



aerospace  
 climate control  
 electromechanical  
 filtration  
**fluid & gas handling**  
 hydraulics  
 pneumatics  
 process control  
 sealing & shielding



# SensoControl®

Product directory



ENGINEERING YOUR SUCCESS.

All the instruments meet the guidelines of the European Community (EU).  
It is confirmed that these products are approved acc. to following standards.



DIN/EN 61000-6-2  
DIN/EN 61000-6-3

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Technical subject to change. November 2015  
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# SensoControl®

Differentiated and exact analyses - always up-to-date

## Diagnosis measurement technology

Measuring  
Displaying  
Analyzing

Robust, fast,  
easy to operate

- Early identifications of faults
  - Pressure
  - Flow rate
  - Temperature
  - Rotation speed
- Precise diagnosis
  - On-site
  - Logging of short-term incidents
  - Trend analysis over longer periods
  - Expressed graphically or numerically
  - Assessment and documentation on a PC
- For
  - preventative maintenance
  - commissioning
  - troubleshooting
  - machine optimization

## Industry Products

Measuring  
Managing  
Regulating

Robust, long-term stability, also  
suited for extreme conditions

- Displays, measurements, and parameter monitoring
  - Pressure
  - Temperature
  - Level
  - Flow rate
- Parameter analysis
  - On-site visualization
  - Suited for a rapid regulatory process
  - Reliable switching with simple operation
- Application

Ideal for assembly units in general machine and plant construction, for machine tools or presses in car plants.  
Individual branch-specific solutions are available any time.

Reliable technology for trouble-free machine monitoring

## ServiceJunior



The **ServiceJunior** enables the measurement and display of pressures in a single device. Thanks to the four-digit display, the measurement values are displayed more accurately. Pressure peaks are securely recorded with a sampling rate of 10 ms.

The **ServiceJunior** is characterized by its easy use. With its convincing price-performance ratio, the device offers all the advantages of digital pressure measurement. The measurement of MIN and MAX values enables pressure peaks to be recorded.

### Device features:

- Digital pressure measurement and backlit display
- Accuracy  $\pm 0.1-0.5\%$  FS (FullScale)
- Display with a bar chart (drag indicator) using the peak hold function
- Pressure peak measurement with 10 ms sampling rate
- Easy operation
- Robust and reliable
- Rotating

## Parker Serviceman Plus



The new **Parker Serviceman Plus** is a mobile, extremely robust and easy-to-use measurement instrument for numerous measurement tasks in mobile hydraulics and stationary hydraulic plants.

Thanks to the automatic sensor recognition, you can simply clip in pressure, temperature, flow rate and speed sensors and start measurements immediately. No tedious sensor parameterizing required, the measuring ranges are automatically scaled and the measurement unit is shown in the display.

### Device features:

- Easy operation
- Robust design with oil-resistant rubber protection
- Plug-&-Play functionality
- Large back-lit display
- New storage concept with a Nano USB stick
- Incl. PC software SensoWin®
- Can be delivered in 2 versions: analog or CAN

## The Parker Service Master *Easy*



**The Parker Service Master *Easy*** is a multi-channel portable measurement instrument for the simultaneous measurement of important hydraulic units:

It can measure, display, store and process all hydraulic parameters such as pressure, differential pressure, temperature, rotation speed, flow rate and hydraulic performance.

In order to meet the requirements of both modern industry hydraulics and complex mobile hydraulics, different versions are available to the user.

### Device features:

- 3-channel and 4-channel versions
- Easy to use thanks to automatic sensor recognition
- PC connection
- Measuring channels
- Integrated memory
- Trigger storage
- Incl. PC software SensoWin®

Catalog 4054

## The Parker Service Master *Plus*



In machine, plant and vehicle construction, the implementation possibilities of hydraulics are constantly increasing through the combination of hydraulics and electronics. **The Parker Service Master *Plus*** meets the demands of this development. It has never been easier to measure, display and analyze complex processes. The tried and tested storage process is particularly targeted at the measurement of MIN and MAX values and, in combination with various display options, offers analysis possibilities for problem solving.

### Device features:

- Portable multi-function measuring instrument
- Measure, monitor and analyze pressure, temperature, volumetric flow rate and rotation speed.
- Measurements and displays from 26 sensors
- Presentation of measurement values as figures, bars, pointer and curves
- Project templates stored and loaded
- Interfaces: CAN, LAN, USB
- Storage of all measurement values for more than 1 billion values. Measurement values
- Measurement data (automated recording, storage and analysis via LAN and USB with PC software SensoWin®)

Catalog 4054

## PC software SensoWin®



PC software **SensoWin®** is an easy-to-use aid for importing and editing the measurement curves recorded by **The Parker Serviceman Plus**, **The Parker Service Master Easy** or **The Parker Service Master Plus**.

Documentation and certificates are easily and cheaply issued, as PC software **SensoWin®** can serve all possibilities and advantages of Windows.

### Device features:

- Easy operation
- Compatible with Windows 2000/XP/VISTA/7 (32- und 64-bit)
- Zoom function
- Conjunction of measurement curves
- Tabular view of measurement values
- Calculation of extreme values
- Cursor function
- Transmission of measurement procedures and documentation print-out
- Export function
- Online measurement

## Test-Kit SCJN



Thanks to the **ServiceJunior-Test-Kit**, you can easily check manometers and pressure sensors, configure pressure switches and much more besides.

The Kit consists of a hand pump, with a choice of hydraulic or pneumatic, to produce a definite control pressure, and of a **ServiceJunior** as a reference device. Air, water and oil are used as pressure media.

