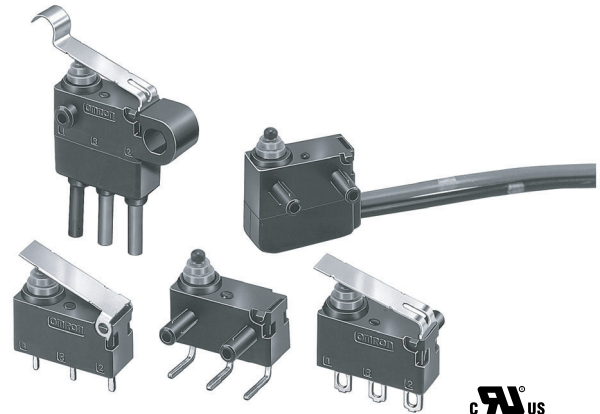


## Sealed Ultra Subminiature Basic Switch

## D2HW

**Smallest sealed snap-action switch in the industry with a very long stroke for reliable ON/OFF action.**

- The case dimensions are 78% of conventional models, contributing to down-sizing of mechanical modules.
- Extra-long stroke even without levers. (OT: 1.4 mm)
- Made of environment-friendly materials. All models are lead-free, including molded lead wire models.



## Ordering Information

### ■ Model Number Legend:

D2HW-

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

  
1 2 3 4 5

#### 1. Mounting Structure

- A: Without posts (base-mounting)
- BR: Posts on right
- BL: Posts on left
- C: M3-screw mounting

#### 2. Ratings

- 2: 1 mA at 5 VDC to 2 A at 12 VDC

#### 3. Actuator

- 0: Pin plunger
- 1: Hinge lever
- 2: Long hinge lever
- 3: Simulated roller hinge lever
- 4: Hinge roller lever
- 6: Leaf lever
- 7: Simulated roller leaf lever
- 8: Long leaf lever

#### 4. Contacts

- 1: SPDT
- 2: SPST-NC (Molded lead wire models only.)
- 3: SPST-NO (Molded lead wire models only.)

#### 5. Terminals

- D: Straight PCB terminals
- DR: Right-angled PCB terminals
- DL: Left-angled PCB terminals
- H: Solder terminals
- M: Molded lead wires downwards
- MR: Molded lead wires on right-side
- ML: Molded lead wires on left-side

**Note** Add "S" to the end of the model number for the UL/CSA-approved version.

## ■ List of Models

### PCB-mounted Models

| Actuator                                                                                                          | Terminals |          | Contact form | Model                                                                                                    |                                                                                                           |                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------|-----------|----------|--------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|                                                                                                                   |           |          |              | With posts on right<br> | With posts on left<br> | Without posts<br> |
| Pin plunger<br>                  | For PCB   | Straight | SPDT         | ---                                                                                                      | ---                                                                                                       | D2HW-A201D                                                                                           |
|                                                                                                                   |           | Angled   |              | D2HW-BR201DR                                                                                             | D2HW-BL201DL                                                                                              | ---                                                                                                  |
| Hinge lever<br>                  |           | Straight |              | ---                                                                                                      | ---                                                                                                       | D2HW-A211D                                                                                           |
|                                                                                                                   |           | Angled   |              | D2HW-BR211DR                                                                                             | D2HW-BL211DL                                                                                              | ---                                                                                                  |
| Long hinge lever<br>             |           | Straight |              | ---                                                                                                      | ---                                                                                                       | D2HW-A221D                                                                                           |
|                                                                                                                   |           | Angled   |              | D2HW-BR221DR                                                                                             | D2HW-BL221DL                                                                                              | ---                                                                                                  |
| Simulated roller hinge lever<br> |           | Straight |              | ---                                                                                                      | ---                                                                                                       | D2HW-A231D                                                                                           |
|                                                                                                                   |           | Angled   |              | D2HW-BR231DR                                                                                             | D2HW-BL231DL                                                                                              | ---                                                                                                  |

**Note** Add "S" to the end of the model number for the UL/CSA-approved version. Consult your OMRON sales representative for details.

