2-Color Display Digital Pressure Switch
Series ISE70/75/75H

- NPN/PNP open collector 2 outputs added.
- Cut-to-zero display function added.

**Rated Pressure**

<table>
<thead>
<tr>
<th>For General Fluids</th>
<th>10 MPa</th>
<th>15 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISE75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For Air</td>
<td>1 MPa</td>
<td></td>
</tr>
<tr>
<td>ISE70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 2-color digital display
- IP67

- Selectable from four patterns

- Easily identifiable abnormal readings
  - 10 mm character height

- M12 Connector
  - Lead wire with M12 connector (5 m)
  - Straight and right-angled connectors

- With Bracket
  - User-selectable mounting orientation

- Withstand pressure: Rated pressure x 3
- Model with initial display settings of psi is also available as standard.
- Port size
  - Rc1/4, NPT1/4, G1/4 (ISO1179)

**Functions**

- Anti-chattering
- Zero-out
- Display calibration
- Key lock
- Unit display switching

**Metal Body Type**
(Die-cast aluminum)

For Air

<table>
<thead>
<tr>
<th>For General Fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISE70 (1 MPa)</td>
</tr>
<tr>
<td>ISE75 (10 MPa)</td>
</tr>
<tr>
<td>ISE75H (15 MPa)</td>
</tr>
</tbody>
</table>

**For Air**

- Cut-to-zero display function added.

Credit: Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
## How to Order

### Optional Part No.

When optional parts are required separately, use the following part numbers to place an order.