### Device features:

- Easy production of control pressures and adjustment of:
  - manometers
  - pressure sensors
  - pressure switches
  - safety valves
- Also suitable for portable use
- Pneumatic version from -0.95 - 60 bar and hydraulic version from 0 - 700 bar
- No additional power supply required
- Comprehensive adaptor set included

## SCMA-FCU-600 Frequency Measurement SCMA-VADC-600



### Frequency measurement with SCMA-FCU-600

With the **SCMA-FCU-600** frequency signals such as turbines, flowmeters and speed sensors with a frequency output can be connected to our portable measuring instruments. Sinusoidal or squarewave signals from 1 Hz to 5 Hz can be processed with a signal amplitude of 40 mV to 10 V. Configuration through USB and PC software.

■ **Power supply for external sensor**

With the **SCMA-FCU-600**, external sensors can be supplied with a voltage of 24 V.

■ **Analog and CAN outlet**

The **SCMA-FCU-600** can be connected to the analog or CAN input of our measuring instruments, as desired.

### Measurements from other sensors with SCMA-VADC-600

Signals such as 0/4...20 mA or 0...10 V from other sensors e. g. for torque, force or displacement, can be connected to our portable measuring instruments

Applications:

- Force/displacement diagram
- Torque-volumetric flow rate characteristic curve

■ **Current/voltage measurement**

Electric currents up to 4 ADC and voltage up to 48 VDC can be measured with this module.

Applications:

- Current consumption at proportional valve
- Measurement of switching states of motors/pumps

## SCP Pressure Measurement - Analog



Quick response times guarantee a quick identification of disturbing pressure peaks in the hydraulic system. The robust stainless steel construction allows a variety of applications, e. g. in hydraulics, for cooling water or in compressed air systems.

All pressure sensors are delivered with pre-assembled diagnosis adaptors (M16x2). The connection to the hydraulic system is quick and secure. Reduced assembly times.

**Device features:**

- Small size
- Robust stainless steel design
- Response time of 1 ms
- Pressure peaks logged
- Accuracy ± 0.5 %

## SCP Pressure Measurement - CAN



All the advantages of the analog SCP sensors combined with future-proof CAN bus technology. Simple wiring with the quick plug/screw connection SPEEDCON®. Plug-&-Play functionality with minimum configuration effort.

All pressure sensors are delivered with pre-assembled diagnosis adaptors (M16x2). The connection to the hydraulic system is quick and secure. Reduced assembly times.

**Device features:**

- Small size
- Robust stainless steel design
- Response time of 1 ms
- Pressure peaks logged
- Accuracy ± 0.5 %
- Quick plug/screw connection SPEEDCON®
- Sensor identification light ring
- Suitable for long cable lengths

Pressure Measurement	
-1 ... 015 bar	Pneumatic/low pressure
0 ... 060 bar	Medium pressure
0 ... 150 bar	Medium pressure
0 ... 400 bar	Operational pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1000 bar	High pressure peak load

Pressure Measurement	
-1 ... 016 bar	Pneumatic/low pressure
0 ... 060 bar	Medium pressure
0 ... 160 bar	Medium pressure
0 ... 400 bar	Operational pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1000 bar	High pressure peak load

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## SCPT Pressure/Temperature Measurement - Analog



Quick response times guarantee a quick identification of disturbing pressure peaks in the hydraulic system. The robust stainless steel construction allows a variety of applications, e. g. in hydraulics, for cooling water or in compressed air systems.

All pressure sensors are delivered with pre-assembled diagnosis adaptors (M16x2). The connection to the hydraulic system is quick and secure. Reduced assembly times.

### Device features:

- Robust stainless steel design
- Response time of 1 ms
- Pressure peaks logged
- Accuracy  $\pm 0.5\%$

## SCPT Pressure/Temperature Measurement - CAN



All the advantages of the analog SCPT sensors combined with future-proof CAN bus technology. Simple wiring with the quick plug/screw connection SPEEDCON®. Plug-&-Play functionality with minimum configuration effort.

All pressure sensors are delivered with pre-assembled diagnosis adaptors (M16x2). The connection to the hydraulic system is quick and secure. Reduced assembly times.

### Device features:

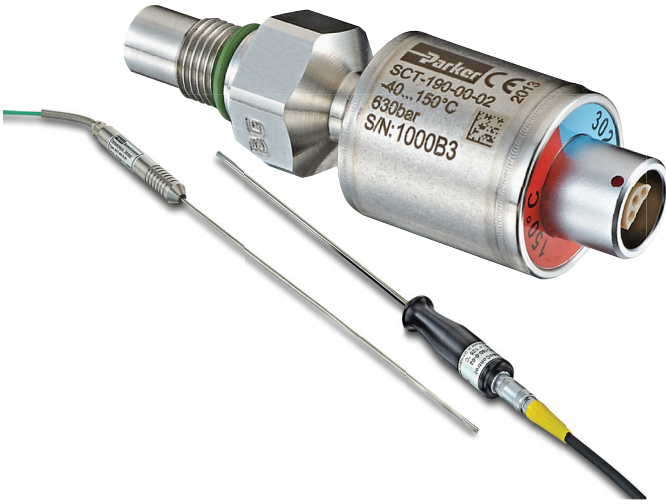
- Robust stainless steel design
- Response time of 1 ms
- Pressure peaks logged
- Future-proof CAN bus technology
- Simple wiring with SPEEDCON®
- Sensor identification LED
- Suitable for long cable lengths
- Accuracy  $\pm 0.5\%$

Pressure Measurement	
-1 ... 015 bar	Pneumatic/low pressure
0 ... 060 bar	Medium pressure
0 ... 150 bar	Medium pressure
0 ... 400 bar	Operational pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1000 bar	High pressure peak load
Temperature Measurement	
-25 ... +105 °C	Temperature

Pressure Measurement	
-1 ... 016 bar	Pneumatic/low pressure
0 ... 060 bar	Medium pressure
0 ... 160 bar	Medium pressure
0 ... 400 bar	Operational pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1000 bar	High pressure peak load
Temperature Measurement	
-25 ... +105°C	Temperature

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## SCT Temperature Measurement - Analog    SCT Temperature Measurement - CAN



Temperature measurements in hydraulics are useful for searching for faults and for avoiding damage following too high temperatures in critical components such as pumps or proportional valves.

