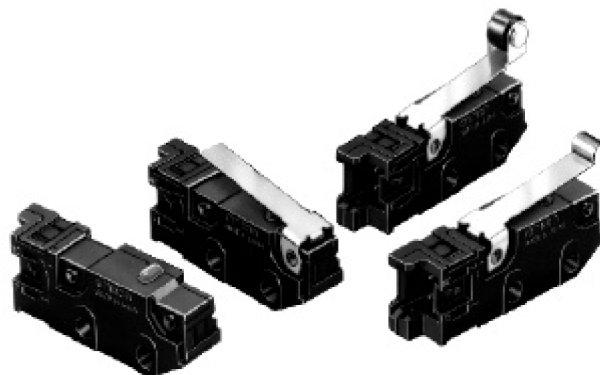




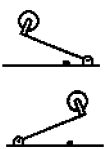
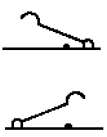
Subminiature Snap Action Switch D3M

Saves Wiring Effort, Production Steps, and Time

- Easy wiring ensured through the Quick-Connect Terminals
- External actuator mounts in either of two directions
- Horizontal layout of terminals saves mounting space
- Same internal mechanism as the OMRON SS Subminiature Snap Action Switch
- RoHS Compliant



Ordering Information

Actuator	Actuator mounting position	Contact type	Model
Pin plunger 	—	SPST-NC	D3M-01
		SPST-NO	D3M-01-3
Hinge lever 	High ratio operating position	SPST-NC	D3M-01K1
		SPST-NO	D3M-01K1-3
	Standard operating position	SPST-NC	D3M-01L1
		SPST-NO	D3M-01L1-3
Hinge roller lever 	High ratio operating position	SPST-NC	D3M-01K2
		SPST-NO	D3M-01K2-3
	Standard operating position	SPST-NC	D3M-01L2
		SPST-NO	D3M-01L2-3
Simulated roller lever 	High ratio operating position	SPST-NC	D3M-01K3
		SPST-NO	D3M-01K3-3
	Standard operating position	SPST-NC	D3M-01L3
		SPST-NO	D3M-01L3-3

■ Connectors

Refer to *Wiring* under the Precautions section of this data sheet.

Specifications

■ Characteristics

Permissible operating speed (see note 1)		0.1 mm/s to 1 m/s
Permissible operating frequency	Mechanical	400 operations/min max.
	Electrical	60 operations/min max.
Insulation resistance		100 MΩ min. at 500 VDC
Contact resistance (initial value)		100 mΩ max. including connector and 50-mm AWG28 lead wire resistance
Dielectric strength	Between terminals of the same polarity	1,000 VAC at 50/60 Hz for 1 min
	Between charged metal part and ground	1,500 VAC at 50/60 Hz for 1 min
	Between non-charged metal part and each terminal	1,500 VAC at 50/60 Hz for 1 min
Vibration resistance	Malfunction (See Note 2.)	10 to 55 Hz, 1.5-mm double amplitude for 1 ms max. with contacts closed or open.
Shock resistance	Destruction	1,000 m/s ² (approx. 100G)
	Malfunction (See Note 2.)	300 m/s ² (approx. 30G) for 1 ms max. with contacts closed or open.
Life expectancy	Mechanical	500,000 operations (at full-stroke operating speed of 10 mm/s at a frequency of 60 operations/min)
	Electrical	200,000 operations (at full-stroke operating speed of 10 mm/s at a frequency of 30 operations/min)
Enclosure rating		IP00
Degree of protection against electric shock		Class I
Proof tracking index (PTI)		175
Ambient temperature	Operating	-25°C to 85°C (with no icing)
Ambient humidity	Operating	85% max.
Weight		Approx. 2 g (pin plunger model)

- Note:** 1. The permissible operating speed applies to pin plunger models.
 2. If a lever actuator model is used, the above vibration resistance conditions will apply when the actuator is in the maximum over-travel position.

