



# Hydraulic & Offshore Supplies











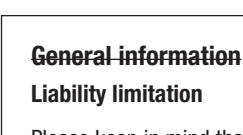
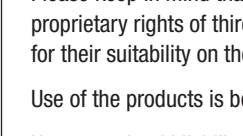
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## Stauff Diagtronic



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## General information

### Liability limitation

Please keep in mind that all data listed are average values and should only be considered non-binding indications, even with regard to the proprietary rights of third parties. They may only be used for design purposes conditionally, and do not free you from performing your own test for their suitability on the products we supply.

Use of the products is beyond our control and falls exclusively in your area of responsibility.

However, should liability come into question regardless, this liability is limited for all damages to the value of the products we supplied and that you deployed.

Of course, we guarantee the quality of our products in accordance with the requirements of our General Terms and Conditions.

**We reserve the right to make engineering changes. This catalogue supersedes all previous catalogues.**

The STAUFF SPG-DIGI digital pressure gauges are intended to measure and display pressures in hydraulic systems, particularly for oils, lubricants and water. They can display the current measured values, as well as minimum and maximum values, with an accuracy of 0,5% of full scale. The STAUFF SPG-DIGI digital pressure gauges are available individually, or as part of a complete pressure test kit. They are very sturdy, reliable, easy to use and come with the CE mark (evidence of conformity compliance).



**Technical data**

**Dimensions**

- Diameter 79 (3,11)
- Depth 33 (1,3)
- Weight 540 g (1,19 lbs.)

**Display**

- Text display: 4 1/2-digit  
Size: 50 x 34 (1,97 x 1,34)
- Actual value display: 15 (0,59)
- MIN-/MAX or FS\* display: 8 (0,31)
- Units: bar, PSI, MPa, kPa, mbar
- Bar graph display (drag indicator)
- Background lighting
- Zero correction
- Battery charge display

**Specifications**

- Output of the current measured value
- Accuracy: ± 0,25 % FS\* typ., ± 0,5 % FS\* max.
- Resolution: 4.096 steps
- Peak pressure measurement with 10 ms sampling rate
- Ambient temperature: -10°C ... 50°C (14°F ... 122°F)
- Media temperature: -20°C ... 80°C (-4°F ... 176°F)
- Storage temperature: -20°C ... 60°C (-4°F ... 140°F)
- Relative humidity: < 85 %
- Battery life:  
max. 1.500 hours (operating without lighting, 2 x 1,5 V DC AA alkaline)
- Lighted measured value display
- Pressure connection: G 1/4 BSP made of 1.4404 stainless steel
- Housing made of die-cast zinc with TPE rubber protective covering
- Adapter made of steel, zinc-nickel coated
- Gaskets: NBR (Buna-N®)  
FKM (Viton®) or EPDM upon request
- Safety class: EN 60529 - IP 67
- Vibration: IEC 60068-2-6 / 10 ... 500 Hz 5 g
- Shock: IEC 60068-2-27 25 g
- Load cycles (10<sup>6</sup>): 100

\* FS = Full Scale

**Accessories (connection adapters)**

A large number of adapters are available to connect the STAUFF SPG-DIGI pressure gauges to other test points and testers.

Adapter	Adaption from	to dimension G	Adapter	Adaption from	to dimension G	Adapter	Adaption from	to dimension G
SDA20-G1/4	G 1/4	M 16 x 2						
SDA15-G1/4	G 1/4	M 16 x 1,5						
SDA12-G1/4	G 1/4	S 12,65 x 1,5						
SAD20/15-P	M 16 x 2	M 16 x 1,5						
SAD20/12-P	M 16 x 2	S 12,65 x 1,5						
SAD20/10-P	M 16 x 2	Plug-in system						

Other Adapters on request available.



**Ordering system / Pressure ranges**

SPG - DIGI - B0016 - B - CAL			
<b>Type</b>			
SPG	STAUFF pressure gauge		
<b>Version</b>			
DIGI	Digital pressure measurement and display		
<b>Pressure range</b>			
Code	Display range	Maximum pressure	Burst pressure
B0016	-1 ... 16 bar (-14,5 ... 230 PSI)	40 bar (580 PSI)	50 bar (725 PSI)
B0100	0 ... 100 bar (0 ... 1.450 PSI)	200 bar (2.900 PSI)	800 bar (11.600 PSI)
B0400	0 ... 400 bar (0 ... 5.800 PSI)	800 bar (11.600 PSI)	1.700 bar (24.650 PSI)
B0600	0 ... 600 bar (0 ... 8.700 PSI)	1.200 bar (17.400 PSI)	2.200 bar (31.900 PSI)
<b>Calibration</b>			
(none)	without calibration certificate		
CAL	with calibration certificate		
<b>Pressure connection</b>			
B	G 1/4 BSP		
U	7/16 - 20 UNF		


**STAUFF SMB-DIGI Pressure Test Kit**

To supplement the SPG-DIGI individual devices, the STAUFF digital pressure gauges are also available as part of a pressure test kit. The SMB-DIGI pressure test kits are assembled in various versions, in accordance with customer wishes.