In order to carry out a precise temperature measurement, the temperature is measured directly in the pipe or hose line.

The insertion sensors of the SCT-190 series can also be used to measure temperature in SCFT-xxx-02-02 turbine flowmeters.

### Device features:

- High pressure-resistant temperature probe
- Temperature measurement up to 1000°C
- Flexible use
- Pressure peaks logged
- Screw-in or bulb sensor



Temperature measurements in hydraulics are useful for searching for faults and for avoiding damage following too high temperatures in critical components such as pumps or proportional valves.

In order to carry out a precise temperature measurement, the temperature is measured directly in the tube or hose line.

The insertion sensors of the SCT-190 series can also be used to measure temperature in SCFT-xxx-02-02 turbine flowmeters.

### Device features:

- High pressure-resistant temperature probe for measuring hydraulics
- Temperature measurement up to 150°C
- Flexible use
- Insertion sensor
- Sensor identification light ring
- Accuracy  $\pm 0.66\%$
- Quick plug/screw connection SPEEDCON®
- Suitable for long cable lengths

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## SCRPM Speed Measurement - Analog



Performance data that depends on the rotation speed, such as the delivery rate of regulated pumps, are ideally transmitted along with the pressure and the flow rate measurement of a hydraulic drive.

Contactless speed measurement (optoelectronic principle) is fast and easy to implement.

The rotation speed is measured, e. g. at a drive shaft, and shown on the measuring instrument. No adjustment needed.

### Device features:

- Also for contactless rotation speed measurement
- Speed measurements up to 10,000 RPM
- With 3-m fixed cable

## SCFT Turbine Flowmeter - Analog



A turbine wheel is driven by the oil flow and thus set in motion. The frequencies produced are processed by a digital electronic device. The influence of disturbing flow effects is thus compensated. With the lower flow resistance  $Q_R$ , the hydraulic circulation operates at low loss.

The turbine flowmeter is equipped with an EMA-3 quick connect coupling to measure the pressure. Oil temperatures can be directly measured from the oil flow in the turbine flowmeter. Thus, all the important measured values are gathered in one location.

### Device features:

- 6 measuring ranges up to 750 l/min
- Easy assembly
- Resistant to high pressure up to 480 bar
- Low flow resistance
- Integrated pressure and temperature measurement points
- Suitable for reverse mode

## SCFTT CAN Turbine Flowmeter



A turbine wheel is driven by the oil flow and thus set in motion. The frequencies produced are processed by a digital electronic device. The influence of disturbing flow effects is thus compensated. With the lower flow resistance  $Q_R$ , the hydraulic circulation operates at low loss.

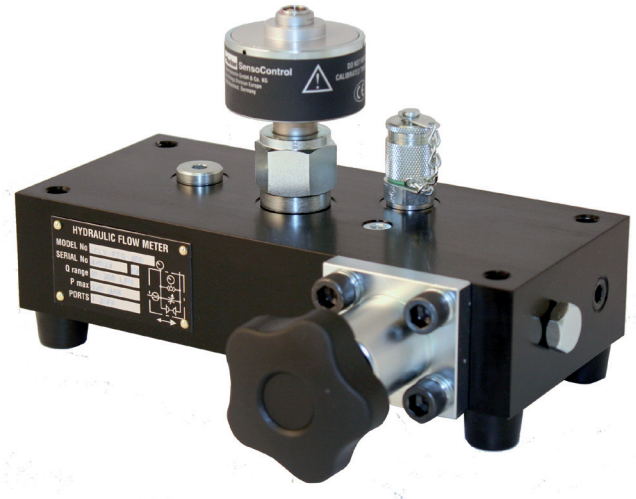
The turbine flowmeter is equipped with an EMA-3 quick connect coupling to measure the pressure.

Oil temperatures are directly measured from the oil flow in the turbine flowmeter. Thus, all the important measured values are gathered in one location.

### Device features:

- Turbine flowmeter with integrated temperature sensor in CAN bus technology
- 6 measuring ranges up to 750 l/min
- Easy assembly
- Resistant to high pressure up to 480 bar
- Low flow resistance
- Integrated pressure and temperature measurement points
- Suitable for reverse mode
- Simple wiring with SPEEDCON®
- Suitable for long cable lengths
- Sensor identification LED

## SCLV Hydraulics Tester - Analog and CAN



Hydraulics testers test the functions of motors, pumps, valves, and hydrostatic drives. These easy-to-handle hydraulic testers can help locate faults in a hydraulic system.

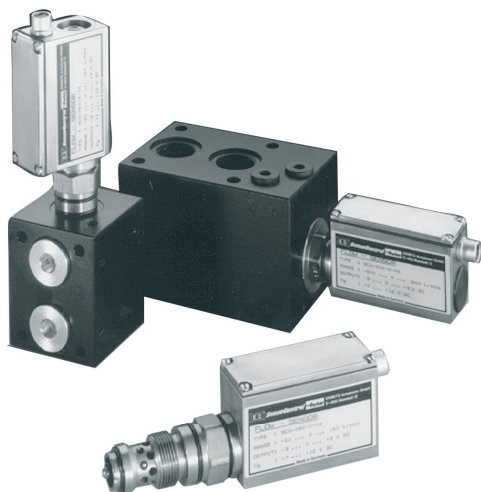
Hydraulic testers can be used for a precise measurement of pressure, temperature, and flow rate when performing maintenance work on hydraulic systems and to locate the source of faults in regulated directional control valves and in the placement of valves.

