2-Colour Display
High-Precision Digital Pressure Switch

Settings can be copied to up to 10 slave sensors at once.
The settings of the master sensor can be copied to the slave sensors.

- Reduced setting efforts
- Reduced chance of set-value input error

3-step setting

Push
Adjust to set-value with buttons.
End setting

Added vacuum range.
- Rated pressure range: 0.0 to –101.0 kPa

Expanded pressure range for positive pressure type to the vacuum range:
- Rated pressure range: –0.1 to 1.0 MPa

2 added outputs:
- NPN or PNP open collector 2 outputs
- NPN or PNP open collector 1 output + analogue output
  (1 to 5 V or 4 to 20 mA)

Series ZSE30A(F)/ISE30A

RoHS compliant
Mounting
Bracket configuration allows mounting in four positions.

Bracket A
Bracket B/C
Bracket C
Mounting example
Mounting example
Mounting example
Panel mount
Mountable side by side without clearance

Replacement one-touch fittings
The clip type allows easy removal of fittings. Fitting’s type and size can be changed.

Lead wire
Connector cover added.

4-digit display
4-digit display allows easy reading of displayed values.
Example: 0.5 MPa

Connector cover
Lead wire with connector (2 m)

Additional functions

- Secret code setting function
  The key locking function keeps unauthorized users from tampering with buttons.
- Power-saving function
  Power consumption is reduced by turning off the monitor (power consumption reduction by up to 20%).
- Resolution-switch function
  It reduces the monitor to flicker.
- MPa/kPa switch function
  Vacuum, compound and/or positive pressure can be displayed both in MPa or kPa.

Series
- ZSE30A (vacuum)
- ZSE30AF (compound)
- ISE30A (positive)

4-digit display
Example: 0.5 MPa

Possible to check set-value during key locking

R1/8, NPT1/8 (M5 female threaded)
ø4, ø6, ø5/32, ø1/4 one-touch fittings

Features 1
2-Color Display High-Precision Digital Pressure Switch
Series ZSE30A(F)/ISE30A

How to Order

For vacuum/compound pressure
- ISE30A
- ZSE30A

For positive pressure
- ZSE30A
- ZSE30AF

Rated pressure range
- ISE30A: -0.1 to 1 MPa
- ZSE30A: 0 to -101 kPa
- ZSE30AF: -100 to 100 kPa

Output
- N: NPN open collector 1 output
- P: PNP open collector 1 output
- A: NPN open collector 2 outputs
- B: PNP open collector 2 outputs
- C: NPN open collector 1 output + Analogue voltage output
- D: NPN open collector 1 output + Analogue current output
- E: PNP open collector 1 output + Analogue voltage output
- F: PNP open collector 1 output + Analogue current output

Rated pressure range
- ZSE30A: 0 to -101 kPa
- ZSE30AF: -100 to 100 kPa

Piping
- R1/8 (M5 female threaded)
- NPT1/8 (M5 female threaded)
- One-touch fitting ø4 mm, ø5/32 inch
- One-touch fitting ø6 mm
- One-touch fitting ø1/4 inch
- One-touch fitting ø4 mm, ø5/32 inch
- One-touch fitting ø6 mm
- One-touch fitting ø1/4 inch

Option 1
- Display unit
- Without unit display
- Fixed SI unit
- With unit display

Option 2
- Bracket A
- Bracket B
- Bracket C

Option 3
- Symbol
- Operating manual
- Calibration certificate

Made to Order (P.12)
- X510
- For M12 4-pin pre-wired connector
- Available only for output "A" or "B".

