

Sealed Miniature Basic Switch

D2VW

High-quality, High-precision Miniature Switch Conforms to IP67 (Lead wire type only)

- Monoblock construction made from single-liquid epoxy resin assures high sealing capability.
- V-model internal mechanism assures high operating-position accuracy and long life.
- A wide operating temperature range of -40°C to 90°C is ideal for any operating environment.
- General-load (5 A at 250 VAC) models and Micro-load models are available.
- Conforms to EN61058-1



Ordering Information

Model Number Legend

D2VW-□□-□□
1 2 3 4

1. Ratings

- 5: 5 A
- 01: 0.1 A

2. Actuator

- None: Pin plunger
- L1A: Short hinge lever
- L1: Hinge lever
- L1B: Long hinge lever
- L3: Simulated hinge lever
- L2A: Short hinge roller lever
- L2: Hinge roller lever








3. Contact Form

- 1: SPDT
- 2: SPST-NC
- 3: SPST-NO

4. Terminal

- None: Solder/Quick-connect terminals (#187)
- Note:** HS for UL and CSA approval.
- M: Lead wire
- Note:** MS for UL and CSA approval.

List of Models

Actuator	Model		
	0.1 A	5 A	
Pin plunger 	Solder and quick-connect terminals (#187)	D2VW-01-1	D2VW-5-1
	Lead wire	D2VW-01-1M	D2VW-5-1M
Short hinge lever 	Solder and quick-connect terminals (#187)	D2VW-01L1A-1	D2VW-5L1A-1
	Lead wire	D2VW-01L1A-1M	D2VW-5L1A-1M
Hinge Lever 	Solder and quick-connect terminals (#187)	D2VW-01L1-1	D2VW-5L1-1
	Lead wire	D2VW-01L1-1M	D2VW-5L1-1M
Long hinge lever 	Solder and quick-connect terminals (#187)	D2VW-01L1B-1	D2VW-5L1B-1
	Lead wire	D2VW-01L1B-1M	D2VW-5L1B-1M
Simulated hinge lever 	Solder and quick-connect terminals (#187)	D2VW-01L3-1	D2VW-5L3-1
	Lead wire	D2VW-01L3-1M	D2VW-5L3-1M
Short hinge roller lever 	Solder and quick-connect terminals (#187)	D2VW-01L2A-1	D2VW-5L2A-1
	Lead wire	D2VW-01L2A-1M	D2VW-5L2A-1M
Hinge roller lever 	Solder and quick-connect terminals (#187)	D2VW-01L2-1	D2VW-5L2-1
	Lead wire	D2VW-01L2-1M	D2VW-5L2-1M

Note: The standard lengths of the lead wires (AV0.75f) of models incorporating them are 30 cm.

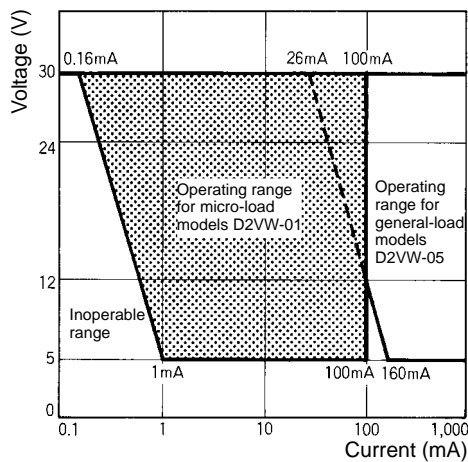
Specifications

■ Ratings

Model	Rated voltage	Non-inductive load				Inductive load	
		Resistive load		Lamp load		Inductive load	
		NC	NO	NC	NO	NC	NO
D2VW-5	125 VAC	5 A		0.5 A		4 A	
	250 VAC	5 A		0.5 A		4 A	
	30 VDC	5 A		3 A		4 A	
	125 VDC	0.4 A		0.1 A		0.4 A	
D2VW-01	125 VAC	0.1 A		---		---	
	30 VDC	0.1 A		---		---	

- Note:**
1. The above current ratings are the values of the steady-state current.
 2. Inductive load has a power factor of 0.7 min. (AC) and a time constant of 7 ms max. (DC).
 3. Lamp load has an inrush current of 10 times the steady-state current.
 4. The ratings values apply under the following test conditions:
 Ambient temperature: 20±2°C
 Ambient humidity: 65±5%
 Operating frequency: 30 operations/min

Use the Switch in the following operating range.