The pressure loading valve with integrated bursting discs allows pressure to build up progressively to test the flow rate over the whole work area.

### Device features:

- 2 measuring ranges up to 750 l/min
- Resistant to high pressure up to 480 bar
- Integrated overload protection
- Reverse mode (flow direction A-B)
- Also with a CAN bus connection
- CAN version with integrated temperature sensor
- Connections for pressure and temperature sensors possible

## SCQ Flowmeter - Analog



In high pressure hydraulics, a rapid identification of the rate of flow is very important. Thanks to the quick response time of the flowmeter, the dynamic behavior of hydraulic systems can be measured.

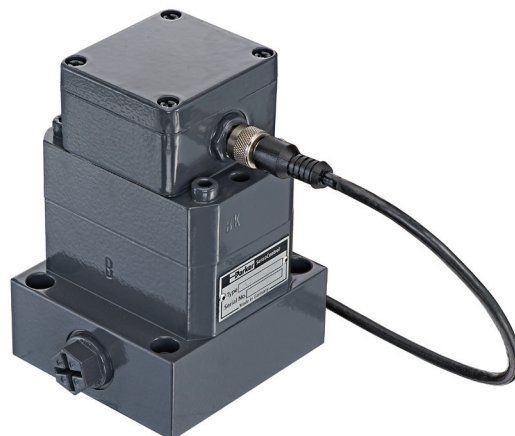
The direction indicator is helpful when searching for faults in the hydraulic system.

Quick load changes that cause damage, for example, to valves or pumps, can be identified. Assembly with the connector block allows the combined measurement of p, T, and Q. The IN-LINE adaptor for tube or hose assembly ensures the quick integration of the flowmeter into the hydraulic system. The robust construction also permits application in extreme conditions, such as a high load change or speeds of pressure increase.

### Device features:

- Spring/piston system
- Flowmeter with direction indicator
- Response time  $\leq 2$  ms
- Compact construction
- Pressure-resistant up to 420 bar
- Wide range of viscosity
- p, T, and Q measurements possible with connector block

## SCVF Volume Counter



The **SCVF** is a volume counter for highly accurate flow measurements in hydraulic installations. A very precisely worked gear pair is driven by the fluid flow.

The **SCVF** works in a wide range of viscosity. Different thicknesses allow a variety of applications.

Thanks to the wide range of viscosity, all pumpable fluids with a certain degree of lubricity can be measured:

- mineral oils
- hydraulic oils
- grease
- brake fluid (EPDM sealing)
- Skydrol (special version)

If you need to gather exact flow measurements from a wide range of viscosity, the **SCVF** volume counter is the ideal solution.

### Device features:

- Measurement principle: volume/gear counter
- 4 measuring ranges up to 300 l/min
- Measurement accuracy  $\pm 0.5$  % FS
- Pressure-resistant up to 400 bar
- Wide range of viscosity
- Quiet
- Exact flow measurement over a wide range of viscosity
- Flexible use of different media

## SCPSDi Pressure Switch



The **SCPSDi** is an electronic pressure switch with:

- Pressure display
- 2 programmable switching outputs
- Optional analog output signal
- IO-link interface
- VDMA menu navigation

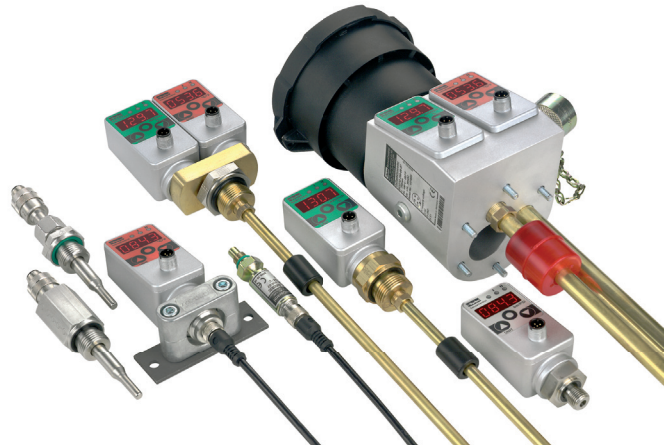
The new construction concept and the resulting assembly possibilities combined with multiple connection options are the most important characteristics of the **SCPSDi**.

This unique scope of functions makes the **SCPSDi** ideal for long-term series use in industrial applications.

### Device features:

- IO-Link
- VDMA menu
- ECO Mode
- Rotating >360°
- 180° reversible display
- Analog output V/mA
- Reliable operation thanks to LOCK
- Compact
- Robust
- MPa, bar, PSI
- Metal housing
- Mounting width 35 mm
- Mounting height 78 mm

## Controller Family



Controllers are used in control, management, and monitoring systems in which switch or analog signals or a display is/are necessary.

The controllers can replace:

- mechanical switches
- mechanical displays  
(manometers, thermometers, gauge-glasses)
- sensors

and combine all the functions of the above-named components in a single device.

### Device features:

- Large display
- Freely adjustable
- Robust metal design
- Compact
- Long term stability
- Reliable
- Resistant to interference

## SCPSD PressureController



The PressureController combines the functions of a pressure switch, a pressure sensor, and a display unit:

- Pressure display (manometer)
- Switching outputs
- Analog signal

Simple operation, compact construction and high reliability are the most important characteristics of the PressureController. The PressureController offers exceptional technical data and optimum pressure management, combined with various assembly options. It is therefore ideal for long-term series use in industrial applications.