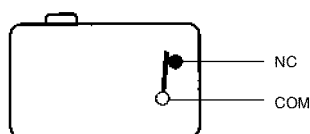
■ Operating Characteristics

Characteristics	Part number						
	D3M-01 D3M-01-3	D3M-01K1 D3M-01K1-3	D3M-01L1 D3M-01L1-3	D3M-01K2 D3M-01K2-3	D3M-01L2 D3M-01L2-3	D3M-01K3 D3M-01K3-3	D3M-01L3 D3M-01L3-3
Max. operating force (OF)	153 gf	51 gf	102 gf	51 gf	102 gf	51 gf	102 gf
Min. reset force (RF)	25 gf	6 gf	10 gf	6 gf	10 gf	6 gf	10 gf
Min. pretravel (PT)	0.6 mm	—	—	—	—	—	—
Min. overtravel (OT)	0.4 mm	1.2 mm	0.7 mm	1.2 mm	0.7 mm	1.2 mm	0.7 mm
Max. movement differential (MD)	0.1 mm	0.8 mm	0.6 mm	0.8 mm	0.6 mm	0.8 mm	0.6 mm
Max. free position (FP)	—	14.0 mm	11.5 mm	19.7 mm	17.2 mm	16.2 mm	13.6 mm
Operating position (OP)	8.4±0.3 mm	10.0±0.8 mm	9.2±0.6 mm	15.7±0.8 mm	14.9±0.6 mm	12.2±0.8 mm	11.3±0.6 mm

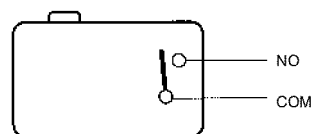
- Note:** 1. A tolerance of ±0.4 mm applies to all of the above dimensions unless otherwise specified.
 2. The operating characteristics apply when each actuator is moved in the direction indicated by the arrow and “A.”

■ Contact Form

SPST-NC



SPST-NO



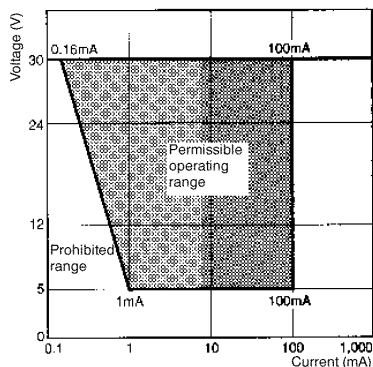
Approved Standards

EN61058-1
 UL1054
 CSA C22.2 No. 55

Ratings

Rated voltage	Resistive load
30 VDC	0.1 A

Use the D3M in the following permissible operating range.



Minimum Applicable Load (Level N)

Voltage	Resistive load
5 VDC	1 mA

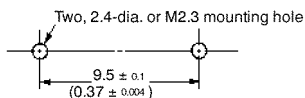
Refer to *Minimum Load* under the Precautions section of this data sheet.

Dimensions

Unit: mm (inch)

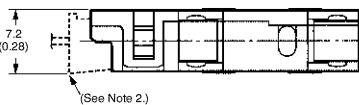
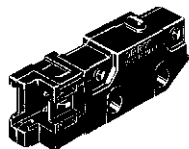
Mounting Dimensions for All Models

Use M2.3 screws, flat washers, and spring washers to mount the D3M securely. Make sure that the tightening torque applied to each screw is within a range from 2.3 to 2.7 kgf • cm.