All pressure test kits are supplied in a handy case with individually-designed foam inserts. They contain the following components:

- SPG-DIGI digital pressure gauge
- SDA adapter (G 1/4 BSP to M 16 x 2 or S 12,65 x 1,5)
- SSV20 or SSV12 hose connector
- SMK20-G1/4-PC or SKK12-G1/4-PC test point
- SMK20-M10x1-PA or SKK12-M10x1-PA test point
- SRS-G3/8-B reducing thread adapter
- SRS-G1/2-B reducing thread adapter
- SMS test hose (2 m / 6,5 ft),  
M 16 x 2 or S 12,65 x 1,5 connection, pressure-resistant to 600 bar
- Operating instructions (multilingual) on CD
- Dust cloth

**Ordering system Pressure Test Kit / Pressure ranges**

SMB - DIGI - 20 - B0016 - B - CAL			
<b>Type</b>			
SMB	STAUFF Pressure Test Kit		
<b>Version</b>			
DIGI	for the SPG-DIGI digital pressure gauge		
<b>Adapter version</b>			
20	Adapts to STAUFF Test 20 (M 16 x 2)		
12	Adapts to STAUFF Test 12 (S 12.65 x 1.5)		
<b>Pressure range</b>			
Code	Display range	Maximum pressure	Burst pressure
B0016	-1 ... 16 bar (-14,5... 230 PSI)	40 bar (580 PSI)	50 bar (725 PSI)
B0100	0 ... 100 bar (0 ... 1.450 PSI)	200 bar (2.900 PSI)	800 bar (11.600 PSI)
B0400	0 ... 400 bar (0 ... 5.800 PSI)	800 bar (11.600 PSI)	1.700 bar (24.650 PSI)
B0600	0 ... 600 bar (0 ... 8.700 PSI)	1.200 bar (17.400 PSI)	2.200 bar (31.900 PSI)
<b>Calibration</b>			
(none)	Digital pressure gauge without calibration certificate		
CAL	Digital pressure gauge with calibration certificate		
<b>Pressure connection</b>			
B	G 1/4 BSP		

## Product description

The STAUFF SPT pressure transmitters were developed as an inexpensive technical alternative to the products of other manufacturers. The SPT pressure transmitters convert applied pressures from 10 bar (145 PSI) up to 1.000 bar (15.000 PSI) into corresponding output signals. With its sturdy stainless-steel housing and its compact size, the SPT pressure transmitter provides a highly-developed sensor unit with many advantages, such as excellent insensibility to vibration and a long service life.



## Specifications

- Sturdy stainless-steel housing
- Compact size
- Operating pressures up to 1.000 bar (15.000 PSI)
- Long-term stability
- Temperature compensation
- Protected against incorrect polarity, short circuits and over-voltage
- Pressure connections: BSP, NPT or SAE thread
- Safety class – IP 65 (NEMA 5)
- Supply voltage: 10 V ... 30 V DC
- Output signal: 4 ... 20 mA
- Weight: approx. 100 g (0,2 lbs.)

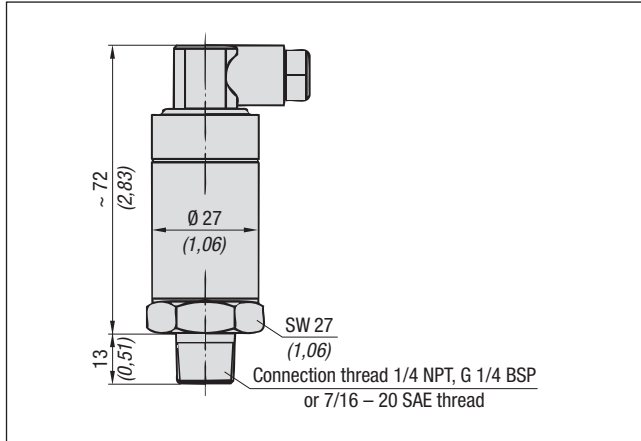
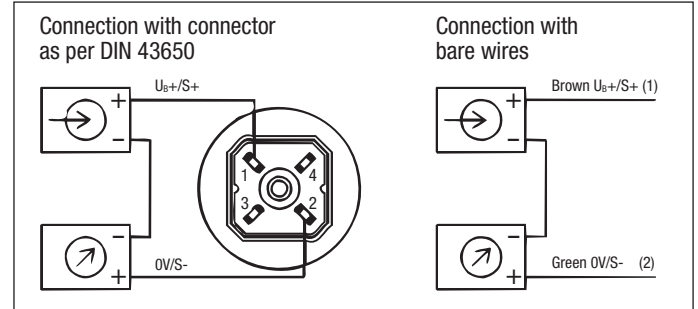
## Pressure ranges

