SCPSD

Features

• Stainless Steel or Ceramic Diaphragms
• UL Listed and CE Marked
• Pressure Ranges
  -14.7 to 250 PSI .................. 0 to 3000 PSI
  0 to 1000 PSI .................. 0 to 5000 PSI
  0 to 2000 PSI .................. 0 to 9000 PSI
• Sensor Outputs
  2 PNP Open Collector Transistor
  Output, 30 VDC, 100mA
  Optional Additional Current, 4 to 20mA
• Selectable Units of Measure
  PSI, bar, Mpa
• Output Response Time Less than 5.0ms
• Error Message
• Polarity Protected
• Short Circuit Protected
• 4 Digit LED
• Display Swivels 290°

SCPSD Programming Options

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<th>Feature</th>
<th>Yes</th>
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<tr>
<td>Outputs Change N.O. / N.C.</td>
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<tr>
<td>Units of Measure change</td>
<td>✔</td>
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<tr>
<td>EZY Mode</td>
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<tr>
<td>Hysteresis Mode</td>
<td>✔</td>
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<tr>
<td>Window Comparator Mode</td>
<td></td>
</tr>
<tr>
<td>Auto Teach Mode</td>
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<tr>
<td>Auto Surveillance Mode</td>
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<tr>
<td>Display Refresh Settings</td>
<td>✔</td>
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<tr>
<td>Output Response Time</td>
<td>✔</td>
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<tr>
<td>Display Peak / Bottom Difference Value</td>
<td>✔</td>
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<tr>
<td>Special Display Features</td>
<td></td>
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<tr>
<td>Lockout Option</td>
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<tr>
<td>Peak Value at a Touch</td>
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<td>Bottom Value at a Touch</td>
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<td>Zero Reset</td>
<td>✔</td>
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<tr>
<td>Red / Green LED Display Options</td>
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<td>Peak Surveillance Mode</td>
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<td>Energy Savings Mode</td>
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<td>Scan Mode</td>
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<td>Password Lockout</td>
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<td>Error Output Mode</td>
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<tr>
<td>Setting of Decimal Point</td>
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### Specifications

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<td>-14.7 to 100 PSI</td>
<td>0100 0250 016 1000 3000 9000 250</td>
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<td>0 to 9000 PSI</td>
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#### SCPSD Ordering Numbers

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<th>Pressure Range</th>
<th>Port Size</th>
<th>Output Circuit</th>
<th>Electrical Connector</th>
<th>Part Number</th>
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<tr>
<td>-14.7 to 100 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(2) PNP</td>
<td>M12, 4 Pin</td>
<td>SCPSD-0100P-0727</td>
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<tr>
<td>-14.7 to 100 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(1) PNP with 4-20MA</td>
<td>M12, 4 Pin</td>
<td>SCPSD-0100P-1727</td>
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<tr>
<td>-14.7 to 250 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(2) PNP</td>
<td>M12, 4 Pin</td>
<td>SCPSD-0250P-0727</td>
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<tr>
<td>-14.7 to 250 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(1) PNP with 4-20MA</td>
<td>M12, 4 Pin</td>
<td>SCPSD-0250P-1727</td>
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<tr>
<td>0 to 1000 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(2) PNP with 4-20MA</td>
<td>M12, 5 Pin</td>
<td>SCPSD-1000P-0727</td>
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<tr>
<td>0 to 1000 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(1) PNP with 4-20MA</td>
<td>M12, 5 Pin</td>
<td>SCPSD-1000P-1727</td>
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<td>0 to 3000 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(2) PNP</td>
<td>M12, 5 Pin</td>
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<td>0 to 3000 PSI</td>
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<td>(1) PNP with 4-20MA</td>
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<td>0 to 5000 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(2) PNP</td>
<td>M12, 5 Pin</td>
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<td>(1) PNP with 4-20MA</td>
<td>M12, 5 Pin</td>
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<td>0 to 5000 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(2) PNP with 4-20MA</td>
<td>M12, 5 Pin</td>
<td>SCPSD-5000P-1727</td>
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<tr>
<td>0 to 9000 PSI</td>
<td>7/6-20 UNF-2b (SAE-4)</td>
<td>(1) PNP with 4-20MA</td>
<td>M12, 5 Pin</td>
<td>SCPSD-9000P-0727</td>
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<tr>
<td>-1 to 16 Bar</td>
<td>1/4 BSPP Male</td>
<td>(2) PNP</td>
<td>M12, 4 Pin</td>
<td>SCPSD-016-04-17</td>
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<tr>
<td>-1 to 16 Bar</td>
<td>1/4 BSPP Male</td>
<td>(2) PNP with 4-20ma</td>
<td>M12, 5 Pin</td>
<td>SCPSD-016-14-15</td>
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<tr>
<td>0 to 150 Bar</td>
<td>1/4 BSPP Male</td>
<td>(2) PNP</td>
<td>M12, 4 Pin</td>
<td>SCPSD-250-04-17</td>
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<tr>
<td>0 to 150 Bar</td>
<td>1/4 BSPP Male</td>
<td>(2) PNP with 4-20ma</td>
<td>M12, 5 Pin</td>
<td>SCPSD-250-14-15</td>
</tr>
<tr>
<td>0 to 600 Bar</td>
<td>1/4 BSPP Male</td>
<td>(2) PNP</td>
<td>M12, 4 Pin</td>
<td>SCPSD-600-04-17</td>
</tr>
<tr>
<td>0 to 600 Bar</td>
<td>1/4 BSPP Male</td>
<td>(2) PNP with 4-20ma</td>
<td>M12, 5 Pin</td>
<td>SCPSD-600-14-15</td>
</tr>
</tbody>
</table>

