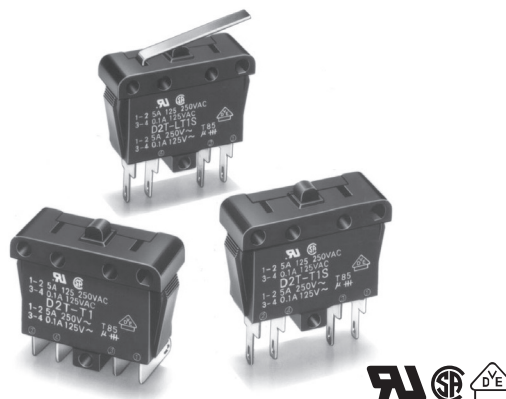




# Door Interlock Switch D2T

## Compact DPST-NO Snap Action Switch

- Incorporates circuits for power and low-level loads
- Approved by safety standards, such as UL, CSA, and VDE
- As compact as OMRON's V-series snap action switches
- Contact gap of 0.7 mm min.
- Panel or screw-mounted with ease
- Straight and angled terminals are available
- RoHS Compliant



## Ordering Information

| Actuator   | Right-angled solder terminal | Straight solder terminal |
|--|------------------------------|--------------------------|
| Pin plunger<br> | D2T-T1                       | D2T-T1S                  |
| Hinge lever<br> | D2T-LT1                      | D2T-LT1S                 |

**Note:** The actuator of the D2T is identical to that used for OMRON's V-series Snap-action Switches. The actuator can be replaced with other types of actuators. Contact your OMRON representative for details.

### Model Number Legend

D2T-□T1□  
1 2

1. **Actuator**  
None: Pin plunger  
L: Hinge lever

2. **Terminals**  
None: Right-angled solder terminals  
S: Straight solder terminals

## Specifications

### ■ Characteristics (Initial)

|   |   |
|---|---|
| Operating speed                         | 10 to 500 mm/second   |
| Operating frequency                     | Mechanical: 120 operations per minute max.<br>Electrical: 30 operations per minute max.   |
| Contact resistance                      | 50 mΩ max. between terminals 1 and 2<br>100 mΩ max. between terminals 3 and 4   |
| Insulation resistance                   | 100 MΩ min. (at 500 VDC)  |
| Dielectric strength (See note 1)        | 1,000 VAC for 1 minute 50/60 Hz between terminals of same polarity<br>1,500 VAC for 1 minute 50/60 Hz between current-carrying metal parts and ground, and between each terminal and non-current-carrying metal part, and between terminals of different polarity |
| Vibration resistance (See note 2)       | Malfunction: 10 to 55 Hz, 1.5 mm double amplitude   |
| Shock resistance (See note 2)           | Destruction: 1,000 m/s <sup>2</sup> (approx 100G) max.<br>Malfunction: 300 m/s <sup>2</sup> (approx. 30G) max.  |
| Degree of protection                    | IEC IP40  |
| Degree of protection vs. electric shock | Class I   |
| Proof tracking index (PTI)              | 175   |
| Ambient operating temperature           | -25° to 85°C (at 60% RH max.) with no icing   |
| Ambient operating humidity              | 85% max (for 5°C to 35°C)   |
| Life expectancy                         | Mechanical: 100,000 operations min. at 60 operations/minute<br>Electrical: 100,000 operations min. at 30 operations/minute  |
| Weight                                  | Approx. 10 g (for pin plunger models)   |

**Note:** 1. The dielectric strength shown is measured using a separator between the switch and metal mounting plate  
2. For the pin plunger models, the above values apply for use at the free position and total travel position.  
For lever models, they apply at the total travel position. Contact opening or closing time is within 1 ms.

## ■ Ratings (Reference values)

| Voltage | Resistive Load            |                           |
|---------|---------------------------|---------------------------|
|         | Between terminals 1 and 2 | Between terminals 3 and 4 |
| 250 VAC | 5A                        | ---                       |
| 125 VAC | 5A                        | 0.1A                      |
| 30 VDC  | 6A                        | 0.1A                      |

**Note:** The ratings apply under the following test conditions: Ambient Temperature = 20±2°C, Ambient Humidity = 65±5%, Operating frequency = 30 operations/min.

## ■ Approved Standards

UL Recognized  
CSA Certified

| Rated voltage | Between terminals 1 and 2 | Between terminals 3 and 4        |
|---------------|---------------------------|----------------------------------|
| 125 VAC       | 5A                        | 0.1A<br>(for 100,000 operations) |
| 250 VAC       | 5A                        | ---                              |

EN61058-1 (VDE approval)

| Rated voltage | Between terminals 1 and 2 | Between terminals 3 and 4 |
|---------------|---------------------------|---------------------------|
| 125 VAC       | ---                       | 0.1A                      |
| 250 VAC       | 5A                        | ---                       |

Testing conditions: 5E4 (50,000 operations), T85 (0°C to 85°C)

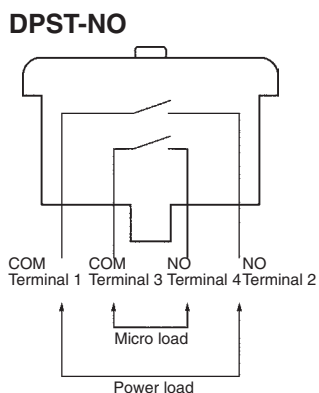
## ■ Contact Specifications

| Item                               | Terminals 1 and 2 | Terminals 3 and 4 |
|------------------------------------|-------------------|-------------------|
| Specification                      | Rivet             | Plated            |
| Material                           | Silver            |                   |
| Gap (standard value)               | 1 mm              | 1.4 mm            |
| Inrush current                     | 60 A max.         | ---               |
| Minimum applicable load (see note) | 160 mA at 5 VDC   | 1 mA at 5 VDC     |