Code	Pressure range*	Maximum pressure**	Burst pressure***
B0010	0 ... 10 bar (0 ... 145 PSIG)	35 bar (507 PSI)	42 bar (609 PSI)
<b>B0016</b>	<b>0 ... 16 bar (0 ... 232 PSIG)</b>	<b>80 bar (1.160 PSI)</b>	<b>96 bar (1.392 PSI)</b>
B0025	0 ... 25 bar (0 ... 363 PSIG)	50 bar (725 PSI)	96 bar (1.392 PSI)
<b>B0040</b>	<b>0 ... 40 bar (0 ... 580 PSIG)</b>	<b>80 bar (1.160 PSI)</b>	<b>400 bar (5.800 PSI)</b>
B0060	0 ... 60 bar (0 ... 870 PSIG)	120 bar (1.740 PSI)	550 bar (7.980 PSI)
<b>B0100</b>	<b>0 ... 100 bar (0 ... 1.450 PSIG)</b>	<b>200 bar (2.900 PSI)</b>	<b>800 bar (11.600 PSI)</b>
<b>B0160</b>	<b>0 ... 160 bar (0 ... 2.320 PSIG)</b>	<b>320 bar (4.640 PSI)</b>	<b>1.000 bar (14.500 PSI)</b>
<b>B0250</b>	<b>0 ... 250 bar (0 ... 3.630 PSIG)</b>	<b>500 bar (7.250 PSI)</b>	<b>1.200 bar (17.400 PSI)</b>
<b>B0400</b>	<b>0 ... 400 bar (0 ... 5.800 PSIG)</b>	<b>800 bar (11.600 PSI)</b>	<b>1.700 bar (24.650 PSI)</b>
B0600	0 ... 600 bar (0 ... 8.700 PSIG)	1.200 bar (17.400 PSI)	2.400 bar (34.800 PSI)
B1000	0 ... 1.000 bar (0 ... 14.500 PSIG)	1.500 bar (21.750 PSI)	3.000 bar (43.500 PSI)
<b>P00300</b>	<b>0 ... 300 PSIG (0 ... 20 bar)</b>	<b>725 PSI (49 bar)</b>	<b>3.625 PSI (247 bar)</b>
P00400	0 ... 400 PSIG (0 ... 27 bar)	725 PSI (49 bar)	3.625 PSI (247 bar)
P00500	0 ... 500 PSIG (0 ... 34 bar)	1.160 PSI (79 bar)	5.800 PSI (395 bar)
<b>P00600</b>	<b>0 ... 600 PSIG (0 ... 41 bar)</b>	<b>1.160 PSI (79 bar)</b>	<b>5.800 PSI (395 bar)</b>
P01000	0 ... 1.000 PSIG (0 ... 68 bar)	1.740 PSI (118 bar)	7.975 PSI (543 bar)
<b>P01500</b>	<b>0 ... 1.500 PSIG (0 ... 102 bar)</b>	<b>2.900 PSI (197 bar)</b>	<b>11.600 PSI (789 bar)</b>
P02000	0 ... 2.000 PSIG (0 ... 136 bar)	2.900 PSI (197 bar)	11.600 PSI (789 bar)
<b>P03000</b>	<b>0 ... 3.000 PSIG (0 ... 204 bar)</b>	<b>7.250 PSI (493 bar)</b>	<b>17.400 PSI (1.184 bar)</b>
<b>P05000</b>	<b>0 ... 5.000 PSIG (0 ... 340 bar)</b>	<b>11.600 PSI (789 bar)</b>	<b>24.650 PSI (1.677 bar)</b>
<b>P07500</b>	<b>0 ... 7.500 PSIG (0 ... 510 bar)</b>	<b>17.400 PSI (1.184 bar)</b>	<b>34.800 PSI (2.367 bar)</b>
P10000	0 ... 10.000 PSIG (0 ... 680 bar)	17.400 PSI (1.184 bar)	34.800 PSI (2.367 bar)
P15000	0 ... 15.000 PSIG (0 ... 1.020 bar)	21.750 PSI (1.480 bar)	43.500 PSI (2.959 bar)

Note : \* Pressure ranges printed in bold are standard

\*\* Maximum pressure, does not cause permanent changes to the technical characteristics but may result in a shift of the zero and measured values