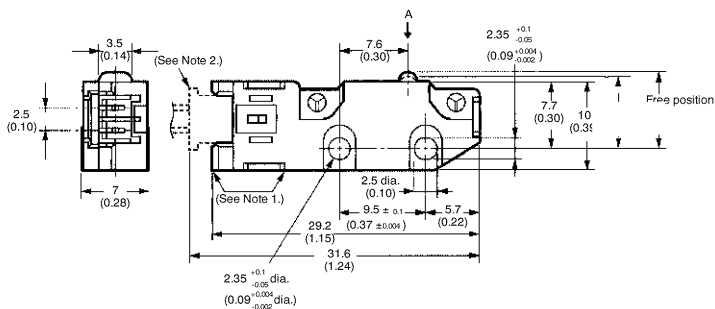


Pin Plunger

D3M-01
 D3M-01-3

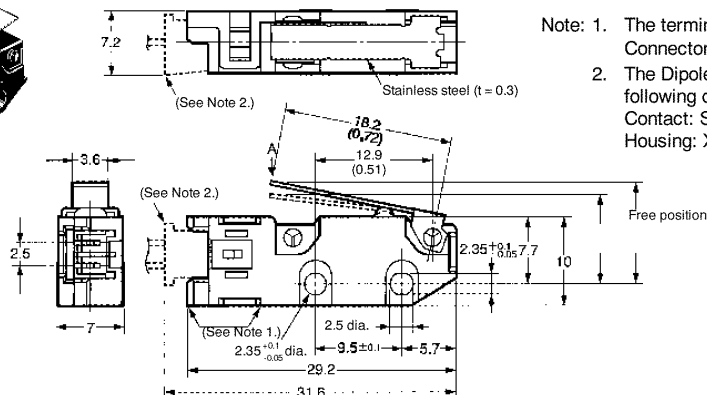
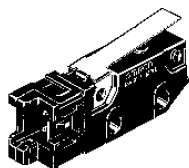


- Note: 1. The terminals connect to JST's Dipole XA Connector.
 2. The Dipole XA Connector consists of the following components.
 Contact: SAX-001T-P0.6
 Housing: XAP-02V-1(13)



■ Hinge Lever

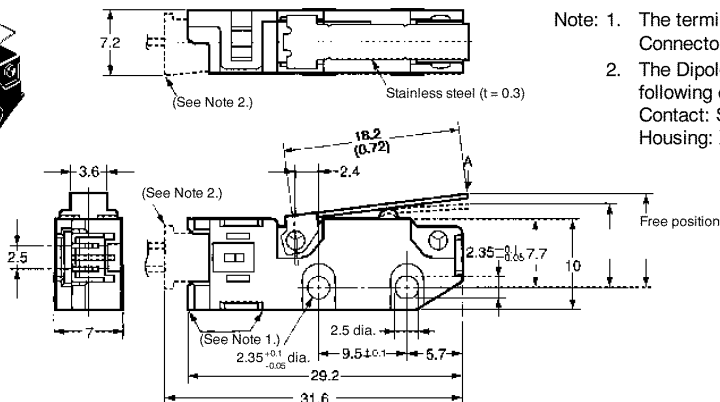
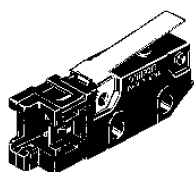
D3M-01K1
D3M-01K1-3



- Note: 1. The terminals connect to JST's Dipole XA Connector.
2. The Dipole XA Connector consists of the following components.
Contact: SAX-001T-P0.6
Housing: XAP-02V-1(13)

■ Hinge Lever

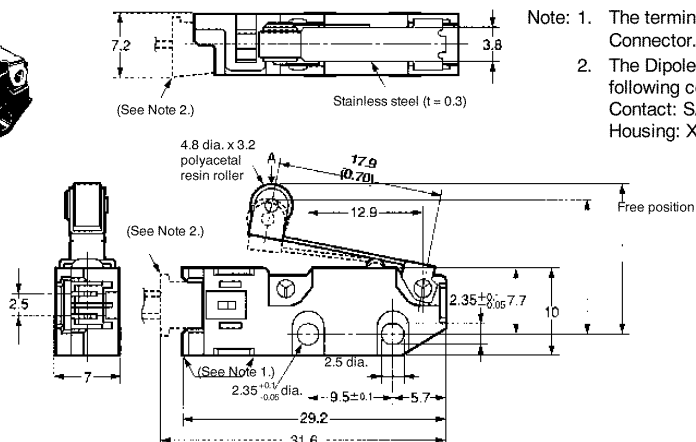
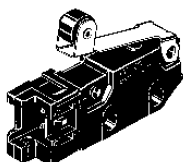
D3M-01L1
D3M-01L1-3



- Note: 1. The terminals connect to JST's Dipole X Connector.
2. The Dipole XA Connector consists of the following components.
Contact: SAX-001T-P0.6
Housing: XAP-02V-1(13)