### Models with Solder Terminals or Molded Lead Wires

| Actuator                                                                                                | Terminals         |            | Contact form | Model                                                                                                      |                                                                                                            |                                                                                                           |
|---------------------------------------------------------------------------------------------------------|-------------------|------------|--------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                                                                                                         |                   |            |              | With posts on right<br> | With posts on left<br> | M3-screw mounting<br> |
| Pin plunger<br>      | Solder            |            | SPDT         | D2HW-BR201H                                                                                                | D2HW-BL201H                                                                                                | D2HW-C201H                                                                                                |
|                                                                                                         | Molded lead wires | Downwards  | SPDT         | D2HW-BR201M                                                                                                | D2HW-BL201M                                                                                                | D2HW-C201M                                                                                                |
|                                                                                                         |                   |            | SPST-NC      | D2HW-BR202M                                                                                                | D2HW-BL202M                                                                                                | D2HW-C202M                                                                                                |
|                                                                                                         |                   |            | SPST-NO      | D2HW-BR203M                                                                                                | D2HW-BL203M                                                                                                | D2HW-C203M                                                                                                |
|                                                                                                         |                   |            | SPST-NC      | D2HW-BR202MR                                                                                               | D2HW-BL202MR                                                                                               | D2HW-C202MR                                                                                               |
|                                                                                                         |                   |            | SPST-NO      | D2HW-BR203MR                                                                                               | D2HW-BL203MR                                                                                               | D2HW-C203MR                                                                                               |
|                                                                                                         |                   | Right-side | SPST-NC      | D2HW-BR202ML                                                                                               | D2HW-BL202ML                                                                                               | ---                                                                                                       |
|                                                                                                         |                   | Left-side  | SPST-NO      | D2HW-BR203ML                                                                                               | D2HW-BL203ML                                                                                               | ---                                                                                                       |
| Hinge lever<br>      | Solder            |            | SPDT         | D2HW-BR211H                                                                                                | D2HW-BL211H                                                                                                | D2HW-C211H                                                                                                |
|                                                                                                         | Molded lead wires | Downwards  | SPDT         | D2HW-BR211M                                                                                                | D2HW-BL211M                                                                                                | D2HW-C211M                                                                                                |
|                                                                                                         |                   |            | SPST-NC      | D2HW-BR212M                                                                                                | D2HW-BL212M                                                                                                | D2HW-C212M                                                                                                |
|                                                                                                         |                   |            | SPST-NO      | D2HW-BR213M                                                                                                | D2HW-BL213M                                                                                                | D2HW-C213M                                                                                                |
|                                                                                                         |                   |            | SPST-NC      | D2HW-BR212MR                                                                                               | D2HW-BL212MR                                                                                               | D2HW-C212MR                                                                                               |
|                                                                                                         |                   |            | SPST-NO      | D2HW-BR213MR                                                                                               | D2HW-BL213MR                                                                                               | D2HW-C213MR                                                                                               |
|                                                                                                         |                   | Right-side | SPST-NC      | D2HW-BR212ML                                                                                               | D2HW-BL212ML                                                                                               | ---                                                                                                       |
|                                                                                                         |                   | Left-side  | SPST-NO      | D2HW-BR213ML                                                                                               | D2HW-BL213ML                                                                                               | ---                                                                                                       |
| Long hinge lever<br> | Solder            |            | SPDT         | D2HW-BR221H                                                                                                | D2HW-BL221H                                                                                                | D2HW-C221H                                                                                                |
|                                                                                                         | Molded lead wires | Downwards  | SPDT         | D2HW-BR221M                                                                                                | D2HW-BL221M                                                                                                | D2HW-C221M                                                                                                |
|                                                                                                         |                   |            | SPST-NC      | D2HW-BR222M                                                                                                | D2HW-BL222M                                                                                                | D2HW-C222M                                                                                                |
|                                                                                                         |                   |            | SPST-NO      | D2HW-BR223M                                                                                                | D2HW-BL223M                                                                                                | D2HW-C223M                                                                                                |
|                                                                                                         |                   |            | SPST-NC      | D2HW-BR222MR                                                                                               | D2HW-BL222MR                                                                                               | D2HW-C222MR                                                                                               |
|                                                                                                         |                   |            | SPST-NO      | D2HW-BR223MR                                                                                               | D2HW-BL223MR                                                                                               | D2HW-C223MR                                                                                               |
|                                                                                                         |                   | Right-side | SPST-NC      | D2HW-BR222ML                                                                                               | D2HW-BL222ML                                                                                               | ---                                                                                                       |
|                                                                                                         |                   | Left-side  | SPST-NO      | D2HW-BR223ML                                                                                               | D2HW-BL223ML                                                                                               | ---                                                                                                       |

**Note:** 1. The length of standard lead wires (AVSS0.5) for molded lead wire models is 30 cm.  
2. Add "S" to the end of the model number for the UL/CSA-approved version. Consult your OMRON sales representative for details.

