Compact Pressure Switch

Series ZSE2 (For Vacuum)/ISE2 (For Positive Pressure)

For General Pneumatics

Can be integrated with ZX or ZR ejector system.

Easy and simple wiring
Connector type
Compact Pressure Switch
Series ZSE2/ISE2

How to Order

Operating pressure range/ Setting pressure range

Positive pressure
ISE2

Vacuum
ZSE2

Piping specifications

<table>
<thead>
<tr>
<th></th>
<th>Single mounting R 1/8 Note 2</th>
<th>Single mounting NPTF 1/8 Note 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0X</td>
<td>W/suction filter (Mounting on ZX unit) M5 x 0.8</td>
<td></td>
</tr>
<tr>
<td>0XY</td>
<td>W/suction filter (Mounting on ZX unit) M6 x 1 (Option)</td>
<td></td>
</tr>
<tr>
<td>0R</td>
<td>Base mounting (Mounting on ZR unit)</td>
<td></td>
</tr>
</tbody>
</table>

Note 2) Single mounting type: M5 x 0.8 (female) threaded.

Wiring specifications

<table>
<thead>
<tr>
<th></th>
<th>Grommet type (Lead wire: 0.6 m)</th>
<th>Grommet type (Lead wire: 3 m)</th>
<th>Connector type (Lead wire: 0.6 m)</th>
<th>Connector type (Lead wire: 3 m)</th>
<th>Without connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Output specifications

<table>
<thead>
<tr>
<th></th>
<th>NPN open collector</th>
<th>PNP open collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With Connector/How to Order

- Without lead wire (Connector 1 pc., Socket 3 pcs.) ……ZS-10-A
- With lead wire …………………………………………………ZS-10-5A-

Note) When ordering switch with 5 m long lead wire, indicate both part numbers.

Ex.) ZSE2-01-15CN-1 pc.
     ZS-10-5 A-50-1 pc.

Lead wire length

<table>
<thead>
<tr>
<th></th>
<th>0.6 m</th>
<th>3 m</th>
<th>5 m</th>
</tr>
</thead>
</table>

Replacement Element (Filter) Part Number (Refer to page 843)

- Filter vessel assembly (Filter vessel, Filter element)………ZX1-FK-PC
- Filter element …………………………………………………ZX1-FE
- Filter gasket …………………………………………………ZX1-FG
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>ZSE2</th>
<th>ISE2L</th>
<th>ISE2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For vacuum</td>
<td>For low pressure</td>
<td>For positive pressure</td>
</tr>
<tr>
<td>Rated pressure range/Set pressure range</td>
<td>0 to −101 kPa</td>
<td>0 to 100 kPa</td>
<td>0 to 1 MPa</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>500 kPa</td>
<td></td>
<td>1.5 MPa</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air/Non-corrosive, 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>17 mA or less at 24 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response time</td>
<td>5 ms or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>±1% F.S. or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature characteristics (Based on 25°C)</td>
<td>±3% F.S. or less (Fixed)</td>
<td>ON: when output is ON (Red)</td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>Operating: 0 to 60°C, Stored: −10 to 60°C (With no condensation and no freezing)</td>
<td>Operating/Storage: 35 to 85%RH (With no condensation)</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>Port size</td>
<td>01: R 1/8, M5 x 0.8 T1: NPTF 1/8, M5 x 0.8</td>
<td>0X: With suction filter (For mounting on ZX unit) OR: Base mount type (For mounting on ZR unit)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>35 g (Including 0.6 m-Long lead wire)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead wire</td>
<td>Oilproof heavy-duty vinyl cable 3 cores, ø3.4, Conductor area: 0.2 mm², Insulator O.D.: 1.1 mm</td>
<td>Heat-resistant vinyl electric wire, 3-wire, Conductor area: 0.31 mm², Insulator O.D.: 1.55 mm</td>
<td></td>
</tr>
<tr>
<td>Connector type</td>
<td>CE, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Output Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>−15</th>
<th>−55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch output</td>
<td>NPN open collector 30V, 80 mA or less</td>
<td>PNP open collector 80 mA or less</td>
</tr>
<tr>
<td>Residual voltage</td>
<td>1 V or less (With load current of 80 mA)</td>
<td></td>
</tr>
<tr>
<td>Number of outputs</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hysteresis</td>
<td>3% F.S. or less (Fixed)</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>ON: when output is ON (Red)</td>
<td></td>
</tr>
<tr>
<td>Trimmer adjustment</td>
<td>200°</td>
<td></td>
</tr>
</tbody>
</table>
Calibration Procedure

• Set the ON-pressure by the pressure setting trimmer. Turning clockwise can set the high pressure/high vacuum pressure.