■ Hinge Roller Lever

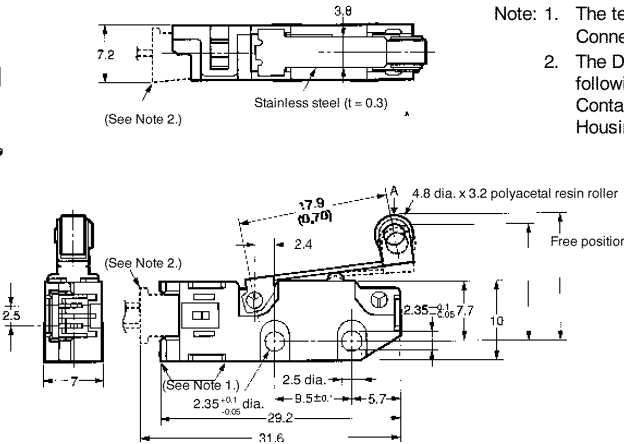
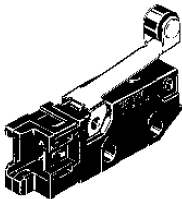
D3M-01K2
D3M-01K2-3



- Note: 1. The terminals connect to JST's Dipole XA Connector.
2. The Dipole XA Connector consists of the following components.
Contact: SAX-001T-P0.6
Housing: XAP-02V-1(13)

Hinge Roller Lever

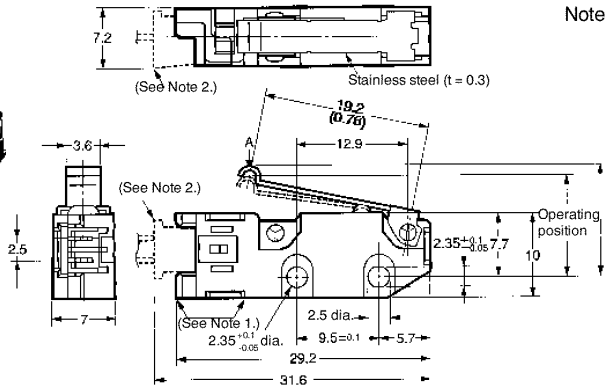
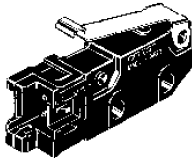
D3M-01L2
D3M-01L2-3



- Note: 1. The terminals connect to JST's Dipole XA Connector.
 2. The Dipole XA Connector consists of the following components.
 Contact: SAX-001T-P0.6
 Housing: XAP-02V-1(13)

Simulated Roller Lever

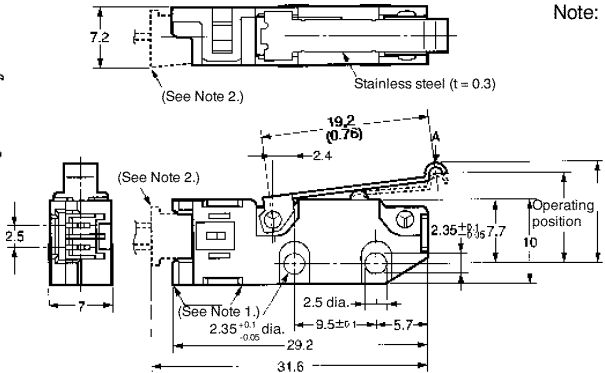
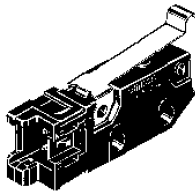
D3M-01K3
D3M-01K3-3



- Note: 1. The terminals connect to JST's Dipole XA Connector.
 2. The Dipole XA Connector consists of the following components.
 Contact: SAX-001T-P0.6
 Housing: XAP-02V-1(13)

Simulated Roller Lever

D3M-01L3
D3M-01L3-3



- Note: 1. The terminals connect to JST's Dipole XA Connector.
 2. The Dipole XA Connector consists of the following components.
 Contact: SAX-001T-P0.6
 Housing: XAP-02V-1(13)

Precautions

■ Mounting

To avoid an electric shock or a fire, be sure to turn OFF the D3M before mounting, removing, wiring, or servicing.

Make sure that the surface to which the D3M is mounted is flat. If the surface is not flat, the housing may distort, and the D3M may malfunction, or the housing may crack.

