Remote Type Pressure Sensors/Pressure Sensor Controllers

**PSE Series**

- Compact Pneumatic Pressure Sensor
  - PSE530 [P.134]

- Compact Pneumatic Pressure Sensor
  - PSE540 [P.137]

- Low Differential Pressure Sensor
  - PSE550 [P.140]

- Pressure Sensor for General Fluids
  - PSE560 [P.143]

- Pressure Sensor for General Fluids
  - PSE570 [P.146]

- Multi-Channel Digital Pressure Sensor Controller
  - PSE200 [P.149]

- 2-Color Display Digital Pressure Sensor Controller
  - PSE300 [P.155]

- Connector type
- DIN rail/Terminal block type
# PSE Series Variations

<table>
<thead>
<tr>
<th>Model</th>
<th>Pressure Sensors</th>
<th>Controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE530</td>
<td>P.134</td>
<td>PSE200</td>
</tr>
<tr>
<td>PSE540</td>
<td>P.137</td>
<td>P.149</td>
</tr>
<tr>
<td>PSE550</td>
<td>P.140</td>
<td>PSE300</td>
</tr>
<tr>
<td>PSE560</td>
<td>P.143</td>
<td></td>
</tr>
<tr>
<td>PSE570</td>
<td>P.146</td>
<td></td>
</tr>
<tr>
<td>PSE200</td>
<td>P.149</td>
<td></td>
</tr>
<tr>
<td>PSE300</td>
<td>P.155</td>
<td></td>
</tr>
</tbody>
</table>

## Basic Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
<th>General fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated pressure range (Minimum display)</td>
<td>±1% (F.S.)</td>
<td>±0.2% (F.S.)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.2% (F.S.)</td>
<td>±0.3% (F.S.)</td>
</tr>
<tr>
<td>Voltage</td>
<td>12 to 24 VDC</td>
<td></td>
</tr>
<tr>
<td>No. of outputs for switch</td>
<td>5 outputs</td>
<td>2 outputs</td>
</tr>
<tr>
<td>Analog output</td>
<td>1 to 5 V</td>
<td>1 to 5 V</td>
</tr>
<tr>
<td>Operating temp.</td>
<td>0 to 50°C</td>
<td>−10 to 60°C</td>
</tr>
</tbody>
</table>

## Functions

<table>
<thead>
<tr>
<th>Digital display</th>
<th>1-color</th>
<th>2-color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure</td>
<td>IP40</td>
<td>IP65</td>
</tr>
<tr>
<td>Front face IP65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others IP40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring</td>
<td>Connector</td>
<td>Grommet</td>
</tr>
<tr>
<td>Keylock, Peak/Bot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>values holding,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-preset,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-shift</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display calibration, Anti-chattering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Wiring

| Connection threads | M reducer | M R, NPT reducer | Resin piping | R, NPT, Rc URJ, TSJ* | R |
|--------------------|-----------|------------------|--------------|-----------------------|
| Int’l standards    | CE        | CE, UL, CSA      | CE           | CE                    | CE |
| Others             | CE, UL, CSA |         | CE           | CE                    | CE |

## Mounting

<table>
<thead>
<tr>
<th>Flexible cable</th>
<th>Direct</th>
<th>With bracket</th>
<th>Panel mount</th>
<th>DIN rail</th>
</tr>
</thead>
</table>

© 132 SMC

* URJ: Face seal fitting, TSJ: Compression fitting
Main Functions (For details, refer to pages 162 to 164.)

Keylock: Locks the keys from functioning.

Peak/Bottom values holding: Displays the maximum and minimum values being set and can keep those values on the display.

Auto-preset: Able to set the pressure automatically. In the case of suction verification, it memorizes the pressure when adsorbed and released. By repeating several times, the optimum values are calculated automatically.

Auto-shift: Stable switch output is available even though the supply pressure may fluctuate. Automatically corrects the set value in accordance with the fluctuations in the supply pressure.

Display calibration: Able to adjust the displayed value (±5%) and justify distribution of the values displayed on respective pressure switch.

Anti-chattering: Prevents malfunction due to sharp pressure fluctuations. The detection of momentary pressure fluctuation as abnormal pressure can be prevented by changing the setting of the response time.
Compact Pneumatic Pressure Sensor

**PSE530 Series**

Unlocked

Locked

Sensor body

Connector cover

**Compact Pneumatic Pressure Sensor**

**PSE530 Series**

Low pressure sensor (PSE532-□) is used to detect minute differentiations. Auto-shift function reduces influence of fluctuations in the supply pressure.

**Table:**

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>−100 kPa</td>
</tr>
<tr>
<td>PSE530</td>
<td>0</td>
</tr>
<tr>
<td>PSE531</td>
<td>−101 kPa</td>
</tr>
<tr>
<td>PSE532</td>
<td>0</td>
</tr>
<tr>
<td>PSE533</td>
<td>−101 kPa</td>
</tr>
</tbody>
</table>

**Application example**

Leak test of radiator

PSE532 + PSE300 Series

Low pressure sensor (PSE532-□) is used to detect minute differentiations. Auto-shift function reduces influence of fluctuations in the supply pressure.
Pressure Sensor

**PSE530 Series**

RoHS

---

**How to Order**

When only optional parts are required, order using the part numbers listed below.

### Option/Part No.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector for pressure sensor controller</td>
<td>ZS-28-C</td>
<td>1 pc. per set</td>
</tr>
<tr>
<td>Sensor cable</td>
<td>ZS-26-F</td>
<td>Cable length: 3 m</td>
</tr>
<tr>
<td>Connector for pressure sensor controller + Sensor cable</td>
<td>ZS-26-J</td>
<td>Cable length: 3 m The connector is not attached to the cable at the time of shipment.</td>
</tr>
</tbody>
</table>

### Specifications

Refer to pages 11 and 12 for Pressure Switch Precautions. For details about the Specific Product Precautions, refer to the Operation Manual on the SMC website, [http://www.smcworld.com](http://www.smcworld.com) Click [here](http://www.smcworld.com) for details.

<table>
<thead>
<tr>
<th>Model</th>
<th>PSE530 (Positive pressure)</th>
<th>PSE531 (Vacuum)</th>
<th>PSE532 (Low pressure)</th>
<th>PSE533 (Compound pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated pressure range</td>
<td>0 to 1 MPa</td>
<td>0 to –101 kPa</td>
<td>0 to 101 kPa</td>
<td>–101 to 101 kPa</td>
</tr>
<tr>
<td>Extension analog output range</td>
<td>–0.1 to 0 MPa</td>
<td>10.1 to 0 kPa</td>
<td>–10.1 to 0 kPa</td>
<td>—</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.5 MPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable fluid</td>
<td>Air/Non-corrosive gas/Non-flammable gas</td>
<td></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 reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>15 mA or less (with no load)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output specifications</td>
<td>Analog output 1 to 5 V (within rated pressure range), 0.6 to 1 V (within extension analog output range), Output impedance: Approx. 1 kΩ</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
</tr>
<tr>
<td>Accuracy (Ambient temperature at 25°C)</td>
<td>±2% F.S. (within rated pressure range), ±5% F.S. (within extension analog output range)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
</tr>
<tr>
<td>Linearity</td>
<td>±1% F.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>±1% F.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage effect</td>
<td>±1% F.S. based on the analog output at 18 V ranging from 12 to 24 VDC</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>12 to 24 VDC ±10% Ripple (p-p) 10% or less (with reverse connection protection)</td>
</tr>
</tbody>
</table>

### Piping Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>M5</th>
<th>R06</th>
<th>R07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port size</td>
<td>M5 x 0.8 male thread</td>
<td>ø6 reducer type</td>
<td>1/4 inch reducer type</td>
</tr>
<tr>
<td>Materials of parts in contact with fluid</td>
<td>Body: Stainless steel 304</td>
<td>Pressure sensor: Silicon, O-ring: NBR</td>
<td>Body: PBT</td>
</tr>
<tr>
<td>Weight</td>
<td>With sensor cable (3 m)</td>
<td>41 g</td>
<td>38 g</td>
</tr>
<tr>
<td></td>
<td>Without sensor cable</td>
<td>7 g</td>
<td>3.8 g</td>
</tr>
</tbody>
</table>
### Internal Circuit and Wiring Example

**PSE53□**

Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ

![Internal Circuit and Wiring Example Diagram]

### Analog Output

1 to 5 VDC

![Analog Output Graph]

### Dimensions

**PSE53□-M5**

![Dimensions Diagram - PSE53□-M5]

**PSE53□-R06 R07**

![Dimensions Diagram - PSE53□-R06 R07]

### Table: Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Applicable fitting size (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE53□-R06</td>
<td>6</td>
</tr>
<tr>
<td>PSE53□-R07</td>
<td>1/4</td>
</tr>
</tbody>
</table>

### With sensor cable

![With Sensor Cable Diagram]
Compact Pneumatic Pressure Sensor

**PSE540 Series**

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE540</td>
<td>–100 kPa 0 100 kPa 500 kPa 1 MPa</td>
</tr>
<tr>
<td>PSE541</td>
<td>–101 kPa 0</td>
</tr>
<tr>
<td>PSE543</td>
<td>–100 kPa 0 100 kPa</td>
</tr>
</tbody>
</table>

- Weight: 2.9 g
- Head size: 9.6 x 20.8 x 18 mm

*Application examples*

- Pads can be directly mounted.
- Manifolding is possible.

For PSE540-M3
How to Order

Option/Part No.
PSE54 1 M3

Note) The connector is not attached to the cable, but is included with the shipment.

