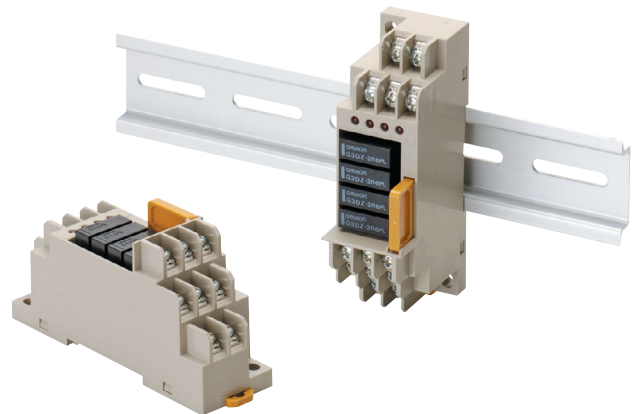
# Terminal Relay

# G6D-4B/G3DZ-4B

CSM\_G6D-4B\_G3DZ-4B\_DS\_E\_2\_1A

## Space-saving Vertical Terminal Relays with 4 Outputs

- Space saving size: 28 × 90 × 45 mm (W × H × D)
- Lineup includes models with G6D Relays and models with G3DZ Power MOS FET Relays.
- Easy wiring with separate I/O terminal construction.
- LED operation indicator.
- Built-in diode absorbs coil surge.
- Special socket used for easy Relay replacement.
- Mounts either on DIN track or with screws.
- Relay Removal Tool.



## Ordering Information

### ■ List of Models

| Output                      | Contact configuration | Rated voltage | Model   |
|-----------------------------|-----------------------|---------------|---------|
| Relay outputs               | Four SPST-NO relays   | 12 VDC        | G6D-4B  |
|                             |                       | 24 VDC        |         |
| Power MOS FET relay outputs |                       | 12 VDC        | G3DZ-4B |
|                             |                       | 24 VDC        |         |

### ■ Accessories (Order Separately)

### Replacement Relays

| Applicable Terminal Relay | Rated voltage | Model      |
|---------------------------|---------------|------------|
| G6D-4B                    | 12 VDC        | G6D-1A-ASI |
|                           | 24 VDC        |            |
| G3DZ-4B                   | 12 VDC        | G3DZ-2R6PL |
|                           | 24 VDC        |            |

# Specifications

## ■ Ratings

### Relay Specifications

#### Coil Ratings (per G6D Relay)

| Rated voltage (V) |    | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V)  | Must release voltage (V) | Max. voltage (V) | Power consumption (mW) |
|-------------------|----|--------------------|---------------------|---------------------------|--------------------------|------------------|------------------------|
| DC                | 12 | 18.7               | 720                 | 70% max.<br>(See note 1.) | 10% min.                 | 130%             | Approx. 200            |
|                   | 24 | 10.5               | 2,880               |                           |                          |                  |                        |

- Note:**
1. The must operate voltage is 75% max. when the Terminal Relay is mounted upside down.
  2. Rated current and coil resistance were measured at a coil temperature of 23°C with a tolerance of ±10%.
  3. Operating characteristics were measured at a coil temperature of 23°C.
  4. The maximum voltage is the maximum value of the allowable voltage range for the relay coil operating power supply. There is no continuous allowance.
  5. The rated current includes the terminal's LED current.

#### Contact Ratings (per G6D Relay)

| Item                                   | Load | Resistive load ( $\cos\phi = 1$ ) |
|--|------|-----------------------------------|
| Rated load                             |      | 3 A at 250 VAC, 3 A at 30 VDC     |
| Rated carry current                    |      | 3 A                               |
| Max. switching voltage                 |      | 250 VAC, 30 VDC                   |
| Max. switching current                 |      | 3 A                               |
| Max. switching power (reference value) |      | 750 VA, 90 W                      |