<table>
<thead>
<tr>
<th>Option</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket</td>
<td>ZS-31-A</td>
<td>Bracket B and the bracket assembly make up one set. Note: Mounting screws are not included.</td>
</tr>
<tr>
<td>Lead wire with M12 connector, straight</td>
<td>ZS-31-B</td>
<td>Lead wire length: 5 m</td>
</tr>
<tr>
<td>Lead wire with M12 connector, right-angled</td>
<td>ZS-31-C</td>
<td>Lead wire length: 5 m</td>
</tr>
</tbody>
</table>
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>ISE70</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated pressure range</strong></td>
<td>0 to 1 MPa</td>
</tr>
<tr>
<td><strong>Set pressure range</strong></td>
<td>–0.1 to 1 MPa</td>
</tr>
<tr>
<td><strong>Withstand pressure</strong></td>
<td>1.5 MPa</td>
</tr>
<tr>
<td><strong>Set pressure resolution</strong></td>
<td>0.01 MPa</td>
</tr>
<tr>
<td><strong>Applicable fluid</strong></td>
<td>Air, Non-corrosive gas, Non-flammable gas</td>
</tr>
<tr>
<td><strong>Power supply voltage</strong></td>
<td>12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with power supply polarity protection)</td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
<td>55 mA or less (at no load)</td>
</tr>
<tr>
<td><strong>Switch output</strong></td>
<td>Output -27: 2 settings; NPN open collector 2 outputs (Pin nos.: 2, 4)&lt;br&gt;Output -42: Fixed setting; NPN open collector 1 output (Pin no.: 4) + PNP open collector 1 output (Pin no.: 2) <strong>Note 1</strong>&lt;br&gt;Output -65: PNP open collector 1 output (Pin no.: 4)&lt;br&gt;Output -67: 2 settings; PNP open collector 2 outputs (Pin nos.: 2, 4)</td>
</tr>
<tr>
<td><strong>Max. load current</strong></td>
<td>80 mA</td>
</tr>
<tr>
<td><strong>Max. applied voltage</strong></td>
<td>30 V (at NPN output)</td>
</tr>
<tr>
<td><strong>Residual voltage</strong></td>
<td>1 V or less (with load current of 80 mA)</td>
</tr>
<tr>
<td><strong>Response time</strong></td>
<td>2.5 ms (with anti-chattering function: 20 ms, 160 ms, 1000 ms, 2000 ms)</td>
</tr>
<tr>
<td><strong>Short circuit protection</strong></td>
<td>With short circuit protection</td>
</tr>
<tr>
<td><strong>Repeatability</strong></td>
<td>±0.5% F.S. or less</td>
</tr>
<tr>
<td><strong>Hysteresis</strong></td>
<td>Variable (0 or above)</td>
</tr>
<tr>
<td><strong>Window comparator mode</strong></td>
<td>OUT1: Light up when output is turned ON; (Green)&lt;br&gt;OUT2: Light up when output is turned ON; (Red: for output -27, -67)</td>
</tr>
<tr>
<td><strong>Indication light</strong></td>
<td>Anti-chattering function, Unit display switching function, Zero-out function, Key lock function</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td>3-digit, 7-segment indicator, 2-color display (Red/Green) can be interlocked with the switch output, Sampling cycle: 5 times/1 s</td>
</tr>
<tr>
<td><strong>Environmental resistance</strong></td>
<td>IP67 <strong>Note 2</strong></td>
</tr>
<tr>
<td><strong>Fluid temperature range</strong></td>
<td>0 to 50°C (with no freezing or condensation)</td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>Operating: 0 to 50°C, Stored: –10 to 60°C (with no freezing or condensation)</td>
</tr>
<tr>
<td><strong>Operating humidity range</strong></td>
<td>Operating and stored: 35 to 85%RH (with no condensation)</td>
</tr>
<tr>
<td><strong>Withstand voltage</strong></td>
<td>1000 VAC for 1 min. between live parts and case</td>
</tr>
<tr>
<td><strong>Insulation resistance</strong></td>
<td>50 MΩ or more between live parts and case (at 500 VDC Mega)</td>
</tr>
<tr>
<td><strong>Vibration resistance</strong></td>
<td>10 to 500 Hz, 1.5 mm or 98 m/s² amplitude in X, Y, Z directions for 2 hours each (De-energized)</td>
</tr>
<tr>
<td><strong>Impact resistance</strong></td>
<td>980 m/s² in X, Y, Z directions 3 times each (De-energized)</td>
</tr>
<tr>
<td><strong>Temperature characteristics</strong></td>
<td>±2%F.S. or less</td>
</tr>
<tr>
<td><strong>Standards</strong></td>
<td>CE Marking, UL/CSA (UL508) compliance</td>
</tr>
<tr>
<td><strong>Wetted parts material</strong></td>
<td>Fitting: C3604 (electroless nickel plated), Sensor port: PBT, Sensor pressure receiving area: Silicon, O-ring: NBR</td>
</tr>
<tr>
<td><strong>Port size</strong></td>
<td>02: Rc1/4, N02: NPT1/4, F02: G1/4 (ISO1179) <strong>Note 2</strong></td>
</tr>
<tr>
<td><strong>Lead wire</strong></td>
<td>Oilproof cable with M12 4-pin pre-wired connector, 4 cores, ø4, 5 m, Conductor O.D.: 0.72 mm, Insulator O.D.: 1.14 mm</td>
</tr>
<tr>
<td><strong>Mass (Weight)</strong></td>
<td>190 g (excluding the lead wire with M12 4-pin pre-wired connector)</td>
</tr>
</tbody>
</table>

**Note 1:** The NPN and PNP outputs function for a single set point.<br>**Note 2:** An FKM gasket is used for the product case seal. Refer to the back of page 727 for details.<br>**Note 3:** G1/4: Applicable to ISO1179-1

See the operating manual for information on how to set and on handling precautions. (Refer to SMC website.)

---

**2-Color Display Digital Pressure Switch**

**For Air**  
**Series ISE70**

---

**ZSE**

**ZSP**

**PS**

**ISA**

**PSE**

**IS**

**ISG**

**ZSM**

---

Courtesy of Steven Engineering, Inc. -230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
How to Order

10 MPa
ISE75
02
43
M

15 MPa
ISE75H
02
43
M

Option 1
Bracket
ZS-31-A
Lead wire with M12 connector, straight
Lead wire length: 5 m

Option 2
With bracket
A

Display unit
Nil
With unit display switching function
M
Fixed SI unit (Note)
P
Pressure unit: psi (Initial value)

Note) Fixed unit: MPa

Optional Part No.
When optional parts are required separately, use the following part numbers to place an order.