Each switching output can be configured individually:

- Normally open/normally closed contact
- On/off switching pressures
- Delay times
- Hysteresis/window function
- Attenuation

These comfortable switch functions enable intelligent configurations which are not possible with mechanical switches. Thus, several switches can be replaced by a single controller.

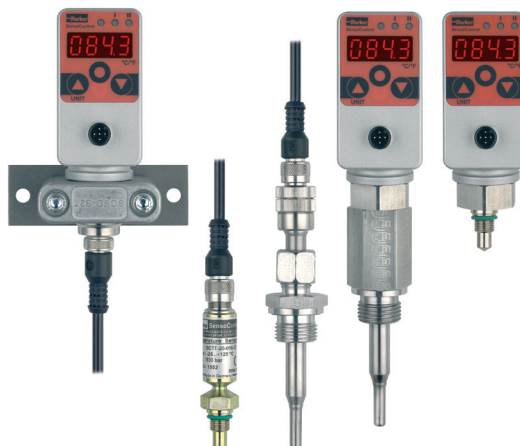
### Device features:

- Compact
- Robust
- Reliable
- Easy operation
- Long term stability
- Excellent interference resistance
- Metal housing
- High protection class
- Many versions
- Rotating
- Analog output
- Password
- MPa, bar, PSI



Catalog 4083

## SCTSD TemperatureController



The TemperatureController combines the functions of a temperature switch, a temperature sensor, and a display unit:

- Temperature display (thermometer)
- Switching outputs
- Analog signal

Simple operation, varied functionality, and a modular design are the most important characteristics of the TemperatureController. The TemperatureController offers exceptional technical data and optimum temperature management, combined with various assembly options. It is therefore ideal when the temperature must be safely monitored and clearly displayed.

Each switching output can be configured individually:

- Normally open/normally closed contact
- On/off switching pressures
- Delay times
- Hysteresis/window function
- Time delay

These comfortable switch functions enable intelligent configurations which are not possible with mechanical switches. Thus, several switches can be replaced by a single controller.

### Device features:

- Compact
- Robust
- Reliable
- Metal housing
- Modular design
- Many versions
- Analog output
- Rotating
- Password
- °C, °F



Catalog 4083

## SCTSD-L Combination Switch



The **SCTSD-L** combination switch was devised around the requirements of hydraulic unit constructions and combines the functions of a fixed mechanical level switch with those of a configurable electronic temperature switch with a display.

### Level

The tank level is measured by a highly dynamic and fully encapsulated magnetic float and switches the bistable dry reed contacts. The M12 pin assignment is compatible with conventional systems. The level contacts are firmly preset according to normal tank sizes. Two standard switching output versions are available.

### Temperature

The temperature is measured via the temperature sensor and assessed by the SCTSD TemperatureController and continually displayed. These comfortable switch functions (e. g. window function) enable intelligent configurations which are not possible with mechanical temperature switches.

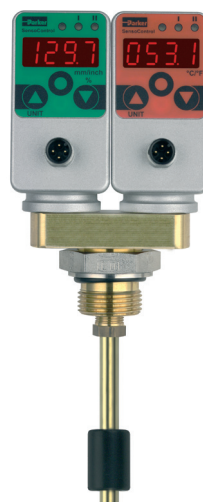
#### Device features:

- Compact construction
- Temperature display
- Individually configurable temperature switch outputs
- Small switching hysteresis
- Preset
  - for standard oils
  - for cooling
  - for shutdown ( $T_{max}$ )
- Fixed level contacts
- Bistable contacts
- Preset level
  - Warning and shutdown min
  - Shutdown min/max
- Up to 1 m bar length



Catalog 4083

## SCLTSD LevelTempController



The LevelTempController enables the temperature and the level to be configured and displayed separately on the same platform. When monitoring the tank, this integration of level and temperature functionality opens up many possibilities.

The LevelTempController combines the functions of a level/temperature switch, a level/temperature sensor, and a level/temperature display:

- Level/temperature display
- Switching outputs
- Analog signal

### Level

The position of the float is finely graduated ( $\geq 5$  mm) and continually logged and shown in mm or inches in the display. The continual logging of the level means that there is no risk of individual mechanical contacts 'sticking'. This greatly increases the operational safety of the monitored installation.

### Temperature

The temperature in the medium is continually logged and shown on the display. As with the LevelController, all switching outputs can be configured individually. In addition, all the comfortable switching functions are available, including the window and hysteresis functions, normally open and normally closed contacts, and an analog output for temperature.

#### Device features:

- Proven measurement system
- Rotating
- Level display
- mm/inch/% display
- High & low display
- Analog output
- Switching outputs
- One borehole only
- No surge pipe necessary
- Replaces several mechanical switches



Catalog 4083



## SCLSD LevelController



The LevelController combines the functions of a level switch, a level sensor, and a level display:

- Level display (gauge-glass)
- Switching outputs
- Analog signal

The LevelController is best suited for monitoring tank levels.

A variety of applications can be comfortably implemented or subsequently corrected through the menu-driven configuration of the level switching points. As the switching points no longer need to be given when ordering, the usual variability found in mechanical level switches is reduced.

Each switching output can be configured individually:

- Normally open/normally closed contact
- Higher/lower level switching point
- Delay times
- Hysteresis/window function
- Attenuation

These comfortable switch functions enable intelligent configurations which are not possible with mechanical switches. Thus, several switches can be replaced by a single controller.

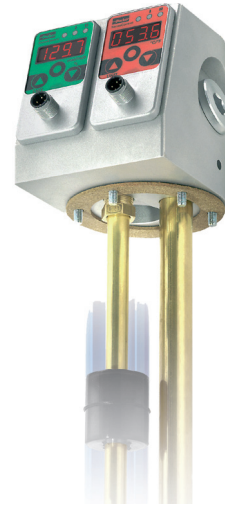
### Device features:

- Proven measurement system
- Level display
- mm/inch/% display
- High & low display
- Analog output
- Switching outputs
- No surge pipe necessary
- Replaces several mechanical switches
- Rotating



Catalog 4083

## SCOTC OilTankController



In addition to the LevelTempController, the OilTankController offers standardized connections for an air filter and a filling coupling.