### Power MOS FET Relay Specifications

#### Input (per G3DZ Power MOS FET Relay)

| Rated voltage (V) |    | Operating voltage | Must operate voltage level | Must release voltage level | Input impedance | Rated current |
|-------------------|----|-------------------|----------------------------|----------------------------|-----------------|---------------|
| DC                | 12 | 9.6 to 14.4 VDC   | 9.6 VDC max.               | 1 VDC min.                 | 2 kΩ±20%        | 8.0 mA ±20%   |
|                   | 24 | 19.2 to 28.8 VDC  | 19.2VDC max.               |                            | 4 kΩ±20%        | 8.2 mA ±20%   |

**Note:** The rated current includes the terminal's LED current.

#### Output (per G3DZ Power MOS FET Relay)

| Load voltage                 | Load current   | Inrush current resistance |
|------------------------------|----------------|---------------------------|
| 3 to 264 VAC<br>3 to 125 VDC | 100 μ to 0.3 A | 6 A (10 ms)               |

## ■ Characteristics

| Model  |                          | G6D-4B   |
|--|--------------------------|--|
| Item   |                          | Relay output   |
| Contact resistance (See note 2.)                         |                          | 100 mΩ max.  |
| Must operate time (See note 3.)                          |                          | 10 ms max.   |
| Release time (See note 3.)                               |                          | 15 ms max.   |
| Insulation resistance                                    |                          | 1,000 MΩ min. (at 500 VDC)   |
| Dielectric strength                                      |                          | 2,000 VAC, 50/60 Hz for 1 min between coil and contacts  |
|  |                          | 750 VAC, 50/60 Hz for 1 min between contacts of same polarity  |
| Impulse withstand voltage (between coil and contacts)    |                          | 4,000 V (1.2 × 50 μs)  |
| 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, 0.75-mm single amplitude (1.5-mm double amplitude)  |
| Shock resistance   | Destruction              | 500 m/s <sup>2</sup>   |
|  | Malfunction              | 100 m/s <sup>2</sup>   |
| Endurance  | Mechanical               | 20,000,000 operations min. (at 18,000 operations/hr)   |
|  | Electrical (See note 3.) | 100,000 operations min. (3 A at 250 VAC, resistive load)<br>100,000 operations min. (3 A at 30 VDC, resistive load) (at 1,800 operations/hr) |
| Minimum permissible load (reference value) (See note 4.) |                          | 10 mA at 5 VDC   |
| Ambient operating/storage temperature                    |                          | -25 to 55°C (with no icing)  |
| Ambient operating humidity                               |                          | 45 to 85%  |
| Weight   |                          | Approx. 70 g   |

- Note:**
1. The above values are initial values.
  2. Measurement condition: 1 A at 5 VDC
  3. Ambient temperature: 23°C
  4. This value is measured at 120 operations/min.

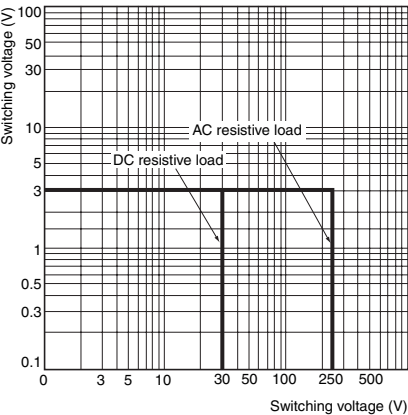
| Model                                 |  | G3DZ-4B   |
|---------------------------------------|--|---|
| Item                                  |  | Power MOS FET relay outputs   |
| Must operate time                     |  | 10 ms max.  |
| Release time                          |  | 15 ms max.  |
| Output ON resistance                  |  | 2.4 Ω max.  |
| Leakage current at OFF state          |  | 10 μA max. (at 125 VDC)   |
| Insulation resistance                 |  | 100 MΩ min. (at 500 VDC)  |
| Dielectric strength                   |  | 2,000 VAC, 50/60 Hz for 1 min between input and output terminals      |
| Vibration resistance                  |  | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) |
| Shock resistance                      |  | 500 m/s <sup>2</sup>  |
| Ambient operating/storage temperature |  | -25 to 55°C (with no icing)   |
| Ambient operating humidity            |  | 45% to 85%  |
| Weight                                |  | Approx. 65 g  |