<table>
<thead>
<tr>
<th>Option</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket</td>
<td>ZS-31-A</td>
<td>Bracket B and the bracket assembly make up one set.</td>
</tr>
<tr>
<td>Lead wire with M12 connector, straight</td>
<td>ZS-31-B</td>
<td>Lead wire length: 5 m</td>
</tr>
<tr>
<td>Lead wire with M12 connector, right-angled</td>
<td>ZS-31-C</td>
<td>Lead wire length: 5 m</td>
</tr>
</tbody>
</table>

Note) Fixed unit: MPa
## Specifications

### 2-Color Display Digital Pressure Switch

**For General Fluids**

**Series ISE75/75H**

![Image](image_url)

### Model

<table>
<thead>
<tr>
<th></th>
<th>ISE75</th>
<th>ISE75H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated pressure range</strong></td>
<td>0 to 10 MPa</td>
<td>0 to 15 MPa</td>
</tr>
<tr>
<td><strong>Set pressure range</strong></td>
<td>0.4 to 10 MPa</td>
<td>0.5 to 15 MPa</td>
</tr>
<tr>
<td><strong>Withstand pressure</strong></td>
<td>30 MPa</td>
<td>45 MPa</td>
</tr>
<tr>
<td><strong>Set pressure resolution</strong></td>
<td>0.1 MPa</td>
<td></td>
</tr>
<tr>
<td><strong>Applicable fluid</strong></td>
<td>Fluid or gas that will not corrode stainless steel 304, 430 and 630</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply voltage</strong></td>
<td>12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with power supply polarity protection)</td>
<td></td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
<td>55 mA or less (at no load)</td>
<td>80 mA</td>
</tr>
<tr>
<td><strong>Switch output</strong></td>
<td>Output -27: 2 settings; NPN open collector 2 outputs (Pin no.: 2, 4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output -43: Fixed setting; NPN open collector 1 output (Pin no.: 4) + PNP open collector 1 output (Pin no.: 2) Note 1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output -65: PNP open collector 1 output (Pin no.: 4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output -67: 2 settings; PNP open collector 2 outputs (Pin no.: 2, 4)</td>
<td></td>
</tr>
</tbody>
</table>

#### Max. load current
80 mA

#### Max. applied voltage
30 V (at NPN output)

#### Residual voltage
1 V or less (with load current of 80 mA)

#### Response time
2.5 ms (with anti-chattering function: 20 ms, 160 ms, 1000 ms, 2000 ms)

#### Short circuit protection
With short circuit protection

#### Repeatability
±0.5% F. S. or less

#### Hysteresis mode
Variable (0 or above)

#### Display
3-digit, 7-segment indicator, 2-color display (Red/Green) can be interlocked with the switch output, Sampling cycle: 5 times/1 s

#### Display accuracy
±2% F.S. ±1 digit or less (at 25±3°C)

#### Indication light
OUT1: Light up when output is turned ON; (Green)
OUT2: Light up when output is turned ON; (Red; for output -27, -67)

#### Functions
Anti-chattering function, Unit display switching function, Zero-out function, Key lock function

#### Environmental resistance

<table>
<thead>
<tr>
<th></th>
<th>ISE75</th>
<th>ISE75H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enclosure</strong></td>
<td>IP67 Note 2)</td>
<td></td>
</tr>
<tr>
<td><strong>Fluid temperature range</strong></td>
<td>−5 to 80°C (with no freezing or condensation)</td>
<td></td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>Operating: −5 to 50°C, Stored: −10 to 60°C (with no freezing or condensation)</td>
<td></td>
</tr>
<tr>
<td><strong>Operating humidity range</strong></td>
<td>Operating and stored: 35 to 85%RH (with no condensation)</td>
<td></td>
</tr>
<tr>
<td><strong>Withstand voltage</strong></td>
<td>250 VAC for 1 min. between live parts and case</td>
<td></td>
</tr>
<tr>
<td><strong>Insulation resistance</strong></td>
<td>50 MΩ or more between live parts and case (at 50 VDC Mega)</td>
<td></td>
</tr>
<tr>
<td><strong>Vibration resistance</strong></td>
<td>10 to 500 Hz, 1.5 mm or 98 m/s² amplitude in X, Y, Z directions for 2 hours each (De-energized)</td>
<td></td>
</tr>
<tr>
<td><strong>Impact resistance</strong></td>
<td>980 m/s² in X, Y, Z directions 3 times each (De-energized)</td>
<td></td>
</tr>
</tbody>
</table>

#### Temperature characteristics
(Based on 25°C within operating temperature range)

<table>
<thead>
<tr>
<th></th>
<th>ISE75</th>
<th>ISE75H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>±3% F.S. or less</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Standards
CE Marking, UL/C CSA (UL508) compliance

