

# 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.

# SCPSD PressureController

## Device features

### Everything at a glance

- Sloped display
- Digital display
  - Large
  - Illuminated
- Display
  - PSI/bar/Mpa
  - Current pressure
  - Minimum pressure
  - Maximum pressure
  - Switching points

### Variable installation

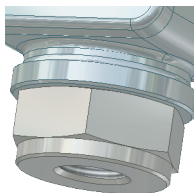
- Compact size
- 290° pivotable

### Pressure port

- Stainless steel
- Long term stable measuring cell
- Wide range of compatible substances

### Thread

- Inner thread



- Outer thread



### Optical interface

- Switch status is shown

### Easy to use

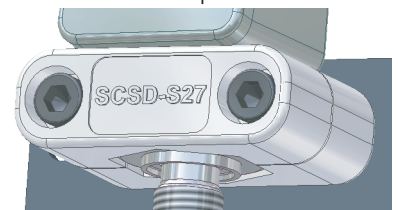
- 3 large buttons
- Display of the unit

### Rugged

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

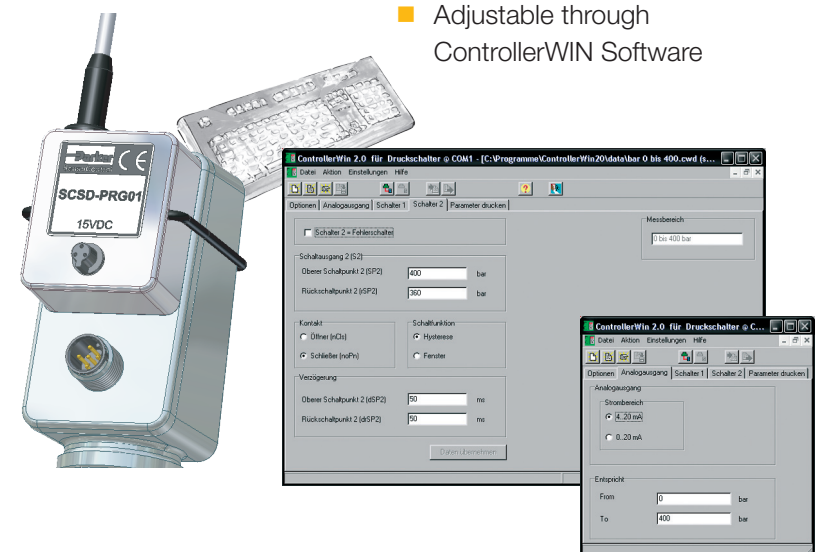
### Tube clamp

- Safe installation with the sturdy SCSD-S27 clamp



### Programming module

- Adjustable through ControllerWIN Software



# SCPSD PressureController

## Technical data

SCPSD-	004	010	016	060	100	250	400	600
Pressure range P <sub>n</sub> relative bar / (psi) Adjusting range RSP...SP	-1...4 (-14.5...58)	-1...10 (-14.5...145)	-1...16 (-14.5...232)	0...60 (0...870)	0...100 (0...1450)	0...250 (0...3626)	0...400 (0...5802)	0...600 (0...8702)
Overload pressure P <sub>n</sub> bar / (psi)	10 (145)	20 (290)	40 (580)	120 (1740)	200 (2400)	500 (7521)	800 (11,603)	1200 (17,405)
Burst pressure P <sub>n</sub> bar / (psi)	12 (174)	25 (363)	50 (725)	550 (7977)	800 (11,603)	1200 (17,405)	1700 (24,656)	2200 (31,908)
Display resolution bar / (psi)	0.01 (0.15)	0.01 (0.15)	0.01 (0.15)	0.1 (1.45)	0.1 (1.45)	1 (14.5)	1 (14.5)	1 (14.5)
Smallest adjustable difference between SP and RSP (SP-RSP) bar / (psi)	0.03 (0.44)	0.06 (0.87)	0.09 (1.31)	0.3 (4.35)	0.6 (8.7)	2 (29)	3 (43.5)	3 (43.5)
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; ED soft seal NBR* (DIN 3852 T2, Form X); ED (DIN3852 T11, Form E)
Tightening torque	35 Nm
Temperature range of substance	-20...+85 °C (-4...185°F)
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) ± 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 ± 1 % FS max. ± 1 Digit
Response speed	
Switching output	≤ 10 ms
Analogue output	≤ 10 ms

Electrical connection	
Supply voltage V <sub>+</sub>	15 to 30 VDC nominal 24 VDC; Protection class 3
Electrical connection	M12x1; 4-pole; 5-pole; with gold-plated contacts device connector
Short-circuit protection	Yes
Protection against wrong insertion	Yes
Overload protection	Yes
Current consumption	< 100 mA
Housing	
	Adjustable direction to 290°C (554°F)
Material	Painted zinc die cast Z 410
Foil material	Polyester
Display	4-digit 7-segment LED; red; digit height 9 mm
Protection degree	IP67 DIN EN 60529;

# SCPSD PressureController

## Technical data

Ambient conditions	
Ambient temperature range	-20...+85 °C (-4...185°F)
Storage temperature range	-40...+100 °C (-40...212°F)
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; $RL \leq (\text{Supply voltage} - 8 \text{ V}) / 20 \text{ mA} (\leq 500 \Omega)$

\* 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 (5802 psi) pressure switch has a comparable resolution (of 1 bar, 14.5 psi) as that of a 600-bar (8702 psi) pressure switch (also 1 bar), it is possible to use a 600-bar (8702 psi) pressure switch even when there is a smaller nominal pressure (for example, 315 bar, 4569 psi).