Port size

<table>
<thead>
<tr>
<th></th>
<th>M3</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M3 x 0.5</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

Sensor specifications

<table>
<thead>
<tr>
<th></th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>12% F.S.</td>
</tr>
<tr>
<td>1</td>
<td>2% F.S.</td>
</tr>
<tr>
<td>3</td>
<td>5% F.S.</td>
</tr>
</tbody>
</table>

Piping Specifications

<table>
<thead>
<tr>
<th></th>
<th>M3</th>
<th>M5</th>
<th>01</th>
<th>N01</th>
<th>R04</th>
<th>R06</th>
<th>IM5</th>
<th>IM5H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M3 x 0.5</td>
<td>M5 x 0.8</td>
<td>R1/8</td>
<td>NPT1/8</td>
<td>ø4 reducer</td>
<td>ø6 reducer</td>
<td>M5 female thread, through type</td>
<td>M5 female thread, through type (with mounting hole)</td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>PSE540</th>
<th>PSE541</th>
<th>PSE543</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated pressure range</td>
<td>0 to 1 MPa</td>
<td>0 to –101 kPa</td>
<td>–100 to 100 kPa</td>
</tr>
<tr>
<td>Extension analog output range</td>
<td>–0.1 to 0 MPa</td>
<td>10.1 to 0 kPa</td>
<td>—</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.5 MPa</td>
<td>500 kPa</td>
<td></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 reverse connection protection)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>15 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output specifications</td>
<td>Analog output 1 to 5 V (within rated pressure range), 0.6 to 1 V (within extension analog output range), Output impedance: Approx. 1 kΩ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy (Ambient temperature at 25°C)</td>
<td>PSE54: ±2% F.S. (within rated pressure range), ±5% F.S. (within extension analog output range)</td>
<td>PSE54: ±1% F.S. (within rated pressure range), ±3% F.S. (within extension analog output range)</td>
<td></td>
</tr>
<tr>
<td>Linearity</td>
<td>±0.7% F.S. or less</td>
<td>±0.4% F.S.</td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.2% F.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage effect</td>
<td>±0.8% F.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>IP40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>Operating: 0 to 50°C, Stored: –20 to 70°C (No freezing or condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>1000 VAC (in 50/60 Hz) for 1 minute between terminals and housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature characteristics</td>
<td>±2% F.S. (25°C reference)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor cable</td>
<td>Oilproof heavy-duty vinyl cable (ellipse), 3 cores, 2.7 x 3.2, 3 m, Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standards</td>
<td>CE, UL/CSA (E216656), RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Piping Specifications

<table>
<thead>
<tr>
<th></th>
<th>M3</th>
<th>M5</th>
<th>01</th>
<th>N01</th>
<th>R04</th>
<th>R06</th>
<th>IM5</th>
<th>IM5H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M3 x 0.5</td>
<td>M5 x 0.8</td>
<td>R1/8</td>
<td>NPT1/8</td>
<td>ø4 reducer</td>
<td>ø6 reducer</td>
<td>M5 female thread, through type</td>
<td>M5 female thread, through type (with mounting hole)</td>
</tr>
</tbody>
</table>

Material

<table>
<thead>
<tr>
<th></th>
<th>M3</th>
<th>M5</th>
<th>01</th>
<th>N01</th>
<th>R04</th>
<th>R06</th>
<th>IM5</th>
<th>IM5H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fitting: Stainless steel 303</td>
<td>Fitting: C3604BD</td>
<td>Fitting: A6063S-T5</td>
<td>Fitting:</td>
<td>Fitting:</td>
<td>Fitting:</td>
<td>Fitting:</td>
<td>Fitting:</td>
</tr>
</tbody>
</table>

Pressure sensing section

<table>
<thead>
<tr>
<th></th>
<th>M3</th>
<th>M5</th>
<th>01</th>
<th>N01</th>
<th>R04</th>
<th>R06</th>
<th>IM5</th>
<th>IM5H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M3 x 0.5</td>
<td>M5 x 0.8</td>
<td>R1/8</td>
<td>NPT1/8</td>
<td>ø4 reducer</td>
<td>ø6 reducer</td>
<td>M5 female thread, through type</td>
<td>M5 female thread, through type (with mounting hole)</td>
</tr>
</tbody>
</table>

Weight

<table>
<thead>
<tr>
<th></th>
<th>With sensor cable</th>
<th>Without sensor cable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42.4 g</td>
<td>2.9 g</td>
</tr>
<tr>
<td></td>
<td>42.7 g</td>
<td>3.2 g</td>
</tr>
<tr>
<td></td>
<td>49.3 g</td>
<td>9.8 g</td>
</tr>
<tr>
<td></td>
<td>41.4 g</td>
<td>1.9 g</td>
</tr>
<tr>
<td></td>
<td>41.6 g</td>
<td>2.1 g</td>
</tr>
<tr>
<td></td>
<td>43.3 g</td>
<td>3.8 g</td>
</tr>
<tr>
<td></td>
<td>44.1 g</td>
<td>4.6 g</td>
</tr>
</tbody>
</table>
Compact Pneumatic Pressure Sensor **PSE540 Series**

**Internal Circuit and Wiring Example**

- **PSE54□** Voltage output type
  - 1 to 5 V
- Output impedance: Approx. 1 kΩ

- **Analog Output**
  - 1 to 5 VDC
  - Analog output [V]:
    - Pressure
    - Range: Rated pressure range
      - For vacuum: 0 to –101 kPa
      - 0 to –101 kPa
      - 10.1 kPa
      - Compound pressure: –100 kPa to 100 kPa
        - –100 kPa to 100 kPa
        - 100 kPa
        - —
      - For positive pressure: 0 to 1 MPa
        - 0 to 1 MPa
        - –0.1 MPa

- **Dimensions**

  **PSE54□-M3 □-M5**

  - M3: M3 x 0.5
  - M5: M5 x 0.8
  - With across flats 7

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>PSE54□-M3</th>
<th>PSE54□-M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10.8</td>
<td>11.5</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>3.5</td>
</tr>
</tbody>
</table>

- **Common Dimensions**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>PSE54□-R04</th>
<th>PSE54□-R06</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Ø4</td>
<td>Ø6</td>
</tr>
<tr>
<td>B</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

- **PSE54□-IM5**

- **PSE54□-01 □-N01**
  - M5 x 0.8

- **With across flats 12**

- **PSE54□-IM5H**

- **M5 x 0.8**

---

**ZSE20 ISE20**
**ZSE30 ISE30**
**ZSE40 ISE40**
**ZSE10 ISE10**
**ISE70**
**ZSE50 ISE50**
**PS ISA3**
**ISA2 ISE35**
**PSE IS ISG**
**ZSM1**

---

**SMC**

---

**Page 139**
Low Differential Pressure Sensor

PSE550 Series

### Application examples

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE550</td>
<td>0 1 kPa 2 kPa</td>
</tr>
</tbody>
</table>

**Power LED status indicator**

**2 mounting types**

- Mounting directly
- Mounting with bracket

**Accuracy**

±1% F.S.

**Proof pressure**

65 kPa

**Flow control**
PSE550 Series

Can control air flow by monitoring the flow rate inside the duct.

**Filter clogging monitoring**
PSE550 Series

Can control filtration and replacement periods by monitoring the clogging of the filter.

**Liquid level detection**
PSE550 Series

Can detect the liquid level through changes in the purge pressure.

Applications
How to Order

PSE550 – □ □ □

Option/Part No.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket</td>
<td>ZS-30-A</td>
<td>With M3 x 5L (2 pcs.)</td>
</tr>
<tr>
<td>Connector for pressure sensor controller</td>
<td>ZS-28-C</td>
<td>1 pc.</td>
</tr>
</tbody>
</table>

Output specifications

<table>
<thead>
<tr>
<th>Nil</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>Connect for pressure sensor controller (1 pc.)</td>
</tr>
</tbody>
</table>

Note 1) Not applicable to the PSE200 series.
Note 2) The connector is not attached to the cable, but is included with the shipment.

Specifications

Refer to pages 11 and 12 for Pressure Switch Precautions. For details about the Specific Product Precautions, refer to the Operation Manual on the SMC website, http://www.smcworld.com Click here for details.

<table>
<thead>
<tr>
<th>Model</th>
<th>PSE550</th>
<th>PSE550-28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated differential pressure range</td>
<td>0 to 2 kPa</td>
<td></td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>–50 to 50 kPa (RoHS)</td>
<td>—</td>
</tr>
<tr>
<td>Extension analog output range</td>
<td>–0.2 to 0 kPa</td>
<td></td>
</tr>
<tr>
<td>Proof pressure</td>
<td>65 kPa</td>
<td></td>
</tr>
<tr>
<td>Applicable fluid</td>
<td>Air/Non-corrosive gas/Non-flammable gas</td>
<td>—</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>15 mA or less</td>
<td></td>
</tr>
<tr>
<td>Output specifications</td>
<td>Analog output: 1 to 5 VDC (within rated differential pressure range) 0.6 to 1 VDC (within extension analog output range) Output impedance: Approx. 1 kΩ</td>
<td>Analog output: 4 to 20 mA DC (within rated differential pressure range) Maximum load impedance: 500 Ω or less (at 24 VDC) 100 Ω or less (at 12 VDC)</td>
</tr>
<tr>
<td>Accuracy (Operating temperature at 25°C)</td>
<td>±1% F.S. (within rated differential pressure range), ±3% F.S. (within extension analog output range)</td>
<td>—</td>
</tr>
<tr>
<td>Linearity</td>
<td>±0.5% F.S.</td>
<td>±3% F.S.</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.3% F.S.</td>
<td>—</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Orange light is turned on. (When energized)</td>
<td>—</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP40</td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>Operating: 0 to 50°C, Stored: –20 to 70°C (No freezing or condensation)</td>
<td>—</td>
</tr>
<tr>
<td>Operating/Stored</td>
<td>35 to 85% RH (No condensation)</td>
<td>—</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>1000 VAC (in 50/60 Hz) for 1 minute between terminals and housing</td>
<td>—</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing</td>
<td>—</td>
</tr>
<tr>
<td>Temperature characteristics</td>
<td>±3% F.S. (25°C reference)</td>
<td>—</td>
</tr>
<tr>
<td>Port size</td>
<td>Ø4.8 (Ø4.4 in the end) resin piping (Applicable to 1/0.4 air tubing)</td>
<td>—</td>
</tr>
<tr>
<td>Materials of parts in contact with fluid</td>
<td>Resin pipe: Nylon, Piston area of sensor: Silicon</td>
<td>—</td>
</tr>
<tr>
<td>Sensor cable</td>
<td>Oilproof heavy-duty vinyl cable (ellipse), 3 cores, 2.7 x 3.2, 3 m Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm Oilproof heavy-duty vinyl cable (ellipse), 2 cores, 2.7 x 3.2, 3 m Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm</td>
<td>—</td>
</tr>
<tr>
<td>Weight</td>
<td>With sensor cable 75 g</td>
<td>Without sensor cable 35 g</td>
</tr>
</tbody>
</table>

Note) Can detect differential pressure from 0 to 2 kPa within the range of –50 to 50 kPa.
**PSE550 Series**

**Internal Circuit and Wiring Example**

**PSE550**
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ

---

**PSE550-28**
Current output type
4 to 20 mA
Allowable load impedance
500 Ω or less (at 24 VDC)
100 Ω or less (at 12 VDC)

* Install the load either on the LINE (+) or LINE (–) side.