#### Wetted parts material
Pressure receiving area: Stainless steel 630, Fitting: Stainless steel 304 (port size Rc1/4)
<table>
<thead>
<tr>
<th></th>
<th>ISE75</th>
<th>ISE75H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Port size</strong></td>
<td>02: Rc1/4, N02: NPT1/4, F02: G1/4 (ISO1179) Note 3)</td>
<td></td>
</tr>
</tbody>
</table>

#### Lead wire
Oilproof cable with M12 4-pin pre-wired connector, 4 cores, ø4, 5 m, Conductor Ø.D.: 0.72 mm, Insulator Ø.D.: 1.14 mm

#### Mass (Weight)
228 g (port size Rc1/4), 210 g (port size NPT1/4, G1/4) (excluding the lead wire with M12 4-pin pre-wired connector)

Note 1) The NPN and PNP outputs function for a single set point.

Note 2) An FKM gasket is used for the product case seal. Refer to the back of page 727 for details.

Note 3) G1/4: Applicable to ISO1179-1

See the operating manual for information on how to set and on handling precautions. (Refer to SMC website.)

---

**Courtesty of Steven Engineering, Inc.**

230 Ryan Way, South San Francisco, CA 94080-6370
Main Office: (650) 588-9200
Outside Local Area: (800) 258-9200
www.stevenengineering.com
Series ISE70/75/75H

Descriptions

**Indication light (Green)**
Displays the switch operation status. Lights up when OUT1 is turned ON.

**SET button**
Use this button to switch the mode and set the set value.

**UP button**
Use this button to change the mode or increase the ON/OFF set value. It also allows you to switch to the peak value display mode.

**Down button**
Use this button to change the mode or decrease the ON/OFF set value. It also allows you to switch to the bottom value display mode.

**LCD**
Displays the current pressure condition, set mode and error code. The display mode can be selected from four options: fixed green single-color reading, fixed red single-color reading, green reading interlocked with output for switching to red reading, or red reading interlocked with output for switching to green reading.

**Indication light (Red)**
Note: Displays the switch operation status. Lights up when OUT2 is turned ON.

Internal Circuits and Wiring Examples

**Output -27**
- 2 settings
- NPN open collector 2 outputs
- Max. 30 V, 80 mA, Residual voltage 1 V or less

**Output -65**
- PNP open collector 1 output
- Max. 80 mA

**Output -43**
- Fixed setting
- NPN open collector 1 output + PNP open collector 1 output
- (The pressure set point for switching the output signal is common to NPN and PNP.)
- Max. 30 V (NPN only), 80 mA, Residual voltage 1 V or less

**Output -67**
- 2 settings
- PNP open collector 2 outputs
- Max. 80 mA
2-Color Display Digital Pressure Switch
For General Fluids Series ISE70/75/75H

Functions

Display calibration function
This function eliminates slight differences in the output values and allows uniformity in the numbers displayed. Displayed values of the pressure sensor can be calibrated to within ±5% of their readings.

Peak/Bottom hold function
This function constantly detects and updates the maximum and minimum pressure values and allows the unit to hold the display value.

Key lock function
This function prevents incorrect operations such as changing the set value accidentally.

Zero-out function
The measured pressure reading can be adjusted to zero. More specifically, the factory-set reading can be corrected to within ±7%F.S.

Unit display switching function
The reading unit can be selected.

Anti-chattering function
A large bore cylinder or ejector consumes a large amount of air in operation and may experience a temporary drop in the primary pressure. This function prevents detection of such temporary drops in primary pressure as abnormal pressure.

Response time selections: 20 ms, 160 ms, 640 ms, 1000 ms, 2000 ms

Cut-to-zero display function
With the ISE75 series, users can enable or disable a function (cut-to-zero display function) that displays pressure values of 0.3 MPa or less as cut-to-zero display function.

