Snap Action Switch
D2JW

Immersion-Proof Subminiature Snap Action Switch

- Ultra-small and highly sealed
- Water-tight housing conforming to IP67 (lead wire types) and IP50 (terminal types)
- Wide range of operating temperature from -40° to 85°C
- Gold crossbar contact and coil spring offer long life expectancy and high reliability
- RoHS Compliant



Ordering Information

Actuator	Model	
	Solder terminal 	Molded lead wire terminal 
Pin plunger 	**D2JW-011**	**D2JW-011-MD**
Short hinge lever 	**D2JW-01K1A1**	**D2JW-01K1A1-MD**
Hinge lever 	**D2JW-01K11**	**D2JW-01K11-MD**
Simulated roller lever 	**D2JW-01K31**	**D2JW-01K31-MD**
Hinge roller lever 	**D2JW-001K21**	**D2JW-01K21-MD**

Note: The length of the standard molded lead wire (AWG18) is 30 cm (12 in).

Specifications

■ Characteristics

Operating speed (see note 1)		1 mm to 250 mm/second (0.04 to 9.84 in/second)
Operating frequency (see note 1)	**Mechanical**	240 operations per minute
	Electrical	60 operations per minute
Contact resistance		100 mΩ max. (Molded lead type: 140 mΩ min.)
Insulation resistance		100 MΩ min. (at 500 VDC)
Dielectric strength		600 VAC, 50/60 Hz for 1 minute between terminals of same polarity 1,000 VAC, 50/60 Hz for 1 minute between current-carrying metal part and ground, and between each terminal and noncurrent-carrying metal part
Vibration	**Malfunction durability**	10 to 55 Hz, 1.5 mm double amplitude
Shock	**Mechanical durability**	1,000 m/s^2 min. (approx. 100 g min.)
	Malfunction durability	200 m/s^2 min. (approx. 20 g min.)
Ambient temperature		-40° to 85° C (with no icing)
Humidity		35% to 98% RH
Degree of protection		IEC IP67 IEC (lead wire type) and IP50 (terminal type)
Service life	**Mechanical**	1,000,000 operations min.
	Electrical	100,000 operations min.
Weight		Approx. 7 g (molded lead terminal type, pin plunger type)

Note: 1. The values are for pin plunger type.
2. Data shown are of initial value.

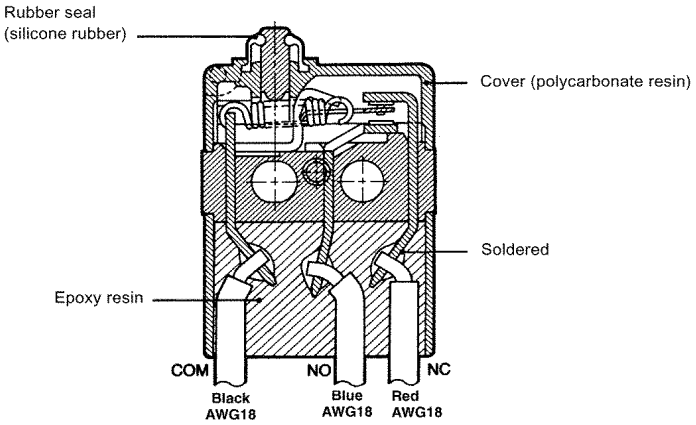
■ Operating Characteristics

	Part number				
Characteristics	**D2JW-011**	**D2JW-01K1A1**	**D2JW-01K11**	**D2JW-01K31**	**D2JW-01K21**
OF max.	250 g	117 g	82 g	97 g	100 g
RF min.	100 g	23 g	16 g	20 g	20 g
PT max.	0.6 mm (0.02 in)	5.4 mm (0.21 in)	6.4 mm (0.25 in)	5.5 mm (0.22 in)	5.2 mm (0.20 in)
OT min.	0.3 mm (0.01 in)	0.7 mm (0.03 in)	1.4 mm (0.06 in)	1.1 mm (0.04 in)	1.1 mm (0.04 in)
MD max.	0.1 mm (0.004 in)	0.5 mm (0.02 in)	0.7 mm (0.03 in)	0.6 mm (0.02 in)	0.5 mm (0.02 in)
OP	8.1±0.3 mm (0.32±0.01 in)	8.4±0.8 mm (0.33±0.03 in)	8.4±0.8 mm (0.33±0.03 in)	10.3±0.8 mm (0.41±0.03 in)	14.6±0.8 mm (0.57±0.03 in)