Model	D2VW-01	D2VW-5
Minimum applicable load	1 mA at 5 VDC	160 mA at 5 VDC

■ Characteristics

Operating speed	0.1 mm to 1 m/s (at pin plunger models)
Operating frequency	Mechanical: 300 operations/min Electrical: 60 operations/min
Insulation resistance	100 MΩ min. (at 500 VDC)
Contact resistance (initial value)	50 mΩ max. (100 mΩ max. for lead wire model)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between terminals of same polarity 1,500 VAC, 50/60 Hz for 1 min between current-carrying metal parts and ground (see note 1) 1,500 VAC, 50/60 Hz for 1 min 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)	Malfunction: 300 m/s ² {approx. 30G} max.
Life expectancy (see note 3)	Mechanical: 10,000,000 operations min. Electrical: 100,000 operations min. (1,000,000 operations min. for D2VW-01 models)
Degree of protection	IP67 for lead wire model IP50 for terminal model
Degree of protection against electric shock	Class I
Proof tracking index (PTI)	175
Ambient temperature	Operating: -40°C to 90°C (with no icing) (see note 4)
Ambient humidity	Operating: 95% max. (for 5°C to 35°C)
Weight	Approx. 7 g (terminal type pin plunger models)

Note: 1. The dielectric strength shown in the table indicates the value for models with a Separator.

- 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.
- For testing conditions, consult your OMRON sales representative.
- The operating temperature of the lead wire (AV0.75f) for the lead wire model is between -40°C to 85°C.

■ Approved Standards

UL1054 (File No. E41515)

CSA C22.2 No.55 (File No. LR21642)

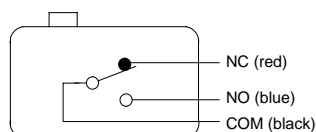
Rated voltage	D2VW-5 Models	D2VW-01 Models
125 VAC	3 A	0.1 A
250 VAC	3 A	---
30 VDC	---	0.1 A

VDE/EN61058-1 (IEC61058-1) (File No. 104068)

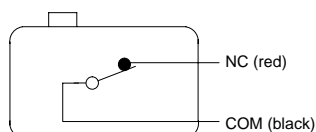
Rated voltage	D2VW-5 Models	D2VW-01 Models
125 VAC	---	0.1 A
250 VAC	3 A	---

■ Contact Form

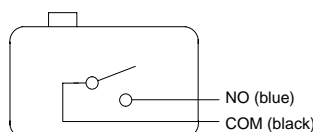
SPDT



SPST-NC



SPST-NO



Note: Colors in parentheses indicate lead wire colors.

■ Contact Specifications

Item		D2VW-5	D2VW-01
Contact	Specification	Rivet	Crossbar
	Material	Silver alloy	Gold alloy
	Gap (standard value)	0.5 mm	
Inrush current	NC	15 A max.	---
	NO	15 A max.	---

Dimensions

- Note:** 1. All units are in millimeters unless otherwise indicated.
 2. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

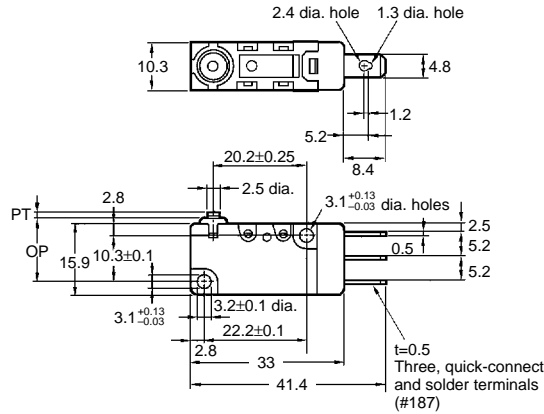
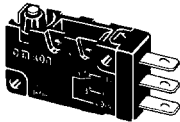
Terminal Models

The pin plunger model is shown here as a typical example. Operating characteristics and dimensions of the actuator section are the same as for the lead wire models.

