# SCPSD PressureController

## Device features

- Compact size
- Rugged
- Dependable
- Easily operable
- Long-term stability
- Excellent interference immunity
- Metal housing
- High protection class
- Many variants
- Pivoting
- Analogue output
- Password
- MPa, bar, PSI







**The PressureController combines the functions of a pressure switch, a pressure sensor and a display device.**

- Pressure gauge (manometer)
- Switching outputs
- Analogue signal

The PressureController is easy to operate, has a compact design and is very reliable. The PressureController features excellent technical specifications, optimal pressure management and a wide variety of installation options. This makes it perfect for permanent series use in industrial applications.

### Easy to use

The parameters are set using the keys or over a programming module.

### High functionality

Each switching output can be adjusted individually:

- NO/NC contact
- On/off switching pressures
- Delay times
- Hysteresis / window function
- Attenuation

Thanks to these easy switching functions, intelligent adjustments can be set which are normally not possible using a mechanical switch. Therefore, many switches can be replaced with one controller.

The analogue output is individually adjustable

- 0/4...20 mA switchable
- Starting pressure selectable
- End pressure selectable

### Reliable and safe

The pressure is recorded with a long term stable measuring cell. A functional error is signalled and can be processed further according to DESINA. Parameters can be password protected to avoid unauthorised changes.

### Rugged

The housing is made of metal and is resistant to moisture, shock and vibrations. The electronics are protected against reverse polarity, over-voltage and short-circuits.

### Everything at a glance

The large illuminated display can be read from long distances. The pressures can be displayed in MPa, bar or PSI.

### Optimal installation possibilities

The SCPSD is ideal for installation under critical conditions because of its compact design and excellent interference immunity. The display is always easy to read because the housing can be positioned as needed.

### Universal

Diverse versions are available for the many different applications.





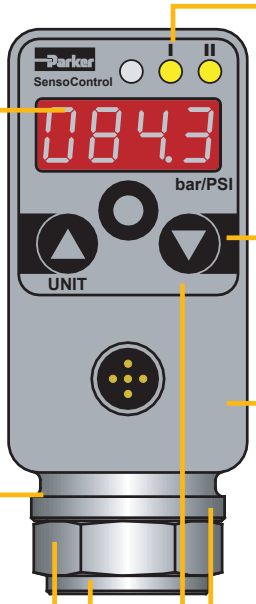
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# SCPSD PressureController

## Device features

### Optical interface
- Switch status is shown

### Everything at a glance
- Sloped display
- Digital display
  - Large
  - Illuminated
- Display
  - PSI/bar/Mpa
  - Current pressure
  - Minimum pressure
  - Maximum pressure
  - Switching points



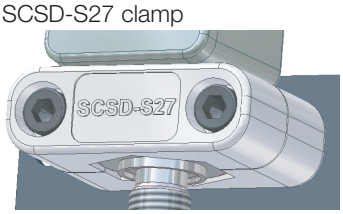

### Easy to use
- 3 large buttons
- Display of the unit

### Rugged
- Metal housing
- Waterproof
- Excellent interference immunity
- Vibration proof
- Shock proof

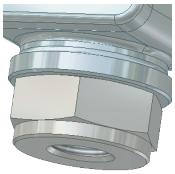
### Variable installation
- Compact size
- 290° pivotable