**Analog Output**

1 to 5 VDC

![Graph 1 to 5 VDC](image)

4 to 20 mA DC

![Graph 4 to 20 mA](image)

**Dimensions**

![Dimensions Diagram](image)

**With bracket**

![Bracket Diagram](image)
Pressure Sensor
For General Fluids

PSE560 Series

Applicable fluids example

- Argon
- Air-containing drainage
- Refrigerant
- Nitrogen
- Hydraulic oil
- Silicone oil
- Water
- Carbon dioxide
- Lubricant
- Fluorocarbon
- Air

Variations

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE560</td>
<td>−100 kPa 0 100 kPa 500 kPa 1 MPa</td>
</tr>
<tr>
<td>PSE561</td>
<td>−101 kPa 0</td>
</tr>
<tr>
<td>PSE563</td>
<td>−100 kPa 100 kPa</td>
</tr>
<tr>
<td>PSE564</td>
<td>0 500 kPa</td>
</tr>
</tbody>
</table>

Material of parts in contact with fluid

Stainless steel 316L

Fluorine-free

Copper-free

Oil-free

(IP65)

Application examples

Cleaning lines
Check for working pressure for hydraulic cylinders
Suction verification of workpieces containing moisture

Note: When vacuum is released, take precautions to avoid water collision with inertia force. (An adapter with restrictor (ZS-31-X175) is available to prevent water collision with rush inertia.) (Refer to “NOTE” on the Operation Manual at SMC website for details.)

Applications
Pressure Sensor
For General Fluids

PSE560 Series

Specifications

Refer to pages 11 and 12 for Pressure Switch Precautions. For details about the Specific Product Precautions, refer to the Operation Manual on the SMC website, http://www.smcworld.com Click here for details.

Piping Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>PSE560 (Positive pressure)</th>
<th>PSE561 (Vacuum)</th>
<th>PSE563 (Compound pressure)</th>
<th>PSE564 (Positive pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated pressure range</td>
<td>0 to 1 MPa</td>
<td>0 to –101 kPa</td>
<td>–100 to 100 kPa</td>
<td>0 to 500 kPa</td>
</tr>
<tr>
<td>Extension analog output range</td>
<td>–0.1 to 0 MPa</td>
<td>10.1 to 0 kPa</td>
<td>—</td>
<td>–50 to 0 kPa</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.5 MPa</td>
<td>500 kPa</td>
<td>500 kPa</td>
<td>750 kPa</td>
</tr>
</tbody>
</table>

Applicable fluid
Liquid or gas that will not corrode or attack stainless steel 316L

Power supply voltage
12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with reverse connection protection)

Output specifications
Analog output: 1 to 5 V (within rated pressure range)
0.6 to 1 V (within extension analog output range)
Output impedance: Approx. 1 kΩ

Accuracy (Ambient temperature at 25°C)
±1% F.S. (within rated pressure range), ±3% F.S. (within extension analog output range)

Linearity
±0.5% F.S.

Repeatability
±0.2% F.S.

Power supply voltage effect
±0.3% F.S.

Enclosure
IP65

Operating temperature range
Operating: –10 to 60°C, Stored: –20 to 70°C (No freezing or condensation)

Operating humidity range
Operating/Stored: 35 to 85% RH (No condensation)

Withstand voltage
250 VAC for 1 minute between terminals and housing

Insulation resistance
50 MΩ or more (50 VDC measured via megohmmeter) between terminals and housing

Temperature characteristics
±2% F.S. (±0 to 50°C: 25°C reference), ±3% F.S. (±10 to 60°C: 25°C reference)

Sensor cable
PSE560-0: Oilproof heavy-duty vinyl cable with air tubing, 3 cores, ø5.1, 3 m, Conductor area: 0.2 mm², Insulator O.D.: 1.12 mm
PSE560-28: Oilproof heavy-duty vinyl cable with air tubing, 2 cores, ø5.1, 3 m, Conductor area: 0.2 mm², Insulator O.D.: 1.12 mm

Standards
CE marking (EMC directive/RoHS directive), UL/CSA (E216656)

Model | 01 | 02 | N01 | N02 | C01 | A2 | B2 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Port size</td>
<td>R1/8</td>
<td>R1/4</td>
<td>NPT1/8</td>
<td>NPT1/4</td>
<td>Rct1/8</td>
<td>URJ1/4</td>
<td>TSJ1/4</td>
</tr>
<tr>
<td>Material</td>
<td>Case: C3604 + Nickel plating, Piping port/Pressure sensor: Stainless steel 316L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>With sensor cable</td>
<td>193 g</td>
<td>200 g</td>
<td>194 g</td>
<td>201 g</td>
<td>187 g</td>
<td>203 g</td>
</tr>
<tr>
<td>Without sensor cable</td>
<td>101 g</td>
<td>108 g</td>
<td>102 g</td>
<td>109 g</td>
<td>95 g</td>
<td>111 g</td>
<td>101 g</td>
</tr>
</tbody>
</table>
**Internal Circuit and Wiring Example**

**PSE56□□**
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ

**PSE56□□-28**
Current output type
4 to 20 mA
Allowable load impedance
500 Ω or less (at 24 VDC)
100 Ω or less (at 12 VDC)

**Analog Output**
1 to 5 VDC
4 to 20 mA DC

**Dimensions**

**PSE56□□-01**, **PSE56□□-N01**

**PSE56□□-C01**

**PSE56□□-B2**

**Adapter with restrictor**
**ZS-31-X□□**
Material:
Stainless steel 304

**Orifice**
**ZS-48-A**
Material:
Stainless steel 303

**Note:** If it is predicted that the pressure, such as the water hammer or surge pressure fluctuates rapidly, refer to the Precautions stated in the Operation Manual at SMC website (http://www.smcworld.com).
# Pressure Sensor For General Fluids

## PSE570 Series

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 100 kPa 500 kPa 1 MPa 2 MPa 5 MPa 10 MPa</td>
</tr>
<tr>
<td>PSE570</td>
<td>0 100 kPa 1 MPa</td>
</tr>
<tr>
<td>PSE573</td>
<td>-100 kPa 100 kPa</td>
</tr>
<tr>
<td>PSE574</td>
<td>0 500 kPa</td>
</tr>
<tr>
<td>PSE575</td>
<td>0 2 MPa</td>
</tr>
<tr>
<td>PSE576</td>
<td>0 5 MPa</td>
</tr>
<tr>
<td>PSE577</td>
<td>0 10 MPa</td>
</tr>
</tbody>
</table>

### M12 connector

- **Materials of Parts in Contact with Fluid**
  - Piping port*: C3604 + Nickel plating
  - Pressure sensor*: Al₂O₃ (Alumina 96%)
  - Sensor seal: FKM + Grease, FKM

* Stainless steel 316L is used for the PSE560. For details, refer to page 143.

### Application examples

- **Liquid coolant pressure control**

- **PET bottle molding machines**

- **Liquid pressure control of gun drills**

### Withstand voltage

- **500 VAC**
  - Twice that of the PSE560

### IP65
Pressure Sensor for General Fluids

**PSE570 Series**

**How to Order**

**Model**

<table>
<thead>
<tr>
<th>Sensor range</th>
<th>Option (Lead wire)</th>
<th>Output specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive pressure (0 to 1 MPa)</td>
<td>Nil</td>
<td>Voltage output type 1 to 5 V</td>
</tr>
<tr>
<td>Compound pressure (−100 to 100 kPa)</td>
<td>L</td>
<td>Current output type 4 to 20 mA</td>
</tr>
<tr>
<td>Positive pressure (0 to 2 MPa)</td>
<td>N</td>
<td>None</td>
</tr>
<tr>
<td>Positive pressure (0 to 5 MPa)</td>
<td>L</td>
<td>None</td>
</tr>
<tr>
<td>Positive pressure (0 to 10 MPa)</td>
<td>N</td>
<td>None</td>
</tr>
</tbody>
</table>

**Specifications**

For pressure switch precautions and specific product precautions, refer to the "Operation Manual" on the SMC website. Click here for details.

**Model**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Applicable fluid</th>
<th>Pressure Rated pressure range</th>
<th>Proof pressure</th>
<th>Power supply voltage</th>
<th>Current consumption</th>
<th>Protection</th>
<th>Accuracy</th>
<th>Environment</th>
<th>Insulation resistance</th>
<th>Operating temperature range</th>
<th>Operating humidity range</th>
<th>Standards</th>
<th>Materials of parts in contact with fluid</th>
<th>Analog output</th>
<th>Piping Specifications</th>
<th>Cable Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE570</td>
<td>Gas or liquid that will not corrode materials of parts in contact with fluid</td>
<td>0 to 1 MPa</td>
<td>3.0 MPa</td>
<td>12 to 24 VDC</td>
<td>10 mA or less</td>
<td>Reverse connection protection</td>
<td>±1.0% F.S. +0.5% F.S.</td>
<td>±2.5% F.S. +0.5% F.S.</td>
<td>IP65</td>
<td>500 MΩ</td>
<td>−10 to 60 °C (No freezing or condensation)</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td>CE marking (EMC directive/RoHS directive)</td>
<td>Piping port: C3604 + Nickel plating, Pressure sensor: Al2O3 (Alumina 96%), Sensor seal: FKM + Grease</td>
<td>Voltage output: 1 to 5 V</td>
<td>Current output: 4 to 20 mA</td>
</tr>
<tr>
<td>PSE573</td>
<td>Gas or liquid that will not corrode materials of parts in contact with fluid</td>
<td>0 to 100 to 100 kPa</td>
<td>600 kPa</td>
<td>12.5 MPa</td>
<td>30 MPa</td>
<td>Reverse connection protection</td>
<td>±1.0% F.S. +0.5% F.S.</td>
<td>±2.5% F.S. +0.5% F.S.</td>
<td>IP65</td>
<td>500 MΩ</td>
<td>−10 to 60 °C (No freezing or condensation)</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td>CE marking (EMC directive/RoHS directive)</td>
<td>Piping port: C3604 + Nickel plating, Pressure sensor: Al2O3 (Alumina 96%), Sensor seal: FKM + Grease</td>
<td>Voltage output: 1 to 5 V</td>
<td>Current output: 4 to 20 mA</td>
</tr>
<tr>
<td>PSE574</td>
<td>Gas or liquid that will not corrode materials of parts in contact with fluid</td>
<td>0 to 5 MPa</td>
<td>5.0 MPa</td>
<td>12.5 MPa</td>
<td>30 MPa</td>
<td>Reverse connection protection</td>
<td>±1.0% F.S. +0.5% F.S.</td>
<td>±2.5% F.S. +0.5% F.S.</td>
<td>IP65</td>
<td>500 MΩ</td>
<td>−10 to 60 °C (No freezing or condensation)</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td>CE marking (EMC directive/RoHS directive)</td>
<td>Piping port: C3604 + Nickel plating, Pressure sensor: Al2O3 (Alumina 96%), Sensor seal: FKM + Grease</td>
<td>Voltage output: 1 to 5 V</td>
<td>Current output: 4 to 20 mA</td>
</tr>
<tr>
<td>PSE575</td>
<td>Gas or liquid that will not corrode materials of parts in contact with fluid</td>
<td>0 to 7 MPa</td>
<td>12.5 MPa</td>
<td>30 MPa</td>
<td>30 MPa</td>
<td>Reverse connection protection</td>
<td>±1.0% F.S. +0.5% F.S.</td>
<td>±2.5% F.S. +0.5% F.S.</td>
<td>IP65</td>
<td>500 MΩ</td>
<td>−10 to 60 °C (No freezing or condensation)</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td>CE marking (EMC directive/RoHS directive)</td>
<td>Piping port: C3604 + Nickel plating, Pressure sensor: Al2O3 (Alumina 96%), Sensor seal: FKM + Grease</td>
<td>Voltage output: 1 to 5 V</td>
<td>Current output: 4 to 20 mA</td>
</tr>
<tr>
<td>PSE576</td>
<td>Gas or liquid that will not corrode materials of parts in contact with fluid</td>
<td>0 to 7 MPa</td>
<td>12.5 MPa</td>
<td>30 MPa</td>
<td>30 MPa</td>
<td>Reverse connection protection</td>
<td>±1.0% F.S. +0.5% F.S.</td>
<td>±2.5% F.S. +0.5% F.S.</td>
<td>IP65</td>
<td>500 MΩ</td>
<td>−10 to 60 °C (No freezing or condensation)</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td>CE marking (EMC directive/RoHS directive)</td>
<td>Piping port: C3604 + Nickel plating, Pressure sensor: Al2O3 (Alumina 96%), Sensor seal: FKM + Grease</td>
<td>Voltage output: 1 to 5 V</td>
<td>Current output: 4 to 20 mA</td>
</tr>
<tr>
<td>PSE577</td>
<td>Gas or liquid that will not corrode materials of parts in contact with fluid</td>
<td>0 to 10 MPa</td>
<td>30 MPa</td>
<td>30 MPa</td>
<td>30 MPa</td>
<td>Reverse connection protection</td>
<td>±1.0% F.S. +0.5% F.S.</td>
<td>±2.5% F.S. +0.5% F.S.</td>
<td>IP65</td>
<td>500 MΩ</td>
<td>−10 to 60 °C (No freezing or condensation)</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
<td>CE marking (EMC directive/RoHS directive)</td>
<td>Piping port: C3604 + Nickel plating, Pressure sensor: Al2O3 (Alumina 96%), Sensor seal: FKM + Grease</td>
<td>Voltage output: 1 to 5 V</td>
<td>Current output: 4 to 20 mA</td>
</tr>
</tbody>
</table>