Dimensions and Operating Characteristics

Pin Plunger

D2VW-01-1
 D2VW-5-1

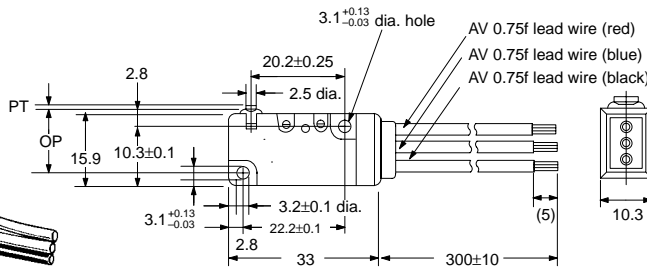
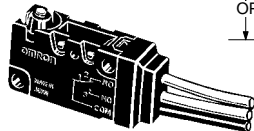


OF max.	1.96 N {200 gf}
RF min.	0.29 N {30 gf}
PT max.	1.2 mm
OT min.	1.0 mm
MD max.	0.4 mm
OP	14.7 \pm 0.4 mm

Lead Wire Models

Pin Plunger

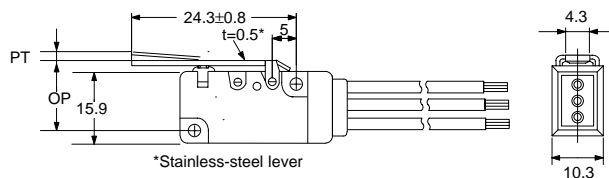
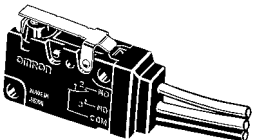
D2VW-01-1M
 D2VW-5-1M



OF max.	1.96 N {200 gf}
RF min.	0.29 N {30 gf}
PT max.	1.2 mm
OT min.	1.0 mm
MD max.	0.4 mm
OP	14.7 \pm 0.4 mm

Short Hinge Lever

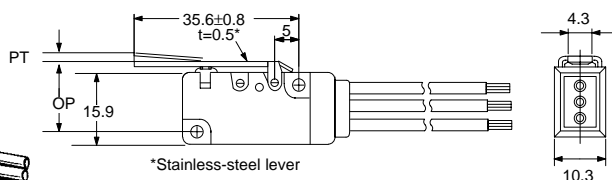
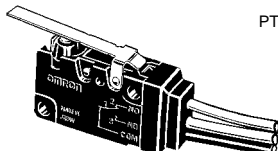
D2VW-01L1A-1M
 D2VW-5L1A-1M



OF max.	1.96 N {200 gf}
RF min.	0.20 N {20 gf}
PT max.	1.6 mm
OT min.	0.8 mm
MD max.	0.5 mm
OP	15.2 \pm 0.5 mm

Hinge Lever

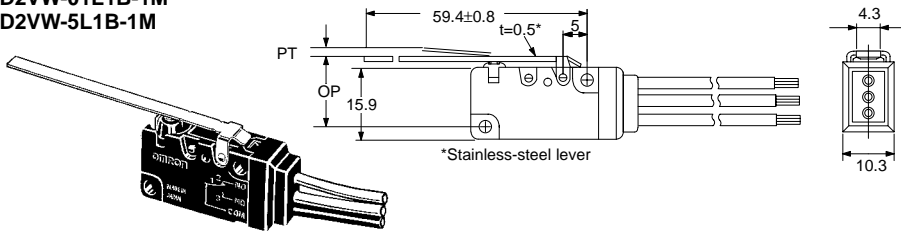
D2VW-01L1-1M
 D2VW-5L1-1M



OF max.	1.18 N {120 gf}
RF min.	0.15 N {15 gf}
PT max.	4.0 mm
OT min.	1.6 mm
MD max.	0.8 mm
OP	15.2 \pm 1.2 mm