When monitoring the tank for series use, this integration of level and temperature functionality together with air filter and fill adapter port opens up many possibilities. Only one connecting bore is needed for four functions.

The OilTankController combines the functions of a level/temperature switch, a level/temperature sensor, and a level/temperature display:

- Level/temperature display (Thermometer/gauge-glass)
- Switching outputs
- Analog signal

Each switching output can be configured individually:

A variety of applications can be comfortably implemented or subsequently corrected through the menu-driven configuration of the level switching points. As the switching points no longer need to be given when ordering, the usual variability found in mechanical level switches is reduced.

### Device features:

- Proven measurement system
- Level/temperature display
- mm/inch/% display
- High & low display
- One borehole only
- Continual level measurement
- Connection
  - Filling coupling
  - Air filter
  - Negative pressure
- No surge pipe necessary



Catalog 4083

## SCP01 Pressure Sensors



The **SCP01** pressure sensor was designed for the requirements of industrial applications and is used for control, management, or monitoring systems. The **SCP01** is characterized by its compact form, high linearity, and excellent interference resistance. Thanks to its speed of response, the **SCP01** is also used for rapid control processes. The compact stainless steel housing is designed for harsh ambient conditions. All parts in contact with the medium are manufactured from stainless steel and, in combination with welded thin-layer measuring cell, ensure high medium compatibility. All electronic parts are encapsulated as protection against vibrations and humidity.

An EDM hole is integrated in order to ensure an exact pressure measurement free from interference. It minimizes air cavitation and thus protects the measuring cell from any pressure blows or pressure peaks that may occur.

Thanks to its long life, high accuracy, high reliability, and robust stainless steel construction, it is the device best suited for sustained series use in hydraulic applications.

### Device features:

- Small construction
- Stainless steel measuring cell
- Stainless steel housing
- Resistant to shock and vibrations
- Wide-ranging media compatibility
- High linearity
- Long term stability
- Medium temperature -40 ... 125 °C
- Up to 1000 bar
- High burst pressure
- 1 ms
- EDM-drilling
- Encapsulated electronic parts

## Pressure sensors SCP02



The **SCP02** was specially designed for use in mobile work machines. For this, the **SCP02** has received e1 approval and is manufactured with the latest manufacturing methods, in accordance with ISO/TS 16949.

Its resistance to shock and vibrations, EMC properties, power supply, and wider temperature range have been designed for this area of application.

Thanks to its speed of response, the **SCP02** can also be used for rapid control processes.

The compact stainless steel housing and the plastic plug enable use in harsh ambient conditions, such as are found in mobile hydraulics.

All parts in contact with the medium are manufactured from stainless steel (1.4548) and, in combination with the welded thin-layer measuring cell, ensure high medium compatibility.

An EDM hole is integrated in order to ensure an exact pressure measurement free from interference. It minimizes air cavitation and thus protects the measuring cell from any pressure blows or pressure peaks that may occur.

### Device features:

- Small construction
- Stainless steel measuring cell
- Stainless steel housing
- Resistant to shock and vibrations
- High degree of protection
- E1 road approval
- Medium temperature -40 ... 150 °C
- Up to 1000 bar
- 1 ms
- Up to 36 V wiring systems



## SCPS01 Pressure Switch



The **SCPS01** electronic pressure switch was conceived for use in series machines.

In order to make assembly more straightforward, the pressure switches can be pre-programmed to client-specific values upon request. Time-consuming adjustments or configuration under pressure are therefore unnecessary. The system manufacturer can configure the pressure switches by software. This excludes the possibility of an unauthorized end user manipulating the switch.

The pressure switches do not contain any mechanical moving parts. All parts in contact with the medium are made out of stainless steel and, in combination with the welded thin-layer measuring cell, ensure high medium compatibility. A cushioning mechanism can be optionally integrated in the medium inlet. The stainless steel housing enables use in extremely harsh ambient conditions.

In order to ensure a wide field of use, the EMC properties and shock and vibration resistance are configured for use in mobile work machines. The e1 approval even permits the **SCPS01** to be installed in vehicles used on public roads.

Thanks to their robust and compact construction, combined with their long-term stability and attractive price, the **SCPS01** are the alternative to mechanical pressure switches.

### Device features:

- Long life
- No re-adjustment
- Engineered for harsh environments
- Precise switching



Catalog 4083

## SCP-EX Pressure Sensors



The **SCP-EX** can be configured for Zone 1 and conforms with Directive 94/9/EC. Thanks to the appropriate protective circuits, polarity reversal protection, overvoltage protection, and power dissipation limitation will be activated in the case of a fault. Its wide-reaching industrial application options are guaranteed through high accuracy and a robust and compact construction. Various pressure transducers are available thanks to its compatibility with different mechanical and electrical connections.

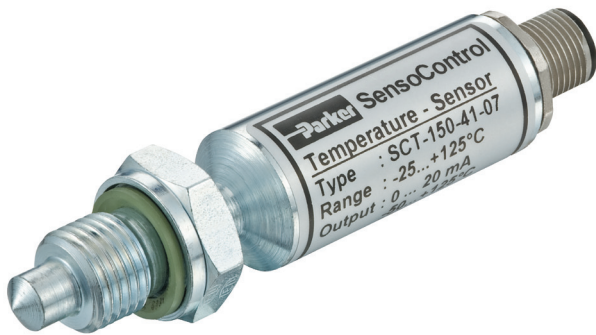
For Zone 1, in which explosive atmospheres, such as a mix of inflammable compounds in the form of gas, steam, or haze and air, sometimes occur in normal operation. It is essential to adhere to the relevant national safety regulations when assembling, commissioning, and operating these pressure transducers.