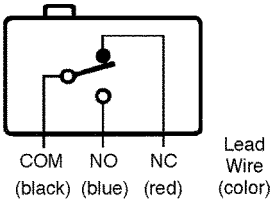
■ Ratings

Electrical rating	0.1 A, 30 VDC (resistive load)

■ Construction



■ Contact Form

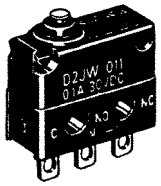


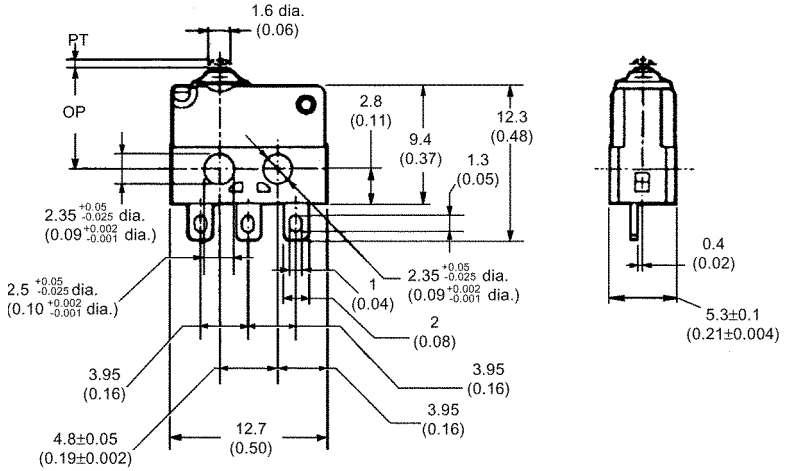
Dimensions

Unit: mm (inch)