Long Hinge Lever

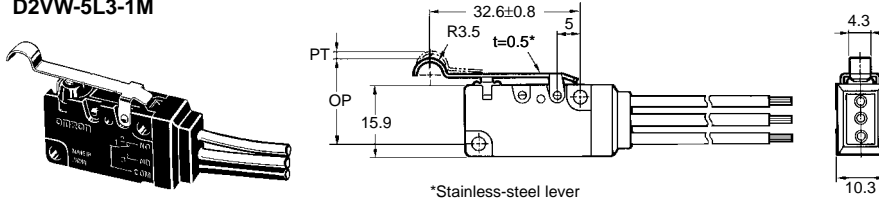
D2VW-01L1B-1M
D2VW-5L1B-1M



OF max.	0.59 N {60 gf}
RF min.	0.05 N {5 gf}
PT max.	9.0 mm
OT min.	3.2 mm
MD max.	2.0 mm
OP	15.2±2.6 mm

Simulated Hinge Lever

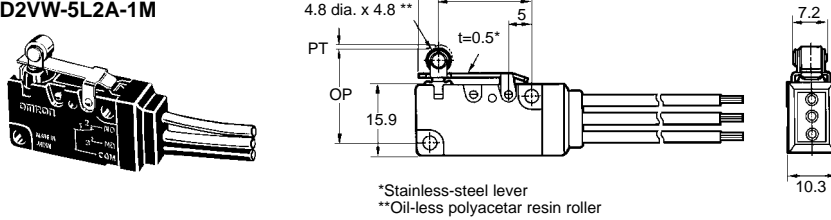
D2VW-01L3-1M
D2VW-5L3-1M



OF max.	1.18 N {120 gf}
RF min.	0.15 N {15 gf}
PT max.	4.0 mm
OT min.	1.6 mm
MD max.	0.8 mm
OP	18.7±1.2 mm

Short Hinge Roller Lever

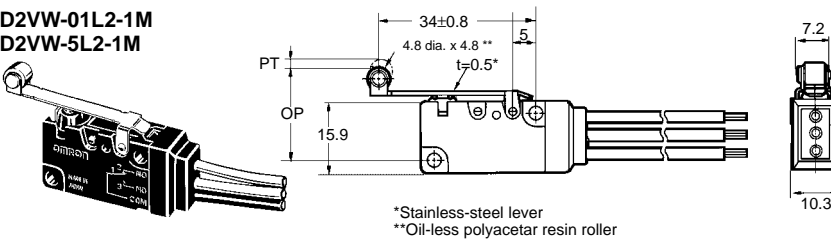
D2VW-01L2A-1M
D2VW-5L2A-1M



OF max.	2.25 N {230 gf}
RF min.	0.20 N {20 gf}
PT max.	1.6 mm
OT min.	0.8 mm
MD max.	0.5 mm
OP	20.7±0.6 mm

Hinge Roller Lever

D2VW-01L2-1M
D2VW-5L2-1M

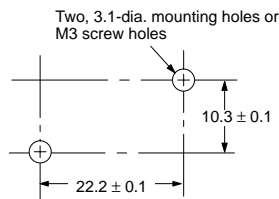


OF max.	1.18 N {120 gf}
RF min.	0.15 N {15 gf}
PT max.	4.0 mm
OT min.	1.6 mm
MD max.	0.8 mm
OP	20.7±1.2 mm

Precautions

■ Mounting Dimensions

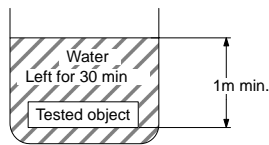
Use two M3 mounting screws with spring washers to mount the switch. Tighten the screws to a torque of 0.39 to 0.59 N • m {4 to 6 kgf • cm}.



■ Degree of Protection

The D2VW was tested under water and passed the following water-tightness tests, which however, does not mean that the D2VW can be used in the water.

IEC Publication 529, class IP67. Refer to the following illustration for the test method at OMRON.



■ Protection Against Chemicals

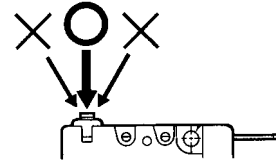
Prevent the Switch from coming into contact with oil and chemicals. Otherwise, damage to or deterioration of Switch materials may result.

■ Correct Use

Refer to pages 22 to 29 for common precautions.

Operation

With the pin plunger models, set the Switch so that the plunger can be pushed in from directly above. Since the plunger is covered with a rubber cap, applying a force from lateral directions may cause damage to the plunger or reduction in the sealing capability.



Handling

Handle the Switch carefully so as not to break the sealing rubber of the plunger.

■ Connectors

Refer to terminal connections on page 214.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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