| Actuator                                                                                                                  | Terminals         |            | Contact form | Model                                                                                                     |                                                                                                           |                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------|-------------------|------------|--------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                                                                                                           |                   |            |              | With posts on right<br> | With posts on left<br> | M3-screw mounting<br> |
| <b>Simulated roller hinge lever</b><br>  | Solder            |            | SPDT         | D2HW-BR231H                                                                                               | D2HW-BL231H                                                                                               | D2HW-C231H                                                                                               |
|                                                                                                                           | Molded lead wires | Downwards  | SPDT         | D2HW-BR231M                                                                                               | D2HW-BL231M                                                                                               | D2HW-C231M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR232M                                                                                               | D2HW-BL232M                                                                                               | D2HW-C232M                                                                                               |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR233M                                                                                               | D2HW-BL233M                                                                                               | D2HW-C233M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR232MR                                                                                              | D2HW-BL232MR                                                                                              | D2HW-C232MR                                                                                              |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR233MR                                                                                              | D2HW-BL233MR                                                                                              | D2HW-C233MR                                                                                              |
|                                                                                                                           |                   | Right-side | SPST-NC      | D2HW-BR232MR                                                                                              | D2HW-BL232MR                                                                                              | D2HW-C232MR                                                                                              |
|                                                                                                                           |                   | Left-side  | SPST-NC      | D2HW-BR232ML                                                                                              | D2HW-BL232ML                                                                                              | ---                                                                                                      |
| <b>Hinge roller lever</b><br>            | Solder            |            | SPDT         | D2HW-BR241H                                                                                               | D2HW-BL241H                                                                                               | D2HW-C241H                                                                                               |
|                                                                                                                           | Molded lead wires | Downwards  | SPDT         | D2HW-BR241M                                                                                               | D2HW-BL241M                                                                                               | D2HW-C241M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR242M                                                                                               | D2HW-BL242M                                                                                               | D2HW-C242M                                                                                               |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR243M                                                                                               | D2HW-BL243M                                                                                               | D2HW-C243M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR242MR                                                                                              | D2HW-BL242MR                                                                                              | D2HW-C242MR                                                                                              |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR243MR                                                                                              | D2HW-BL243MR                                                                                              | D2HW-C243MR                                                                                              |
|                                                                                                                           |                   | Right-side | SPST-NC      | D2HW-BR242MR                                                                                              | D2HW-BL242MR                                                                                              | D2HW-C242MR                                                                                              |
|                                                                                                                           |                   | Left-side  | SPST-NC      | D2HW-BR242ML                                                                                              | D2HW-BL242ML                                                                                              | ---                                                                                                      |
| <b>Leaf lever</b><br>                    | Solder            |            | SPDT         | D2HW-BR261H                                                                                               | D2HW-BL261H                                                                                               | D2HW-C261H                                                                                               |
|                                                                                                                           | Molded lead wires | Downwards  | SPDT         | D2HW-BR261M                                                                                               | D2HW-BL261M                                                                                               | D2HW-C261M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR262M                                                                                               | D2HW-BL262M                                                                                               | D2HW-C262M                                                                                               |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR263M                                                                                               | D2HW-BL263M                                                                                               | D2HW-C263M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR262MR                                                                                              | D2HW-BL262MR                                                                                              | D2HW-C262MR                                                                                              |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR263MR                                                                                              | D2HW-BL263MR                                                                                              | D2HW-C263MR                                                                                              |
|                                                                                                                           |                   | Right-side | SPST-NC      | D2HW-BR262MR                                                                                              | D2HW-BL262MR                                                                                              | D2HW-C262MR                                                                                              |
|                                                                                                                           |                   | Left-side  | SPST-NC      | D2HW-BR262ML                                                                                              | D2HW-BL262ML                                                                                              | ---                                                                                                      |
| <b>Simulated roller leaf lever</b><br> | Solder            |            | SPDT         | D2HW-BR271H                                                                                               | D2HW-BL271H                                                                                               | D2HW-C271H                                                                                               |
|                                                                                                                           | Molded lead wires | Downwards  | SPDT         | D2HW-BR271M                                                                                               | D2HW-BL271M                                                                                               | D2HW-C271M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR272M                                                                                               | D2HW-BL272M                                                                                               | D2HW-C272M                                                                                               |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR273M                                                                                               | D2HW-BL273M                                                                                               | D2HW-C273M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR272MR                                                                                              | D2HW-BL272MR                                                                                              | D2HW-C272MR                                                                                              |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR273MR                                                                                              | D2HW-BL273MR                                                                                              | D2HW-C273MR                                                                                              |
|                                                                                                                           |                   | Right-side | SPST-NC      | D2HW-BR272MR                                                                                              | D2HW-BL272MR                                                                                              | D2HW-C272MR                                                                                              |
|                                                                                                                           |                   | Left-side  | SPST-NC      | D2HW-BR272ML                                                                                              | D2HW-BL272ML                                                                                              | ---                                                                                                      |
| <b>Long leaf lever</b><br>             | Molded lead wires | Downwards  | SPDT         | D2HW-BR281M                                                                                               | D2HW-BL281M                                                                                               | D2HW-C281M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | D2HW-BR282M                                                                                               | D2HW-BL282M                                                                                               | D2HW-C282M                                                                                               |
|                                                                                                                           |                   |            | SPST-NO      | D2HW-BR283M                                                                                               | D2HW-BL283M                                                                                               | D2HW-C283M                                                                                               |
|                                                                                                                           |                   |            | SPST-NC      | ---                                                                                                       | ---                                                                                                       | D2HW-C282MR                                                                                              |
|                                                                                                                           |                   | Right-side | SPST-NO      | ---                                                                                                       | ---                                                                                                       | D2HW-C283MR                                                                                              |
|                                                                                                                           |                   |            | SPST-NO      | ---                                                                                                       | ---                                                                                                       | D2HW-C283MR                                                                                              |