### Pressure port
- Stainless steel
- Long term stable measuring cell
- Wide range of compatible sub-stances

### Tube clamp
- Safe installation with the sturdy SCSD-S27 clamp



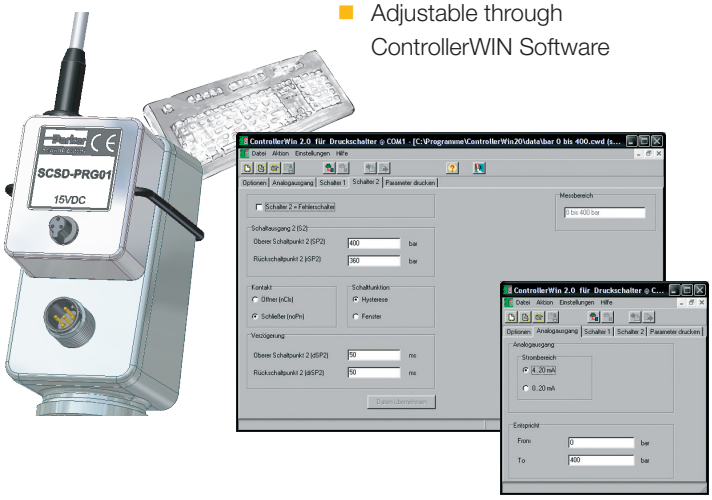

### Thread
- Inner thread



- Outer thread




### Programming module
- Adjustable through ControllerWIN Software








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# SCPSD PressureController

## Technical data

| SCPSD- | 004 | 010 | 016 | 060 | 100 | 250 | 400 | 600 |
|---|---|---|---|---|---|---|---|---|
| Pressure range $P_n$ relative (bar)<br>Adjusting range RSP...SP | -1...4 | -1...10 | -1...16 | 0...60 | 0...100 | 0...250 | 0...400 | 0...600 |
| Overload pressure $P_n$ (bar) | 10 | 20 | 40 | 120 | 200 | 500 | 800 | 1200 |
| Burst pressure $P_n$ (bar) | 12 | 25 | 50 | 550 | 800 | 1200 | 1700 | 2200 |
| Display resolution (bar) | 0.01 | 0.01 | 0.01 | 0.1 | 0.1 | 1 | 1 | 1 |
| Smallest adjustable difference between SP and RSP (SP-RSP) | 0.03 | 0.06 | 0.09 | 0.3 | 0.6 | 2 | 3 | 3 |
| Measuring component | Ceramic | | | Thin film DMS | | | | |
| Parts in contact with substances | Stainless steel 1.4404; Ceramic AL2O3; NBR | | | Stainless steel 1.4404; 1.4542 | | | | |

| **Input parameters** | |
|---|---|
| Switching cycles | ≥ 100 million |
| Polling rate | ≥ 5 ms |
| Connector thread | G1/4 BSPP;<br>ED soft seal NBR*<br>(DIN 3852 T2, Form X);<br>ED (DIN3852 T11, Form E) |
| Tightening torque | 35 Nm |
| Temperature range of substance | -20...+85 °C |
| Weight | Approx. 300 g |
| MTTFd | > 100 years |
| **Output values** | |
| Accuracy | ± 0.5 % FS typ.; ± 1 % FS max. |
| Temperature drift | ± 0.02 % FS/°K type (at -20...+85 °C)<br>± 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 type ± 1 Digit<br>± 1 % FS max. ± 1 Digit |
| **Response speed** | |
| Switching output | ≤ 10 ms |
| Analogue output | ≤ 10 ms |

| **Electrical connection** | |
|---|---|
| Supply voltage $V_+$ | 15 to 30 VDC nominal<br>24 VDC; Protection class 3 |
| Electrical connection | M12x1; 4-pole; 5-pole;<br>with gold-plated contacts<br>device connector |
| Short-circuit protection | Yes |
| Protection against wrong insertion | Yes |
| Overload protection | Yes |
| Current consumption | < 100 mA |
| **Housing** | |
| | Adjustable direction to 290°C |
| Material | Painted zinc die cast Z 410 |
| Foil material | Polyester |
| Display | 4-digit 7-segment LED;<br>red; digit height 9 mm |
| Protection degree | IP67 DIN EN 60529; |





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# SCPSD PressureController

## Technical data

| Ambient conditions | |
|---|---|
| Ambient temperature range | -20...+85 °C |
| Storage temperature range | -40...+100 °C |
| Vibration resistance | 20 g; 10...500 Hz IEC60068-2-6** |
| Shock resistance | 50 g; 11 ms IEC60068-2-29** |
| **EM compatibility** | |
| Disturbance emissions | EN 61000-6-3 |
| Resistance to interference | EN 61000-6-2 |
| **Outputs** | |
| Switching outputs | Two MOSFET high-side switches (PNP) |
| Contact functions | NO / NC contact; window / hysteresis; function freely adjustable |
| Switching voltage | $V_+$ -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 ≤ (Supply voltage - 8 V)/ 20 mA (≤ 500 Ω) |

* different sealing material (FKM, EPDM etc.) upon request
** does not apply for version DIN EN 175301-803 Form A (old DIN43650)

### Information about selecting the pressure range

The following parameters are relevant when working with pressure switches:

- System pressure
- Switching point pressure

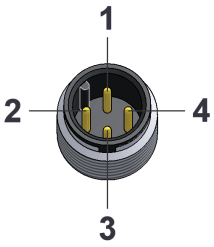
Since a 400-bar pressure switch has a comparable resolution (of 1 bar) as that of a 600-bar pressure switch (also 1 bar), it is possible to use a 600-bar pressure switch even when there is a smaller nominal pressure (for example, 315 bar).

This is a positive feature because it provides the same precision with improved safety and fewer product variants.