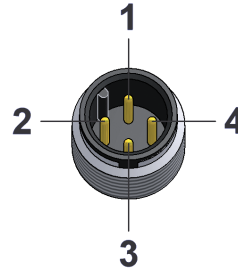
This is a positive feature because it provides the same precision with improved safety and fewer product variants.

## Pin assignment

### SCPSD-xxx-14-x7

1 switching and 1 analogue output

M12x1; 4-pole

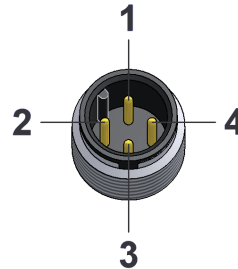


PIN	Assignment
1	$V_+$
2	Analogue out
3	0 V / GND
4	S1 out

### SCPSD-xxx-04-x7

2 switching outputs;

M12x1; 4-pole



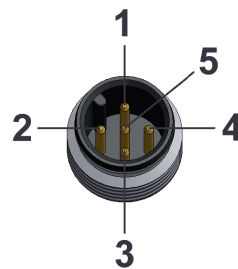
PIN	Assignment
1	$V_+$
2	S2 out
3	0 V / GND
4	S1 out



### SCPSD-xxx-14-x5

2 switching outputs; 1 analogue output;

M12x1; 5-pole



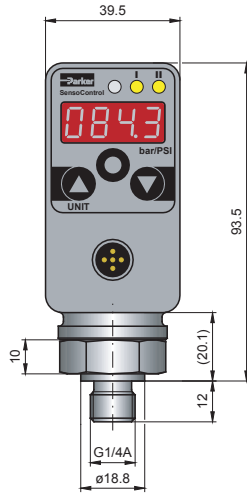
PIN	Assignment
1	$V_+$
2	S2 out
3	0 V / GND
4	S1 out
5	Analogue out



# SCPSD PressureController

## Outer thread

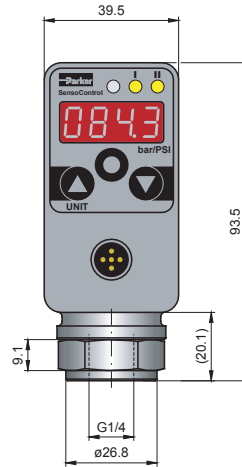
SCPSD-xxx-x4-1x



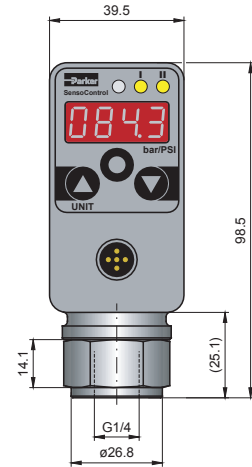
## Inner thread

SCPSD-xxx-x4-2x

Up to 10 bar (145 psi)



From 16 bar (232 psi)

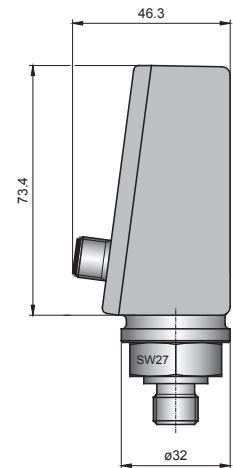
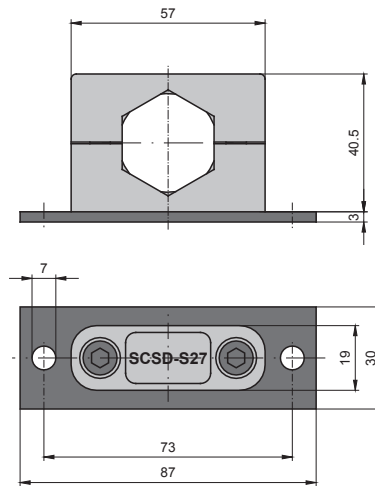


## M12 connecting plug

SCPSD-xxx-x4-x5

## Clamp (accessory)

SCSD-S27



# 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
- Securing clamp
- Reducing adapter M22x1.5
- Reducing adapter G1/2 BSPP
- Attenuation adapter
- Attenuation adapter
- Flange adapter
- for mechanical pressure switch

**SCSD-PRG-KIT**

**SCSD-S27**

**SCA-1/4-M22x1.5-ED**

**SCA-1/4-ED-1/2-ED**

**SCA-1/4EDX1/4-D**

**SCA-1/2EDX1/2-D**

**SCAF-1/4-40**

## Connection cable and single plug

### Connection cable, assembled

(open cable end)

**SCK-400-xx-xx**

### 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	<b>SCK-145</b>
M12 cable jack; 90° angled	<b>SCK-155</b>

## 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