Example pressure displays (shading indicates changed displays)

<table>
<thead>
<tr>
<th>ISE75</th>
<th>(for 10 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut-to-zero display function &quot;ON&quot;: 0 → Displayed as 0 → 0.4 → 0.5 → 0.6 → ... → 9.9 → 10.0</td>
<td></td>
</tr>
<tr>
<td>Cut-to-zero display function &quot;OFF&quot;: 0 → 0.1 → 0.2 → 0.3 → 0.4 → 0.5 → 0.6 → ... → 9.9 → 10.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ISE75H</th>
<th>(for 15 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut-to-zero display function &quot;ON&quot;: 0 → Displayed as 0 → 0.5 → 0.6 → ... → 14.9 → 15.0</td>
<td></td>
</tr>
<tr>
<td>Cut-to-zero display function &quot;OFF&quot;: 0 → 0.1 → 0.2 → 0.3 → 0.4 → 0.5 → 0.6 → ... → 14.9 → 15.0</td>
<td></td>
</tr>
</tbody>
</table>

Pressure Display Range

<table>
<thead>
<tr>
<th>Series</th>
<th>Cut-to-zero display function &quot;ON&quot;</th>
<th>Cut-to-zero display function &quot;OFF&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISE75</td>
<td>0 to 10.0 MPa</td>
<td>0 to 10.0 MPa</td>
</tr>
<tr>
<td>ISE75H</td>
<td>0 to 15.0 MPa</td>
<td>0 to 15.0 MPa</td>
</tr>
</tbody>
</table>

Error function

Take the following corrective solutions when error occurs.

<table>
<thead>
<tr>
<th>Error description</th>
<th>LCD display</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over-current error</td>
<td>OUT1 $E_r1$</td>
<td>Load current of switch output exceeds 80 mA.</td>
<td>Shut off the power supply. After eliminating the output factor that caused the excess current, turn the power supply back on.</td>
</tr>
<tr>
<td>Residual pressure error</td>
<td>OUT2 $E_r2$</td>
<td>A pressure level greater than ±7%F.S. has been applied when it is cleared to zero. The switch will automatically return to measuring mode in three seconds, however. Due to individual product differences, the setting range varies by ±1 digit.</td>
<td>Bring the pressure back to atmospheric pressure and by using the zero-out function.</td>
</tr>
<tr>
<td>System error</td>
<td>$E_r4$</td>
<td>Internal data error</td>
<td>Shut off the power supply. Turn the power supply back on.</td>
</tr>
<tr>
<td>$E_r5$</td>
<td>Internal data error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$E_r6$</td>
<td>Internal data error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$E_r7$</td>
<td>Internal data error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$E_r8$</td>
<td>Internal data error</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Output -27 and -67 only.

* If the switch will not recover to normal even after all of the above-mentioned solutions have been applied, consult SMC for investigation.

Note 2) Output -27 and -67 only.

* The set pressure range does not change when the cut-to-zero display function is disabled.
Series ISE70/75/75H

Dimensions

ISE70/75/75H

Bracket mount

Piping port
02: Rc1/4
N02: NPT1/4
F02: G1/4 (ISO1179)

Note) The connector faces down (toward the piping). Do not attempt to rotate the connector, as it is not rotatable.

Connector pin assignments

Output -43 (Color: Gray)
1 Brown DC (+)
2 White OUT1 (PNP)
3 Blue DC (–)
4 Black OUT1 (NPN)

Output -65 (Color: Black)
1 Brown DC (+)
2 White NC
3 Blue DC (–)
4 Black OUT1 (NPN)

Output -27 and -67 (Color: Gray)
1 Brown DC (+)
2 White OUT2 (NPN or PNP)
3 Blue DC (–)
4 Black OUT1 (NPN or PNP)
Series ISE70/75/75H
Specific Product Precautions 1
Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 687 to 691 for Pressure Switch Precautions.

**Handling**

⚠️ **Warning**

1. Do not use pressure sensors with poisonous, corrosive and/or flammable gases or liquids.

⚠️ **Caution**

1. Do not drop, bump, or apply excessive impacts (980 m/s²) while handling.
Although the body of the sensor may not be damaged, the internal parts of the sensor could be damaged and lead to a malfunction.

2. The tensile strength of the cord is 50 N.
Applying a greater pulling force on it can cause a malfunction. When handling, hold the body of the sensor—do not dangle it from the cord.

3. Do not exceed the screw-in torque of 40 N·m for the ISE70 and 80 N·m for the ISE75(H) when connecting the pipe to the switch.
Exceeding these values may cause the switch to malfunction.

