Installation and Maintenance Manual
Series ZSE5/ISE5 Digital Pressure Switch
For future reference, please keep this manual in a safe place

### Safety Instructions
These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard labeled as "DANGER", "WARNING", or "CAUTION" to ensure safety, be sure to observe 0604145015, 58 83735015, and other safety precautions.

1. **DANGER:** Operator error could result in serious injury or loss of life.

2. **WARNING:** In extreme conditions, there is a possibility of serious injury or loss of life.

3. **CAUTION:** Operator error could result in equipment damage.

### WARNING
1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications. Since the products specified here are used in serious operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and tests to meet specific requirements.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

3. Do not operate machinery/equipment or attempt to remove component until safety is confirmed:
   1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of 0604145015, 58 83735015, and other safety precautions.
   2. When equipment is to be removed, confirm the safety process as mentioned above. Switch off all electrical supplies and exhaust all residual compressed air in the system.
   3. Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders, etc. (Blind air into the system gradually to create back-pressure, i.e., incorporate a soft-start valve).

4. Contact SMC if the product is to be used in any of the following conditions:
   1. Conditions and environments beyond the given specifications, or if product is used outdoors.
   2. Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, press applications, or safety equipment.
   3. Any application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

### CAUTION
Ensure that the air supply system is filtered to 5 microns.

### Technical specifications

#### Fluid and lubrication type
- Fluid: Fluid that will not corrode SGS/SGS and SGS/SGS
- Lubrication: Lubrication is required

#### Pressure sensor
- Pressure range: 0-200kPa (0-2.04 kgf/cm²), 1.5MPa (15.3 kgf/cm²)
- Pressure type: Pneumatic
- Operating temperature: 0-50°C
- Material: SUS630

#### Fittings
- Fittings: SUS304
- Lead wire: Vinyl chloride (vinyl sheath)

#### Body
- Body material: PBT
- Indicator panel: Denatured PPO

#### Mechanical properties
- Tensile strength: 49N (5 kgf)
- Insulation resistance: Between whole wires and case 2M
- Vibration resistance: 10~500Hz width=1.5mm or acceleration 10G (choose the smaller vibration) in X, Y, Z direction (2 hours)

#### Quality and operating life
- Section in contact with fluid are made of SUS630 (pressure sensor)
- Sections in contact with fluid are made of SUS630 (pressure sensor)
- Black analog output
- Brown DC
- OFF
- OFF
- Green (standard)
- Green (standard)
- Peak pressure (upper limit) or bottom pressure (lower limit) will be held and displayed. This function is available during pressure setting.

#### Power supply
- Power supply: 12~24VDC
- Consumption current: 45mA max.
- Self-diagnosis function: Excess pressure/Data error/... Note 2: Excess current/Pressure during 0-clear

#### Display
- Display light: - ON: Turn on light

#### Operating buttons (Fig 5)
- Press the ▶ button while pressure is being displayed, and the peak pressure (upper limit) or bottom pressure (lower limit) will be held and displayed. This function is available during pressure setting.
- The tensile strength of the wire is 49N (5 kgf). Do not exceed this figure.

#### Common specifications
- Max. operating pressure: 200kPa (2.04 kgf/cm²), 1.5MPa (15.3 kgf/cm²)

#### Hysteresis mode
- ZSE: The hysteresis is 2 digits, so separate P1 from P2 by 5 digits or more and set them. ISE: The hysteresis is 3 digits, so separate P1 from P2 by 7 digits or more and set them. * 1 digit is the minimum pressure display unit (See table above).

#### Analog output
- Analog output type: Adjustable (2-digit or more)

#### Operating buttons (Fig 3)
- Press the ▶ button while pressure is being displayed, and the peak pressure (upper limit) or bottom pressure (lower limit) will be held and displayed. This function is available during pressure setting.
- The tensile strength of the wire is 49N (5 kgf). Do not exceed this figure.

### Note 1: Hysteresis mode

#### ZSE

- When the values of P1 and P2 are the same or when P1>P2 within 2 digits, the hysteresis will be automatically 2 digits for the set value of P1.

#### ISE

- When the values of P1 and P2 are the same or when P1>P2 within 3 digits, the hysteresis will be automatically 3 digits for the set value of P1.

### Note 2: Analog output

- Analog output has no overcurrent detection function.

### For future information, please contact your local SMC office, details follow.

#### SMC Corporation
- ENGLAND: Phone: 08145-528085
- TURKEY: Phone: 0212-2211512
- ITALY: Phone: 02/4771
- GERMANY: Phone: 08145-5800
- HOLLAND: Phone: 03178-15100
- FRANCE: Phone: 01-64-19-51-80
- SWITZERLAND: Phone: 01-345-52-08
- SWEDEN: Phone: 01-52-19-80
- POLAND: Phone: 01-82-61-31-84
- DENMARK: Phone: 00-44-25-53-62
- TURKEY: Phone: 0212-555-85-58
- FRANCE: Phone: 01-54-90-13-87
- SPAIN: Phone: 01-29-29-90
- FINLAND: Phone: 00-44-25-53-62

### Table 1

<table>
<thead>
<tr>
<th>Item</th>
<th>ZSE5B-ZSE5B-ISE5B-ISE5B-ISE5B-ISE5B-ISE5B</th>
</tr>
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<tbody>
<tr>
<td>26 analog output type</td>
<td>26 analog output type</td>
</tr>
<tr>
<td>37 type NPN open collector</td>
<td>37 type NPN open collector</td>
</tr>
<tr>
<td>Type of switch output modes</td>
<td>Type of switch output modes</td>
</tr>
</tbody>
</table>

### Table 2

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Green</td>
<td>PBT</td>
</tr>
<tr>
<td>2</td>
<td>Brown DC+</td>
<td>SUS630</td>
</tr>
<tr>
<td>3</td>
<td>Brown DC+</td>
<td>SUS630</td>
</tr>
<tr>
<td>4</td>
<td>Black analog output</td>
<td>SUS630</td>
</tr>
<tr>
<td>5</td>
<td>Brown DC+</td>
<td>SUS630</td>
</tr>
<tr>
<td>6</td>
<td>Black analog output</td>
<td>SUS630</td>
</tr>
<tr>
<td>7</td>
<td>Green (standard)</td>
<td>PBT</td>
</tr>
<tr>
<td>8</td>
<td>Green (standard)</td>
<td>PBT</td>
</tr>
<tr>
<td>9</td>
<td>Peak mode</td>
<td>SUS630</td>
</tr>
<tr>
<td>10</td>
<td>Bottom mode</td>
<td>SUS630</td>
</tr>
</tbody>
</table>

### Diagrams

- Fig 1: Construction/Parts list (Fig 1)
- Fig 2: Analog output type
- Fig 3: -27 type NPN open collector
- Fig 4: Complete self-diagnosis function
- Fig 5: Pressure/flow measurement (Fig 4)