### Pressure Sensor

**SCPSD High Pressure 316 Stainless Steel**

- **Sensing Element**: Ceramic Stainless Steel 1.4404
- **Parts in Contact with Media**: Stainless Steel 1.4404, 1.4542, NBR*
- **Switch Cycles**: >100 Million
- **Output Response Time**: < 10ms
- **Power Supply**: 15 to 30VDC, Class 2 Power Supply
- **Short Circuit Protection**: Yes, 2.4 Amp / Open Collector Output
- **Reverse Polarity Protection**: Yes
- **Overload Protection**: Yes
- **Current Consumption**: < 100mA
- **Output Circuit**: 2 PNP (Sourcing) Open Collector Transistor
- **Analog Output**: 0/4…20mA, Programmable, freely scaleable
- **Output Functions**: Hysteresis, Window Comparator
- **Switching Voltage**: -1.5VDC
- **Maximum Current Output**: 1A with 2 Open Collector Outputs, .5A per Output
- **Accuracy**: ± 0.5% F.S., ± 1% Max.
- **Repeatability**: ± 0.25% F.S.
- **Display Accuracy**: ± 0.5% F.S. Typ., ± 1 Digit
- **Thermal Error Max.**: ±0.03% F.S. at -4 to 185°F (-20 to 85°C)
- **Material**: Pressure Die-cast Zinc Z 410: Surface-finishing
- **Display Material**: Polyester
- **General Protection**: IP 67, EN60529, UL, CE Marked, EMC-EN50082-2 Class B, EN 50081-2
- **Temperature Range of Media**: -4 to 185°F (-20 to 85°C)
- **Ambient Temperature Range**: -4 to 185°F (-20 to 85°C)
- **Storage Temperature**: -40 to 212°F (-40 to 100°C)
- **Display**: 4-Digit, 7-Segment LED, Red, 9mm Height
- **Tightening Torque**: 35Nm
- **Vibration Resistance**: 20G, 10 to 500Hz, IEC60068-2-6
- **Shock Resistance**: 50 G, XYZ, 11ms, IEC60068-2-29
- **Mass**: 10.6 oz. (300g)
Internal Circuit

M12, 4-Pin, (2) PNP Outputs

M12, 5-Pin, (2) PNP Outputs with 4 to 20mA Analog

M12, 4-Pin, (1) PNP Output with 4 to 20mA Analog

Note: M12, 5-Pin Female Cable Connector will fit on both M12, 4-Pin and 5-Pin Male Sensor Connector.

Installation

Mechanical:

⚠️ CAUTION: Install and de-install the SCPSD only when there is no pressure present.

Attach the SCPSD to the appropriate process connection. Installation should be undertaken only with a 22mm, across flats spanner. Ensure that the digital display is placed in the best viewing position by using the rotational housing adjustment. Turn the SCPSD manually to the required position. Maximum 290°.

Excessive turning beyond the easily detectable end stop will lead to damage.

The housing can be attached:

• with self-tapping screws into two blind holes at the back of the housing
• with the mounting plate provided
• with cable ties

Electrical:

⚠️ CAUTION: The SCPSD may be installed only by a qualified electrician in accordance with the respective national and international regulations.

Protect the SCPSD from electromagnetic influences and over-voltages.

Optional installation tips which are shown by experience to reduce the influence of interference:

• Use shorter cables
• Avoid short distances between connecting leads and power consuming devices and interference generating electrical and electronic equipment
• Use free running diodes

Avoid static and dynamic over-pressures which exceed the specified overload pressure. Even when the overload pressure is exceeded only for a short time the SCPSD may be damaged. Parker SensoControl diagnostic systems are recommended for measuring pressure peaks exactly.