**Options/Part Nos.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire and M12 connector (3 m), Straight</td>
<td>ZS-37-A</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Lead wire and M12 connector (3 m), Right angle</td>
<td>ZS-37-B</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Assembly-type connector</td>
<td>PSE-573</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Adapter with restrictor R1/8</td>
<td>ZS-31-X175</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Adapter with restrictor R1/8</td>
<td>ZS-21-X168</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Orifice M5</td>
<td>ZS-48-A</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Lead wire and M12 connector (3 m), Right angle</td>
<td>ZS-37-B-X449</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Lead wire and M12 connector (3 m), Straight</td>
<td>ZS-37-A-X448</td>
<td>—</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Connector for pressure sensor controller connection</td>
<td>ZS-28-CA-4</td>
<td>—</td>
<td>1 pc.</td>
</tr>
</tbody>
</table>

**Cable Specifications**

- Conductors: AWG23
- Outside diameter: 0.72 mm
- Cross-linked vinyl chloride
- Color: Blue, Black, White, Black, Blue
- Material: Oil resistant vinyl chloride

**Piping Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R1/8</td>
<td>1 pc.</td>
<td>1 pc.</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1 pc.</td>
<td>1 pc.</td>
</tr>
<tr>
<td>R1/4</td>
<td>1 pc.</td>
<td>1 pc.</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1 pc.</td>
<td>1 pc.</td>
</tr>
</tbody>
</table>

**Weight**

| Without lead wire and M12 connector | 88 g | 95 g |
| With lead wire and M12 connector | 175 g | 182 g | 191 g |
PSE57□□□-□□
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ

PSE57□□□-□□-28
Current output type
4 to 20 mA
Allowable load impedance
500 Ω or less (at 24 VDC)
100 Ω or less (at 12 VDC)

*1 The unconnected terminals are used in SMC, so please do not connect them.

Analog Output

1 to 5 VDC
4 to 20 mA DC

Dimensions

Lead wire and M12 connector
ZS-37-A

ZS-37-B

Adapter with restrictor
ZS-31-X□□□
Material:
Stainless steel 304

Orifice
ZS-48-A
Material:
Stainless steel 303

* If it is expected that the pressure, such as the water hammer or surge pressure will fluctuate rapidly, refer to the Precautions in the Operation Manual on the SMC website (http://www.smcworld.com).
**Multi-Channel Digital Pressure Sensor Controller**

**PSE200 Series**

<table>
<thead>
<tr>
<th>Applicable sensors</th>
<th>Rated pressure range</th>
<th>Set/Display resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE53, PSE54, PSE55, PSE56, PSE57</td>
<td>−100 kPa to 0 kPa, 0 kPa to 100 kPa, 0 to 1 MPa</td>
<td>1 MPa</td>
</tr>
<tr>
<td>PSE531, PSE541</td>
<td>−101 kPa</td>
<td>0.1 kPa</td>
</tr>
<tr>
<td>PSE533, PSE543</td>
<td>−101 kPa</td>
<td>0.1 kPa</td>
</tr>
<tr>
<td>PSE530, PSE540</td>
<td>0 to 101 kPa</td>
<td>1 MPa</td>
</tr>
<tr>
<td>PSE532</td>
<td>0 to 101 kPa</td>
<td>0.1 kPa</td>
</tr>
</tbody>
</table>

- **A single controller monitors up to 4 pressure sensors.**
  - Sensor input: 4 inputs
  - Switch output: 5 outputs (2 outputs for 1 ch, 1 output for 2 to 4 ch)

- **Functions**
  - Auto-shift function
  - Auto-preset function
  - Auto-identification function
  - Copy function
  - Channel scan function
  - Zero-clear function
  - Keylock function
  - Peak/Bottom values holding/display function
  - Display unit switching function
  - Display calibration function
  - Anti-chattering function

- **Connector type**

- **A single controller monitors various applications.**
  - Suction verification
  - Check for supply pressure for ejectors
  - Check for working pressure for hydraulic cylinders
  - Leak test
  - Placement verification
  - Check for supply pressure for cleaning lines
  - Suction verification of workpieces containing moisture

- **Panel mounted**

- **Connector type**
  - e-CON connector

- **Power supply/Output connection cable**

- **76% reduction in installation space**
  - Compared with the panel mounted ZSE40/ISE40

- **40 mm**

- **165 mm**

- **RoHS**

- **ZSE20 ISE20**
- **ZSE30 ISE30**
- **ZSE40 ISE40**
- **ZSE50 ISE50**
- **ZSE60 ISE60**
- **PS IS ISG ZSM1**
How to Order

**PSE200 Series**

**Input/Output specifications**
- 0  NPN 5 outputs + Auto-shift input
- 1  PNP 5 outputs + Auto-shift input

**Unit specifications**
- Nil  With display unit switching function [Note 1]
- M  Fixed SI unit [Note 2]

**Note 1)** Under the New Measurement Law, sales of switches with the unit switching function are not allowed for use in Japan.

**Note 2)** For vacuum, low pressure and compound pressure: kPa
For positive pressure: MPa

**Accessory: Power supply/Output connection cable (2 m)**
Included with the controller.

![Power supply/Output connection cable ZS-26-A](image)

**Option 1**
- Nil  None
- A  Panel mount adapter
  - Waterproof seal (Accessory)
  - Panel mount adapter

**Option 2**
- Nil  None
- 4C  Sensor connector (4 pcs.)

![Sensor connector](image)

**Option/Part No.**

When only optional parts are required, order with the part numbers listed below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel mount adapter</td>
<td>ZS-26-B</td>
<td>Waterproof seal, mounting screws M3 x 8L (2 pcs.) included</td>
</tr>
<tr>
<td>Front protective cover + Panel mount adapter</td>
<td>ZS-26-C</td>
<td>Waterproof seal, mounting screws M3 x 8L (2 pcs.) included</td>
</tr>
<tr>
<td>48 conversion adapter</td>
<td>ZS-26-D</td>
<td>This adapter is used to mount the PSE200 series on the panel fitting of the PSE100 series.</td>
</tr>
<tr>
<td>Front protective cover</td>
<td>ZS-26-01</td>
<td>Order panel mount adapter separately.</td>
</tr>
<tr>
<td>Sensor connector (1 pc. per set)</td>
<td>ZS-28-C</td>
<td>For the PSE570 series (Excludes the PSE570 series)</td>
</tr>
<tr>
<td></td>
<td>ZS-28-CA-4</td>
<td>For PSE570 series</td>
</tr>
</tbody>
</table>
Multi-Channel Controller *PSE200 Series*

**Specifications**

Refer to pages 11 and 12 for Pressure Switch Precautions. For details about the Specific Product Precautions, refer to the Operation Manual on the SMC website, [http://www.smcworld.com](http://www.smcworld.com) Click here for details.

<table>
<thead>
<tr>
<th>Model</th>
<th>Power supply voltage</th>
<th>Current consumption</th>
<th>Power supply voltage for sensor</th>
<th>Power supply current for sensor Note 1)</th>
<th>Sensor input</th>
<th>Number of inputs</th>
<th>Input protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE200</td>
<td>12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with reverse connection protection)</td>
<td>55 mA or less (Current consumption for sensor is not included.)</td>
<td>[Power supply voltage] −1.5 V</td>
<td>Maximum 40 mA (100 mA maximum for the total power supply current when 4 sensors are input.)</td>
<td>1 to 5 VDC (Input impedance: Approx. 800 kΩ)</td>
<td>4 inputs</td>
<td>With excess voltage protection (Up to 26.4 V)</td>
</tr>
<tr>
<td>PSE201</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Switch output**

<table>
<thead>
<tr>
<th>Maximum load current</th>
<th>PNP open collector output: 5 outputs (Sensor input CH1: 2 outputs, CH2 to 4: 1 output)</th>
<th>PNP open collector output: 5 outputs (Sensor input CH1: 2 outputs, CH2 to 4: 1 output)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum load voltage</td>
<td>30 V</td>
<td></td>
</tr>
<tr>
<td>Residual voltage</td>
<td>1 V or less (with load current of 80 mA)</td>
<td></td>
</tr>
<tr>
<td>Response time</td>
<td>5 ms or less (Response time selections with anti-chattering function: 20 ms, 160 ms, 640 ms)</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection</td>
<td>With short circuit protection</td>
<td></td>
</tr>
</tbody>
</table>

**Repeatability**

| ±0.1% F.S. ±1 digit | ±1 digit |

**Hysteresis**

<table>
<thead>
<tr>
<th>Hysteresis mode</th>
<th>Adjustable (can be set from 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window comparator mode</td>
<td>Fixed (3 digits)</td>
</tr>
</tbody>
</table>

**Display**

For measured value display: 4-digit, 7-segment indicator, Display color: Orange (Sampling frequency: 4 times/sec)
For channel display: 1-digit, 7-segment indicator, Display color: Red

**Display accuracy (Operating temperature at 25°C)**

| ±0.5% F.S. ±1 digit |

**Indicator light**

Red (Lights up when output is turned ON.)

