

D3D



Miniature Door Switch

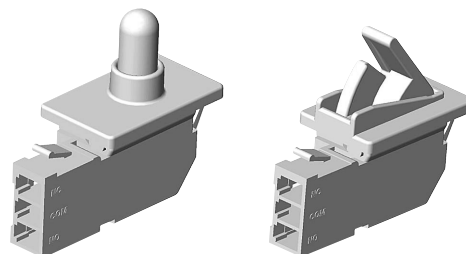
- Appliance industry standard plunger and lever actuator styles
- High contact reliability ensured using gold alloy crossbar contacts
- Drip/spill sealing in free position (plunger models)
- Low operating force 200 g (2 N). maximum
- Quick-Connect terminals for easier wiring
- ROHS Compliant

| Part | Rated Resistive Load - Switch | Actuator types | Contact form | Operating Force | Seal type | Termination Style | Service Life - Electrical (Min. @ Rated Loads) |
|----------------|-------------------------------|----------------|--------------|-----------------|---------------------------------|-------------------|--|
| D3D-111 | 1A @ 125VAC / 0.5A @ 250VAC | Plunger | SPDT | 204g | Dust-Proof (in closed position) | JST HL Connector | 100,000 ops |
| D3D-121 | 1A @ 125VAC / 0.5A @ 250VAC | Plunger | SPST-NC | 204g | Dust-Proof (in closed position) | JST HL Connector | 100,000 ops |
| D3D-131 | 1A @ 125VAC / 0.5A @ 250VAC | Plunger | SPST-NO | 204g | Dust-Proof (in closed position) | JST HL Connector | 100,000 ops |
| D3D-211 | 1A @ 125VAC / 0.5A @ 250VAC | Lever | SPDT | 204g | Dust-Proof (in closed position) | JST HL Connector | 100,000 ops |
| D3D-221 | 1A @ 125VAC / 0.5A @ 250VAC | Lever | SPST-NC | 204g | Dust-Proof (in closed position) | JST HL Connector | 100,000 ops |
| D3D-231 | 1A @ 125VAC / 0.5A @ 250VAC | Lever | SPST-NO | 204g | Dust-Proof (in closed position) | JST HL Connector | 100,000 ops |

Miniature Door Switch D3D

Unique Mechanism Allows Switching of Micro Loads

- Choose from plunger or lever actuators.
- Plunger models provide sealing in the free position.
- Low operating force of 204 g max.
- Disconnectable crimp connector for easier wiring.
- High contact reliability ensured with gold crossbar contacts.
- Low noise operation.
- RoHS Compliant.



Ordering Information



Model Number Legend

D3D-□□□
1 2 3

- 1. Actuator**
 - 1: Plunger
 - 2: Lever
- 2. Contact Form**
 - 1: SPDT
 - 2: SPST-NC
 - 3: SPST-NO
- 3. Color of Housing**
 - 1: White

List of Models

Stock Note: Shaded items are normally stocked.

| Actuator | Model | | |
|--|--------------|---------|---------|
| | Contact form | | |
| | SPDT | SPST-NC | SPST-NO |
| Plunger  | D3D-111 | D3D-121 | D3D-131 |
| Lever  | D3D-211 | D3D-221 | D3D-231 |

Specifications

■ Ratings

| Rated voltage | Resistive load |
|---------------|----------------|
| 125 VAC | 1 A |
| 250 VAC | 0.5 A |

Note: The ratings on the left were tested under the following conditions.

| | |
|----------------------|-------------------|
| Ambient temperature: | 20±2° C |
| Ambient humidity | 65±5% |
| Operating frequency | 20 operations/min |

■ Characteristics

| | |
|---|---|
| Operating speed | 7.5 to 500 mm/s |
| Operating frequency | Mechanical: 120 operations/min Electrical: 20 operations/min |
| Insulation resistance | 100 MΩ min. (at 500 VDC) |
| Contact resistance (initial value) | 100 mΩ max. |
| Dielectric strength | 1,000 VAC, 50/60 Hz for 1 min between terminals of the same polarity 1,500 VAC, 50/60 Hz for 1 min between current-carrying metal parts and ground, and between each terminal and non-current-carrying metal parts |
| Vibration resistance | Malfunction: 10 to 55 Hz, 1.5-mm double amplitude |
| Shock resistance (See note 1) | Destruction: 490 m/s ² max. Malfunction: 300 m/s ² max. |
| Durability (See note 2) | Mechanical: 300,000 operations min. (60 operations/min) Electrical: 100,000 operations min. (20 operations/min) |
| Degree of protection | IP00 |
| Degree of protection against electric shock | D3D-1 models (plunger models): Class II D3D-2 models (lever models): Class 0 |
| Proof tracking index (PTI) | 600 |
| Ambient operating temperature | -30° C to 60° C (with no icing) |
| Ambient operating humidity | 85% max. |
| Weight | Approx. 4 g |

- Note:** 1. The contacts do not open or close for more than 1 ms.
2. Consult your Omron representative for details on test conditions.

■ Approved Standards

UL 1054 (File No. E41515), CSA C22.2 No. 55, cuRus component recognized, VDE EN 61058-1 (File No. 4000 5053).