\*\*\* Burst pressure, results in permanent changes to the technical characteristics or destruction of the pressure transmitter

**Dimensions (with connector as per DIN 43650)**

**Electrical connections/schematic (2-wire system)**


Cable	Identification	DIN connector	Cable colour
Supply +	UB+ / S+	Pin 1	Brown
Signal -	0V / S-	Pin 2	Green

**Technical data**

<b>Measuring principle</b>	Thin-film sensor
<b>Connection thread</b>	1/4 NPT, G 1/4 BSP or 7/16 - 20 SAE thread
<b>Materials</b> Parts in contact with measured materials Housing	CrNi steel 1.4571 and 1.4542 CrNi steel 1.4571
<b>Dimensions</b> Dimensions Weight	See drawing approx. 100 g (0,2 lbs.)
<b>Temperature ranges</b> Media temperature Ambient temperature Storage temperature Compensation range Temperature coefficient in the compensated temperature range Average temperature coefficient of the zero (% FS*/10K): Average temperature coefficient of the range (% FS*/10K):	-30°C ... 100°C (-22°F ... 212°F) -30°C ... 85°C (-22°F ... 185°F) -40°C ... 100°C (-40°F ... 212°F) 0°C ... 80°C (+32°F ... 176°F) ≤ 0,3 ≤ 0,2
<b>Accuracies/deviations</b> Deviation from the characteristic (% FS*) Hysteresis (% FS*) Reproducibility (% FS*) Stability per year (% FS*)	≤ 1,0 ≤ 0,5 ≤ 0,05 ≤ 0,2
<b>Electrical data</b> Supply voltage Output signal Maximum load Limit frequency Response time	10 V ... 30 V DC 4 ... 20 mA (2-wire system) $R_A \leq (U_b - 10 V) / 0,02 A$ (with $R_A$ in ohms and $U_b$ in volts) 150 Hz < 1 ms
<b>Electrical connection</b>	Miniature right-angle connector, 4-pin, G series (as per DIN 43650)
<b>Protection types</b>	Protection against incorrect polarity, over-voltage and short circuits, safety class EN 60529/IEC 529 - IP 65 (NEMA 5), Interference emission and immunity as per EN 61326 CE declaration of conformity upon request

\* FS = Full Scale

**Ordering system**

SPT - B0100 - B04 - 420 - MD	
<b>Type</b> SPT	STAUFF pressure transmitter
<b>Pressure range</b> Code	See the "Code" column in the table on page 6
<b>Connector version</b>	Subminiature round connector as per DIN 43650
<b>Signal</b>	Output signal: 4 ... 20 mA (2-wire system)
<b>Pressure connection</b> B04	G 1/4 BSP
N04	1/4 NPT
S04	7/16 - 20 SAE thread

### Series description

The STAUFF measuring and test equipment of the PPC series are perfectly suited for measuring all relevant quantities in fluid engineering systems, including pressure, differential pressure, temperature, flow and capacity. Depending on the type, they allow evaluation, storage and further processing in PCs or notebooks. They have been especially developed for the growing needs of system monitoring, troubleshooting and determining measured values in hydraulic and pneumatic systems. The application areas are correspondingly broad:

- Industrial hydraulics
- Mobile, agricultural and forestry hydraulics
- Marine and offshore hydraulics
- Chemical and petrochemical industries
- Energy and air conditioning industries
- Heating and sanitary industries



The hydraulic testers of the PPC-04 /2 series are distinguished by simple operation using eight buttons. They are suitable for connecting two sensors simultaneously and show the measured values as numbers on their two-line display.







The hydraulic testers of the PPC-06/08/12 series, depending upon the type, provide the potential of connecting 3, 4 or 6 sensors. They have internal memory and can not only output the measured values as numbers, they can also display them as graphs.

The PPC-04 /2 series has been completely redesigned. Just to name the innovations apparent at first glance, the new testers have a two-line display, both connected sensors can be displayed simultaneously. The

new version, identified by the "/2" in the name, now operates with the same sensor connections of the PPC-06/08/12 series. This has made connecting the hydraulic tester to the sensors substantially easier for the user.

All hydraulic testers of the PPC series and their corresponding sensors are also available in a calibrated version. A separate calibration certificate (see an example on page 27) is supplied with each tester. Subsequent calibration of the hydraulic testers and sensors is also possible. The optional and subsequent calibration must be ordered using a separate ordering code (see the ordering table on page 27).