**Auto-shift input**

Non-voltage input (Reed or Solid state), Input 10 ms or more, Independently controllable auto-shift function ON/OFF

**Auto-identification function**

With auto-identification function Note 2)

**Environment**

<table>
<thead>
<tr>
<th>Enclosure</th>
<th>Front face: IP65 (when panel-mounted), Others: IP40 Note 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature range</td>
<td>Operating: 0 to 50°C, Stored: −10 to 60°C (No freezing or condensation)</td>
</tr>
<tr>
<td>Ambient humidity range</td>
<td>Operating/Stored: 35 to 85% RH (No condensation)</td>
</tr>
</tbody>
</table>

**Temperature characteristics**

| ±0.5% F.S. (25°C reference) |

**Connection**

| Power supply/Output connection: 8P connector, Sensor connection: e-con connector |

**Material**

Housing: PBT; Display: Transparent nylon; Back rubber cover: CR

**Weight**

Approx. 60 g (Excluding power supply/output cable)

**Power supply/Output connection cable**

Heat resistant heavy-duty cable, 8 cores, ø4.8, 2 m, Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm

**Standards**

CE, RoHS

---

**Note 1** If the Vcc and 0 V side of the sensor input connector are short circuited, the inside of the controller will be damaged.

**Note 2** Auto-identification function comes with the "PSE53" series pressure sensor only. Other SMC series (PSE540, 560, 570) are not equipped with this function.

**Note 3** IP40 when using the 48 conversion adapter.

---

**Applicable Pressure Sensor**

<table>
<thead>
<tr>
<th>Applicable sensor</th>
<th>Rated pressure range</th>
<th>Set/Display resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE53 □ PSE54 □ PSE55 □ PSE56 □ PSE57 □</td>
<td>−100 kPa 0 100 kPa 1 MPa</td>
<td>0.1 kPa</td>
</tr>
<tr>
<td>PSE531 PSE541 – PSE561 –</td>
<td>−101 kPa 0</td>
<td></td>
</tr>
<tr>
<td>PSE533 PSE543 – PSE563 PSE573</td>
<td>−101 kPa 101 kPa</td>
<td></td>
</tr>
<tr>
<td>PSE530 PSE540 – PSE560 PSE570</td>
<td>0 1 MPa</td>
<td>0.001 MPa</td>
</tr>
<tr>
<td>PSE532 – –</td>
<td>0 101 kPa</td>
<td>0.1 kPa</td>
</tr>
</tbody>
</table>

---

[151]
Internal Circuit and Wiring Example

**PSE200-(M)**
- NPN open collector 5 outputs + Auto-shift 1 input

**PSE201-(M)**
- PNP open collector 5 outputs + Auto-shift 1 input
**Dimensions**

**PSE200/201**

- **Sensor connector (4P x 4)**
  - PIN no. 1: DC (+)
  - PIN no. 2: N.C.
  - PIN no. 3: DC (–)
  - PIN no. 4: IN (1 to 5 V)

- **Power supply/Output connector (8P)**
  - PIN no. 1: DC (+)
  - PIN no. 2: DC (–)
  - PIN no. 3: CH1_OUT1
  - PIN no. 4: CH1_OUT2
  - PIN no. 5: CH2_OUT1
  - PIN no. 6: CH3_OUT1
  - PIN no. 7: CH4_OUT1
  - PIN no. 8: Auto-shift input

- **Power supply/Output connection cable (Accessory)**
  - Pin no. 1: Brown: DC (+)
  - Pin no. 2: Blue: DC (–)
  - Pin no. 3: Black: CH1_OUT1
  - Pin no. 4: White: CH1_OUT2
  - Pin no. 5: Gray: CH2_OUT1
  - Pin no. 6: Red: CH3_OUT1
  - Pin no. 7: Green: CH4_OUT1
  - Pin no. 8: Yellow: Auto-shift input

---

**Multi-Channel Controller PSE200 Series**

**ZSE20**
**ISE20**
**ZSE30**
**ISE30**
**ZSE40**
**ISE40**
**ZSE10**
**ISE10**
**ISE70**
**ZSE80**
**ISE80**

**PS**
**ISA3**
**ISA2**
**ISE35**
**PSE**
**IS**
**ISG**
**ZSM1**
### Dimensions

**Front protective cover + Panel mount adapter**

- Front protective cover: Front protective cover
- Waterproof seal: Waterproof seal
- Panel: Panel
- Panel mount adapter: Panel mount adapter

**48 conversion adapter + Panel mount adapter**

- Front protective cover: Front protective cover
- Waterproof seal: Waterproof seal
- Panel: Panel
- Panel mount adapter: Panel mount adapter

**Panel fitting dimensions**

- Applicable panel thickness: 0.5 to 8 mm
2-Color Display Digital Pressure Sensor Controller

**PSE300 Series**

### Applicable sensors and Rated pressure range

<table>
<thead>
<tr>
<th>Applicable sensors</th>
<th>Rated pressure range</th>
<th>Set/Display resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE53</td>
<td>PSE54</td>
<td>PSE55</td>
</tr>
<tr>
<td>PSE531</td>
<td>PSE541</td>
<td>—</td>
</tr>
<tr>
<td>PSE533</td>
<td>PSE543</td>
<td>—</td>
</tr>
<tr>
<td>PSE530</td>
<td>PSE540</td>
<td>—</td>
</tr>
<tr>
<td>PSE532</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

### Functions
- Auto-shift function
- Auto-preset function
- Display calibration function
- Peak/Bottom values holding/display function
- Keylock function
- Zero-clear function
- Error indication function
- Display unit switching function
- Anti-chattering function

### Connector type

- **E-CON connector**
  - Power supply/Output connector
  - Sensor connector

### DIN rail/Terminal block type

### Current input type

- Electrical current input (4 to 20 mA DC) is added to the sensor input.
- Applicable sensor type:
  - PSE56cite-28 (Current output type)
  - PSE57cite-28 (Current output type)
**Power supply/Output connection cable**

ZS-28-A

**Bracket**

ZS-28-B With M3 x 5L (2 pcs.)

**Sensor connector**

ZS-28-C For the PSE301 series (Excludes the PSE570 series)

ZS-28-CA-4 For PSE570 series

**Panel mount adapter**

ZS-27-C With M3 x 8L (2 pcs.)

**Panel mount adapter + Front protective cover**

ZS-27-D With M3 x 8L (2 pcs.)

**Front protective cover**

ZS-27-01 1 pc.

---

**Input specifications**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Voltage input</td>
</tr>
<tr>
<td>1</td>
<td>Current input</td>
</tr>
</tbody>
</table>

**Input/Output specifications**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NPN 2 outputs + 1-5 V output</td>
</tr>
<tr>
<td>1</td>
<td>NPN 2 outputs + 4-20 mA output</td>
</tr>
<tr>
<td>2</td>
<td>NPN 2 outputs + Auto-shift input</td>
</tr>
<tr>
<td>3</td>
<td>PNP 2 outputs + 1-5 V output</td>
</tr>
<tr>
<td>4</td>
<td>PNP 2 outputs + 4-20 mA output</td>
</tr>
<tr>
<td>5</td>
<td>PNP 2 outputs + Auto-shift input</td>
</tr>
</tbody>
</table>

**Unit specifications**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>With display unit switching function Note 1)</td>
</tr>
<tr>
<td>M</td>
<td>Fixed SI unit Note 2)</td>
</tr>
</tbody>
</table>

Note 1) Under the New Measurement Law, sales of switches with the unit switching function are not allowed for use in Japan.

Note 2) Fixed unit

For vacuum, low pressure, low differential pressure and compound pressure: kPa

For positive pressure: MPa (For 1 MPa) kPa (For 500 kPa)

---

**Option 1**

- **Nil** None
- **L** Power supply/Output connection cable

Note) The cable is not attached to the product, but is included with the shipment.

---

**Option 2**

- **Nil** None
- **A** Bracket M3 x 5L
- **B** Panel mount adapter
- **C** Panel mount adapter + Front protective cover

Note) These options are not attached to products, but are included with the shipment.

---

**Option 3**

- **Nil** None
- **E** Sensor connector (e-con connector)

Note) The connector is not attached to the cable, but is included with the shipment.

Note) This connector cannot be used with the PSE570 series.