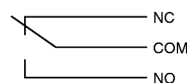
■ Contact Specifications

| Contact | Specification | Crossbar |
|---------------------------------------|---------------|---------------|
| | Material | Gold Alloy |
| Minimum applicable load (See note) | | 1 mA at 5 VDC |

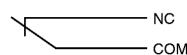
Note: For more information about the minimum applicable load, refer to "Micro Loads" on page 4.

■ Contact Form

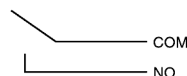
SPDT



SPST-NC



SPST-NO



Dimensions

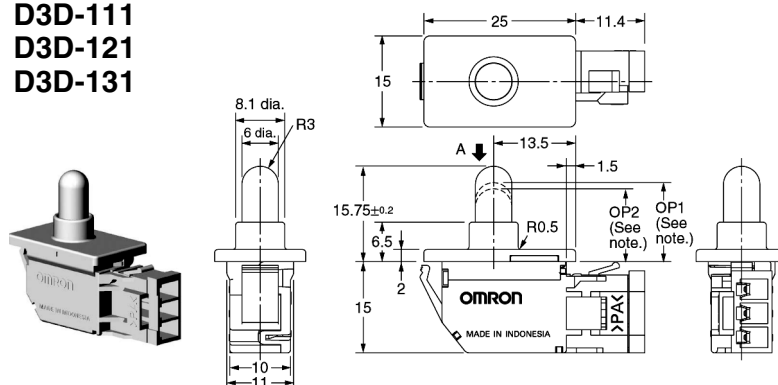
Unit: mm

■ Dimensions and Operating Characteristics

- Note:** 1. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.
 2. The operating characteristics are for operation in direction A (indicated by the arrow).

Plunger Models

D3D-111
D3D-121
D3D-131

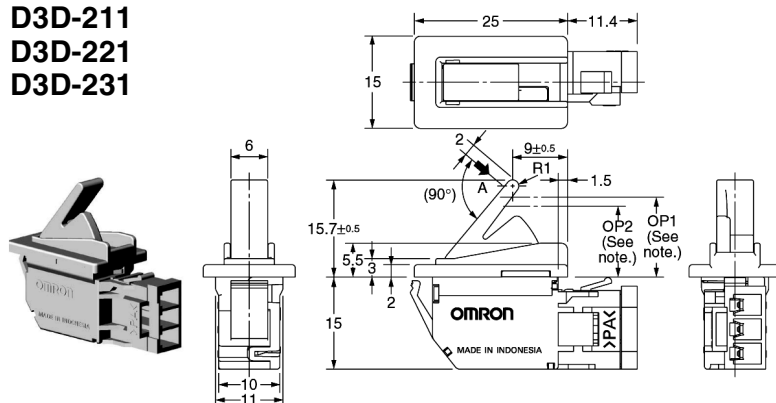


| Type | Plunger model | | |
|---------|-----------------------|---------|---------|
| | D3D-111 | D3D-121 | D3D-131 |
| OF max. | 204 g | | |
| TT | (9.0) mm | | |
| OP min. | OP1 (NC-OFF) 13 mm | 13 mm | 12 mm |
| | OP2 (NO-ON) 12 mm | | |

Note: The dimensions OP1 and OP2 apply to the D3D-111 only. The D3D-121 and D3D-131 are SPST-NC and SPST-NO respectively and so therefore have only one corresponding dimension here (OP).

Lever Models

D3D-211
D3D-221
D3D-231

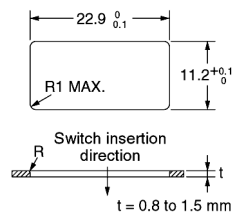


| Type | Level model | | |
|---------|-----------------------|---------|---------|
| | D3D-211 | D3D-221 | D3D-231 |
| OF max. | 204 g | | |
| TT | (9.7) mm | | |
| OP min. | OP1 (NC-OFF) 13 mm | 13 mm | 11.5 mm |
| | OP2 (NO-ON) 12 mm | | |

Note: The dimensions OP1 and OP2 apply to the D3D-211 only. The D3D-221 and D3D-231 are SPST-NC and SPST-NO respectively and so therefore have only one corresponding dimension here (OP).

■ Mounting Panel Cutout Dimensions

Unit (mm)



■ Connectors

The terminals connect to JST's HL Connector.

The HL Connector consists of the following components.

Contact: SSF-21T-P1.4

Housing: HLP-03V

Precautions

■ Cautions

Handling

Do not expose the switch to shocks, such as by dropping it. Doing so may damage or deform the switch.

Do not apply lubrication to the sliding parts, such as pushbuttons or actuators. Doing so may result in faulty operation or contact failure.

In order to ensure stable contact force for NO contacts, use an operating stroke of at least 5 mm.

■ Correct Use

Mounting

This product does not have waterproof or drip-proof construction. Ensure that water does not enter the switch interior. In particular, do not use the switch in locations where water may be spilled or flow over the switch. Doing so may result in deterioration of the insulation.

Wiring

Do not use the switch with a large force applied to the connector or lead wire. Doing so may result in rattling or contact failure.

Storage Environment

Storing the switch in a plastic bag will help prevent discoloration due to sulfuration of the (silver-plated) terminals.

Do not use the switch in locations subject to harmful gases or to high temperatures or humidity levels. Depending on the location, it is recommended that switches be inspected between 3 and 6 months after the date of manufacture.

Micro Loads

Even when using the switch within the operating range, if there are inrush currents or surges, it may decrease the durability of the switch. If necessary, insert a contact protection circuit.