■ Pin plunger

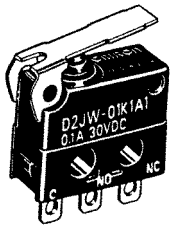
D2JW-011

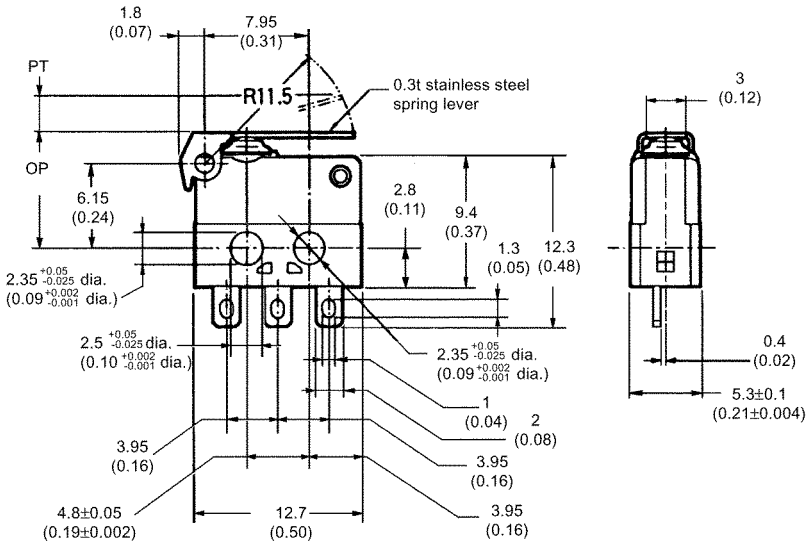




■ Short hinge lever

D2JW-01K1A1

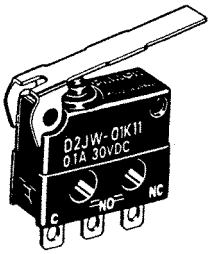


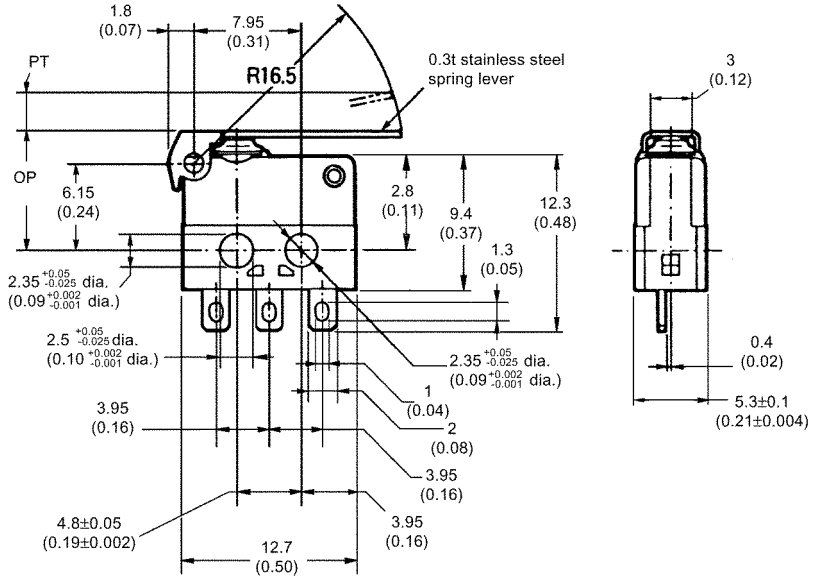


Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

■ Hinge lever

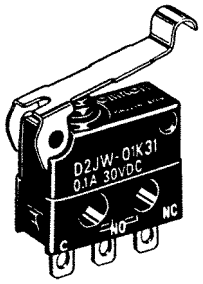
D2JW-01K11

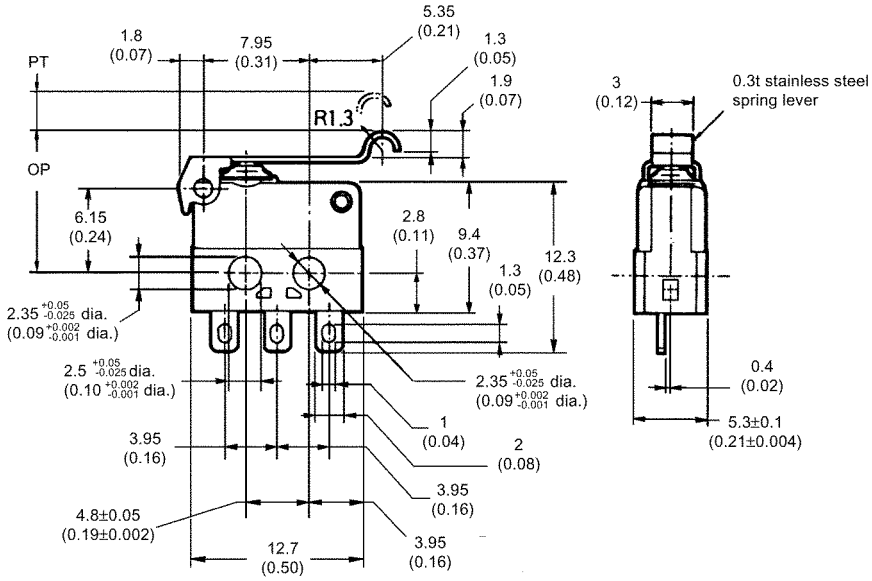




■ Simulated roller lever

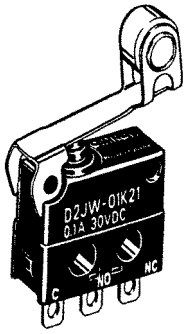
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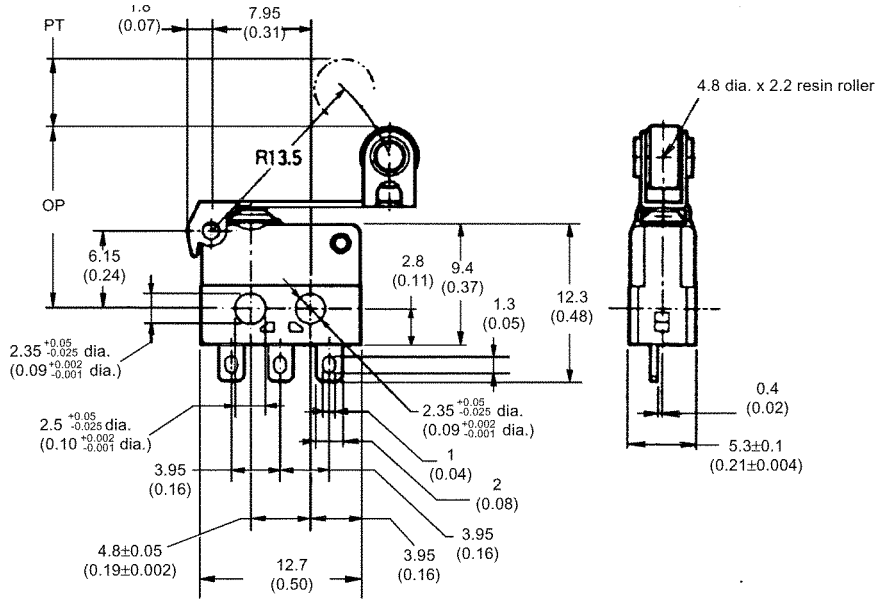