Option 2
- Bracket A
- Bracket B
- Bracket C

Panel mount adapter
- Panel mount adapter + Front protection cover

Note 1) Made to Order
Note 2) Under the New Measurement Law, sales of switches with the unit switching function have not been allowed for use in Japan.
Note 3) Fixed unit kPa, MPa

Note) For output types N and P, the number of core of lead wires will be 3, and for other types, it will be 4.
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>ZSE30A (Vacuum pressure)</th>
<th>ZSE30AF (Compound pressure)</th>
<th>ISE30A (Positive pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated pressure range</td>
<td>0.0 to −101.0 kPa</td>
<td>−100.0 to 100.0 kPa</td>
<td>−100.0 to 1,050 MPa</td>
</tr>
<tr>
<td>Regulating pressure range</td>
<td>10.0 to −105.0 kPa</td>
<td>−105.0 to 105.0 kPa</td>
<td>−0.105 to 1,050 MPa</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>500 kPa</td>
<td>500 kPa</td>
<td>1.5 MPa</td>
</tr>
<tr>
<td>Setting/display resolution</td>
<td>0.1 kPa</td>
<td>0.1 kPa</td>
<td>0.001 MPa</td>
</tr>
<tr>
<td>Applicable fluid</td>
<td>Air, non-corrosive gas, non-flammable gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with power supply polarity protection)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>40 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch output</td>
<td>NPN or PNP open collector 1 output, NPN or PNP open collector 2 outputs (selectable)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Piping Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>O1</th>
<th>N01</th>
<th>C4H</th>
<th>C6H</th>
<th>N7H</th>
<th>C4L</th>
<th>C6L</th>
<th>N7L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port size</td>
<td>R1/8 M5 x 0.8</td>
<td>NPT1/8 M5 x 0.8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Sensor pressure receiving area</td>
<td>81 g</td>
<td>70 g</td>
<td>71 g</td>
<td>73 g</td>
<td>75 g</td>
<td>73 g</td>
<td>75 g</td>
<td></td>
</tr>
<tr>
<td>Wetted parts material</td>
<td>PBT, POM, Stainless steel 304, C3604 (electroless nickel plated)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>85 g</td>
<td>74 g</td>
<td>75 g</td>
<td>77 g</td>
<td>77 g</td>
<td>79 g</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Optional Part No.

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

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Option</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZS-38-A1</td>
<td>Bracket A</td>
<td>Mounting screw (with 2 pcs of M3 x 8L)</td>
</tr>
<tr>
<td>ZS-38-A2</td>
<td>Bracket B</td>
<td>Mounting screw (with 2 pcs of M3 x 8L)</td>
</tr>
<tr>
<td>ZS-38-A3</td>
<td>Bracket C</td>
<td>Mounting screw (with 2 pcs of M3 x 8L)</td>
</tr>
<tr>
<td>ZS-27-C</td>
<td>Panel mount adapter</td>
<td>Mounting screw (with 2 pcs of M3 x 8L)</td>
</tr>
<tr>
<td>ZS-27-D</td>
<td>Panel mount + front protection cover</td>
<td>Mounting screw (with 2 pcs of M3 x 8L)</td>
</tr>
<tr>
<td>ZS-27-01</td>
<td>Front protection cover</td>
<td></td>
</tr>
<tr>
<td>ZS-38-3L</td>
<td>Lead wire with connector (3 cores, 2 m)</td>
<td></td>
</tr>
<tr>
<td>ZS-38-4L</td>
<td>Lead wire with connector (4 cores, 2 outputs, 2 m)</td>
<td></td>
</tr>
<tr>
<td>ZS-38-3G</td>
<td>Lead wire with connector (with connector cover) (3 cores, 1 output, 2 m)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Option</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZS-38-2G</td>
<td>Lead wire with connector (with connector cover) (4 cores, 2 outputs, 2 m)</td>
<td></td>
</tr>
<tr>
<td>ZS-38-3L</td>
<td>Lead wire with connector (3 cores, 2 m)</td>
<td></td>
</tr>
<tr>
<td>ZS-38-4L</td>
<td>Lead wire with connector (4 cores, 2 outputs, 2 m)</td>
<td></td>
</tr>
<tr>
<td>ZS-38-3G</td>
<td>Lead wire with connector (with connector cover) (3 cores, 1 output, 2 m)</td>
<td></td>
</tr>
</tbody>
</table>
Analogue Output