Tester overview

<b>Hydraulic testers</b>  <b>Options</b>						
	<b>PPC-04-B /2</b>	<b>PPC-04-A /2</b>	<b>PPC-04-AP /2</b>	<b>PPC-06</b>	<b>PPC-08</b>	<b>PPC-12</b>

Rechargeable battery operation	-	●	●	●	●	●
Battery operation	●	-	-	-	-	-
Automobile adapter	-	○	○	○	○	○

Number of sensor inputs	2	2	2	3	4	6
PC interface	-	-	●	●	●	●
Online function	-	-	●	●	●	●
Internal measured value memory	-	-	-	●	●	●
Internal trigger function	-	-	-	●	●	●
Data display	●	●	●	●	●	●
Graphic display	-	-	-	●	●	●
Curve printout	-	-	-	●	●	●
PC software kit	-	-	○	●	●	●
USB adapter	-	-	○	○	○	○

Pressure measurement	●	●	●	●	●	●
Temperature measurement	●	●	●	●	●	●
Flow measurement	●	●	●	●	●	●
Rotational speed measurement	●	●	●	●	●	●
Frequency measurement	-	-	-	-	●	●
External trigger function	-	-	-	●	●	●
Third-party sensors	-	-	-	●	●	●
Current/voltage adapter	-	-	-	●	●	●

○ = Optional, ● = Standard



**Product description**

The PPC-04 /2 hydraulic testers were designed for initial start-up, service and maintenance work on fluid engineering systems. Hydraulic systems are becoming more and more accurate and thus require quick, simple checking of the hydraulic key data.



**New redesigned version:**

- **Two-line display**
- **5-pin sensor input**  
(allowing the use of PPC-06/08/12 sensors)
- **“ZERO” function**

The PPC-04 /2 hydraulic tester can be operated simply, using eight buttons. Just like all testers of the PPC series, it is superbly suited for measuring operating pressure, peak pressure, differential pressure, media temperature, flow and rotational speed.

The tester has two separate test inputs that automatically detect the connected sensors. The new two-line display now allows simultaneous display of both sensor inputs. The measuring unit can be selected during power-on at the touch of a button.

The ruggedness of the tester continues in the rubber protective coating that protects the actual tester against impacts. Voltage is supplied either by a commercially available 9 V battery (PPC-04-B /2) or from an integrated rechargeable battery (PPC-04-A /2 and PPC-04-AP /2).

Measurements taken over a lengthy period of time are possible, using a power supply (not for the PPC-04-B /2) which charges the rechargeable battery at the same time.

The data printout is used for the documentation requirement within the scope of ISO 9001 and is compliant with CE.

The PPC-04 /2 can be connected to a PC via an RS-232 interface through a data output (only for the PPC-04-AP /2). Connection to a USB port is possible using an optional adapter. The PPC-04 /2 software that can be ordered separately is compatible with popular PC operating systems such as Windows 95®, Windows 98®, Windows 2000®, Windows NT® and Windows XP®.

Every complete system includes a set of adapters allowing connection of the pressure transmitters, not just to the STAUFF System Test 20, but also to the STAUFF Test 15/12/10 series. It is also possible to connect the pressure sensors under pressure, with the equipment switched on. The temperature and volume flow sensors are to be installed in the pipelines. The rotational speed sensor is a non-contacting sensor and uses an optical mark on the rotating parts.

Measuring the differential pressure requires two pressure transmitters with identical measuring ranges.

Note: The hydraulic tester does not have an internal memory for measured values (except for the temporary MIN-/MAX memory)!

**Technical data**

- PPC-04-B /2      Version with battery
- PPC-04-A /2      Version with rechargeable battery
- PPC-04-AP /2    Version with rechargeable battery and data output

**Measurements/display**

- Pressure            in bar and *PSI*
- Temperature        in °C and °F
- Volume flow        in l/min and *US GPM*
- Rotational speed    in RPM
  
- Two-line LCD display (4-digit)  
  Numeral height: 8 (0,32)
- Data output for connecting to notebook or PC (PPC-04-AP /2 only)
- Plastic housing made of ABS in a rubber protective case with carrying strap and stand
- Auto Power Off (after 15 minutes)

**Power supply**

- Power supply unit 110/230 V AC (50/60 Hz)  
  (PPC-04-A/ 2 and PPC-04-AP/2)
- Internal rechargeable battery 9 V / 110 mA/h
- Operating time with the rechargeable battery: approx. 5 hours
- Optionally with automobile adapter 12 V ... 24 V DC  
  (PPC-04-A/ 2 and PPC-04-AP/2)

**Sensor inputs (5-pin)**

- Automatic sensor recognition
- Input signal            0 V ... 3 V DC (R = 470 kΩ)
- Sampling rate         ≤ 2 ms
- Accuracy              < 0,3% FS\* ± 2 Digit

**Data output**

- 4-pin, RS-232 interface
- Optionally with RS-232 adapter to USB

**General**

- Ambient temperature:    0°C ... 50°C (32°F ... 122°F)
- Storage temperature:    -20°C ... 60°C (-4°F ... 140°F)
- Relative humidity:        < 85 %
- Safety class:              EN 60529 - IP54
- Dimensions (L/W/H):    145 x 70 x 40  
                                          (5,71 x 2,76 x 1,57)
- Weight                      330 g (0,73 lbs.)