## Pin assignment

### SCPSD-xxx-14-x7

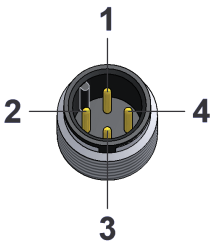
1 switching and 1 analogue output
M12x1; 4-pole




| PIN | Assignment |
|---|---|
| 1 | $V_+$ |
| 2 | Analogue out |
| 3 | 0 V / GND |
| 4 | S1 out |

### SCPSD-xxx-04-x7

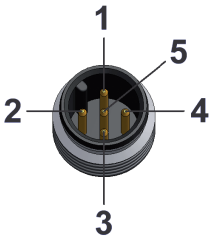
2 switching outputs;
M12x1; 4-pole




| PIN | Assignment |
|---|---|
| 1 | $V_+$ |
| 2 | S2 out |
| 3 | 0 V / GND |
| 4 | S1 out |

### SCPSD-xxx-14-x5

2 switching outputs; 1 analogue output;
M12x1; 5-pole




| PIN | Assignment |
|---|---|
| 1 | $V_+$ |
| 2 | S2 out |
| 3 | 0 V / GND |
| 4 | S1 out |
| 5 | Analogue out |



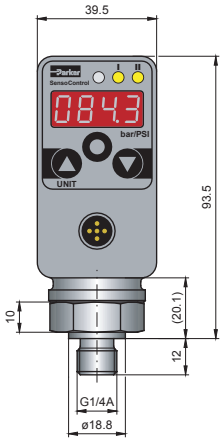


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# SCPSD PressureController

**Outer thread**

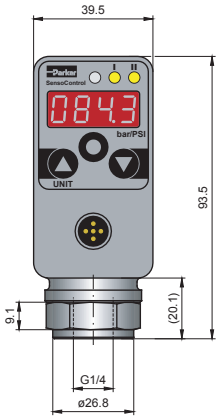
SCPSD-xxx-x4-1x



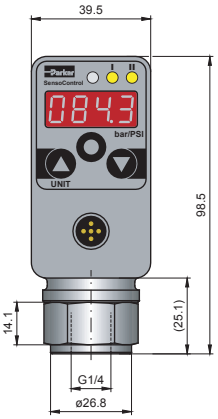

**Inner thread**

SCPSD-xxx-x4-2x

Up to 10 bar




From 16 bar

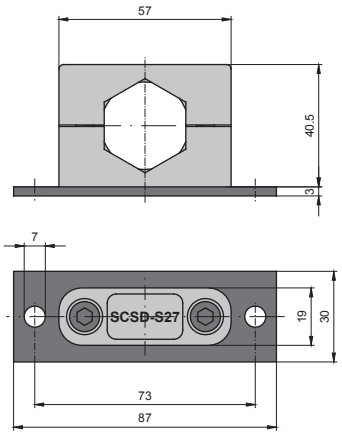


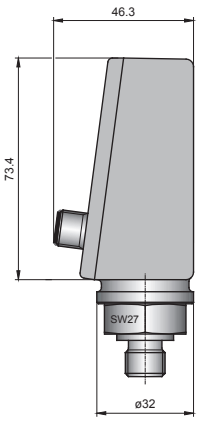

**M12 connecting plug**

SCPSD-xxx-x4-x5

**Clamp (accessory)**

SCSD-S27




The Controller Family

# SCPSD PressureController

## Order code

**SCPSD digital pressure switch**
**2 switching outputs; no analogue output: SCPSD-xxx-04-x7**
M12x1 connecting plug; 4-pole

**1 switching output; with analogue output: SCPSD-xxx-14-x7**
M12x1 connecting plug; 4-pole

**2 switching outputs; with analogue output SCPSD-xxx-14-x5**
M12x1 connecting plug; 5-pole

Pressure range

| | |
|---|---|
| 004 | **004** |
| 010 | **010** |
| 016 | **016** |
| 060 | **060** |
| 100 | **100** |
| 250 | **250** |
| 400 | **400** |
| 600 | **600** |

Version

| | |
|---|---|
| G1/4 BSPP outer thread | **1** |
| G1/4 BSPP inner thread | **2** |

**Accessories:**

| | |
|---|---|
| PC Programming KIT | **SCSD-PRG-KIT** |
| Securing clamp | **SCSD-S27** |
| Reducing adapter M22x1.5 | **SCA-1/4-M22x1.5-ED** |
| Reducing adapter G1/2 BSPP | **SCA-1/4-ED-1/2-ED** |
| Attenuation adapter | **SCA-1/4EDX1/4-D** |
| Attenuation adapter | **SCA-1/2EDX1/2-D** |
| Flange adapter for mechanical pressure switch | **SCAF-1/4-40** |

## Order example

**SCPSD-100-04-27**

Pressure range 100 bar
2 switching outputs
G1/4 BSPP inner thread
M12 connecting plug

**SCPSD-004-14-17**

Pressure range 4 bar
1 switching output
1 analogue output
G1/4 BSPP outer thread
M12 connecting plug

## Connection cable and single plug

**Connection cable, assembled** **SCK-400-xx-xx**
(open cable end)

Cable length (m)

| | |
|---|---|
| 2 m | **02** |
| 5 m | **05** |
| 10 m | **10** |

Connecting plug

| | |
|---|---|
| M12 cable jack; straight | **45** |
| M12 cable jack; 90° angled | **55** |

**Single connector**

| | |
|---|---|
| M12 cable jack; straight | **SCK-145** |
| M12 cable jack; 90° angled | **SCK-155** |





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