---

**Order DIN rail separately**. Refer to page 161.
Specifications

<table>
<thead>
<tr>
<th>Applicable pressure sensor</th>
<th>PSE300 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display/Set pressure (differential pressure) range</td>
<td>–101 to 101 kPa</td>
</tr>
<tr>
<td>Display/Set resolution</td>
<td>0.2 kPa</td>
</tr>
<tr>
<td>Pressure range</td>
<td>For compound pressure</td>
</tr>
<tr>
<td>Rated pressure (differential pressure) range</td>
<td>–100 to 100 kPa</td>
</tr>
<tr>
<td>Extension analog output range</td>
<td>0.2 kPa</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with reverse connection protection)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>50 mA or less (Current consumption for sensor is not included.)</td>
</tr>
<tr>
<td>Sensor input</td>
<td>PSE300: Voltage input 1 to 5 VDC (Input impedance: 1 MΩ)</td>
</tr>
<tr>
<td>Number of inputs</td>
<td>1 input</td>
</tr>
<tr>
<td>Input protection</td>
<td>With excess voltage protection (Up to 26.4 V)</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>Hysteresis mode: Variable, Window comparator mode: Variable</td>
</tr>
<tr>
<td>Switch output</td>
<td>NPN or PNP open collector output: 2 outputs</td>
</tr>
<tr>
<td>Maximum load current</td>
<td>80 mA</td>
</tr>
<tr>
<td>Maximum load voltage</td>
<td>30 VDC (at NPN output)</td>
</tr>
<tr>
<td>Residual voltage</td>
<td>1 V or less (with load current of 80 mA)</td>
</tr>
<tr>
<td>Output protection</td>
<td>With short circuit protection</td>
</tr>
<tr>
<td>Response time</td>
<td>1 ms or less</td>
</tr>
<tr>
<td>Anti-chattering function</td>
<td>Response time settings for anti-chattering function: 20 ms, 160 ms, 640 ms, 1280 ms</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.1% F.S.</td>
</tr>
<tr>
<td>Analog output</td>
<td></td>
</tr>
<tr>
<td>Voltage output</td>
<td>Output voltage: 1 to 5 V (within rated pressure (differential pressure) range), 0.6 to 1 V (within extension analog output range)</td>
</tr>
<tr>
<td>Accuracy (To display value) (25°C)</td>
<td>±0.8% F.S.</td>
</tr>
<tr>
<td>Current output</td>
<td>Output current: 4 to 20 mA (within rated pressure (differential pressure) range), 2.4 to 4 mA (within extension analog output range)</td>
</tr>
<tr>
<td>Accuracy (To display value) (25°C)</td>
<td>±0.8% F.S.</td>
</tr>
<tr>
<td>Display accuracy</td>
<td>±0.5% F.S. ±2 digits ±0.5% F.S. ±1 digit</td>
</tr>
<tr>
<td>Ambient temperature at 25°C</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>OUT1: Lights up when turned ON (Green), OUT2: Lights up when turned ON (Red)</td>
</tr>
<tr>
<td>Auto-shift input</td>
<td>Non-voltage input (Reed or Solid state), Low level input: 5 ms or more, Low level: 0.4 V or less</td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP40</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>Operating: 0 to 50°C, Stored: –10 to 60°C (No freezing or condensation)</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>Operating/Storage: 35 to 85% RH (No condensation)</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>1000 VAC for 1 minute between terminals and housing</td>
</tr>
<tr>
<td>Temperature characteristics</td>
<td></td>
</tr>
<tr>
<td>Connection</td>
<td>PSE300: Power supply/Output connection: 5P connector, Sensor connection: 4P connector</td>
</tr>
<tr>
<td>Material</td>
<td>PSE300: Front case: PBT, Rear case: PBT (PSE300), Modified PPE (PSE300T)</td>
</tr>
<tr>
<td>Weight</td>
<td>With power supply/Output connection cable</td>
</tr>
<tr>
<td>Power supply/Output connection cable</td>
<td>Oilproof heavy-duty vinyl cable, 5 cores, ø4.1, 2 m, Conductor area: 0.2 mm², Insulator O.D.: 1.12 mm</td>
</tr>
<tr>
<td>Standards</td>
<td>CE, UL/CSA (E216656), RoHS</td>
</tr>
</tbody>
</table>

Note 1) Pressure range can be selected during initial setting. Also, analog output option is not available when auto-shift function is selected. Extension analog output is not available for the PSE570 series.

Note 2) Auto-shift function is not available when analog output option is selected.

Note 3) The following units can be selected with display unit switching function:
- For vacuum & compound pressure: kPa/kgf/cm²/bar-psi-mmHg-inHg
- For positive pressure & low pressure: MPa/kPa/kgf/cm²/bar-psi
- For low differential pressure: kPa-mmHg

### Analog Output

<table>
<thead>
<tr>
<th>1 to 5 VDC</th>
<th>4 to 20 mA DC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analog output [V]</strong></td>
<td><strong>Analog output [mA]</strong></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.6</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Range</th>
<th>Rated pressure range</th>
<th>A</th>
<th>B</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 101 kPa</td>
<td>0 to –101 kPa</td>
<td>0</td>
<td>–101 kPa</td>
<td>10.1 kPa</td>
</tr>
<tr>
<td>0 to 100 kPa</td>
<td>0 to 100 kPa</td>
<td>0</td>
<td>100 kPa</td>
<td>–100 kPa</td>
</tr>
<tr>
<td>0 to 1 MPa</td>
<td>0 to 1 MPa</td>
<td>0</td>
<td>1 MPa</td>
<td>–0.1 MPa</td>
</tr>
<tr>
<td>0 to 500 kPa</td>
<td>0 to 500 kPa</td>
<td>0</td>
<td>500 kPa</td>
<td>–500 kPa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Range</th>
<th>Rated pressure range</th>
<th>C</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 2 kPa</td>
<td>0</td>
<td>2</td>
<td>–2</td>
<td>0 kPa</td>
</tr>
</tbody>
</table>
**PSE300 Series**

**Internal Circuit and Wiring Example**

PSE3 \( \square \square \) (T) – \( \square \square \square \)

- Input/Output specification
- Input specification

**PSE3∥0(T)**
NPN (2 outputs) + Analog voltage output

**PSE3∥1(T)**
NPN (2 outputs) + Analog current output

**PSE3∥2(T)**
NPN (2 outputs) + Auto-shift 1 input

**PSE3∥3(T)**
PNP (2 outputs) + Analog voltage output

**PSE3∥4(T)**
PNP (2 outputs) + Analog current output

**PSE3∥5(T)**
PNP (2 outputs) + Auto-shift 1 input

---

**Connector for Sensor Connection**

<table>
<thead>
<tr>
<th>PIN no.</th>
<th>PSE3∥0 (Voltage input)</th>
<th>PSE3∥1 (Current input)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DC (+) (Brown)</td>
<td>DC (+) (Brown)</td>
</tr>
<tr>
<td>2</td>
<td>N.C.</td>
<td>N.C.</td>
</tr>
<tr>
<td>3</td>
<td>DC (–) (Blue)</td>
<td>N.C.</td>
</tr>
<tr>
<td>4</td>
<td>IN (1 to 5 V) (Black)</td>
<td>IN (4 to 20 mA) (Black)</td>
</tr>
</tbody>
</table>

Note: The colors in ( ) indicate the wire color of the PSE5∥ series.
Pressure Sensor Controller  
"PSE300 Series"

Dimensions

PSE300

Power supply/Output connection cable (ZS-28-A)

Sensor connector

With bracket

With panel mount adapter

With panel mount adapter + Front protective cover

---

Note: The colors in ( ) indicate the wire color of the PSE5 series.

---

Panel mount adapter
Panel fitting dimensions

Horizontal stacking mount of multiple units (n pcs.)

Mount of single unit

Vertical stacking mount of multiple units (n pcs.)
### Pressure Sensor Controller PSE300 Series

#### Dimensions

**PSE3□□T**

- Front protective cover (Option)
  - (Rotate 90° to mount.)
- 3 x 7.2 (= 21.6)
- 2 x ø3.4 mounting hole
- 2 x ø6.4
- 2 x ø3.4 (Max 8)

#### Connections

**PSE3□□T**

(Voltage input, Current input: Pressure sensor 3-wire type)

- 12 to 24 VDC
- OUT1
- OUT2
- GND
- DC (+)
- DC (-)
- IN
- FUNC
  - (Analog output or auto-shift input)
- Brown
- Black
- Blue

**PSE31□□T**

(Current input: Pressure sensor 2-wire type)

- 12 to 24 VDC
- OUT1
- OUT2
- GND
- DC (+)
- DC (-)
- IN
- FUNC
  - (Analog output or auto-shift input)
- Brown
- Blue

#### DIN Rail

**ISA-5□□**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA-5-1</td>
<td>73.0</td>
</tr>
<tr>
<td>ISA-5-2</td>
<td>135.5</td>
</tr>
<tr>
<td>ISA-5-3</td>
<td>173.0</td>
</tr>
<tr>
<td>ISA-5-4</td>
<td>210.5</td>
</tr>
<tr>
<td>ISA-5-5</td>
<td>248.0</td>
</tr>
<tr>
<td>ISA-5-6</td>
<td>285.5</td>
</tr>
<tr>
<td>ISA-5-7</td>
<td>323.0</td>
</tr>
</tbody>
</table>
Function Details

A Auto-shift function

When there are large fluctuations in the supply pressure, the switch may fail to operate correctly. The auto-shift function compensates such supply pressure fluctuations. It measures the (differential) pressure at the time of auto-shift signal input and uses it as the reference (differential) pressure to correct the set value on the switch.

Set value correction by auto-shift function

A Rectified value

When the auto-shift is selected, “ooo” will be displayed for approximately 1 second, and the pressure value at that point will be saved as a rectified value “C_5” (for CH1 of PSE200 and PSE300) or “C_3” (for CH2 to 4 for PSE200). Based on the saved rectified values (Note), the set value “P_1” to “P_4” (for PSE200) or “P_1”, “H_1”, “P_3”, “H_2” (for PSE300) will likewise be rectified.

Note) When an output is reversed, “n_1” to “n_4” (for PSE200) or “n_1”, “H_1”, “n_3”, “H_2” (for PSE300) will be rectified.

Settable Range for Auto-Shift Input

<table>
<thead>
<tr>
<th>PSE200</th>
<th>Set pressure range</th>
<th>Settable range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound pressure</td>
<td>–101.0 to 101.0 kPa</td>
<td>–101.0 to 101.0 kPa</td>
</tr>
<tr>
<td>Vacuum</td>
<td>10.0 to –101.0 kPa</td>
<td>101.0 to –101.0 kPa</td>
</tr>
<tr>
<td>Low pressure</td>
<td>–10.0 to 101.0 kPa</td>
<td>–100.0 to 101.0 kPa</td>
</tr>
<tr>
<td>Positive pressure</td>
<td>–0.1 to 1.000 MPa</td>
<td>–1.000 to 1.000 MPa</td>
</tr>
<tr>
<td>Low differential pressure</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PSE300</th>
<th>Set pressure range</th>
<th>Settable range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound pressure</td>
<td>–101.0 to 101.0 kPa</td>
<td>–101.0 to 101.0 kPa</td>
</tr>
<tr>
<td>Vacuum</td>
<td>10.0 to –101.0 kPa</td>
<td>101.0 to –101.0 kPa</td>
</tr>
<tr>
<td>Low pressure</td>
<td>–10.0 to 100.0 kPa</td>
<td>–100.0 to 100.0 kPa</td>
</tr>
<tr>
<td>Positive pressure</td>
<td>–0.1 to 1.000 MPa</td>
<td>–1.000 to 1.000 MPa</td>
</tr>
<tr>
<td>Low differential pressure</td>
<td>–0.2 to 2.00 kPa</td>
<td>–2.00 to 2.00 kPa</td>
</tr>
</tbody>
</table>

Auto-shift zero (PSE300 series only)

The basic function of auto-shift zero is the same as the function for auto-shift. Also, it corrects values on the display, based on a pressure value of 0, when the auto-shift is selected.

