Pressure Switch/Reed Switch Type

- 100 V AC/DC specifications
- Set pressure range 0.1 to 0.4 MPa
- Service life: 5 million cycles

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>IS10-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air/Inert gas</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.0 MPa</td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>0.7 MPa</td>
</tr>
<tr>
<td>Set pressure range</td>
<td>0.1 to 0.4 MPa (Option: 0.1 to 0.6 MPa)</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>−5 to 60°C (No freezing)</td>
</tr>
<tr>
<td>Contacts</td>
<td>1a</td>
</tr>
<tr>
<td>Error of scale</td>
<td>±0.05 MPa or less</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>Fixed 0.08 MPa or less</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.05 MPa or less</td>
</tr>
<tr>
<td>Wiring specifications</td>
<td>Grommet, Lead wire length: 0.5 m (Option: 3 m, 5 m)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Equivalent to IP40</td>
</tr>
<tr>
<td>Port size</td>
<td>1/8</td>
</tr>
<tr>
<td>Weight</td>
<td>62 g</td>
</tr>
</tbody>
</table>

Switch Characteristics

- Max. contact capacity: AC 2 A, DC 2 W
- Voltage AC/DC: 24 V or less, 48 V, 100 V
- Max. operating current and range: 50 mA, 40 mA, 20 mA

Electrical Circuit

Up to 100 V AC/DC

Set Pressure Range

How to Order

Example) IS10-N01-6PZ

Semi-standard: Select one option each in a through c. Place them in alphanumerical order.

Note 1: Set pressure range of 6P(L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).
Note 2: This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)
**Series IS10**

**Dimensions/Construction**

**Wiring**

**Warning**

1. Connect load before connecting with power source. The switch will break instantly if no load is connected.

2. Make the wiring length as short as possible. When the load which is operated by the pressure switch is an inductive load, or the lead wire is 5 m or longer, use the contact protection box shown in the table below. Otherwise, damage to the switch can result.

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Voltage</th>
<th>Load wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-P11</td>
<td>100 V AC</td>
<td>Switch side: 0.5 m</td>
</tr>
<tr>
<td>CD-P12</td>
<td>24 V DC</td>
<td>Load side: 0.5 m</td>
</tr>
</tbody>
</table>

   - Internal circuit of contact protection box

   - Surge absorber
   - Choke coil
   - Brown lead wire
   - Blue lead wire
   - Capacitor
   - (+) Brown lead wire
   - (-) Blue lead wire

   - How to connect contact protection box

   - Connect the lead wires from the body and the contact protective box side indicated “SWITCH.” Make the lead wire as short as possible, within 1 m.

3. Dimensions of lead wire
   - Enclosure: ø 3.4
   - Insulator: ø 1.1
   - Conductor: ø 0.64

   For details, refer to the operation manual.

**Mounting**

**Warning**

1. When handling the product, hold the body and do not apply tensile stress to the power supply cable. Otherwise, damage may occur to the product.

2. Avoid repeatedly bending or stretching the lead wire. Wiring which applies repeated bending and tensile stress to the lead wire can break the circuit. If the lead wire is damaged, causing operation failure, replace the product with a new one.

3. Do not drop or bump the product when handling the product.

4. Apply a wrench to the bottom of the product when screwing.

   Turning it by applying a wrench on the top of the main body may cause damage to the product. Recommended tightening torque: 7 to 9 Nm

5. Mounting direction is available in either horizontal or perpendicular.

**Pressure Source**

**Warning**

1. Operating fluids are either air or inert gas exclusively. Never use other fluids. Never use in an environment where flammable fluid or gas is used. Since this is not an explosion-proof construction, it may lead to an explosive disaster.

2. Not applicable to corrosive gas and liquid. Otherwise, damage to the body or liquid leakage can result.

3. Avoid use in vacuum applications. Switch may be imploded.

4. This product (Series IS10) uses a reed switch. If the chattering of the output signal is a problem, choose a solid state type pressure switch or adjust by PLC.