**Note:** 1. The length of standard lead wires (AVSS 0.5) for molded lead wire models is 30 cm.

2. Add "S" to the end of the model number for the UL/CSA-approved version. Consult your OMRON sales representative for details.

## Specifications

### ■ Ratings

| Rated voltage (V) | Resistive load |
|-------------------|----------------|
| 125 VAC           | 0.1 A          |
| 12 VDC            | 2 A            |
| 24 VDC            | 1 A            |
| 42 VDC            | 0.5 A          |

**Note** The ratings values apply under the following test conditions:

Ambient temperature: 20±2°C  
 Ambient humidity: 65±5%  
 Operating frequency: 30 operations/min

## ■ Characteristics

| Item                                        | Specification                                                                                                                                                                                                       |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating speed                             | 1 mm to 500 mm/s (for pin plunger models)                                                                                                                                                                           |
| Operating frequency                         | 30 operations/min max.                                                                                                                                                                                              |
| Insulation resistance                       | 100 MΩ min. (at 500 VDC)                                                                                                                                                                                            |
| Contact resistance (initial value)          | 100 mΩ max. (molded lead wire models: 150 mΩ max.)                                                                                                                                                                  |
| Dielectric strength                         | 600 VAC, 50/60 Hz for 1 min between terminals of the same polarity<br>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 (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. 100 G} max.<br>Malfunction: 300 m/s <sup>2</sup> {approx. 30 G} max.                                                                                                   |
| Durability (see note 3)                     | Mechanical: 1,000,000 operations min. (30 operations/min)<br>Electrical: 100,000 operations min. (20 operations/min)                                                                                                |
| Degree of protection                        | IEC IP67 (excluding the terminals on terminal models)                                                                                                                                                               |
| Degree of protection against electric shock | Class I                                                                                                                                                                                                             |
| Proof tracking index (PTI)                  | 175                                                                                                                                                                                                                 |
| Ambient operating temperature               | –40 to 85°C (with no icing)                                                                                                                                                                                         |
| Ambient operating humidity                  | 95% max. (for 5 to 35°C)                                                                                                                                                                                            |
| Weight                                      | Approx. 0.7 g (for pin plunger models with terminals)                                                                                                                                                               |

- Note:**
1. The data given above are initial values.
  2. For the pin plunger models, the above values apply for use at the free position, operating position, and total travel position. For the lever models, they apply at the total travel position.  
The values shown apply for malfunctions of 1 ms max.
  3. For testing conditions, consult your OMRON sales representative.

## ■ Approved Standards

Consult your OMRON sales representative for specific models with standard approvals.

**UL1054 (File No. E41515)/CSA C22.2 No. 55 (UL approval)**

| Rated voltage | D2HW  |
|---------------|-------|
| 125 VAC       | 0.1 A |
| 12 VDC        | 2 A   |

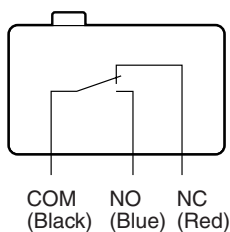
## ■ Contact Specifications

| Item                               | Specification |
|------------------------------------|---------------|
| Specification                      | Crossbar      |
| Material                           | Gold alloy    |
| Gap (standard value)               | 0.5 mm        |
| Minimum applicable load (see note) | 1 mA at 5 VDC |

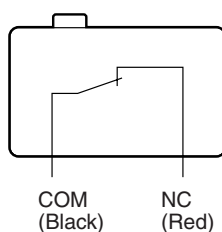
- Note** Minimum applicable loads are indicated by N standard reference values. This value represents the failure rate at a 60% ( $\lambda_{60}$ ) reliability level.  
The equation  $\lambda_{60}=0.35 \times 10^{-6}/\text{operations}$  indicates that a failure rate of 1/2,000,000 operations can be expected at a reliability level of 60%.