B Auto-preset function

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

Settable Range for Auto-Preset Input

<table>
<thead>
<tr>
<th>PSE200</th>
<th>Set pressure range</th>
<th>Settable range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound pressure</td>
<td>–101.0 to 101.0 kPa</td>
<td>–101.0 to 101.0 kPa</td>
</tr>
<tr>
<td>Vacuum</td>
<td>10.0 to –101.0 kPa</td>
<td>101.0 to –101.0 kPa</td>
</tr>
<tr>
<td>Low pressure</td>
<td>–10.0 to 100.0 kPa</td>
<td>–100.0 to 100.0 kPa</td>
</tr>
<tr>
<td>Positive pressure</td>
<td>–0.1 to 1.000 MPa</td>
<td>–1.000 to 1.000 MPa</td>
</tr>
<tr>
<td>Low differential pressure</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PSE300</th>
<th>Set pressure range</th>
<th>Settable range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound pressure</td>
<td>–101.0 to 101.0 kPa</td>
<td>–101.0 to 101.0 kPa</td>
</tr>
<tr>
<td>Vacuum</td>
<td>10.0 to –101.0 kPa</td>
<td>101.0 to –101.0 kPa</td>
</tr>
<tr>
<td>Low pressure</td>
<td>–10.0 to 100.0 kPa</td>
<td>–100.0 to 100.0 kPa</td>
</tr>
<tr>
<td>Positive pressure</td>
<td>–0.1 to 1.000 MPa</td>
<td>–1.000 to 1.000 MPa</td>
</tr>
<tr>
<td>Low differential pressure</td>
<td>–0.2 to 2.00 kPa</td>
<td>–2.00 to 2.00 kPa</td>
</tr>
</tbody>
</table>

Formula for Obtaining the Set Value

| PSE200 | P_1 or P_3 = A·(A-B)/4 P_2(4)=B+(A-B)/4 |
|--------|----------------|----------------|
| PSE300 | H_1(H_2)=(A-B)/2 | — |
Function Details

**C Display calibration function**
Fine adjustment of the indicated value of the pressure sensor can be made within the range of ±5% of the read value.
(The scattering of the indicated value can be eliminated.)

![Adjustable range of display calibration function](image)

Note: When the display calibration function is used, the set pressure value may change ±1 digit.

**D Peak/Bottom values holding/display function**
This function constantly detects and updates the maximum and minimum values and allows to hold the display value.
For PSE300, when the Δ/□ is simultaneously pressed for 1 sec-ond or longer, while “holding”, the hold value will be reset.

**E Keylock function**
Prevents operation errors such as accidentally changing setting values.

**F Zero-clear function**
This function clears and resets the zero value on the display of meas-
ured (differential) pressure within ±7% F.S. of the factory adjusted val-
ue.

**G Error indication function**

<table>
<thead>
<tr>
<th>Error name</th>
<th>Error code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE200</td>
<td>PSE300</td>
<td></td>
</tr>
<tr>
<td>Load current of 80 mA or more is applied to the switch output (OUT1).</td>
<td>Er 1</td>
<td>Er 1</td>
</tr>
<tr>
<td>Load current of 80 mA or more is applied to the switch output (OUT2).</td>
<td>Er 2</td>
<td>Er 2</td>
</tr>
<tr>
<td>Pressure applied during the zero reset operation exceeds ±7% F.S.</td>
<td>Er 3</td>
<td>Er 3</td>
</tr>
<tr>
<td>• After displaying the error code for 3 seconds, the switch automatically returns to the measuring mode. Due to individual product differences, the setting range varies ±4 digits.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply pressure exceeds the maximum set (differential) pressure or upper limit of the display pressure.</td>
<td>HHHH</td>
<td>HH</td>
</tr>
<tr>
<td>A sensor may be disconnected or mis-wired. Or, supply pressure is below the minimum set (differential) pressure or lower limit of the display pressure.</td>
<td>LLLL</td>
<td>LLL</td>
</tr>
<tr>
<td>The value measured at the time of auto-shift input is outside the set (differential) pressure range.</td>
<td>Er 5</td>
<td>Er 4</td>
</tr>
<tr>
<td>• After displaying the error code for one second, the switch returns to the measuring mode.</td>
<td>Er 6</td>
<td>Er 6</td>
</tr>
<tr>
<td>Internal data error</td>
<td>Er 7</td>
<td>Er 7</td>
</tr>
<tr>
<td>Internal data error</td>
<td>Er 8</td>
<td>Er 8</td>
</tr>
</tbody>
</table>

**H Copy function (PSE200 series only)**
Information that can be copied includes the following: 1. Pressure set values, 2. Range settings, 3. Display units, 4. Output modes, 5. Response times.
- When CH1 is copied to CH2, CH3, and CH4, information of OUT1 in CH1 will be copied.
- When CH2, CH3, or CH4 is copied to CH1, information of OUT1 in CH2, CH3, or CH4 will be copied only to OUT1 in CH1.

Note: When the copy function is used, the regulating pressure value of the copied channel may change ±1 digit.

**I Auto-identification function (PSE200 series only)**
This function automatically identifies the pressure range of the pressure sensor that is connected to the multi-channel pressure sensor controller, thus eliminating the need of having to reset the range again after replacing the sensor. This function will be activated either when “Aon” is set to the auto-identification mode or when the power is turned back on in that condition. However, this function only works in conjunction with specific pressure sensors (SMC PSE53 series).
When other pressure sensors are used, this function will not work. When using other types of pressure sensors, first set the auto-
identification mode to “AoF”, and then proceed to setting the range. Turning the power back on while in the “Aon” setting can cause a malfunction.

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

<table>
<thead>
<tr>
<th>Available response time settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE200</td>
</tr>
<tr>
<td>PSE300</td>
</tr>
</tbody>
</table>

**K Channel selection function (PSE200 series only)**
Pressure value for the selected channel is displayed.

**L Channel scan function (PSE200 series only)**
Pressure values for each channel are displayed by turns at 2-second intervals.
### Display unit switching function

Display units can be switched with this function. Units that can be displayed vary depending on the range of the pressure sensors connected to the controller.

#### PSE200

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>For compound pressure</th>
<th>For vacuum</th>
<th>For low pressure</th>
<th>For positive pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable pressure sensor</td>
<td>PSE533</td>
<td>PSE543</td>
<td>PSE553</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE563</td>
<td>PSE573</td>
<td>PSE532</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE541</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE561</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE550</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set pressure (differential pressure) range</td>
<td>-101 to 101 kPa</td>
<td>10 to -101 kPa</td>
<td>-10 to 101 kPa</td>
<td>-0.1 to 1 MPa</td>
</tr>
<tr>
<td>P</td>
<td>kPa</td>
<td>0.1</td>
<td>0.1</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>MPa</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>G</td>
<td>kgf/cm²</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>b</td>
<td>bar</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>P</td>
<td>psi</td>
<td>0.02</td>
<td>0.01</td>
<td>0.1</td>
</tr>
<tr>
<td>in</td>
<td>inHg</td>
<td>0.1</td>
<td>0.1</td>
<td>—</td>
</tr>
<tr>
<td>mm</td>
<td>mmHg</td>
<td>1</td>
<td>1</td>
<td>—</td>
</tr>
</tbody>
</table>

#### PSE300

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>For compound pressure</th>
<th>For vacuum</th>
<th>For low pressure</th>
<th>For positive pressure</th>
<th>For low differential pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable pressure sensor</td>
<td>PSE533</td>
<td>PSE543</td>
<td>PSE553</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE563</td>
<td>PSE573</td>
<td>PSE532</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE541</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE561</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE550</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set pressure (differential pressure) range</td>
<td>-101 to 101 kPa</td>
<td>10 to -101 kPa</td>
<td>-10 to 101 kPa</td>
<td>-0.1 to 1 MPa</td>
<td>-50 to 500 kPa</td>
</tr>
<tr>
<td>P</td>
<td>kPa</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>MPa</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.001</td>
</tr>
<tr>
<td>G</td>
<td>kgf/cm²</td>
<td>0.002</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
</tr>
<tr>
<td>b</td>
<td>bar</td>
<td>0.002</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
</tr>
<tr>
<td>P</td>
<td>psi</td>
<td>0.05</td>
<td>0.02</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>in</td>
<td>inHg</td>
<td>0.1</td>
<td>0.1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>mm</td>
<td>mmHg</td>
<td>2</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
For pressure switch precautions and specific product precautions, refer to the “Operation Manual” on the SMC website. Click here for details.

PSE300AC Series

Sensor Monitor

How to Order

PSE30 0AC–AB–M–

Option (Power supply/output lead wire)

<table>
<thead>
<tr>
<th>Power supply/output lead wire</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Straight lead wire</td>
</tr>
<tr>
<td>L</td>
<td>Right angle lead wire</td>
</tr>
<tr>
<td>N</td>
<td>None</td>
</tr>
</tbody>
</table>

Unit specification

<table>
<thead>
<tr>
<th>With unit selection function*1</th>
<th>M</th>
<th>With unit selection function (initial value psi)*1</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>S</td>
<td>S only</td>
</tr>
<tr>
<td>P</td>
<td>P</td>
<td>P only</td>
</tr>
</tbody>
</table>

*1 Under the new Measurement Act, sales of switches with the unit selection function have not been allowed for use in Japan.

*2 Fixed unit: Pa, kPa, MPa

For details on the lead wire with M12 connector and the assembly type connector for connecting to the sensor, refer to page 147.

Options/Part Nos.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply/output lead wire</td>
<td>ZS-31-B</td>
<td>1 pc.</td>
</tr>
<tr>
<td></td>
<td>ZS-31-C</td>
<td>1 pc.</td>
</tr>
</tbody>
</table>

For details on the lead wire with M12 connector and the assembly type connector for connecting to the sensor, refer to page 147.