**Pressure Setting**

**Warning**

1. Set within the display pressure range of the scale plate.

**Caution**

1. The pressure can be adjusted by rotating the adjustment screw. The red indicator goes up and down according to the adjustment. Rotate the screw clockwise for high pressure.

2. Use a screwdriver of a size suitable for the groove of the adjustment screw.

3. Scale of switching set display is the set value at the pressure drop.

4. The ON signal is output through the pressure set on the scale plate, to which the hysteresis is added for detecting the ON-pressure signal.

5. The pressure displayed on the scale plate is a guideline only. Measure the accurate pressure with the pressure gauge.

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**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>ZDC</td>
</tr>
<tr>
<td>2</td>
<td>Switch assembly</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>Shield plate</td>
<td>Steel sheet</td>
</tr>
<tr>
<td>4</td>
<td>Cover</td>
<td>Steel sheet</td>
</tr>
<tr>
<td>5</td>
<td>Adjusting screw</td>
<td>Brass</td>
</tr>
<tr>
<td>6</td>
<td>Hexagon nut</td>
<td>Brass</td>
</tr>
<tr>
<td>7</td>
<td>Indicator</td>
<td>PBT</td>
</tr>
<tr>
<td>8</td>
<td>Spring</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>9</td>
<td>Magnet</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>Piston</td>
<td>POM</td>
</tr>
<tr>
<td>11</td>
<td>Seal piston</td>
<td>NBR</td>
</tr>
<tr>
<td>12</td>
<td>Scale plate</td>
<td>PC</td>
</tr>
</tbody>
</table>
Pressure Switch for Connecting to Modular/F.R.L. Units

### Pressure Switch with Spacer

**IS10M - 30 -**

Semi-standard: Select one option each in a through c. Place them in alphanumerical order. Example) IS10M-30L3C

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Body size</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Set pressure range</td>
<td>0.1 to 0.4 MPa</td>
</tr>
<tr>
<td>b</td>
<td>Lead wire length</td>
<td>0.5 m</td>
</tr>
<tr>
<td>c</td>
<td>Scale plate</td>
<td>MPa</td>
</tr>
</tbody>
</table>

Note 1) Set pressure range of 6P(L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).
Note 2) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

### Pressure Switch with Piping Adapter

**IS10E - 30 - 03 -**

Semi-standard: Select one option each in a through d. Place them in alphanumerical order. Example) IS10E-30N03-6PRZ

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Body size</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Set pressure range</td>
<td>0.1 to 0.4 MPa</td>
</tr>
<tr>
<td>b</td>
<td>Lead wire length</td>
<td>0.5 m</td>
</tr>
<tr>
<td>c</td>
<td>Scale plate</td>
<td>MPa</td>
</tr>
<tr>
<td>d</td>
<td>Mounting position</td>
<td>Right</td>
</tr>
</tbody>
</table>

Note 1) For thread type: NPT only. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)
Note 2) Set pressure range of 6P(L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).

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For details, refer to "Modular/F.R.L. Units, Series AC" in Best Pneumatics No.5.
These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)\(^1\), and other safety regulations.

\(^1\) ISO 4414: Pneumatic fluid power – General rules relating to systems.  
ISO 4413: Hydraulic fluid power – General rules relating to systems.  
IEC 60204-1: Safety of machinery – Electrical equipment of machines.  
(Part 1: General requirements)  
ISO 10218-1: Manipulating industrial robots - Safety. etc.

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### Safety Instructions

**Caution:** Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

**Warning:** Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

**Danger:** Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

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### Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications. Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possible equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment. The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our machinery and equipment should only be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.  
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been taken.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.  
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for assembly, operation and maintenance of machines or equipment including our machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The product herein described is basically provided for peaceful use in manufacturing industries. These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)\(^1\), and other safety regulations.

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### Caution

1. The product is provided for use in manufacturing industries. The product herein described is basically provided for peaceful use in manufacturing industries. If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch.

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### Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.\(^2\)
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
4. Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.

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### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

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### Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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