Output voltage vs. Output current

<table>
<thead>
<tr>
<th>Range</th>
<th>Rated pressure range</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>For vacuum pressure</td>
<td>0.0 to –101.0 kPa</td>
<td>—</td>
<td>0</td>
<td>–101 kPa</td>
</tr>
<tr>
<td>For compound pressure</td>
<td>–100.0 to 100.0 kPa</td>
<td>—</td>
<td>–100 kPa</td>
<td>100 kPa</td>
</tr>
<tr>
<td>For positive pressure</td>
<td>–0.100 to 1.000 MPa</td>
<td>–0.1 MPa</td>
<td>0</td>
<td>1 MPa</td>
</tr>
</tbody>
</table>

Descriptions

**Unit display**
Displays unit being used (only kPa and MPa).

**OUT1 Output display (Green)**
Lights up when switch output (OUT1) is turned ON.

**UP button**
Use this button to select the mode or increase the ON/OFF set value. It is also used for switching to the peak display mode.

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

**LCD display**
Displays the current pressure condition, setting mode, and error codes. A display colour type can be selected from either a single colour display with red or green, or 2-colour display in which green and red are switched according to the output. Four different display settings are available.

**OUT2 Output display (Red)**
Lights up when switch output (OUT2) is turned ON.

**DOWN button**
Use this button to select the mode or decrease the ON/OFF set value. It is also used for switching to the bottom value display mode.

Functions (Refer to pages 10 and 11 for details.)

<table>
<thead>
<tr>
<th>Copy function</th>
<th>Copies the settings of the master sensor to the slave sensors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-preset function</td>
<td>Calculates and enters rough set values automatically from the actual operating conditions.</td>
</tr>
<tr>
<td>Precision indicator setting function</td>
<td>Evens out deviations in the displayed value.</td>
</tr>
<tr>
<td>Peak display function</td>
<td>Can retain the maximum pressure value displayed during measurement.</td>
</tr>
<tr>
<td>Bottom display function</td>
<td>Can retain the minimum pressure value displayed during measurement.</td>
</tr>
<tr>
<td>Key lock function (Security code input can be selected)</td>
<td>The key board can be locked to prevent any incorrect function of the switch.</td>
</tr>
<tr>
<td>Zero-out function</td>
<td>The pressure display can be set at zero when the pressure is open to the atmosphere.</td>
</tr>
<tr>
<td>Anti-chattering function</td>
<td>Prevents possible malfunction due to sudden fluctuations in the primary pressure by adjusting the response time.</td>
</tr>
<tr>
<td>Unit display switching function</td>
<td>Can convert the display value.</td>
</tr>
<tr>
<td>Power-saving mode</td>
<td>Reduces power consumption.</td>
</tr>
<tr>
<td>Display resolution-switch function</td>
<td>Converts display resolution from the normal value of 1/1000 to 1/100.</td>
</tr>
<tr>
<td>kPa⇒MPa switch function</td>
<td>Converts the unit between kPa and MPa.</td>
</tr>
</tbody>
</table>
Internal Circuits and Wiring Examples

**Z/ISE30A(F) - □□□□□ - Output**

### N
**NPN (1 output)**

- **Main circuit**
  - Brown DC (+)
  - Black OUT
  - White OUT
  - Blue DC (-)

**Load**

- 12 to 24 VDC

Max. 28 V, 80 mA
Residual voltage 1 V or less

### P
**PNP (1 output)**

- **Main circuit**
  - Brown DC (+)
  - Black OUT
  - White OUT
  - Blue DC (-)

**Load**

- 12 to 24 VDC

Max. 80 mA
Residual voltage 1 V or less

### A
**NPN (2 outputs)**

- **Main circuit**
  - Brown DC (+)
  - Black OUT1
  - White OUT2
  - Blue DC (-)

**Load**

- 12 to 24 VDC

Max. 28 V, 80 mA
Residual voltage 1 V or less

### B
**PNP (2 outputs)**

- **Main circuit**
  - Brown DC (+)
  - Black OUT1
  - White OUT2
  - Blue DC (-)

**Load**

- 12 to 24 VDC

Max. 80 mA
Residual voltage 1 V or less

---

Note) The FUNC terminal is connected using a dedicated lead wire (ZS-38-5L or ZS-38-U) when the copy function is used. (Refer to “Copy function” on page 10.)
NPN (1 output) + Analogue voltage output

