Electronic Pressure Switch
Series SCPSD

Characteristics

• Compact
• Rugged
• Reliable
• Easy operation
• Long-term stability
• Excellent interference resistance
• Metal housing
• High protection class
• Many variants
• Rotatable
• Analogue output
• Password
• MPa, bar, psi

The Pressure Controller combines the functions of a pressure switch, a pressure sensor and a display instrument:
• Pressure display (manometer)
• Switching outputs
• Analogue signal

Simple operation, compact design and high reliability are the most important features of the SCPSD. The Pressure Controller offers excellent technical performance and optimum pressure management. It is ideal for permanent use in industrial applications.

Easy to operate
Parameter setting is carried out via the keys or with a programming module.

High functionality
Every switching output can be set individually:
• Normally closed/normally open contacts
• On and off switching pressures
• Delay times
• Hysteresis/window function
• Damping

Intelligent settings which are not possible with a mechanical switch can be achieved with these convenient switch functions. Several switches can be replaced by a single controller.

The analogue output is individually settable
• 0/4…20 mA switchable
• Settable initial pressure
• Settable final pressure

Reliable/safe
Pressure is captured by a measuring cell with long-term stability. Any functional error is monitored and can be processed in accordance with DESINA. Thanks to a password, unauthorized change of parameters is prevented.

Rugged
The housing is made of metal and is resistant to humidity, shock and vibrations. The electronics are protected from reverse polarity, overvoltage and short circuits.

Everything within view
The large illuminated display is readable even from a considerable distance. Pressures are shown in MPa, bar or psi.

Optimum installation possibilities
With its compact design and excellent interference resistance the SCPSD is suitable for installation under critical conditions.

With its directionally settable housing, the display can always be read very easily.

Universal
Many versions are available to suit a wide variety of applications.
Instrument Features

• Optical interface
• Switch status display

Everything in view
• Chamfered display
• Digital display
• Large
• Luminescent
• Display
• psi/bar/Mpa
• Actual pressure
• Minimum pressure
• Maximum pressure
• Switching points

Easy to operate
• 3 large keys
• Display of units

Pressure connection
• Stainless steel
• Measuring cell stable long-term
• Wide media tolerance

Rugged
• Metal housing
• Watertight
• High interference resistance
• Vibration resistant
• Shockproof

Flexible installation
• Compact
• Rotatable 290°

Thread
• Internal thread
• External thread

Tube clamp
• Safe mounting with a rugged SCSD-S27 clamp

Programming module
• Can be set with ControllerWIN software
# Technical Data

## Electronic Pressure Switch Series SCPSD

<table>
<thead>
<tr>
<th>Pressure range $P_n$ (bar)</th>
<th>004</th>
<th>010</th>
<th>016</th>
<th>060</th>
<th>100</th>
<th>250</th>
<th>400</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1..4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>250</td>
<td>400</td>
</tr>
<tr>
<td>-1..10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>100</td>
<td>800</td>
<td>1200</td>
</tr>
<tr>
<td>-1..16</td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td>200</td>
<td>500</td>
<td>800</td>
<td>1200</td>
</tr>
<tr>
<td>0...60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0...100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0...250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0...400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0...600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overload pressure $P_{max}$ (bar)</th>
<th>10</th>
<th>20</th>
<th>40</th>
<th>120</th>
<th>200</th>
<th>500</th>
<th>800</th>
<th>1200</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Burst pressure $P_{burst}$ (bar)</th>
<th>12</th>
<th>25</th>
<th>50</th>
<th>550</th>
<th>800</th>
<th>1200</th>
<th>1700</th>
<th>2200</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Measuring element</th>
<th>Ceramic low pressure</th>
<th>DMS thin film high pressure</th>
</tr>
</thead>
</table>

### Input quantities

- **Reversing cycles**: $\geq 100 \text{ Mio.}$
- **Scanning rate**: $\geq 5 \text{ ms}$
- **Connecting thread**: G1/4 BSPP; ED soft seal NBR $^1$ (DIN 3852 T2, form X); ED (DIN3852 T11, form E)
- **Torque**: 35 Nm
- **Parts in contact with media**:
  - Low pressure: 1.4404 stainless steel; AL2O3 ceramic; NBR
  - High pressure: stainless steels 1.4404; 1.4542
- **Temperature range of medium**: -20 ... +85 °C
- **Weight**: approx. 300 g

### Output quantities

- **Accuracy**: ± 0.5 % FS typ.; ± 1 % FS max.
- **Temperature drift**: ± 0.02 % FS/K typ. (at -20...+85 °C) ± 0.03 % FS/K max.
- **Long-term stability**: ± 0.2 % FS/a
- **Repeat accuracy**: ± 0.25 % FS
- **Switching point accuracy**: ± 0.5 % FS typ.; ± 1 % FS max.
- **Display accuracy**: ± 0.5 % FS typ. ± 1 Digit ± 1 % FS max. ± 1 Digit

### Response speed

- **Switching output**: ≤ 10 ms
- **Analogue output**: ≤ 10 ms

### Electrical connection

- **Power supply**: 15...30 VDC nominal; 24 VDC; protection class 3
- **Electrical connection**: M12x1, 4-pole; 5-pole with gold-plated contacts. appliance inlet connector DIN EN 175301-803 form A (formerly DIN43650)
- **Short circuit protection**: yes
- **Reverse polarity protection**: yes
- **Overload protection**: yes
- **Current consumption**: < 100 mA

### Housing

- **Material**: pressure die-casting Z 410; painted polyester
- **Display**: 4-figure 7-segment LED; red; digit height 9 mm
- **Protection class**: IP67 DIN EN 60529; IP65 with plug-in connector DIN EN 175301-803 form A (formerly DIN43650)