■ Operating Stroke

Make sure that the dog is separated from the actuator when the actuator is in the free position and that the actuator is pressed appropriately when the D3M is actuated. The actuator must not be pressed excessively to reach the maximum overtravel position, or the D3M may be damaged.

Make sure the actuator is pressed in the direction where the D3M is actuated.

■ Minimum Load

If the load causes inrush current, even though the D3M is in operation within the permissible operating range, the life of the D3M may be shortened. In this case, insert a contact protection circuit.

The minimum applicable load is on the basis of level N, that is, a reliable rate of 60% (λ_{60}), in accordance with JIS C5003.

This rate ($\lambda_{60} = 0.5 \times 10^{-6}/\text{operations}$) means that the D3M is expected to have operational failure at least once per 2,000,000 operations.

■ Wiring

The terminals connect to JST's Dipole XA Connector.

The Dipole XA Connector consists of the following components.

Contact: SAX-001T-P0.6

Housing: XAP-02V-1

OMRON does not sell the Dipole XA Connector. Contact the following.

J.S.T. Corporation (U.S.A.)

Tel: (1)847-473-1957

Fax: (1)847-473-0144

— **Caution** —

The voltage and current applied to the D3M must be within the rated ranges when it is turned ON, turned OFF, and in operation, or the service life of the D3M may be shortened. Also note that if inappropriate voltage and current are applied, the D3M may radiate heat and burn.

Omron Electronic Components, LLC

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- Definitions:** The words used herein are defined as follows.
 - Terms:** These terms and conditions
 - Seller:** Omron Electronic Components LLC and its subsidiaries
 - Buyer:** The buyer of Products, including any end user in section III through VI
 - Products:** Products and/or services of Seller
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- Offer/Acceptance:** These Terms are deemed part of all quotations, acknowledgments, invoices, purchase orders and other documents, whether electronic or in writing, relating to the sale of Products by Seller. Seller hereby objects to any Terms proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
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 - Delivery and shipping dates are estimates only; and
 - Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
- Claims:** Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier must be presented in detail in writing to Seller within 30 days of receipt of shipment.

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- Suitability:** IT IS THE BUYER'S SOLE RESPONSIBILITY TO ENSURE THAT ANY OMRON PRODUCT IS FIT AND SUFFICIENT FOR USE IN A MOTORIZED VEHICLE APPLICATION. BUYER SHALL BE SOLELY RESPONSIBLE FOR DETERMINING APPROPRIATENESS OF THE PARTICULAR PRODUCT WITH RESPECT TO THE BUYER'S APPLICATION INCLUDING (A) ELECTRICAL OR ELECTRONIC COMPONENTS, (B) CIRCUITS, (C) SYSTEM ASSEMBLIES, (D) END PRODUCT, (E) SYSTEM, (F) MATERIALS OR SUBSTANCES OR (G) OPERATING ENVIRONMENT. Buyer acknowledges that it alone has determined that the Products will meet their requirements of the intended use in all cases. Buyer must know and observe all prohibitions of use applicable to the Product/s.
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 - Use in consumer Products or any use in significant quantities.

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 - Motorized Vehicle Application:** USE OF ANY PRODUCT/S FOR A MOTORIZED VEHICLE APPLICATION MUST BE EXPRESSLY STATED IN THE SPECIFICATION BY SELLER.
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- Errors And Omissions:** The information on Seller's website or in other documentation has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.
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- Law:** These Terms are governed by Illinois law (without regard to conflict of laws). Federal and state courts in Illinois have exclusive jurisdiction for any dispute hereunder.
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1. **Suitability for Use.** Seller shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in Buyer's application or use of the Product. At Buyer's request, Seller will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases but the following is a non-exhaustive list of applications for which particular attention must be given:
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 - (ii) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
 - (iii) Use in consumer products or any use in significant quantities.
 - (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this product.

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4. **Change in Specifications.** Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Seller representative at any time to confirm actual specifications of purchased Product.
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Complete "Terms and Conditions of Sale" for product purchase and use are on Omron's website at <http://www.components.omron.com> – under the "About Us" tab, in the Legal Matters section.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

OMRON[®]

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