## ■ Contact Form

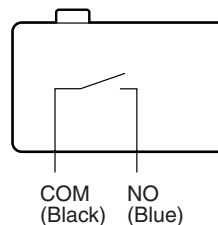
### SPDT



### SPST-NC (Molded Lead Wire Models Only)



### SPST-NO (Molded Lead Wire Models Only)



- Note** Molded lead wire colors are indicated in parentheses.

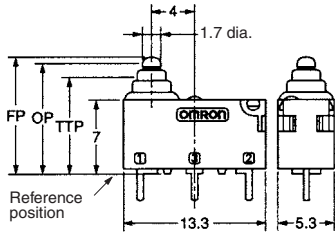
## Dimensions

### ■ Mounting Structure and Reference Positions for Operating Characteristics

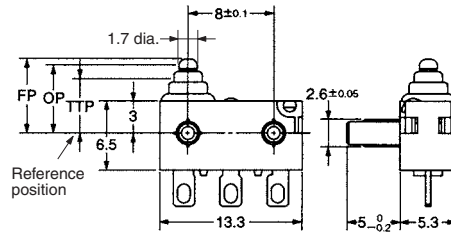
**Note** All units are in millimeters unless otherwise indicated.

The reference positions used for FP, OP, and TTP values are as shown below for each type of mounting.

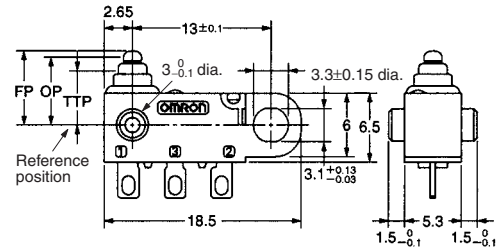
#### Models without Posts D2HW-A□



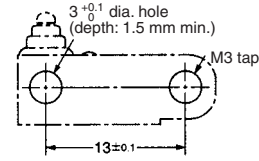
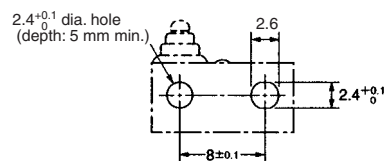
#### Models with Posts D2HW-B□



#### M3-screw Mounting Models D2HW-C□

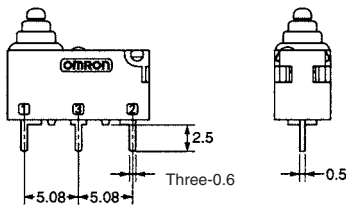


#### Mounting Hole Dimensions (Reference) Mounting Hole Dimensions (Reference)

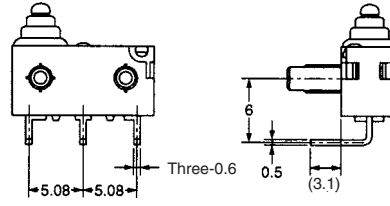


### ■ Terminals

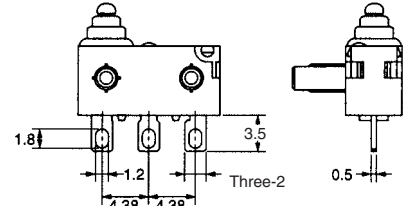
#### Straight PCB Terminals



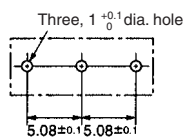
#### Angled PCB Terminals



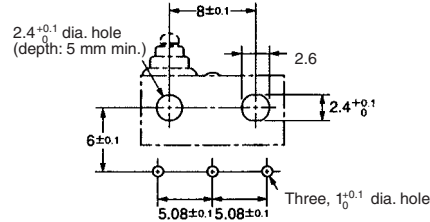
#### Solder Terminals



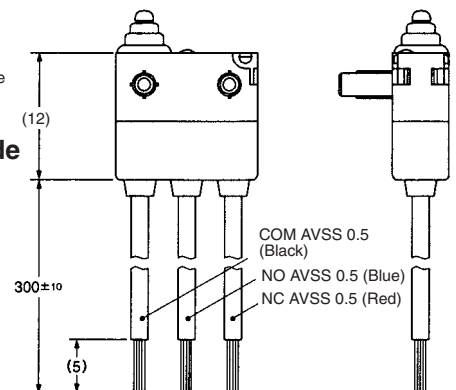
#### PCB Cutout Dimensions (Reference)



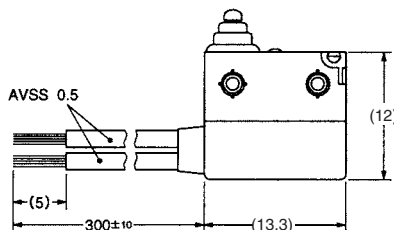
#### PCB Cutout Dimensions (Reference)



