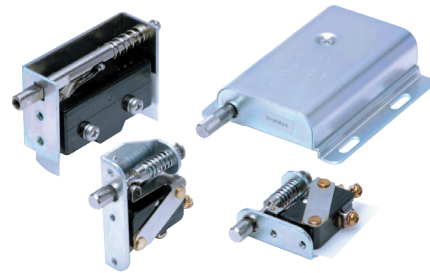


## Door Switches with Built-in Basic Switches for Long Life

- Installation in electrical facilities, equipment doors, and other openings helps ensure safety by reliably preventing accidents.
- A Basic Switch is built in to provide a large switching capacity and long service life.



Be sure to read *Safety Precautions* on page 3 and *Safety Precautions for All Basic Switches*.

### Ordering Information

| Operation      |                | Built-in Switch | Model          |
|----------------|----------------|-----------------|----------------|
| Push operation | Pull operation |                 |                |
| Self-reset     | Hold           | Z-15GL42-B      | <b>1ZAP2</b>   |
|                |                | V-15-1B6        | <b>1VAP2-1</b> |
|                |                | V-15-3B6        | <b>1VAP2-2</b> |
|                |                |                 | <b>1VAP2-6</b> |

### Contact Form

| Model          | Name                   | Contact form |
|----------------|------------------------|--------------|
| <b>1ZAP2</b>   | Double-throw (SPDT)    |              |
| <b>1VAP2-1</b> |                        |              |
| <b>1VAP2-2</b> |                        |              |
| <b>1VAP2-6</b> | Single-throw (SPST-NO) |              |

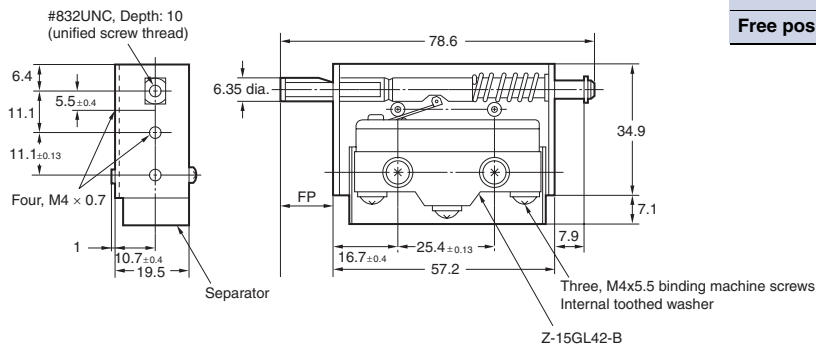
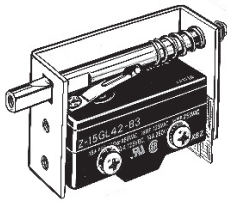
### Specifications

| Item                                   | Model             | 1ZAP2                                       | 1VAP2-□                        |
|--|-------------------|---|--------------------------------|
| <b>Built-in Switch</b>                 |                   | Z-15GL42-B                                  | V-15-1B6/V-15-3B6              |
| <b>Rating</b>                          |                   | 15 A, 125 VAC (resistive load)              | 15 A, 125 VAC (resistive load) |
|  |                   | 15 A, 250 V (resistive load)                | 15 A, 250 V (resistive load)   |
| <b>Ambient operating temperature</b>   |                   | -25 to 80°C (with no icing or condensation) |                                |
| <b>Ambient operating humidity</b>      |                   | 35% to 85%RH                                |                                |
| <b>Durability</b>                      | <b>Mechanical</b> | 100,000 operations min.                     | 100,000 operations min.        |
|  | <b>Electrical</b> | 100,000 operations min.                     | 25,000 operations min.         |
| <b>Degree of protection</b>            |                   | IP00  |                                |
| <b>Electric shock protection class</b> |                   | Class II                                    |                                |
| <b>PTI (proof tracking index)</b>      |                   | 175   |                                |
| <b>Pollution degree</b>                |                   | 3 (IEC 947-5-1)                             |                                |

Note: 1. The 1VAP2-6 is also available with SPDT contacts. The model number is 1VAP2-6 (V-15-1B6).  
 2. The built-in switch cannot be replaced.

