

# Sealed Reed Basic Switch

## D2RW

### Extended life logic level switching with watertight circuitry

- Suitable for micro loads to 1 million operations minimum.
- Internal Reed Switch sealed to IP67 ensures stable operation.
- Extended humidity operating range, up to 95% RH.
- Industry standard mounting for miniature basic switches.
- Available with internally fitted levers.



## Ordering Information

### Model Number Legend

D2RW-01□  
1 2





#### 1. Ratings

01: 0.25 A at 100 VDC; 100  $\mu$ A at 5 VDC

#### 2. Actuator

None: Pin plunger  
L1: Hinge lever  
L2: Hinge roller lever  
L3: Simulated roller lever

### List of Models

Actuator		Model
Pin plunger		D2RW-01
Hinge lever		D2RW-01L1
Hinge roller lever		D2RW-01L2
Simulated roller lever		D2RW-01L3

## Specifications

### Ratings

Switching voltage	100 VDC max.
Switching current	0.25 A max.
Contact capacity	10 W max.

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

Ambient temperature: 20 $\pm$ 2°C

Ambient humidity: 65 $\pm$ 5%

Operating frequency: 30 operations/min.

## ■ Characteristics

Operating speed	0.1 mm to 1 m/s (pin plunger models)
Operating frequency	Mechanical: 150 operations/min max. Electrical: 30 operations/min max.
Insulation resistance	100 MΩ min. (at 100 VDC) between terminals of same polarity 100 MΩ min. (at 500 VDC) between current-carrying metal parts and ground
Contact resistance (initial value)	300 mΩ max.
Dielectric strength (see note 2)	200 VDC for 1 min between terminals of the same polarity 500 VAC, 50/60 Hz for 1 min between current-carrying metal parts and ground
Vibration resistance (see note 3)	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
Shock resistance (see note 3)	Destruction: 500 m/s <sup>2</sup> {approx. 50 G} max. Malfunction: 200 m/s <sup>2</sup> {approx. 20 G} max.
Durability (see note 4)	Mechanical: 1,000,000 operations min. (30 operations/min.) Electrical: 1,000,000 operations min. (15 operations/min.) (100 mA at 24 VDC)
Degree of protection	IEC IP67 (internal Reed Switch only; case sealed to IP40)
Degree of protection against electric shock	Class I
Proof tracking index (PTI)	175
Ambient operating temperature	-10° C to 60° C (at ambient humidity of 60% max.) (with no icing or condensation)
Ambient operating humidity	95% max. (for 5° C to 35° C)
Weight	Approx. 20 g (pin plunger models)

Note: 1. The data given above are initial values.

2. The dielectric strength values shown in the are for models with a separator.

3. For the pin plunger models, the above values apply for use at both the free position and total travel position. For the lever models, they apply at the total travel position. Contact opening or closing time is within 1 ms.

4. For testing conditions, contact your OMRON sales representative.

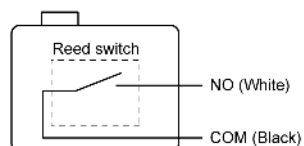
## ■ Contact Specifications

Internally mounted reed switch

Minimum applicable load	100 μA at 5 VDC
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## ■ Contact Form

SPST-NO



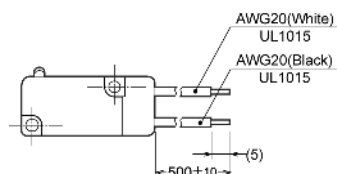
Note: Lead wire colors are indicated in parentheses.

## Dimensions

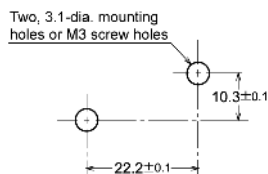
Note: All units are in millimeters unless otherwise indicated.

### ■ Terminals

Molded Lead Wires



### ■ Mounting Holes



## ■ Dimensions and Operating Characteristics

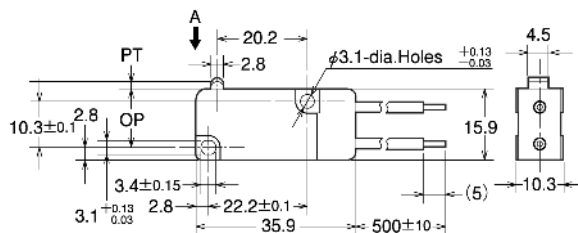
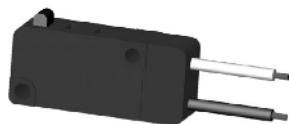
Note: 1. All units are in millimeters unless otherwise indicated.

2. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

3. The operating characteristics are for operation in the A direction (↓).

### Pin Plunger Models

D2RW-01

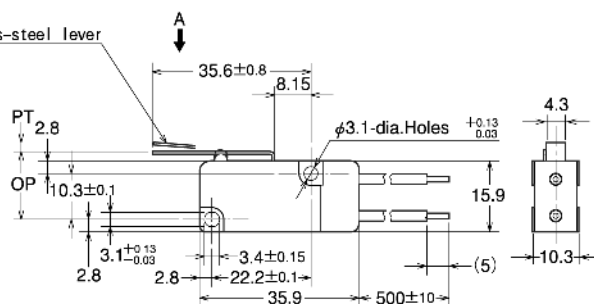


OF max.	1.5 N {153 gf}
RF min.	0.1 N {10 gf}
PT max.	1.6 mm
OT min.	0.6 mm
MD max.	0.8 mm
OP	14.7±0.6 mm

### Hinge Lever Models

D2RW-01L1

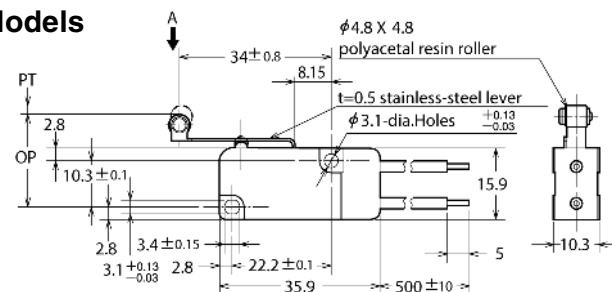
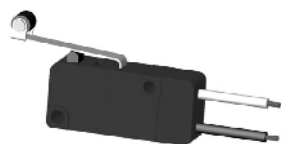
t=0.5 stainless-steel lever



OF max.	0.75 N {76 gf}
RF min.	0.05 N {5 gf}
PT max.	4.0 mm
OT min.	1.0 mm
MD max.	1.6 mm
OP	15.2±1.5 mm

### Hinge Roller Lever Models

D2RW-01L2

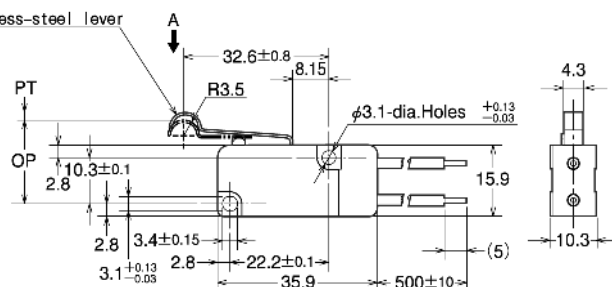
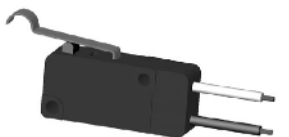


OF max.	0.75 N {76 gf}
RF min.	0.05 N {5 gf}
PT max.	4.0 mm
OT min.	1.0 mm
MD max.	1.6 mm
OP	20.7±1.5 mm

### Simulated Roller Lever Models

D2RW-01L3

t=0.5 stainless-steel lever



OF max.	0.75 N {76 gf}
RF min.	0.05 N {5 gf}
PT max.	4.0 mm
OT min.	1.0 mm
MD max.	1.6 mm
OP	18.7±1.5 mm

# Precautions

## ■ Cautions

### Degree of Protection

Do not use this product immersed in water. Although this model satisfies 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 immersed in water.

IEC 60529: 2001 Degrees of protection provided by enclosures (IP Code)

Code: IP67 (No water intrusion after immersion for 30 minutes.)

Prevent the Switch from long-term exposure to water spray and/or having water adhere to the Switch surface during sudden temperature changes, otherwise water may intrude into the interior of the Switch due to suction.

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

The environment-resistant performance of the switch differs depending on operating loads, ambient atmospheres, and installation conditions, etc. Please perform an operating test of the switch in advance under actual usage conditions.

### Handling

Do not drop the Switch, as the internal mechanism of the Switch may be damaged and, as a result, the characteristics of the Switch may be degraded.

### Effect of External vibrations

Note that the application of 1 kHz or higher vibration to the Switch may cause switching failure due to resonance frequencies.

## ■ Correct Use

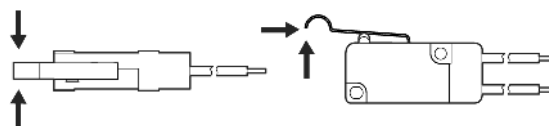
### Mounting

Use M3 mounting screws with plane washers or spring washers to securely mount the Switch. Tighten the screws to a torque of 0.39 to 0.59 N·m {4 to 6 kgf·cm}.

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

### Handling

When handling the Switch, ensure that uneven pressure or, as shown in the following diagram, pressure in a direction other than the operating direction is not applied to the Actuator, otherwise the Actuator or Switch may be damaged, or durability may be decreased.



### Operating Stroke Setting

Install the Switch so that the operating body matches the movement direction of the actuator.

Set the operating stroke so that the actuator is completely disengaged when the switch is in the free position (FP), and is pushed to a point between 60% and 90% of the OT distance after the switch is operated.

Avoid shock operation to the Switch, as this may result in a degradation in the durability of the switch.

### Effect of External Magnetic Field

Do not install two or more Switches in close proximity. Doing so may result in failure due to interference by leaked magnetic fields. When installing several switches, maintain a distance of at least 8 mm between units.

When mounting on a steel plate, maintain a distance of at least 2 mm between Switches as failure to do so may lead to changes in operating characteristics.

Avoid installing the Switch where there are strong magnetic forces, as these may cause failures in operation.

Screws used to mount the Switch should be made of brass or stainless steel (SUS304). Avoid using steel screws.

### Storage Environment

Make sure that the location is free of corrosive gas, dust with no high temperature or humidity, or rapid temperature change. It is recommended that a switch be inspected before use if it is stored for three months or more.

### Effect of Contained Material

The Switch uses a corrosion inhibitor inside the unit. Before using, check the effect of outgassing.

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

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