# OMRON Ultra subminiature Pushbutton Switch

### Ultra subminiature size.

- Gold-plated clip contact ensure high reliability.
- The sealed bottom prevents flux penetration.
- Washable, equivalent to IP64 (IEC-60529).
- A9PS is smaller than A9P. Height: A9P 13.3mm, A9PS 10.5mm (30% smaller than A9P)

**RoHS Compliant** 

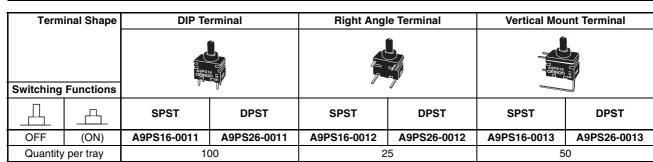
Typical Applications

Security Control Boards

Electric Power Instrumentation

**Ordering Information** 

Program Controllers



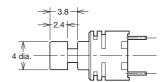
Note: (ON) shows Momentary.

#### • Caps

Available wide range og colors.

| Colors    | White     | Black    | Blue     | Green    | Yellow   | Red      |  |  |
|-----------|-----------|----------|----------|----------|----------|----------|--|--|
| Models    | A9PS-011  | A9PS-021 | A9PS-041 | A9PS-051 | A9PS-061 | A9PS-071 |  |  |
| Dimension | <-4 dia.⇒ |          |          |          |          |          |  |  |

Dimension with the cap.





# A9PS

# Specifications

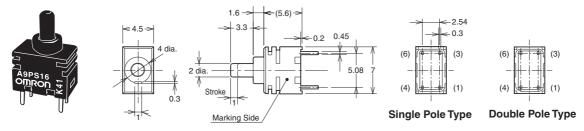
### Ratings/Characteristics

| Switching capacity            | 100 mA at 28 VAC/DC, 0.1 $\mu$ A (minimum current) at 20 mVAC/DC |  |  |  |  |
|-------------------------------|--|--|--|--|--|
| Ambient operating temperature | -20 °C to 80 °C 60% RH max. (with no icing or condensation)      |  |  |  |  |
| Ambient operating humidity    | 45 to 85% RH (5 to 35 °C)  |  |  |  |  |
| Insulation resistance         | 500 MΩ min. (Initial value)                                      |  |  |  |  |
| Contact resistance            | 80 mΩ max. (Initial value)                                       |  |  |  |  |
| Dielectric strength           | 500 VAC for 1min between terminals, between terminals and ground |  |  |  |  |
| Vibration resistance          | Malfunction: 10 to 55 Hz, 1.5-mm double amplitude                |  |  |  |  |
| Shock resistance              | Malufunction: 500 m/s <sup>2</sup> min.                          |  |  |  |  |
| Durability                    | Mechanical: 50,000 operations min.                               |  |  |  |  |
|                               | Electrical: 50,000 operations min.                               |  |  |  |  |
| Operating forcse              | 4.9 N max.   |  |  |  |  |
| Weight                        | 0.3 g  |  |  |  |  |

# Dimensions

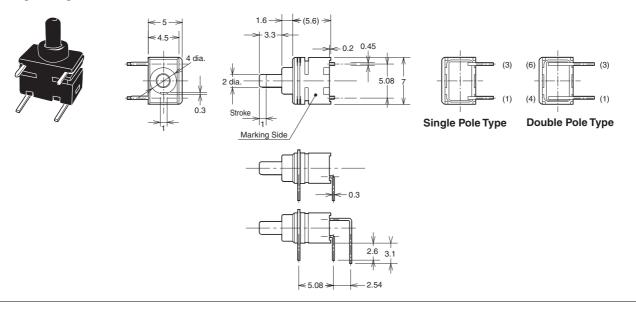
Note: All units are in millimeters unless otherwise indicated.

### • DIP Terminal Models



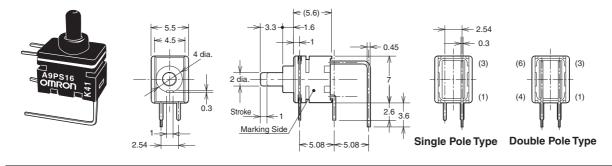
Note: NO.(4) and (6) terminals in the SPDT models are dummys to support the Switch case.

### • Right Angle Terminal Models

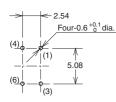


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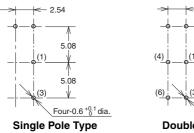
### • Vertical Mount Terminal Models

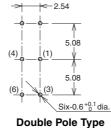


### • PCB Dimensions (Top View) **DIP Terminal Models**

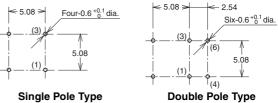


### **Vertical Mount Terminal Models**





### **Right Angle Terminal Models**



**Double Pole Type** 

# Switching Function / Internal Connections

|             | Switching | Functions |       |                |
|-------------|-----------|-----------|-------|----------------|
| SPST Models |           |           | 1(3)  | 1(3)           |
| DPST Models | OFF       | (ON)      | 1<br> | 1 (3)<br>4 (6) |

Note: (ON) shows Momentary.

# Safety Precautions

#### Cautions

Use the switch within the rated voltage and current ranges, otherwise the Switch may have a shortened life expectancy, radiate heat,or burn out. This particularly applies to the instantaneous voltages and currents when switching.

### • Hardling

Do not apply excessive operating force to the Switch. Otherwise the Switch may be damaged or deformed, and the switch mechanism may malfunction as a result. Apply an operating force not exceeding 9.8N {1,000gf}. Apply the operating load from the top of the actuator. Do not apply a load from angle or from side the actuator. Doing so may deform the Switch contact.

### Soldering

Observe the following conditions when soldering the Switch. Automatic Soldering Bath

Soldering temperature: 260 °C max. (Preheating: 100 °C 120s max.) Soldering time: 5s max.

#### Manual Soldering

Soldering temperature: 350  $^{\circ}\text{C}$  at the tip of the soldering iron. Soldering time: 3s max.

#### • Washing

Apply alcohol based solvents to clean.

Do not clean the Switch immediately after soldering. Wait for at least five minutes after soldering before cleaning.

Ultrasonic cleaning is not available dip into Switch washing agents for two minutes maximum.

### • Using Flux

Making mistakes in the type of flux or in the amount or method in which it is applied can cause flux to enter the interior of the Switch, with adverse effects on Switch performance. Assess the proper flux, conditions, and methods prior to using it.

#### RoHS Compliant

The "RoHS Compliant" designation indicates that the listed models do not contain the six hazardous substances covered by the RoHS Directive.

Reference: The following standards are used to determine compliance for the six substances.

- Lead: 1,000 ppm max.
- Mercury: 1,000 ppm max.
- Cadmium: 100 ppm max.
- Hexavalent chromium: 1,000 ppm max.
- PBB: 1,000 ppm max.
- PBDF: 1,000 ppm max.
- Environment for Storage and Use

To prevent discoloration of the terminals and other problems during storage, do not store the Switch in locations subject to the following conditions.

1. High temperature or humidity

- 2. Corrosive gases
- 3. Direct sunlight

Also, the Switch is not waterproof or splash-resistance. Do not use the Switch in locations that are subject to contact with

water. Do not subject the Switch to freezing or condensation.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. A198-E1-02 In the interest of product improvement, specifications are subject to change without notice.

### **OMRON** Corporation

**OMRON SWITCH & DEVICES Corporation** 

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