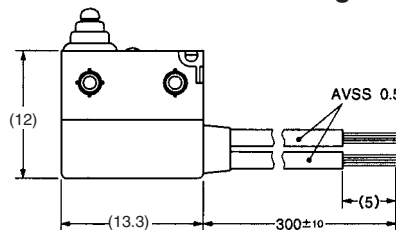
#### Molded Lead Wires Downwards



#### Molded Lead Wires on Left-side



#### Molded Lead Wires on Right-side

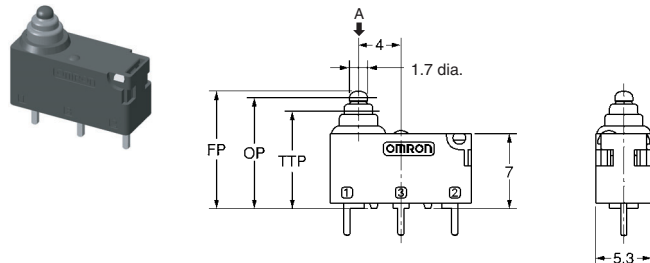


## ■ Dimensions and Operating Characteristics

- Note:**
1. All units are in millimeters unless otherwise indicated.
  2. Dimensions not indicated in the above diagrams have a tolerance of  $\pm 0.2$  mm.
  3. The operating characteristics are for operation in the A direction (  ).

### Pin Plunger Models

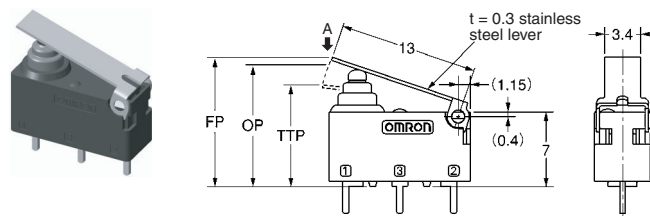
D2HW-□20□□



| Characteristic            | Models without posts                   | Models with posts and M3-mounting models |
|---------------------------|----------------------------------------|------------------------------------------|
| OF max.<br>RF min.        | 0.75 N {76 gf}<br>0.10 N {10 gf}       |                                          |
| OT ref.<br>MD max.        | 1.4 mm (reference value)<br>0.25 mm    |                                          |
| FP max.<br>OP<br>TTP max. | 11.2 mm<br>10.4 $\pm$ 0.2 mm<br>9.1 mm | 7.2 mm<br>6.4 $\pm$ 0.2 mm<br>5.1 mm     |

### Hinge Lever Models

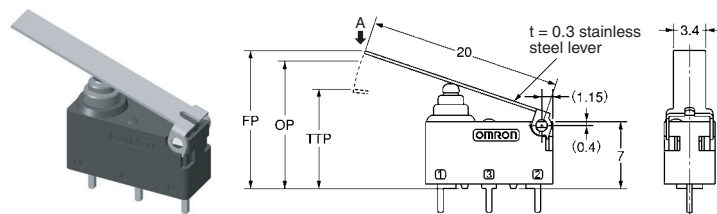
D2HW-□21□□



| Characteristic            | Models without posts                  | Models with posts and M3-mounting models |
|---------------------------|---------------------------------------|------------------------------------------|
| OF max.<br>RF min.        | 0.75 N {76 gf}<br>0.07 N {7 gf}       |                                          |
| OT ref.<br>MD max.        | 1.6 mm (reference value)<br>0.5 mm    |                                          |
| FP max.<br>OP<br>TTP max. | 12.8 mm<br>11.5 $\pm$ 0.5 mm<br>10 mm | 8.8 mm<br>7.5 $\pm$ 0.5 mm<br>6 mm       |

### Long Hinge Lever Models

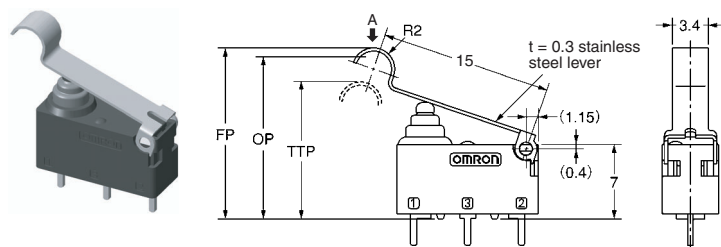
D2HW-□22□□



| Characteristic            | Models without posts                  | Models with posts and M3-mounting models |
|---------------------------|---------------------------------------|------------------------------------------|
| OF max.<br>RF min.        | 0.5 N {50 gf}<br>0.03 N {3 gf}        |                                          |
| OT ref.<br>MD max.        | 2.5 mm (reference value)<br>0.8 mm    |                                          |
| FP max.<br>OP<br>TTP max. | 15.5 mm<br>13.3 $\pm$ 0.8 mm<br>11 mm | 11.5 mm<br>9.3 $\pm$ 0.8 mm<br>7 mm      |

