

## D3D



Miniature Door Switch

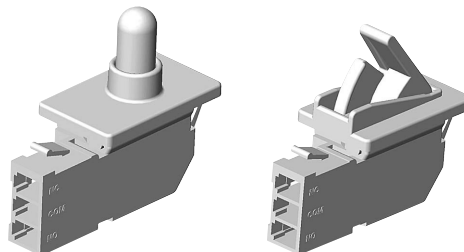
- Appliance industry standard plunger and lever actuator styles
- High contact reliability ensured using gold alloy crossbar contacts
- Drip/spill sealing in free position (plunger models)
- Low operating force 200 g (2 N). maximum
- Quick-Connect terminals for easier wiring
- ROHS Compliant

Part	Rated Resistive Load - Switch	Actuator types	Contact form	Operating Force	Seal type	Termination Style	Service Life - Electrical (Min. @ Rated Loads)
<b>D3D-111</b>	1A @ 125VAC / 0.5A @ 250VAC	Plunger	SPDT	204g	Dust-Proof (in closed position)	JST HL Connector	100,000 ops
<b>D3D-121</b>	1A @ 125VAC / 0.5A @ 250VAC	Plunger	SPST-NC	204g	Dust-Proof (in closed position)	JST HL Connector	100,000 ops
<b>D3D-131</b>	1A @ 125VAC / 0.5A @ 250VAC	Plunger	SPST-NO	204g	Dust-Proof (in closed position)	JST HL Connector	100,000 ops
<b>D3D-211</b>	1A @ 125VAC / 0.5A @ 250VAC	Lever	SPDT	204g	Dust-Proof (in closed position)	JST HL Connector	100,000 ops
<b>D3D-221</b>	1A @ 125VAC / 0.5A @ 250VAC	Lever	SPST-NC	204g	Dust-Proof (in closed position)	JST HL Connector	100,000 ops
<b>D3D-231</b>	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 <sup>2</sup> max. Malfunction: 300 m/s <sup>2</sup> 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).

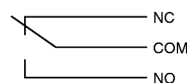
## ■ Contact Specifications

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

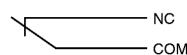
**Note:** For more information about the minimum applicable load, refer to "Micro Loads" on page 4.

## ■ Contact Form

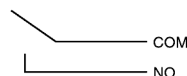
### SPDT



### SPST-NC



### SPST-NO



# Dimensions

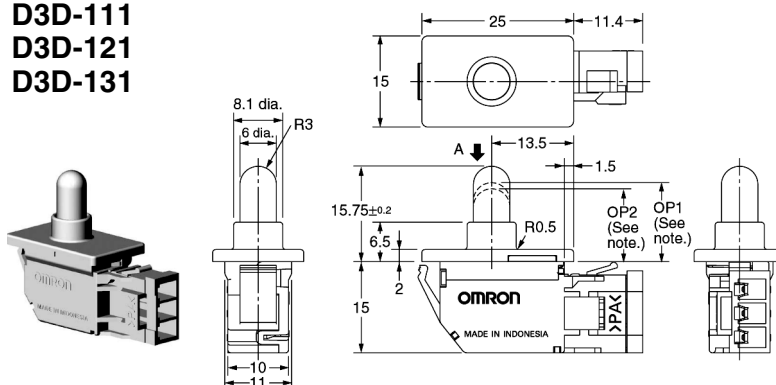
Unit: mm

## ■ Dimensions and Operating Characteristics

- Note:** 1. Unless otherwise specified, a tolerance of  $\pm 0.4$  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**

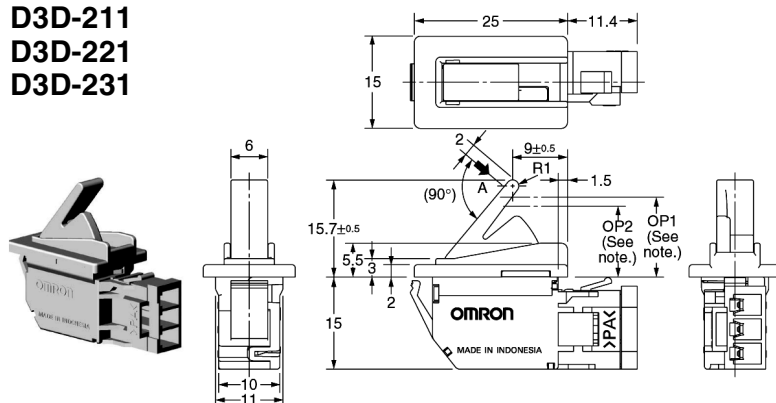


Type	Plunger model		
	D3D-111	D3D-121	D3D-131
OF max.	204 g		
TT	(9.0) mm		
OP min.	OP1 (NC-OFF) 13 mm	13 mm	12 mm
	OP2 (NO-ON) 12 mm		

**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**

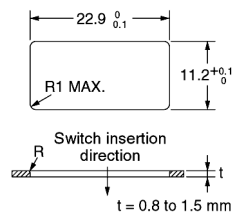


Type	Level model		
	D3D-211	D3D-221	D3D-231
OF max.	204 g		
TT	(9.7) mm		
OP min.	OP1 (NC-OFF) 13 mm	13 mm	11.5 mm
	OP2 (NO-ON) 12 mm		

**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

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### ■ 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.