### Device features:

- Measuring ranges 0 ... 1000 bar
- ATEX approval for Zone 1
  - II 2G Ex ia IIC T4
- Output signal 4 ... 20 mA
- High reliability

Catalog 4083

## SCT-150 Temperature Sensors



A compact construction and high pressure resistance characterize the **SCT-150** electronic temperature sensor.

If the temperature needs to be measured under high pressure and a compact construction is necessary, the **SCT** can be used.

Thanks to its pressure resistance up to 630 bar, the **SCT** temperature sensor is suited to the needs of hydraulic applications.

It performs precise and quick temperature measurements.

The temperature sensors in the **SCT** series are compatible with the **SCE** panel measuring instruments. This allows the medium temperature as well as the hydraulic pressure to be measured, controlled, and evaluated.

### Device features:

- Pressure-resistant up to 630 bar
- Compact construction
- Robust steel housing
- Easy assembly
- -25 °C ... +100 °C

## SCE-020 Digital Display Unit



Multiple connections, a flexible display and numerous outlets characterize the **SCE** digital display unit. The **SCE-020** converts analog standard signals (in 0 ... 10 V to 0/4 ... 20 mA ranges) into easily understood measurement values/units.

Thus, the **SCE-020** can easily display any sensor (pressure, temperature, torque, length etc.) desired.

The display can be read from a great distance. In order to present different measuring values, the desired measurement range and the decimal point can be set easily and in a user-friendly way. Additional units are shown on a separate illuminated surface. The power supply can range from 11 to 30 VDC. An adjustable limit value can be monitored through the potential-free switching output. The analog output and the RS232 series interface can forward the signal to a corresponding peripheral device. If different measuring values need to be presented easily and in a flexible manner, the **SCE-020** display unit can be used.

### Device features:

- Easily readable digital display:
  - large
  - bright
- Programmable
- Free choice of unit
- Input:
  - current 0/4 ... 20 mA
  - voltage 0 ... 10 V
  - frequency 0 ... 8 kHz
- Switching output
- Loopthrough function:
  - analog output
  - series interface
- Standard housing 96 x 48 mm

## SCK Cable



**SensoControl®** cables are designed according to the requirements of industrial sensors and switches.

M12 cables and M12 plugs are therefore usually

- compact
- screened
- 5-pin

### 5-pin design

The 5-pin cables are suitable for both 4 and 5-pin connections. 5-pin cables are fully compatible with sensor versions with 4-pin plugs.

This means that a (5-pin) cable design can always be used for pressure switches (Controller Family SCxSD & SCOTC) and sensors irrespective of the plug version and the different number of pins.

The SCK-400-xxx-x5 cables are compatible with all components with M12 plug connections.

### Shielding

The screening ensures high interference resistance and operational safety.

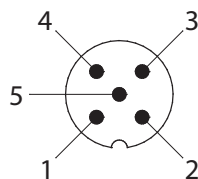
- High EMC protection

### Device features:

- One cable for everything
- Compact
- Resistant to interference
- Compatible with:
  - sensors
  - controllers
- M12 plugs
- DIN EN 175301 (connector plugs)
- Different lengths

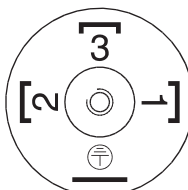
## Connector assignment


### SCK-400-xx-x5



PIN			
1	bn	brown	brown
2	wh	white	white
3	bu	blue	blue
4	bk	black	black
5	gy	grey	grey

### SCK-400-xx-56



PIN			
1	ye	yellow	yellow
2	gn	green	green
3	bn	brown	brown
			

## EMA1/EMA3/EMA4 test points

### EMA1



### EMA3/ EMA4



- To monitor and control pressure in high, low, and negative pressure systems.
- To ventilate cylinders and hydraulic systems.
- For taking samples from high, low, and negative pressure.

### Advantages

- Leak-proof sealing of the connection before opening the valve
- Robust, reliable designs for small dimensions
- Easy handling
- Simple connections for measuring, testing, and switching devices
- Couplings under pressure up to 400 bar possible for types with screw couplings
- Nominal pressures to 630 bar
- Vibration-proof metal protective cap

### Sealing system for primary seal

For EMA1: a non-return ball valve.

For EMA3/EMA4: a sealing cone with an O-Ring seal.

The EMA3/EMA4-sealing system guarantees minimal leakage.

An additional O-ring seal is effective as a secondary seal for screwed-on screw caps (EMA3/EMA4) and coupled sealing plugs (EMA1), as well as for connected measurement hoses.

### Differences between the EMA1 and EMA3/EMA4 types

- Sealing system (see above paragraph)
- Measuring hose connection with plug coupling for EMA1  
measuring hose connection with screw coupling EMA3/  
EMA4
- Nominal pressures (s. paragraph "Nominal pressures")

### Nominal pressures

- EMA3/EMA4 types to 630 bar
- EMA1 types to 400 bar
- Adaption under pressure to max. 400 bar

### Materials and temperatures

- Steel Cr(VI)-free
- Stainless steel, material no. 1.4571
- Seals:
  - FKM (temperature range: -20 to +200 °C)
  - EPDM (ethylene propylene for brake fluid)
  - Temperature range: (-40 to +150 °C)
- Hose:
  - Polyamide (temperature range: -35 to +100 °C)
- For stainless steel version, FKM only

### Utilities

- Suitable for hydraulic oils and other oils with a mineral oil base (take sealing material into account)
- When using with other fluid or gas media, please inquire with information on the medium or the sealing material, or notify us when ordering.



# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



## Aerospace Key Markets

Aftermarket services  
Commercial transports  
Engines  
General & business aviation  
Helicopters  
Launch vehicles  
Military aircraft  
Missiles  
Power generation  
Regional transports  
Unmanned aerial vehicles

## Key Products

Control systems & actuation products  
Engine systems & components  
Fluid conveyance systems & components  
Fluid metering, delivery & atomization devices  
Fuel systems & components  
Fuel tank inerting systems  
Hydraulic systems & components  
Thermal management  
Wheels & brakes



## Climate Control Key Markets

Agriculture  
Air conditioning  
Construction Machinery  
Food & beverage  
Industrial machinery  
Life sciences  
Oil & gas  
Precision cooling  
Process  
Refrigeration  
Transportation

## Key Products

Accumulators  
Advanced actuators  
CO<sub>2</sub> controls  
Electronic controllers  
Filter driers  
Hand shut-off valves  
Heat exchangers  
Hose & fittings  
Pressure regulating valves  
Refrigerant distributors  
Safety relief valves  
Smart pumps  
Solenoid valves  
Thermostatic expansion valves



## Electromechanical Key Markets

Aerospace  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Paper machinery  
Plastics machinery & converting  
Primary metals  
Semiconductor & electronics  
Textile  
Wire & cable

## Key Products

AC/DC drives & systems  
Electric actuators, gantry robots & slides  
Electrohydraulic actuation systems  
Electromechanical actuation systems  
Human machine interface  
Linear motors  
Stepper motors, servo motors, drives & controls  
Structural extrusions



## Filtration Key Markets

Aerospace  
Food & beverage  
Industrial plant & equipment  
Life sciences  
Marine  
Mobile equipment  
Oil & gas  
Power generation & renewable energy  
Process  
Transportation  
Water Purification

## Key Products

Analytical gas generators  
Compressed air filters & dryers  
Engine air, coolant, fuel & oil filtration systems  
Fluid condition monitoring systems  
Hydraulic & lubrication filters  
Hydrogen, nitrogen & zero air generators  
Instrumentation filters  
Membrane & fiber filters  
Microfiltration  
Sterile air filtration  
Water desalination & purification filters & systems



## Fluid & Gas Handling

### Key Markets

Aerial lift  
Agriculture  
Bulk chemical handling  
Construction machinery  
Food & beverage  
Fuel & gas delivery  
Industrial machinery  
Life sciences  
Marine  
Mining  
Mobile  
Oil & gas  
Renewable energy  
Transportation

### Key Products

Check valves  
Connectors for low pressure fluid conveyance  
Deep sea umbilicals  
Diagnostic equipment  
Hose couplings  
Industrial hose  
Mooring systems & power cables  
PTFE hose & tubing  
Quick couplings  
Rubber & thermoplastic hose  
Tube fittings & adapters  
Tubing & plastic fittings



## Hydraulics

### Key Markets

Aerial lift  
Agriculture  
Alternative energy  
Construction machinery  
Forestry  
Industrial machinery  
Machine tools  
Marine  
Material handling  
Mining  
Oil & gas  
Power generation  
Refuse vehicles  
Renewable energy  
Truck hydraulics  
Turf equipment

### Key Products

Accumulators  
Cartridge valves  
Electrohydraulic actuators  
Human machine interfaces  
Hybrid drives  
Hydraulic cylinders  
Hydraulic motors & pumps  
Hydraulic systems  
Hydraulic valves & controls  
Hydrostatic steering  
Integrated hydraulic circuits  
Power take-offs  
Power units  
Rotary actuators  
Sensors



## Pneumatics

### Key Markets

Aerospace  
Conveyor & material handling  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Transportation & automotive

### Key Products

Air preparation  
Brass fittings & valves  
Manifolds  
Pneumatic accessories  
Pneumatic actuators & grippers  
Pneumatic valves & controls  
Quick disconnects  
Rotary actuators  
Rubber & thermoplastic hose & couplings  
Structural extrusions  
Thermoplastic tubing & fittings  
Vacuum generators, cups & sensors



## Process Control

### Key Markets

Alternative fuels  
Biopharmaceuticals  
Chemical & refining  
Food & beverage  
Marine & shipbuilding  
Medical & dental  
Microelectronics  
Nuclear Power  
Offshore oil exploration  
Oil & gas  
Pharmaceuticals  
Power generation  
Pulp & paper  
Steel  
Water/wastewater

### Key Products

Analytical Instruments  
Analytical sample conditioning products & systems  
Chemical injection fittings & valves  
Fluoropolymer chemical delivery fittings, valves & pumps  
High purity gas delivery fittings, valves, regulators & digital flow controllers  
Industrial mass flow meters/ controllers  
Permanent no-weld tube fittings  
Precision industrial regulators & flow controllers  
Process control double block & bleeds  
Process control fittings, valves, regulators & manifold valves



## Sealing & Shielding

### Key Markets

Aerospace  
Chemical processing  
Consumer  
Fluid power  
General industrial  
Information technology  
Life sciences  
Microelectronics  
Military  
Oil & gas  
Power generation  
Renewable energy  
Telecommunications  
Transportation

### Key Products

Dynamic seals  
Elastomeric o-rings  
Electro-medical instrument design & assembly  
EMI shielding  
Extruded & precision-cut, fabricated elastomeric seals  
High temperature metal seals  
Homogeneous & inserted elastomeric shapes  
Medical device fabrication & assembly  
Metal & plastic retained composite seals  
Shielded optical windows  
Silicone tubing & extrusions  
Thermal management  
Vibration damping

ENGINEERING YOUR SUCCESS.

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### US Product Information Centre

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