### Simulated Roller Hinge Lever Models

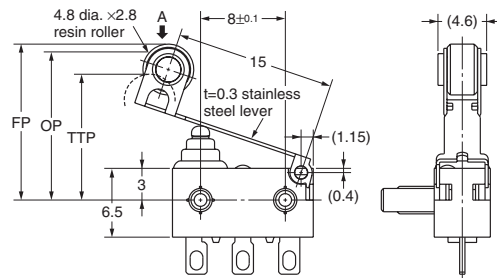
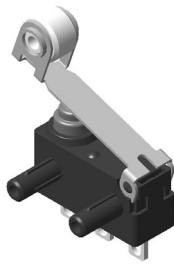
D2HW-□23□□



| Characteristic            | Models without posts                    | Models with posts and M3-mounting models |
|---------------------------|-----------------------------------------|------------------------------------------|
| OF max.<br>RF min.        | 0.65 N {66 gf}<br>0.05 N {5 gf}         |                                          |
| OT ref.<br>MD max.        | 1.9 mm (reference value)<br>0.5 mm      |                                          |
| FP max.<br>OP<br>TTP max. | 16.5 mm<br>15.2 $\pm$ 0.5 mm<br>13.5 mm | 12.5 mm<br>11.2 $\pm$ 0.5 mm<br>9.5 mm   |

### Hinge Roller Lever Models

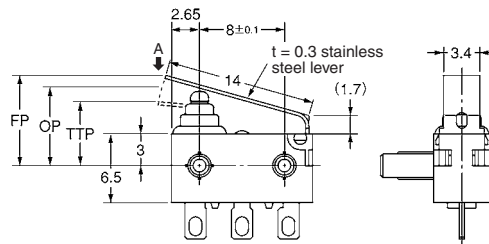
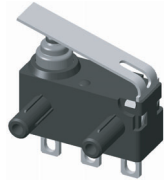
D2HW-□24□□



| Characteristic | Models with posts and M3-mounting models |
|----------------|------------------------------------------|
| OF max.        | 0.65 N {66 gf}                           |
| RF min.        | 0.03 N {3 gf}                            |
| OT ref.        | 1.9 mm (reference value)                 |
| MD max.        | 0.6 mm                                   |
| FP max.        | 15.3 mm                                  |
| OP             | 14±0.6 mm                                |
| TTP max.       | 12.3 mm                                  |

### Leaf Lever Models

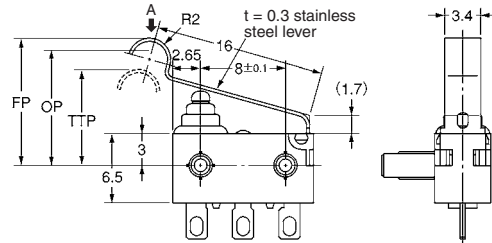
D2HW-□26□□



| Characteristic | Models with posts and M3-mounting models |
|----------------|------------------------------------------|
| OF max.        | 1.8 N {183 gf}                           |
| RF min.        | 0.20 N {20 gf}                           |
| OT ref.        | 1.8 mm (reference value)                 |
| MD max.        | 0.5 mm                                   |
| FP max.        | 9.3 mm                                   |
| OP             | 7.4±0.5 mm                               |
| TTP max.       | 5.8 mm                                   |

### Simulated Roller Leaf Lever Models

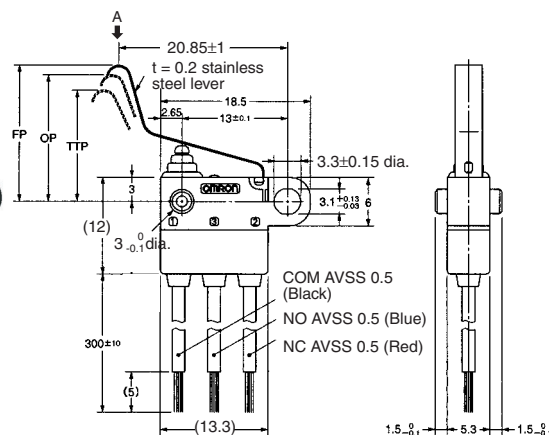
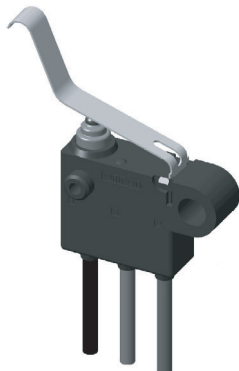
D2HW-□27□□



| Characteristic | Models with posts and M3-mounting models |
|----------------|------------------------------------------|
| OF max.        | 1.8 N {183 gf}                           |
| RF min.        | 0.20 N {20 gf}                           |
| OT ref.        | 2.0 mm (reference value)                 |
| MD max.        | 0.5 mm                                   |
| FP max.        | 12.5 mm                                  |
| OP             | 10.8±0.5 mm                              |
| TTP max.       | 8.9 mm                                   |