**Note:** Minimum applicable loads are indicated by N standard reference values. This value represents the failure rate at a 60% ( $\lambda_{60}$ ) reliability level (JIS C5003). The equation  $\lambda_{60}=0.5 \times 10^{-6}$  / operations indicates that a failure rate of 1/2,000,000 operations can be expected at a reliability level of 60%

## Engineering Data

### ■ Contact Form

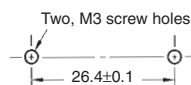


**Note:** The circuit switching power load has a snap-action mechanism. The circuit switching low-level load has a slow-action mechanism.

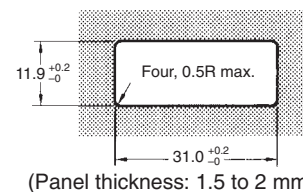
### ■ Mounting Holes

All switches may be panel mounted using M3 mounting screws with plane washers or spring washers to securely mount the switch. Tighten the screws to a torque of 0.4 to 0.6 N·m

#### Panel Mount Holes



#### Panel Cutout Dimensions



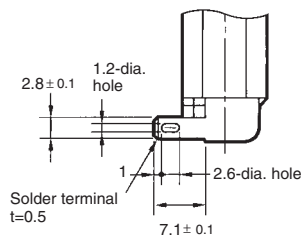
When mounting on a metal surface, be sure to provide a separator between the switch and mounting plate.

# Dimensions

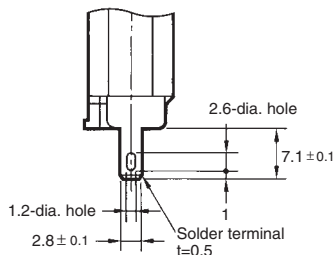
## ■ Terminals

**Note:** Unless otherwise specified, all units are in millimeters

### Angled Terminals



### Straight Terminals

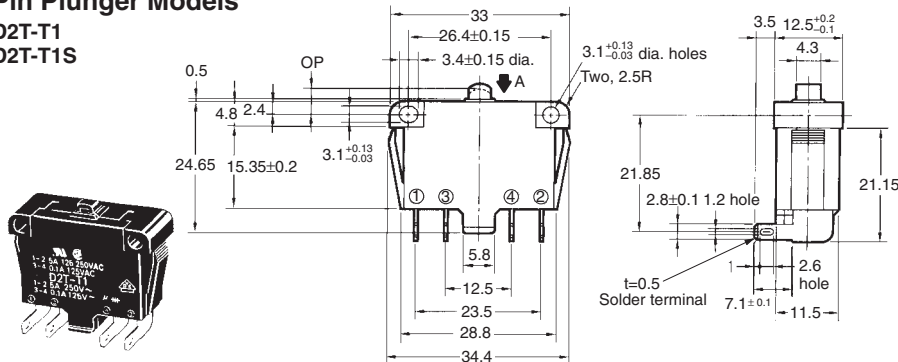


## ■ Dimensions and Operating Characteristics

- Note:**
1. Unless otherwise specified, all units are in millimeters and a tolerance of  $\pm 0.4$  mm applies to all dimensions
  2. The following illustrations and dimensions are for D2T models with angled terminals. Refer to the dimensions in "Terminals" for the straight terminal versions of D2T.
  3. The operating characteristics are for operation in the A direction (↓)

### Pin Plunger Models

D2T-T1  
D2T-T1S

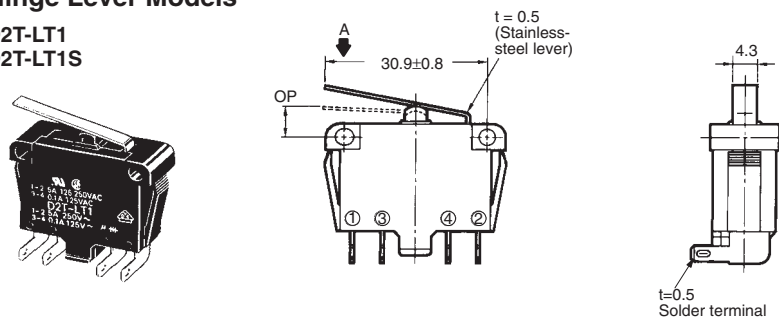


|          |                            |
|----------|----------------------------|
| OF max.  | 330 gf                     |
| RF min.  | 50 gf                      |
| TTF max. | 650 gf                     |
| OT min.  | 0.8 mm                     |
| OP       | 4.4 ± 0.6 mm<br>(see note) |

**Note:** Operating sequence of the circuit between terminals 1 and 2 and the circuit between terminals 3 and 4 is not specified.

### Hinge Lever Models

D2T-LT1  
D2T-LT1S



|          |                            |
|----------|----------------------------|
| OF max.  | 150 gf                     |
| RF min.  | 20 gf                      |
| TTF max. | 250 gf                     |
| OT min.  | 1.6 mm                     |
| OP       | 6.9 ± 1.3 mm<br>(see note) |

**Note:** Operating sequence of the circuit between terminals 1 and 2 and the circuit between terminals 3 and 4 is not specified.

## Precautions

Be sure to read the precautions and information common to all Snap Action and Detection Switches, contained in the Technical User's Guide, "Snap Action Switches, Technical Information" for correct use.

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**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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