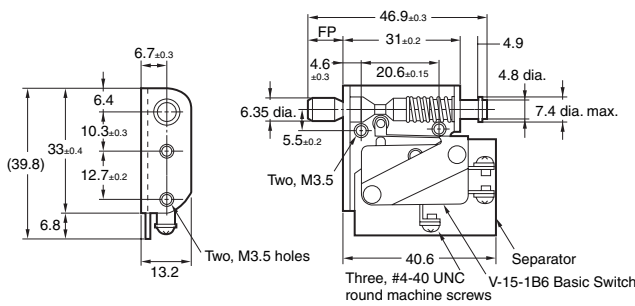
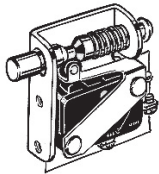
## Dimensions

### 1ZAP2



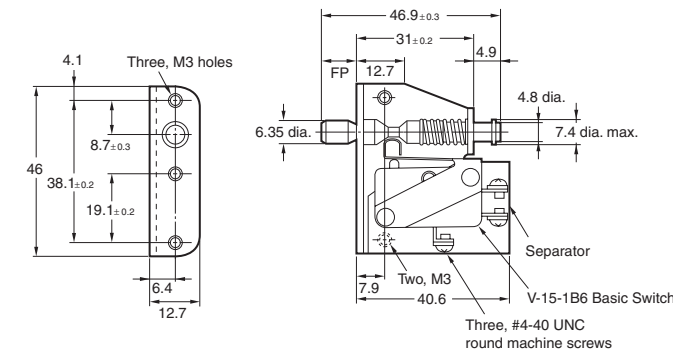
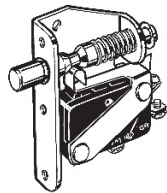
| Operating Characteristics | Model   | 1ZAP2   |
|---------------------------|---------|---------|
| Operating force           | OF max. | 21.6 N  |
| Pretravel                 | PT max. | 4.7 mm  |
| Overtravel                | OT min. | 3.2 mm  |
| Free position             | FP max. | 11.1 mm |

### 1VAP2-1



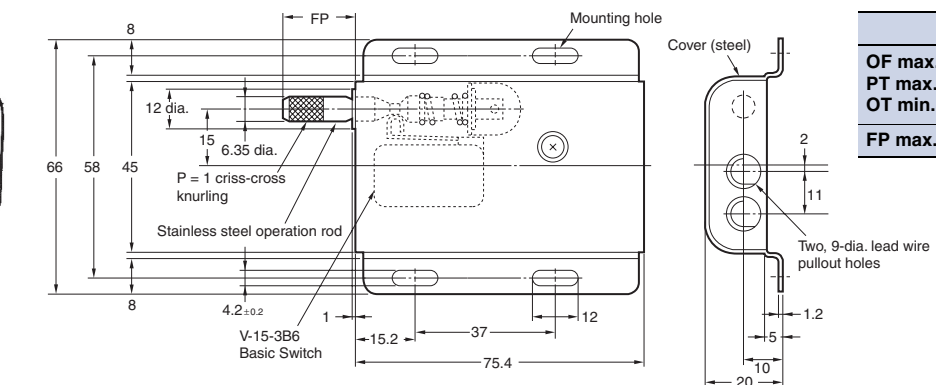
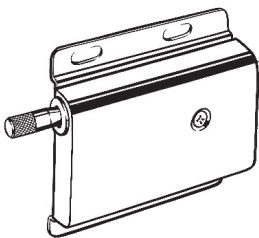
|         | 1VAP2-1 |
|---------|---------|
| OF max. | 17.6 N  |
| PT max. | 4.4 mm  |
| OT min. | 2 mm    |
| FP max. | 9.5 mm  |

### 1VAP2-2



|         | 1VAP2-2 |
|---------|---------|
| OF max. | 17.6 N  |
| PT max. | 4.4 mm  |
| OT min. | 2 mm    |
| FP max. | 9.5 mm  |

### 1VAP2-6



|         | 1VAP2-6 |
|---------|---------|
| OF max. | 14.7 N  |
| PT max. | 6 mm    |
| OT min. | 3 mm    |
| FP max. | 21 mm   |

Note: 1. The standard 1VAP2-6 has SPST-NO contacts.