Engineering Data

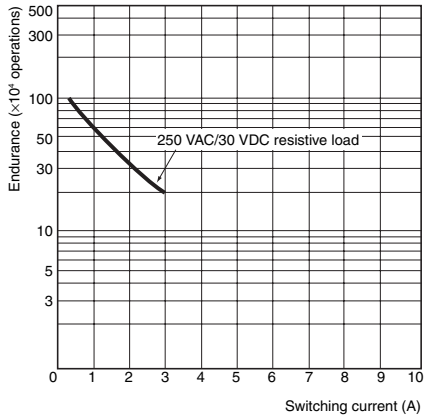
Reference Data

G6D-4B

Maximum Switching Power

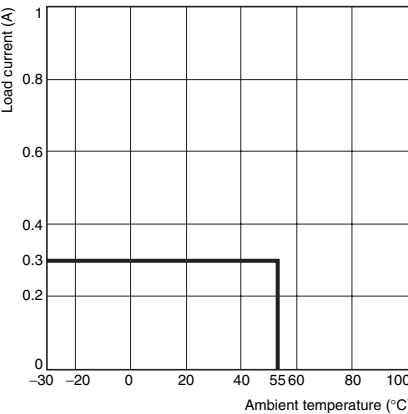


Endurance

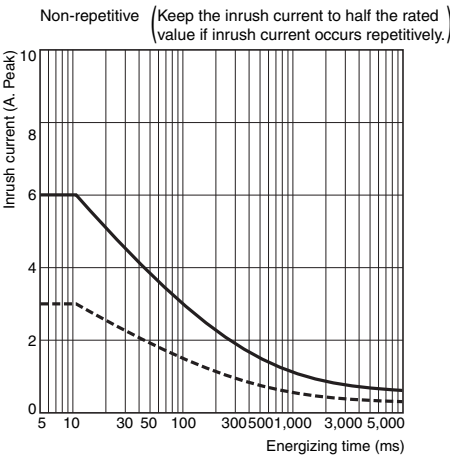


G3DZ-4B

Load Current vs. Ambient Temperature



Inrush Current Resistance



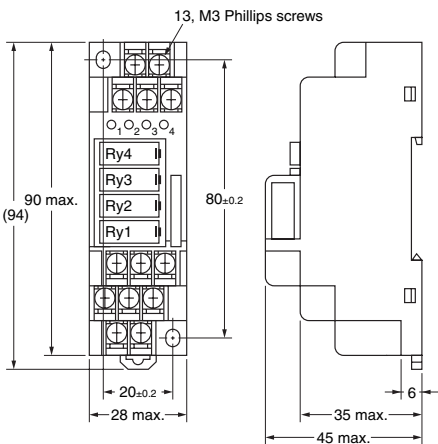
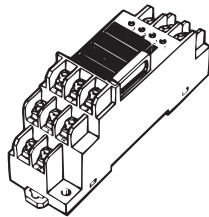
**Note:** Measurement values taken from production line samples have been plotted in graphs to provide this data. Use this data only as a guide. Relays are mass-produced, so allowances must be made for a certain amount of variation in measurement data.

Dimensions

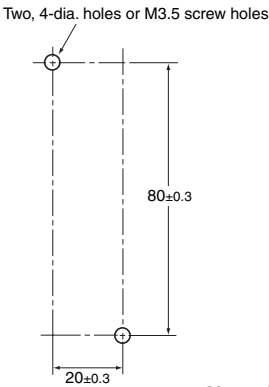
**Note:** All units are in millimeters unless otherwise indicated.

Relays

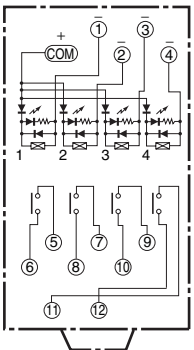
G6D-4B  
G3DZ-4B



Mounting Holes



Terminal Arrangement/  
Internal Connections  
(Top View)



**Note:** Do not reverse the coil polarity.

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## ■ Accessories (Order Separately)

### Relay Mounting Products (Order Separately)

## Safety Precautions

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Refer to *Safety Precautions for All Relays*.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

In the interest of product improvement, specifications are subject to change without notice.

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