\* FS = Full Scale

**Software**

An optional PC set is available for the PPC-04-AP /2, for connecting it to a PC or a notebook. This set contains both a PC adapter (RS-232 connection, length: 2 m / 6,5 ft.) and the corresponding PC software. The measured values can then easily be processed as a data series or a chart using Microsoft Excel®.



**Product description**

The PPC-06/08/12 hydraulic testers have been especially developed for the growing demands of system monitoring and troubleshooting in hydraulic and pneumatic systems. Expanding on the PPC-04 /2 hydraulic tester, internal data memories for storing and further processing measured values have been integrated into the PPC-06/08/12 hydraulic testers.



- Integrated data memory
- Possible to record MIN-/MAX values over long periods
- Internal trigger function
- External trigger function
- Online data transmission

The ergonomically designed housing and the LCD display, which sets automatically to the appropriate line size, now allow problem-free use even under difficult environmental conditions.

The individual PPC-06, PPC-08 and PPC-12 testers differ in the size of the internal data memory and the number of sensor inputs (3-channel, 4-channel or 6-channel technology).

The PPC-06/08/12 can measure, store and process all relevant hydraulic parameters such as pressure, differential pressure, temperature, rotational speed, flow and hydraulic capacities. The comprehensive programmer options, and the internal memory capacity in particular, allow for diverse measurement and evaluation methods such as long-term measurements, trigger functions or measuring data from third-party sensors.

The PPC-06 can measure and store up to 60.000 values, the PPC-08 can handle up to 125.000 and the PPC-12 can accommodate up to 250.000.

The measured values can be transferred at any time to a PC by way of a data output (RS-232). It is also possible to connect to a USB port by means of an optional adapter. The included PPC software is compatible with popular PC operating systems (Windows 95®, Windows 98®, Windows 2000®, Windows NT® and Windows XP®) and permits various evaluation methods.

The automatic sensor recognition feature makes the PPC-06/08/12 hydraulic testers easy to operate, and the testers can be individually configured to meet customer requirements without a great programming effort. All three hydraulic testers allow the data from third-party sensors to be measured and processed.

For additional information on the PPC-06, PPC-08 and PPC-12 hydraulic testers and complete systems, please contact your nearest STAUFF representative.

Type	Number of sensor inputs	up to ... MIN-/MAX values	Integrated data memory for storable curve (1 channel)	storable curves
PPC-06	3	60.000	60	20 (3 channel)
PPC-08	4	125.000	120	30 (4 channel)
PPC-12	6	250.000	240	40 (6 channel)

**Technical data**

<b>PPC-06</b>	Version with 3 sensor inputs
<b>PPC-08</b>	Version with 4 sensor inputs
<b>PPC-12</b>	Version with 6 sensor inputs

**Measurement / display**

- Pressure in bar and *PSI*
- Temperature in °C and °F
- Volume flow in l/min and *US GPM*
- Rotational speed in RPM
- Digital LCD display: 128 x 64 Pixel  
Visible area: 72 x 40 (2,84 x 1,58)
- Automatic numeral height adjustment  
Numeral height: 4,2 (0,17) with eight-line display
- Data output for connection to notebook or PC
- Plastic housing made of fibreglass-reinforced PA
- 11-key membrane keyboard
- Electromagnetic compatibility (EMC):  
Emitted interference: DIN EN 50081, Part 1  
Interference immunity: DIN EN 50082, Part 2
- Auto Power Off (after 20 minutes)
- Battery charge display
- Display accuracy: < 0,25 % FS\*

**Measured data memory**

- Variable storage interval (1 ms ... 10 s) or variable storage time (2 s ... 100 h)
- Manual and automatic triggering

**Power supply**

- Power supply unit: 110/230 V AC (50/60 Hz)
- Rechargeable battery charging circuit
- Internal nickel-metal hybrid rechargeable battery  
7,2 V / 700 mA/h
- Operating time with the rechargeable battery: approx. 5 hours
- Optionally with automobile adapter 12 V ... 24 V DC

**Sensor inputs (5-pin)**

- Automatic sensor detection
- Input signal: 0 V ... 3 V DC (R = 470 kΩ)
- Frequency input via input jack I3
- Frequency range: 0,5 Hz ... 30 kHz
- Sampling rate: ≤ 1 ms
- Accuracy: < 0,3 % FS\* ± 2 digits