### Long Leaf Lever Models

D2HW-□28□□



| Characteristic | Models with posts and M3-mounting models |
|----------------|------------------------------------------|
| OF max.        | 0.9 N {92 gf}                            |
| RF min.        | 0.05 N {5 gf}                            |
| OT ref.        | 2.8 mm (reference value)                 |
| MD max.        | 0.7 mm                                   |
| FP max.        | 19 mm                                    |
| OP             | 15.4±1.5 mm                              |
| TTP max.       | 12.8 mm                                  |

# Precautions

## ■ Cautions

### Degree of Protection

Do not use this product in water. Although molded lead wire models satisfy the test conditions for the standard given below, this test is to check the ingress of water into the switch enclosure after submerging the Switch in water for a given time. Satisfying this test condition does not mean that the Switch can be used in water.

IEC Publication 529, degree of protection IP67.

Do not operate the Switch when it is exposed to water spray, or when water drops adhere to the Switch surface, or during sudden temperature changes, otherwise water may intrude into the interior of the Switch due to a suction effect.

Prevent the Switch from coming into contact with oil and chemicals. Otherwise, damage to or deterioration of Switch materials may result.

Do not use the Switch in areas where it is exposed to silicon adhesives, oil, or grease, otherwise faulty contact may result due to the generation of silicon oxide.

### Terminal Connection

When soldering the lead wire to the terminal, first insert the lead wire conductor through the terminal hole and then conduct soldering.

Made sure that the capacity of the soldering iron is 30 W maximum. Do not take more than 3 s to solder the switch terminal. Improper soldering involving an excessively high temperature or excessive soldering time may deteriorate the characteristics of the Switch.

When soldering the lead wire to the PCB terminal, pay careful attention so that the flux and solder liquid level does not exceed the PCB level.

### Side-actuated (Cam/Dog) Operation

When using a cam or dog to operate the Switch, factors such as the operating speed, operating frequency, push-button indentation, and material and shape of the cam or dog will affect the durability of the Switch. Confirm performance specifications under actual operation conditions before using the Switch in applications.

## ■ Correct Use

### Mounting

Turn OFF the power supply before mounting or removing the Switch, wiring, or performing maintenance or inspection. Failure to do so may result in electric shock or burning.

For M3-screw mounting models, use M3 mounting screws with plane washers or spring washers to securely mount the Switch. Tighten the screws to a torque of 0.27 to 0.29 N·m. Exceeding the specified torque may result in deterioration of the sealing or damage.

For models with posts, secure the posts by thermal caulking or by pressing into an attached device. When pressed into an attached device, provide guides on the opposite ends of the posts to ensure that they do not fall out or rattle.

Mount the Switch onto a flat surface. Mounting on an uneven surface may cause deformation of the Switch, resulting in faulty operation or damage.

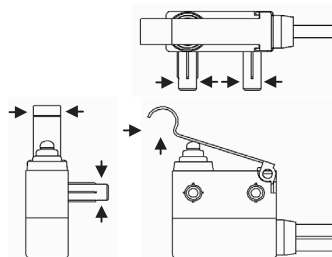
### Operating Body

Use an operating body with low frictional resistance and of a shape that will not interfere with the sealing rubber, otherwise the plunger may be damaged or the sealing may deteriorate.

### Handling

Do not handle the Switch in a way that may cause damage to the sealing rubber.

When handling the Switch, ensure that pressure is not applied to the posts in the directions shown in the following diagram. Also, ensure that uneven pressure or pressure in a direction other than the operating direction is not applied to the Actuator as shown in the following diagram. Otherwise, the post, Actuator, or Switch may be damaged, or the service life may be reduced.



### Wiring Molded Lead Wire Models

When wiring molded lead wire models, ensure that there is no weight on the wire or that there are no sharp bends near the parts where the wire is drawn out. Otherwise, damage to the Switch or deterioration in the sealing may result.

### Using Micro Loads

Even when using micro load models within the operating range, inrush currents or surges may decrease the life expectancy of the Switch. Therefore, insert a contact protection circuit where necessary.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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