4. When connecting the pipe to the switch, engage the wrench horizontally to the chamfered barrel of the fitting.
Be careful not to apply excessive force to the switch’s main unit.

**Connection**

⚠️ **Caution**

1. Incorrect wiring can damage the switch and cause a malfunction or erroneous switch output.
2. Connections should be done while the power is turned off.
3. Wire separately from power lines and high voltage lines, avoiding wiring in the same conduit with these lines.
Malfunctions may occur due to noise from these other lines.
4. If a commercial switching regulator is used, make sure that the F.G. terminal is grounded.

**Operating Environment**

⚠️ **Warning**

1. Our pressure switches are CE marked; however, they are not equipped with surge protection against lightning.
Lightning surge countermeasures should be applied directly to system components as necessary.

2. Our pressure switches do not have an explosion proof rating.
Never use in the presence of an explosive gas as this may cause a serious explosion.

⚠️ **Caution**

1. Do not use in an environment with spattering liquid of oil or solvent.
This may cause the switch to malfunction due to corrosion and/or swelling in the seals (FKM).

**Pressure Source**

⚠️ **Warning**

1. Use of poisonous and deleterious substances, corrosive or combustible fluids
Do not use fluids such as poisonous and deleterious substances or corrosive gases. Also, note that the switch is not explosion-proof.

2. Applicable fluids
Do not use the switch for any corrosive or flammable gas or fluid (ISE70 series).
Do not use the switch for any fluid capable of corroding stainless steel 304, 430 and 630, or for any flammable gas or liquid (ISE75/75H series).
(For corrosiveness of fluids, consult with the manufacturer of the fluid.)

⚠️ **Caution**

1. Withstand pressure
When liquid fluid is used, rapid pressure change can be generated such as water hammer and surge pressure when a valve is turned ON/OFF. Install a dumper or an absorber or an accumulator as a countermeasure according to necessity. It may damage the pressure sensor or the switch if pressure over the proof pressure is applied even for a second.

2. Intrusion of water and drain
A pressure sensor of stainless steel diaphragm is used for this switch. The pressure sensor of this switch can be damaged by the rush inertia of water when the drain contained in water and air collide with the pressure sensor when vacuum is broken after vacuum adsorption is confirmed, and it may cause malfunction with the pressure indication. If there is a possibility of water or drainage getting in, narrow the diameter of the piping to the pressure switch, or make an orifice in the middle of the piping shown in the Fig. below.

**Recommended**

Pipe an orifice vertically (throttle) and so that no water (solution) remains between the switch and orifice.

**Approved**

Approved

727

Courtesy of Steven Engineering, Inc. - 230 Ryan Way, South San Francisco, CA 94080-6370 - Main Office: (650) 588-9200 - Outside Local Area: (800) 258-9200 - www.stevenengineering.com
1. Set the pressure to within the rated pressure range.

The set pressure range is the range of pressure that is possible in setting.

The rated pressure range is the range of pressure that satisfies the specifications (accuracy, linearity, etc.) on the switch.

Although it is possible to set a value outside the rated pressure range, the specifications will not be guaranteed even if the value stays within the set pressure range.

Caution

Set Pressure Range and Rated Pressure Range

1. Set the pressure to within the rated pressure range.

The set pressure range is the range of pressure that is possible in setting.

The rated pressure range is the range of pressure that satisfies the specifications (accuracy, linearity, etc.) on the switch.

Although it is possible to set a value outside the rated pressure range, the specifications will not be guaranteed even if the value stays within the set pressure range.

<table>
<thead>
<tr>
<th>Switch</th>
<th>Pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>−100 kPa</td>
</tr>
<tr>
<td>For 1 MPa</td>
<td>ISE70</td>
</tr>
<tr>
<td>(For Air)</td>
<td></td>
</tr>
<tr>
<td>For 10 MPa</td>
<td>ISE75</td>
</tr>
<tr>
<td>(For General Fluids)</td>
<td></td>
</tr>
<tr>
<td>For 15 MPa</td>
<td>ISE75H</td>
</tr>
<tr>
<td>(For General Fluids)</td>
<td></td>
</tr>
</tbody>
</table>

* The ISE75(H) switch shows zero (0) when the pressure being applied goes below the lower limit of the set pressure range, when the cut-too-zero display function is selected.

| Approved          |
| Approved          |

Authorized: Steven Engineering, Inc.

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com