### Environmental conditions

- **Environmental temperature range**: -20...+85 °C
- **Storage temperature range**: -40...+100 °C
- **Vibration resistance**: 20 g; 10...500 Hz IEC60068-2-6 $^2$
- **Shock resistance**: 50 g; 11 ms IEC60068-2-29 $^2$

### EM compatibility

- **Interference emissions**: EN 61000-6-3
- **Interference resistance**: EN 61000-6-2

### Outputs

- **Switching outputs**: 2 MOSFET high side switches (PNP)
- **Contact functions**: normally open/normally closed; window/hysteresis; freely settable function
- **Switching voltage**: Power supply - 1.5 VDC
- **Switching current max.**: 0.5 A per switch
- **Short circuit current**: 2.4 A per switch
- **Analogue output**: 0/4..20 mA; programmable; freely scalable; RL $\leq$ (power supply - 8 V)/20 mA (≤ 500 Ω)

---

1) Other sealing materials (FPM, EPDM etc.) on request.
2) Does not apply to DIN EN 175301-803 form A (formerly DIN43650) version.
**Connection Designations**

**Electronic Pressure Switch**
**Series SCPSD**

**SCPSD-xxx-04-x6**
1 switching output;
DIN EN 175301-803 form A (formerly DIN43650)

**SCPSD-xxx-04-x7**
2 switching outputs;
M12x1; 4-pole

**SCPSD-xxx-14-x7**
1 switching output;
1 analogue output;
M12x1; 4-pole

**SCPSD-xxx-14-x5**
2 switching outputs;
1 analogue output;
M12x1; 5-pole

---

### Pressure range selection

With pressure switches the settable pressure is very relevant.

Because a 400 bar pressure switch shows the same resolution (1 bar) as a 600 bar pressure switch (also 1 bar), a 600 bar pressure switch can be deployed even at a smaller nominal pressure (eg. 315 bar).

The positive effects of this are the same accuracy with higher safety and fewer product variants.
### Electronic Pressure Switch

**Series SCPSD**

#### Dimensions

**External thread**
- SCPSD-xxx-x4-1x

**Internal thread**
- SCPSD-xxx-x4-2x

**External thread**
- High and low pressure
- DMS/ceramic

**Internal thread**
- High pressure (from 60 bar)
- DMS

- Low pressure (up to 16 bar)
- Ceramic

#### M12 plug-in connector
- SCPSD-xxx-x4-x5

#### DIN EN 175301-803 form A
- (formerly DIN43650)
- SCPSD-xxx-04-x6

#### Accessories
- Clamp
### SCPSD digital pressure switch

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>SCPSD - xxx - 04 - x 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>004; 010; 016; 060; 100; 160; 400; 600 bar</td>
<td></td>
</tr>
</tbody>
</table>

- 1 switching output; without analogue output
- DIN EN 175301-803 form A
- (formerly DIN 43650) plug-in connector

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>SCPSD - xxx - 04 - x 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>004; 010; 016; 060; 100; 160; 400; 600 bar</td>
<td></td>
</tr>
</tbody>
</table>

- 2 switching outputs; without analogue output
- M12x1 plug-in connector; 4-pole

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>SCPSD - xxx - 14 - x 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>4; 10; 16; 60; 100; 160, 400; 600 bar</td>
<td></td>
</tr>
</tbody>
</table>

- 1 switching output; with analogue output
- M12x1 plug-in connector; 4-pole

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>SCPSD - xxx - 14 - x 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>4; 10; 16; 60; 100; 160, 400; 600 bar</td>
<td></td>
</tr>
</tbody>
</table>

- 2 switching outputs; with analogue output
- M12x1 plug-in connector; 5-pole

### Accessories

- **PC programming kit**: SCSD-PRG-KIT
- **Fixing clamp**: SCSD-S27
- **Reducing adaptor M22x1.5**: SCA-1/4-M22x1.5-ED
- **Reducing adaptor G ½ BSPP**: SCA-1/4-ED-1/2-ED
- **Damping adaptor**: SCA-1/X-EDX-1/X-D
- **Flange adaptor for mechanical pressure switch**: SCAF-1/4-40

### Connecting cable and separate plugs

<table>
<thead>
<tr>
<th>Connecting cable, ready-made</th>
</tr>
</thead>
<tbody>
<tr>
<td>(open cable end)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cable length in m</th>
<th>SCK-400-xx-xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>02  2 m</td>
<td></td>
</tr>
<tr>
<td>05  5 m</td>
<td></td>
</tr>
<tr>
<td>10  10 m</td>
<td></td>
</tr>
</tbody>
</table>

- **Plug-in connector**
  - 45 M12 cable socket; straight
  - 55 M12 cable socket; 90° angled
  - 56 DIN EN 175301-803 form A plug connector
    (formerly DIN 43650)

<table>
<thead>
<tr>
<th>Separate plugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12 cable socket; straight</td>
</tr>
<tr>
<td>M12 cable socket; 90° angled</td>
</tr>
<tr>
<td>DIN EN 175301-803 Form A plug connector</td>
</tr>
</tbody>
</table>

**Ordering examples**

- **SCPSD-100-04-27**
  - Pressure range 100 bar
  - 2 switching outputs
  - G ¼ BSPP internal thread
  - M12 plug-in connector

- **SCPSD-60-14-27**
  - Pressure range 60 bar
  - 1 switching output
  - 1 analogue output
  - G ¼ BSPP internal thread
  - M12 plug-in connector

- **SCPSD-004-14-17**
  - Pressure range 4 bar
  - 2 switching outputs
  - 1 analogue output
  - G ¼ BSPP external thread
  - M12 plug-in connector