■ Hinge roller lever

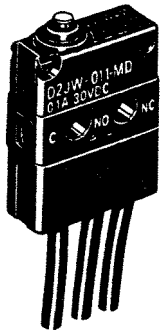
D2JW-01K21

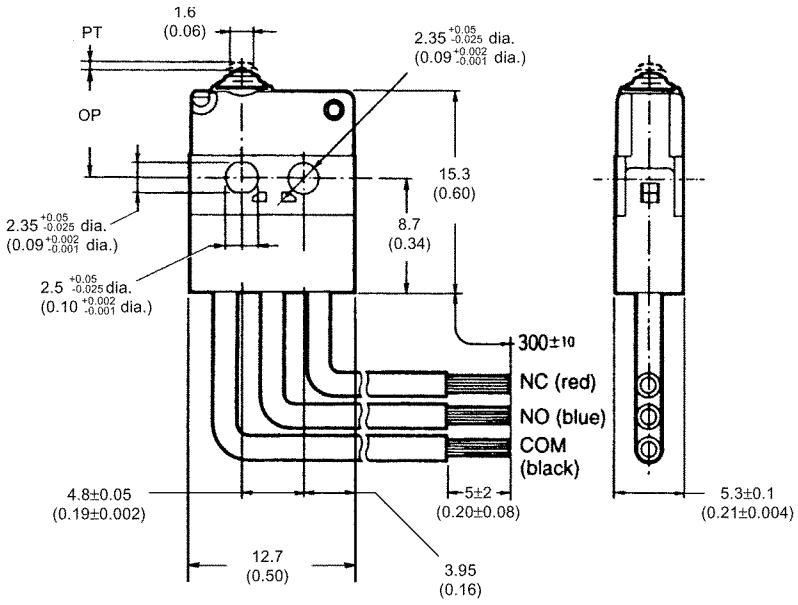




■ Molded lead wire

D2JW-01□□□-MD





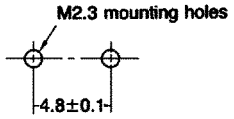
Note: 1. Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

2. Letters and numbers are inserted in blank boxes according to the type actuator.

Precautions

■ Mounting

Use M2.3 screws in combination with plane washers or spring washers to securely mount the switch. Tighten the screws at a torque of 2 to 3 kg-cm.



Because the switch uses polycarbonate resin as material for its component parts, contact OMRON if the switch material is likely to deteriorate due to adherence of oil or chemicals to the switch housing.

■ Soldering

To solder the lead to the terminal, apply a soldering iron rated at 30 W max. (temperature of soldering iron: 280° C max. within three seconds).

Note that applying a soldering iron too long or using one that is rated at more than 30 W may degrade the switch characteristics.

■ Operation

Make sure that the operating body pushes the switch actuator with an adequate force when the switch is to be operated, and that it does not touch the actuator when the switch is released.

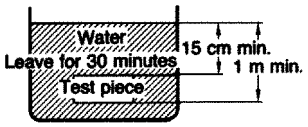
Install the pin plunger switch so that the operating force is applied in alignment with the stroke of the actuator.

Do not apply excessive force to the actuator; otherwise, the switch may be damaged.

■ Degree of Protection

The D2JW satisfies the following test condition specified by the IEC Publication 529 (Degree of Protection by Enclosure):

Degree of protection: IP67
Test method: See the figure below.



Leave the test piece in water for 30 minutes with the top of the test piece submerged 15 cm or more below the water level and the bottom of the test piece submerged 1 m or more below the water level.

This test is to check the ingress of water into the switch enclosure after submerging the switch in water for a given time. Note that even if this test condition is met, the switch cannot be used in water.

MEMO

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