Max. 28 V, 80 mA
Residual voltage 1 V or less
Analogue voltage output
Output impedance: Approx. 1 kΩ

PNP (1 output) + Analogue voltage output

Max. 80 mA
Residual voltage 1 V or less
Analogue voltage output
Output impedance: Approx. 1 kΩ

NPN (1 output) + Analogue current output

Max. 28 V, 80 mA
Residual voltage 1 V or less
Analogue current output
Max. load impedance:
- Power supply voltage 12 V: 300 Ω
- Power supply voltage 24 V: 600 Ω
Min. load impedance: 50 Ω

PNP (1 output) + Analogue current output

Max. 80 mA
Residual voltage 1 V or less
Analogue current output
Max. load impedance:
- Power supply voltage 12 V: 300 Ω
- Power supply voltage 24 V: 600 Ω
Min. load impedance: 50 Ω

Note) The FUNC terminal is connected using a dedicated lead wire (ZS-38-5L or ZS-38-U) when the copy function is used. (Refer to “Copy function” on page 10.)
Series ZSE30A(F)/ISE30A

Dimensions

Z/ISE30A(F) - Piping

01/ N01

One-touch fitting ø4 mm
ø5/32 inch straight

C4H

One-touch fitting ø6 mm
straight

C6H

One-touch fitting ø1/4 inch
straight

N7H

One-touch fitting ø4 mm
ø5/32 inch elbow

C4L

One-touch fitting ø6 mm
ø5/32 inch elbow

C6L

One-touch fitting ø1/4 inch
elbow

N7L
With bracket
Z/ISE30A(F) – □□□□□

Option 2

**A1**
Bracket A
(Option unit part no.: ZS-38-A1)

**A2**
Bracket B
(Option unit part no.: ZS-38-A2)

**A3**
Bracket C
(Option unit part no.: ZS-38-A3)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Bracket B</td>
<td>41.4</td>
</tr>
<tr>
<td>Bracket C</td>
<td>53</td>
</tr>
</tbody>
</table>

Note) Bracket configuration allows mounting in four directions.

Note) Bracket configuration allows mounting in four directions.
**Series ZSE30A(F)/ISE30A**

### Dimensions

**Panel mount**

Z/ISE30A(F) – □□□□□□

Option 2

**Panel mount adapter**

(Option unit part no.: ZS-27-C)

Panel thickness 0.5 to 6

**Panel mount adapter + Front protection cover**

(Option unit part no.: ZS-27-D)

Panel thickness 0.5 to 6
Panel fitting dimensions

1 pc. mounting

Multiple (2 pcs. or more) horizontal mounting

Multiple (2 pcs. or more) vertical mounting

Series ZSE30A(F)/ISE30A

2-Colour Display
High-Precision Digital Pressure Switch
Function Details

A Copy function (F97)
The settings of the master sensor can be copied to several slave sensors, which reduces the time taken for setting and prevents the input of wrong values. **Settings can be copied to up to 10 slave sensors at once.** (Max. transmission distance: 4 m)

Steps to follow:
1) The sensors are connected by a dedicated lead wire (ZS-38-5L for master and one slave or ZS-38-U for master and up to 10 slaves). Copying is performed through a dedicated communication line.
2) Make the slave sensor which needs to be the master into the master by button operation. (Initially all sensors are set as slaves.)
3) Press the \( \text{COPY} \) button on the master sensor to start copying.

B Auto-preset function (F5)
Auto-preset function, when selected in the setting, calculates and stores the set-value from the measured pressure. The optimum set-value is determined automatically by repeating vacuum and break with the target workpiece several times.

Suction Verification

<table>
<thead>
<tr>
<th>Vacuum</th>
<th>Suction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. A</td>
<td>P.1</td>
</tr>
<tr>
<td>n.1</td>
<td>Min. B</td>
</tr>
<tr>
<td>Atmosphere</td>
<td>Released</td>
</tr>
</tbody>
</table>

Formula for Obtaining the Set-Value

\[
\begin{align*}
P_1 \text{ or } P_2 &= A - (A-B)/4 \\
n_1 \text{ or } n_2 &= B + (A-B)/4 \\
H_1 \text{ or } H_2 &= (A-B)/2
\end{align*}
\]

D Peak and bottom display function
This function constantly detects and updates the maximum minimum value and allows to hold the maximum/minimum pressure value. When the \( \text{A} \) \( \text{V} \) buttons are simultaneously pressed for 1 second or longer, while "holding", the held value will be reset.