Specifications

M12 Connector Type

<table>
<thead>
<tr>
<th>Series</th>
<th>PSE300AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable SMC pressure sensor</td>
<td>PSE550, PSE551, PSE561, PSE563, PSE565, PSE567</td>
</tr>
<tr>
<td>Rated pressure range</td>
<td>0 to 2 kPa, 0 to −101 kPa, −100 to 100 kPa, 0 to 100 kPa, 0 to 500 kPa, 0 to 1 MPa, 0 to 2 MPa, 0 to 5 MPa, 0 to 10 MPa</td>
</tr>
<tr>
<td>Display/Set pressure range</td>
<td>−0.2 to 2.1 kPa, 10 to −105 kPa, −105 to 105 kPa, −10 to 105 kPa, −50 to 525 kPa, −0.105 to 1.05 MPa, −0.105 to 2.1 MPa, −0.1 to 5.25 MPa, −0.1 to 10.5 MPa</td>
</tr>
<tr>
<td>Display/Smallest settable increment</td>
<td>0.001 kPa, 0.1 kPa, 0.1 kPa, 0.1 kPa, 1 kPa, 0.001 MPa, 0.001 MPa, 0.01 MPa, 0.01 MPa</td>
</tr>
<tr>
<td>Electrical</td>
<td>Power supply voltage: 12 to 24 VDC (±10%) with 10% voltage ripple or less</td>
</tr>
<tr>
<td></td>
<td>Current consumption: 25 mA or less</td>
</tr>
<tr>
<td></td>
<td>Protection: Reverse connection protection</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Display accuracy: ±0.5% F.S. ±Min. display unit (Ambient temperature at 25°C)</td>
</tr>
<tr>
<td></td>
<td>Repeatability: ±0.1% F.S. ±Min. display unit (Ambient temperature at 25°C)</td>
</tr>
<tr>
<td></td>
<td>Temperature characteristics: ±0.5% F.S. (Ambient temperature of 0 to 50°C, 25°C reference)</td>
</tr>
<tr>
<td>Switch output</td>
<td>Output type: Select from NPN or PNP open collector output.</td>
</tr>
<tr>
<td></td>
<td>Output mode: Select from hysteresis mode, window comparator mode, error output or switch output OFF.</td>
</tr>
<tr>
<td></td>
<td>Switch operation: Select from normal output or reverse output.</td>
</tr>
<tr>
<td></td>
<td>Max. load current: 20 mA</td>
</tr>
<tr>
<td></td>
<td>Internal voltage drop (Max) 30 VDC</td>
</tr>
<tr>
<td></td>
<td>Delay time: 1 ms or less (with anti-chattering function: 20, 100, 500, 1000, 2000, 5000 ms)</td>
</tr>
<tr>
<td></td>
<td>Hysteresis: Variable from 0*2</td>
</tr>
<tr>
<td></td>
<td>Protection: Over current protection</td>
</tr>
<tr>
<td>Sensor input</td>
<td>Voltage input: 1 to 5 VDC (Input impedance: 1 MΩ), Current input: 4 to 20 mA DC (Input impedance: 51 Ω)</td>
</tr>
<tr>
<td></td>
<td>Number of inputs: 1 input</td>
</tr>
<tr>
<td></td>
<td>Connection method: M12–4 pin connector</td>
</tr>
<tr>
<td></td>
<td>Protection: Over voltage protection (up to a voltage of 28.4 VDC)</td>
</tr>
<tr>
<td>Display</td>
<td>Unit: MPa, kPa, Pa, kgl/cm², bar, mbar, psi, inHg, mmHg, mmH2O</td>
</tr>
<tr>
<td></td>
<td>Display type: LCD</td>
</tr>
<tr>
<td></td>
<td>Number of screens: 3-screen display (Main screen, Sub screen x 2)</td>
</tr>
<tr>
<td></td>
<td>Display color: 1) Main screen: Red/Green, 2) Sub screen: Orange</td>
</tr>
<tr>
<td></td>
<td>Number of display digits: 1) Main screen: 4-digit (7-segment), 2) Sub screen: 4-digit (Upper 1-digit 11-segment, 7-segment for other)</td>
</tr>
<tr>
<td></td>
<td>Indicator light: Lights up when switch output is turned ON, OUT1/OUT2: Orange</td>
</tr>
<tr>
<td>Digital filter</td>
<td>*1 Value without digital filter (at 0 ms)</td>
</tr>
<tr>
<td>Environment</td>
<td>3-screen display (Main screen, Sub screen x 2)</td>
</tr>
<tr>
<td></td>
<td>Weight: 55.4 g (without power supply or output lead wires)</td>
</tr>
</tbody>
</table>

*1 Value without digital filter (at 0 ms)

*2 If the applied pressure fluctuates around the set value, the hysteresis must be set to a value more than the amount of fluctuation, or chattering will occur.

*3 This setting is only available for models with the unit selection function. Only MPa, kPa or Pa is available for models without this function.

*4 The response time indicates when the set value is 90% in relation to the step input.
Internal Circuits and Wiring Examples

Setting of NPN open collector 2 outputs: Pressure sensor 3-wire type

Setting of NPN open collector 2 outputs: Pressure sensor 2-wire type

Setting of PNP open collector 2 outputs: Pressure sensor 3-wire type

Setting of PNP open collector 2 outputs: Pressure sensor 2-wire type

* The output type can be changed in the function selection mode.
* Numbers in the figures show the connector pin layout.

Dimensions

Power supply/output connector pin no.

Sensor connector pin no.

Power supply/output lead wire
ZS-31-B

ZS-31-C

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZS-31-B</td>
<td>Straight type 5 m</td>
</tr>
<tr>
<td>ZS-31-C</td>
<td>Right angle type 5 m</td>
</tr>
</tbody>
</table>
PSE300AC Series

Function Details

A Auto-preset function (F4)
Auto-preset function, when selected in the initial setting, calculates and stores the set value from the measured pressure. For example, if this function is used for suction verification, the optimum set value is determined automatically by repeating vacuum and break with the target workpiece several times.

Suction Verification

<table>
<thead>
<tr>
<th>High</th>
<th>Vacuum</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></td>
</tr>
</tbody>
</table>

Formula for Obtaining the Set Value

<table>
<thead>
<tr>
<th>P_1 or P_2</th>
<th>H_1 or H_2</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_1 (P_2) = A – (A-B)/4</td>
<td></td>
</tr>
<tr>
<td>n_1 (n_2) = B + (A-B)/4</td>
<td></td>
</tr>
<tr>
<td>H_1 (H_2) =</td>
<td>(A-B)/2</td>
</tr>
</tbody>
</table>

B Display value fine adjustment function (F6)
Fine adjustment of the indicated value of the pressure sensor can be made within the range of ±5% of the read value. (The scattering of the indicated value can be eliminated.)

C Peak/Bottom value indication function
This function constantly detects and updates the maximum (minimum) pressure when the power is supplied, and allows to hold the maximum (minimum) pressure value.

D Keylock function
Prevents operation errors such as accidentally changing setting values.

E Zero-clear function
This function clears and resets the zero value on the display of measured pressure. The indicated value can be adjusted within ±7% F.S. of the pressure when ex-factory. (±3.5% F.S. for compound pressure)

F Error indication function
This function is to display error location and content when a problem or error has occurred.

<table>
<thead>
<tr>
<th>Error name</th>
<th>Error code</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over current error</td>
<td>[ ]</td>
<td>Load current of 20 mA or more is applied to the switch output.</td>
<td>Turn the power off and remove the cause of the over current. Then supply the power again.</td>
</tr>
<tr>
<td>Residual pressure error</td>
<td>[ ]</td>
<td>During zero-clear operation, pressure over ±7% F.S. (±3.5% F.S. for compound pressure) is present. Note that the mode is returned to measurement mode automatically 1 second later. The zero clear range varies by ±1% F.S. due to variation between individual products.</td>
<td>Perform zero-clear operation again after restoring the applied pressure to an atmospheric pressure condition.</td>
</tr>
<tr>
<td>Applied pressure error</td>
<td>[ ]</td>
<td>Supply pressure exceeds the maximum set pressure.</td>
<td>Reset applied pressure to a level within the set pressure range.</td>
</tr>
<tr>
<td>System error</td>
<td>[ ]</td>
<td>Supply pressure is below the minimum set pressure.</td>
<td>Turn off the power supply and then turn on it again. If the failure cannot be solved, please contact SMC for investigation.</td>
</tr>
</tbody>
</table>

Note) When the display value fine adjustment function is used, the set pressure value may change ±1 digit.
Function Details

**G** Anti-chattering function (Simple setting mode or F1)
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 by changing the delay time setting.

| Available delay time settings | 1 ms or less, 20 ms, 100 ms, 500 ms, 1000 ms, 2000 ms, 5000 ms |

**<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.

**H** Unit selection function (F0)
Display units can be switched with this function.

<table>
<thead>
<tr>
<th>Display unit</th>
<th>Rated pressure range</th>
<th>MPa*</th>
<th>kPa</th>
<th>Pa</th>
<th>kgf/cm²</th>
<th>bar</th>
<th>mbar</th>
<th>psi</th>
<th>inHg</th>
<th>mmHg</th>
<th>mmH2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE550</td>
<td>0 to 2 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE531</td>
<td>0 to –101 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE541</td>
<td>0 to –101 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE561</td>
<td>0 to –101 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE533</td>
<td>–100 to 100 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.02</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE543</td>
<td>–100 to 100 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.02</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE563</td>
<td>–100 to 100 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.02</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE573</td>
<td>–100 to 100 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.02</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE532</td>
<td>0 to 100 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>PSE564</td>
<td>0 to 500 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE574</td>
<td>0 to 500 kPa</td>
<td>0.001</td>
<td>0.1</td>
<td>1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE530</td>
<td>0 to 1 MPa</td>
<td>0.001</td>
<td>1</td>
<td>0.1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE540</td>
<td>0 to 1 MPa</td>
<td>0.001</td>
<td>1</td>
<td>0.1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE560</td>
<td>0 to 1 MPa</td>
<td>0.001</td>
<td>1</td>
<td>0.1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE570</td>
<td>0 to 1 MPa</td>
<td>0.001</td>
<td>1</td>
<td>0.1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE575</td>
<td>0 to 2 MPa</td>
<td>0.001</td>
<td>1</td>
<td>0.1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE576</td>
<td>0 to 5 MPa</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE577</td>
<td>0 to 10 MPa</td>
<td>0.01</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 The PSE51 (vacuum pressure), PSE52 (low pressure), and PSE53 (compound pressure) will have different setting and display resolution when the unit is set to MPa.

**I** Power saving mode (F80)
Power saving mode can be selected.
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.
(During power saving mode, [ECO] will flash in the sub screen and the operation light is ON (only when the switch is ON).)

**J** Setting of secret code (F81)
Users can select whether a secret code must be entered to release key lock.
At the time of shipment from the factory, it is set such that the secret code is not required.
Options / Connection Examples

Power supply/output lead wire
ZS-31-C (Right angle 5 m)

PLC

ZS-31-B (Straight 5 m)

PSE300AC series

To POWER

To SENSOR

Lead wire and M12 connector
ZS-37-A (Straight 3 m)

PCA-1557743
(Assembly-type connector)

ZS-37-B (Right angle 3 m)

PCA-1557743
(Assembly-type connector)

ZS-37-C (Right angle 5 m)

PLC

PCA-1557743
(Assembly-type connector)

PSE57□ series

Lead wire and M12 connector + Assembly-type connector
Set part no.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZS-37-A-X448</td>
<td>Straight 3 m</td>
<td>One lead wire with M12 connector and one assembly type connector shipped together (but not assembled)</td>
</tr>
<tr>
<td>ZS-37-B-X449</td>
<td>Right angle 3 m</td>
<td>One lead wire with M12 connector and one assembly type connector shipped together (but not assembled)</td>
</tr>
</tbody>
</table>