Pressure setting trimmer

Indicator light

• Set the possible min. pressure for adsorption confirmation. If setting the pressure lower than that, switch becomes ON in case that adsorption is not completely done. If setting the pressure higher than that, switch does not become ON even though it may absorb workpieces.

Supply pressure

Set point

Atmospheric pressure 0

• Regarding the pressure setting

Caution

Observe the following precautions for setting the vacuum pressure: Use your fingertips to gently turn the screwdriver. Do not use a screwdriver with a large grip or with a tip that does not fit into the trimmer groove because this could strip the groove.

Hysteresis

Hysteresis is the pressure difference between the ON and the OFF pressure of the output signal. The set pressure is the pressure selected to switch from OFF to ON condition.

How to Use Connector

1. Attaching and detaching connectors

• When assembling the connector to the switch housing, push the connector straight onto the pins until the lever locks into the housing slot. When removing the connector from the switch housing, push the lever down to unlock it from the slot and then withdraw the connector straight off of the pin.

2. Crimping of lead wires and sockets

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.

(Crimp tool: model no. DXT170-75-1)

3. Attaching and detaching lead wires with sockets

• Attaching

Insert the sockets into the square holes of the connector (with +, 0, – indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

• Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket’s hook with a stick having a thin tip (about 1 mm). If the socket will be used again, first spread the hook outward.

Internal Circuits and Wiring Examples

-15

NPN (1 output)

-55

PNP (2 outputs)

How to Replace Filter Element

If the filter element becomes clogged, leading to a reduced adsorption force or delayed response time, stop the operation and replace the element.

(Element part number ZX1-FE) Verify that the filter gasket is placed properly in the gasket groove before installing an element.

(Filter gasket part no.: ZX1-FG)

Filter vessel assembly (Filter vessel + Filter element)

ZX1-FK-PC

Filter vessel

Filter element (ZX1-FE)

Filter gasket (ZX1-FG)

Gasket groove

Filter vessel assembly

- Filter vessel

Caution

1. Do not use with thinner, carbon tetrachloride, chloroform, acetate, aniline, cyclohexane, trichloroethylene, sulfuric acid, lactic acid and watermiscible cutting fluid (alkaline).

2. Operate it away from direct sunlight.
Compact Pressure Switch  Series ZSE2/ISE2

Dimensions

With Suction Filter: ZSE2-0X□
Grommet type: ZSE2-0X□-15

Connector type: ZSE2-0X□-15C

Pressure setting trimmer

Indicator light (Red)

Vacuum supply port

Pneumatic circuit

2 x ø3.3 Mounting hole

Vacuum pad connection port

M5 x 0.8

Vacuum supply port
Series ZSE2/ISE2

Dimensions

Standard Type: ZSE2-01
Grommet type: ZSE2-15

Pressure setting trimmer
Indicator light (Red)

2 x ø3.5 Mounting hole
Piping port
M5 x 0.8 depth 5
01: R 1/8
T1: NPTF 1/8

2 x ø3.5 Mounting hole
Piping port
M5 x 0.8 depth 5
01: R 1/8
T1: NPTF 1/8

Connector type: ZSE2-15C

Pressure setting trimmer
Indicator light (Red)

2 x ø3.5 Mounting hole
Piping port
M5 x 0.8 depth 5
01: R 1/8
T1: NPTF 1/8

Base Mount Type: ZSE2-0R
Grommet type: ZSE2-15C

Pressure setting trimmer
Indicator light (Red)

2 x M2.5 x 41L Mounting thread

Pressure setting trimmer
Indicator light (Red)

2 x M2.5 x 41L Mounting thread

Connector type: ZSE2-15C

Vacuum supply port ø3.3
Gasket

Vacuum supply port ø3.3
Gasket
Compact Pressure Switch  **Series ZSE2/ISE2**

### Dimensions

**ISE2-01**

**Grommet type: ISE2-01-15**

Pressure setting trimmer

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Indicator light (Red)</td>
</tr>
<tr>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td>41</td>
<td>8.5</td>
</tr>
<tr>
<td>600</td>
<td>(3000)</td>
</tr>
</tbody>
</table>

2 x ø3.5 Mounting hole

**Piping port**

M5 x 0.8 depth 5

01: R 1/8

**Connector type: ISE2-01-15C**

Pressure setting trimmer

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2 x ø3.5 Mounting hole

**Piping port**

M5 x 0.8 depth 5

01: R 1/8