**Data output**

- 4-pin, RS-232 interface
- Adjustable baud rate: 1.200 ... 38.400 PBS
- 8 data bits, 1 stop bit
- Online data transmission to a PC (200 ms)
- To USB with an optional RS-232 adapter

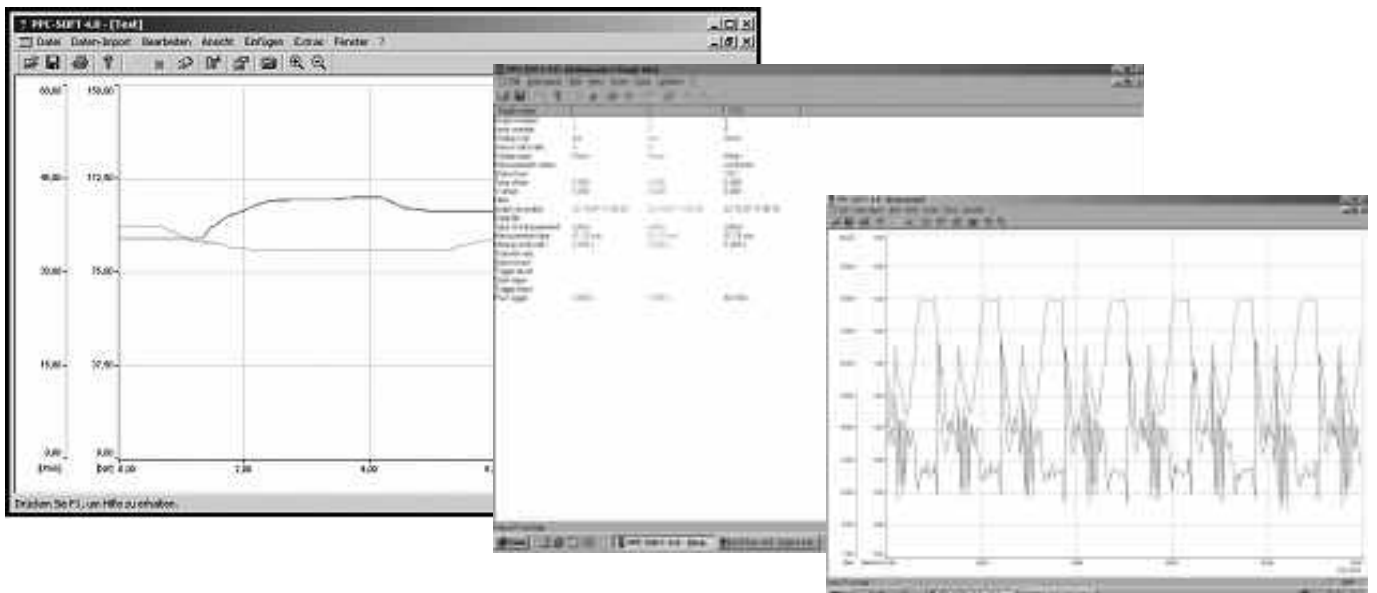
**General**

- Ambient temperature: 0°C ... 50°C (32°F ... 122°F)
- Temperature error: < 0,02 % / °C
- Storage temperature: -25°C ... 60°C (-13°F ... 140°F)
- Relative humidity: < 80 %
- Safety class: EN 60529 - IP54
- Dimensions (L/W/H): 235 x 106 x 53  
(9,25 x 4,17 x 2,09)
- Weight: 530 g (1,17 lbs.)