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

F Zero-out function
This function clears and resets the zero value on the display of measured pressure.

For the pressure switch with analogue output, the analogue output shifts according to the indication. A displayed value can be adjusted within ±7% F.S. of the pressure when ex-factory (±3.5% F.S. for ZSE30AF (compound pressure)).
G Error indication function

<table>
<thead>
<tr>
<th>Error description</th>
<th>Error code (LCD display)</th>
<th>Condition</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcurrent error</td>
<td>Er1</td>
<td>Load current of switch output (OUT1) 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></td>
<td>Er2</td>
<td>Load current of switch output (OUT2) exceeds 80 mA.</td>
<td></td>
</tr>
<tr>
<td>Residual pressure error</td>
<td>Er3</td>
<td>A pressure of ±7% F.S. of atmospheric pressure is applied in the zero-out function. (±3.5% F.S. or more for ZSE30AF (compound pressure))</td>
<td>Bring the pressure back to atmospheric pressure and try using the zero-out function.</td>
</tr>
<tr>
<td>Applied pressure error</td>
<td>HHH</td>
<td>Supply pressure exceeds the maximum regulating pressure.</td>
<td>Reduce/increase supply pressure to within the regulating pressure range.</td>
</tr>
<tr>
<td></td>
<td>LLL</td>
<td>Supply pressure is below the minimum regulating pressure.</td>
<td></td>
</tr>
<tr>
<td>System error</td>
<td>Er0</td>
<td>Internal data error</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Er4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Er6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Er7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Er8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Er9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

H Anti-chattering function (F3)

A large bore cylinder or ejector consumes a large volume of air in operation and may experience a temporary drop in the supply pressure. This function prevents detection of such temporary drops in the supply pressure as an error.

Principle
This function averages pressure values measured during the response time set by the user and then compares the average pressure value with the pressure set point value to output the result on the switch.

![Diagram showing anti-chattering function](image)

I Unit display switching function (F0)

Display units can be switched with this function.

<table>
<thead>
<tr>
<th>Min. unit setting</th>
<th>Display unit</th>
<th>PA</th>
<th>MPa</th>
<th>kg/cm²</th>
<th>bar</th>
<th>PSI</th>
<th>inHg</th>
<th>mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZSE30A (Vacuum pressure)</td>
<td>kPa</td>
<td>0.1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ZSE30AF (Compound pressure)</td>
<td>MPa</td>
<td>0.1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ISE30A (Positive pressure)</td>
<td>kPa</td>
<td>1</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) For the ZSE30A (vacuum pressure) and ZSE30AF (compound pressure), when the display unit is MPa, setting and display resolutions are changed.

J Power-saving mode (F7)

It shifts to the power-saving mode without button operation for 30 seconds. It is set to the normal mode (power-saving mode is OFF) when ex-factory (decimal points and operation indicator light, only when the switch output is turned ON, blink in the power-saving mode).

K Secret code setting (F8)

It can be set whether code number input is required or not when key is locked. It is set to input no code number when ex-factory.
**Series ZSE30A(F)/ISE30A**

Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.

1. M12 4-pin pre-wired connector (Lead wire length 100 mm) X510

---

**How to Order**

**ZSE30A(F) / ISE30A X510**

- **Output specifications**
  - A: NPN open collector 2 outputs
  - B: PNP open collector 2 outputs

---

**Option cable**

**ZS-38-4GM12**

---

**Connector pin numbers**

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>Pin description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DC (+)</td>
</tr>
<tr>
<td>2</td>
<td>OUT (2)</td>
</tr>
<tr>
<td>3</td>
<td>DC (–)</td>
</tr>
<tr>
<td>4</td>
<td>OUT (1)</td>
</tr>
</tbody>
</table>
Series ZSE30A(F)/ISE30A
Specific Product Precautions 1
Be sure to read this before handling.
Refer to back cover for Safety Instructions, “Handling Precautions for SMC Products” (M-E03-3) for Pressure Switches Precautions.