If there is a danger of excessively high pressure peaks, it is recommended to:

• use an SCPSD with a higher nominal instrument pressure (analog output can then be correspondingly matched)
• install a standard throttling device upstream from the SCPSD

Error Messages

<table>
<thead>
<tr>
<th>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>‡Att‡</td>
<td>The set value is lower than the other respective parameters. When Enter is activated, the smaller value is matched up.</td>
</tr>
<tr>
<td>‡Err1‡</td>
<td>System Error (Internal)</td>
</tr>
<tr>
<td>‡Err2‡</td>
<td>Nominal instrument pressure range was exceeded by 10%. Please check system pressure.</td>
</tr>
<tr>
<td>‡Err3‡</td>
<td>Nominal instrument pressure range has been exceeded. Error in analog electronics. Please check system pressure.</td>
</tr>
</tbody>
</table>
Cables (IP 67 Rated)

CB-M12-4P-2M, Female to Open Lead
CB-M12-5P-2M, Female to Open Lead

Dimensions

Switch Output 1 (Also Error Output)
Switch Output 2 (Also Error Output)

CB-M12-4P-2M, Female to Male
CB-M12-5P-2M, Female to Male

Switch Output 1
Switch Output 2

1/4 BSPP
7/16-20 UNF-2B (SAE-4)

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
Parameters Shown in Digital Display

To program switch outputs in menu $S1$ ($S1 = output 1$) or $S2$ ($S2 = output 2$), press $\uparrow$ and hold, then press $\downarrow$ . Pro6 will be displayed for 2 seconds.

- **PRS**: This is dedicated to a password. Entry into the programming mode can be secured only when the correct figures have been entered.
- **S1**: Switch output 1
- **S2**: Switch output 2 (Menu is not active if $S2$ is being used as an error output)
- **SP1**: Switching point (SP); upper limiting value / pressure, at which the switch output changes its status.
- **SP2**: Switching point (SP) of switch output 2; input as pressure value (e.g. 430 bar)
- **rSP1**: Reverse switching point (rSP); lower limiting value/pressure at which switch output changes its status.
- **rSP2**: Reverse switching point (rSP) of switch output 2; input as pressure value (e.g. 420 bar)

The reverse switching point is always smaller than its respective switching point. If the reverse switching point is set higher than the switching point, the reverse switching point will be set automatically 0.5% of the instrument nominal pressure below the switching point. The warning sign $\text{Att}$ (attention) will appear, which can be cleared with Enter.

**Func**: Selection of switching functions:
- $\text{HySt}$ = Hysteresis function
- $\text{FEn}$ = Window function

**cont**: Switch output as
- noPn = closer
- nCLS = opener

**dSPI**: delay time switching point output 1
**drSL**: delay time reverse switching point output 1
**dSP2**: delay time switching point output 2
**drS2**: delay time reverse switching point output 2

Options Program (See Next Page)
Settings for Options Program

**oP** Options program

**PA5** Password input

- **0000** = no password
- Example password **1234** = 1234

**uni** Setting of units:

- **bAr** = bar
- **NPA** = MPa
- **PSi** = PSI

**diS** Display: Value which will be shown on the digital display in run mode.

- **Act** = Actual system pressure
- **Nin** = Minimum system pressure; (pressure troughs)
- **NA** = Maximum system pressure; (pressure peaks)
- **SPI** = Switch point 1
- **SP2** = Switch point 2
- **OFF** = off indication

**AnA** Setting of analog output (see point 4)

- **0-20** = 0-20 mA
- **4-20** = 4-20 mA

**FrON** Calibration of starting value (0 or 4 mA) for the analog output.

- Settable from 0 to nominal instrument pressure.
- Example for **AnA** = 4-20:

  - **0000** = at 0 bar the analog output yields 4 mA.
  - The starting value is always smaller than the end value. If the starting value is set greater than the end value, then the starting value will be automatically set 5% of the nominal instrument pressure below that of the end value. The warning sign **Att 1** will appear, which can be cleared with the Enter sign.

- **SUN** Indication of Software Version

- **dPP** Setting of the decimal point. (The maximum number of decimal points depends on the nominal pressure of the SCPSD instrument)

  - **0000** = no decimal point
  - **000.0** = 1 decimal point
  - **00.00** = 2 decimal points
  - **0.000** = 3 decimal points

**End** End of programming mode

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**Electrical Test Unit (M12, 5-Pin)**

SCSN-450-PSD

**SCPSD Programming Kit**

SCSD-PRG-KIT

Optical Interface Device that allows read / write and storing of SCPSD configuration data. Kit includes optical interface device, electrical test unit with PC cable (RS232 connector) and software.