2. The 1VAP2-6 is also available with SPDT contacts. If SPDT contacts are required, order using the following model number. (The built-in switch is the V-15-1B6.)  
1VAP2-6 (V-15-1B6)

## Safety Precautions

Refer to *Safety Precautions for All Basic Switches*.

### Precautions for Correct Use

#### Mounting Holes

| Mounting direction | 1ZAP2   | 1VAP2-1   | 1VAP2-2  | 1VAP2-6   |
|--------------------|---|---|--|---|
| Front mounting     | <p>Two, 4.5<sup>+0.3</sup>/<sub>0</sub> dia. holes<br/>25.4<sub>±0.3</sub></p>  | <p>Two, 4<sup>+0.3</sup>/<sub>0</sub> dia. holes<br/>20.6<sub>±0.3</sub></p>  | <p>Two, 3.5<sup>+0.3</sup>/<sub>0</sub> dia. holes<br/>38.1<sub>±0.3</sub></p>   | <p>Four, M4 or 4.5<sup>+0.3</sup>/<sub>0</sub> dia. holes<br/>37<sub>±0.3</sub><br/>58<sub>±0.3</sub></p> |
| Side mounting      | <p>10 dia. min.<br/>11.1<sub>±0.3</sub><br/>11.1<sub>±0.3</sub><br/>Two, 4.5<sup>+0.3</sup>/<sub>0</sub> dia. holes</p> | <p>10 dia. min.<br/>10.3<sub>±0.3</sub><br/>12.7<sub>±0.3</sub><br/>Two, 4<sup>+0.3</sup>/<sub>0</sub> dia. holes</p> | <p>10 dia. min.<br/>8.7<sub>±0.3</sub><br/>38.1<sub>±0.3</sub><br/>19.1<sub>±0.3</sub><br/>Two, 3.5<sup>+0.3</sup>/<sub>0</sub> dia. holes</p> | (Side mounting is not possible)   |

#### Wiring

Tighten the terminal screws to the torque given in the following table.

| 1ZAP2            | 1VAP2            |
|------------------|------------------|
| 0.78 to 1.78 N·m | 0.39 to 0.49 N·m |

#### Operating Environment

- The Switch does not have a water-resistant structure. Take measures to protect the Switch if it is to be used in locations subject to splashing or spraying water or other liquids.
- Do not use the Switch where it is continuously subjected to vibration or shock. Doing so will result in contact failure, malfunction, or a decrease in service life caused by abrasive powder that is generated from the internal parts. Subjecting the Switch to excessive vibration or shock may cause the contacts to malfunction, stick, or become damaged. Make sure to install the Switch in locations free of vibration or shock or in a direction where resonance will not occur.
- Do not use the Switch in locations subject to corrosive gas, such as sulfuric gas (H<sub>2</sub>S or SO<sub>2</sub>), ammonium gas (NH<sub>3</sub>), nitric gas (HNO<sub>3</sub>), or chlorine gas (Cl<sub>2</sub>), or high temperature and humidity. Doing so will result in damage due to contact failure or corrosion.
- If the Switch is used in locations with silicone gas, arc energy may cause silicon dioxide (SiO<sub>2</sub>) to build up on the contacts and contact failure may result. If there is silicone oil, silicone sealant, or wire covered with silicone close to the Switch, attach a contact protective circuit to suppress the arcing of the Switch or eliminate the source of silicone gas.
- Use the switch within the specified range for operating temperature and humidity. Using the Switch in high temperatures will cause the operating characteristics to deviate. Rapid changes in temperature will also cause the operating characteristics to deviate. It is recommended to install the Switch as far as possible from heat sources so that the temperature of the Switch is not affected.

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