Handling

⚠️ Warning
1. Do not drop, bump, or apply excessive impacts (100 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 35 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 7 to 9 N·m when connecting the pipe to the switch. Exceeding these values may cause the switch to malfunction.
4. Do not use pressure sensors with corrosive and/or flammable gases or liquids.
5. Allow a sufficient margin of tube length in piping in order to prevent application of torsional, tensile or moment load to the tubes and fittings.
6. When a brand of tubing other than SMC is used, make sure that the tolerance of the tube’s O.D. satisfies the following specifications.
   1) Nylon tubing: ±0.1 mm or less
   2) Soft nylon tubing: ±0.1 mm or less
   3) Polyurethane tubing: +0.15 mm or less, −0.2 mm or less
7. The applicable fluid is air. Consult SMC if the switch is to be used with other types of fluids.

Prompt

Mounting

⚠️ Caution
1. Mounting and removing with panel mount adapter
   - Mount a bracket to the using two M3 x 5L mounting screws and install on piping. The switch can be installed horizontally depending on the installation location.
   - To release push the claws outward as shown on the picture, and pull back towards you.

2. Mounting with brackets
   - Mount a bracket to the using two M3 x 5L mounting screws and install on piping. The switch can be installed horizontally depending on the installation location.
   - When using bracket B, take piping dimensions into consideration for installation.

Connection/Removal of Connector

⚠️ Warning
1. Incorrect wiring can damage the switch and cause a malfunction or erroneous switch output. Connections should be done while the power is turned off.
2. Do not attempt to insert or pull the pressure sensor or its connector when the power is on. A switch output malfunction may occur.

⚠️ Caution
1. 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.
2. If a commercial switching regulator is used, make sure that the F.G. terminal is grounded.

Operating Environment

⚠️ Warning
1. This pressure switch is CE marked; however, it is not equipped with surge protection against lightning. Lightning surge countermeasures should be applied directly to system components as necessary.
2. This pressure switch does not have an explosion proof rating. Never use in the presence of an explosive gas as this may cause a serious explosion.
3. Do not use in an environment where static electricity can cause problems, otherwise system failure or malfunction may result.

Connection

⚠️ Caution

Piping

- Cut the tube perpendicularly.
- Hold the tube and insert it into the One-touch fitting carefully and securely all the way to the bottom.
Set the pressure 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

<table>
<thead>
<tr>
<th>Switch</th>
<th>Pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>-100 kPa</td>
<td>0</td>
</tr>
<tr>
<td>-105 kPa</td>
<td>10 kPa</td>
</tr>
<tr>
<td>For vacuum</td>
<td></td>
</tr>
<tr>
<td>ZSE30A</td>
<td>-101 kPa</td>
</tr>
<tr>
<td>ZSE30AF</td>
<td>-100 kPa</td>
</tr>
<tr>
<td>ISE30A</td>
<td>-100 kPa</td>
</tr>
<tr>
<td>(-0.105 MPa)</td>
<td>1 MPa</td>
</tr>
<tr>
<td>For compound</td>
<td></td>
</tr>
<tr>
<td>pressure</td>
<td></td>
</tr>
<tr>
<td>For positive</td>
<td></td>
</tr>
<tr>
<td>pressure</td>
<td></td>
</tr>
</tbody>
</table>

*Rated pressure range of switch*

*Set pressure range of switch*
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. 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 possibility of 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 products must 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.

4. Use in an interlock circuit, which requires the provision of double interlock for unexpected operation and malfunction.

5. Before machinery/equipment is restarted, take measures to prevent falling or runaway of the driven objects or other applications unsuitable for the standard specifications described in the product catalogue.

6. An application which could have negative effects on people, property, or animals requiring special safety analysis.

7. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical inspections of all relevant 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.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Safety Instructions

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

SMC Corporation (Europe)

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<th>Contact Information</th>
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</tr>
</tbody>
</table>

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, whichever is first.*2

Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.

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.

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.

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.