\*FS = Full Scale

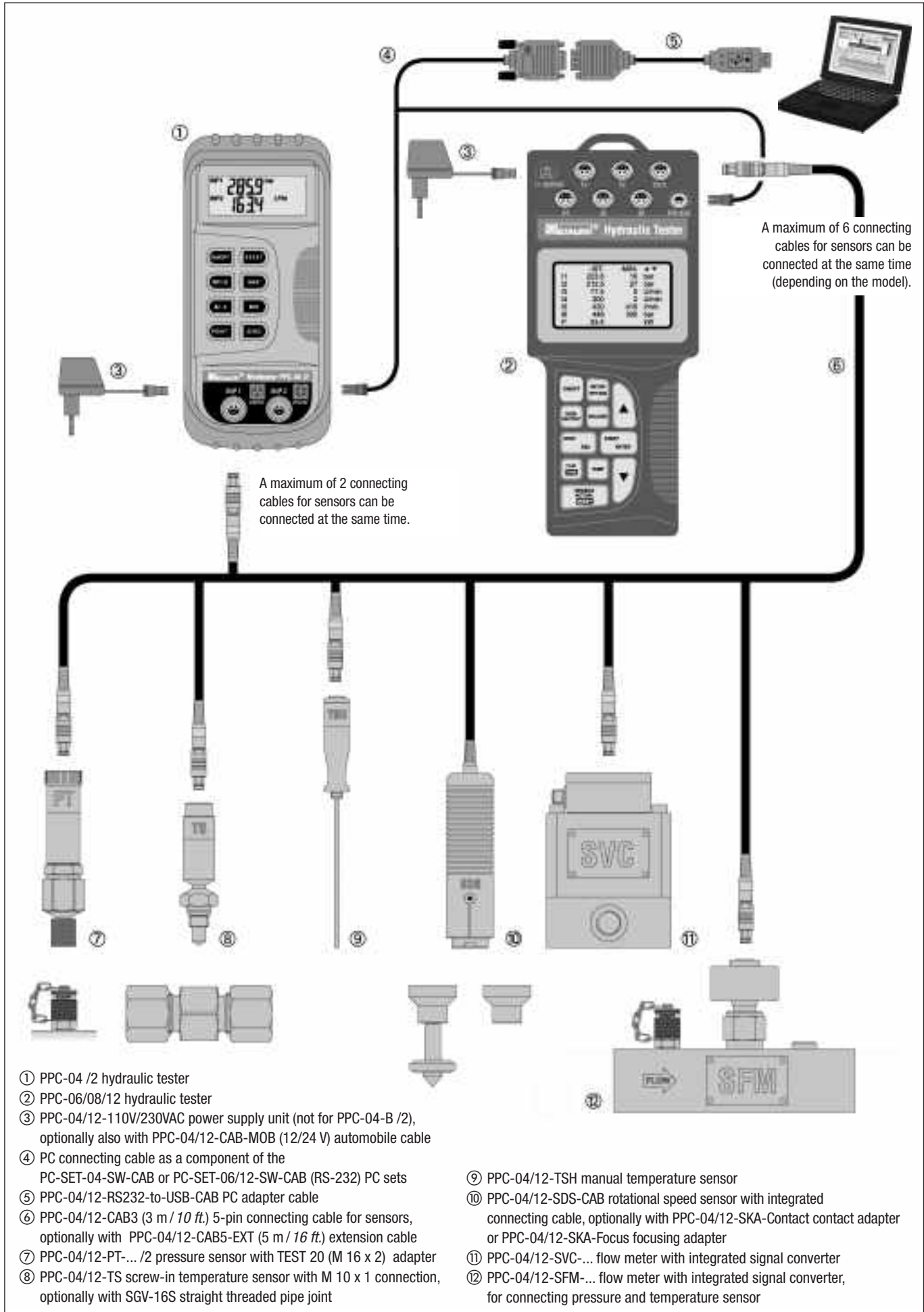
**Software**

A PC set, consisting of a PC adapter (RS-232 serial connection, length: 2 m / 6,5 ft.) and the corresponding PC software, is included as standard with every PPC-06, PPC-08 and PPC-12. The measured data and curves can easily be processed using Microsoft Excel® with the software.



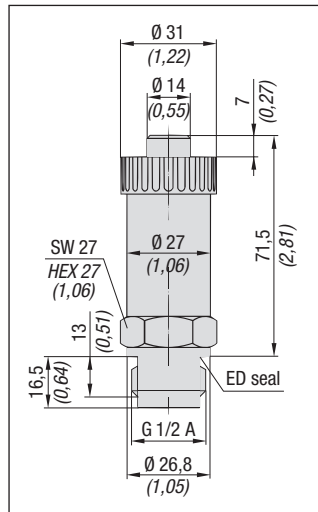


Functional block diagram



**Product description**

The PPC-04/12-PT /2 pressure sensors can be used with all hydraulic testers of the PPC series, due to their 5-pin connection. As an additional feature, the new generation of PPC-04/12-PT sensors (identified with "/2" in the name) can now also measure and display temperature (only with the PPC-06/08/12 hydraulic testers). The STAUFF pressure sensors are a reliable and flexible solution for the PPC series because of their sturdy stainless-steel design, the quick response times (< 1 ms) and the high accuracy ( $\pm 0,25\%$  FS\* typ.) with automatic sensor recognition.


**Specifications**

- Sturdy stainless-steel housing (1.4301)
- FKM gasket (Viton®)
- Weight: 200 g (0,44 lbs.)
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-pin connection
- Pressure connection G 1/2 BSP (without adapter), with STAUFF Test 20 (M 16 x 2) adapter, for additional adapters, see the STAUFF Test catalogue

Note: The temperature measurement data from the PPC-04/12-PT /2 sensors can only be displayed using the PPC-06/08/12 hydraulic testers and cannot be stored or further processed!

**Technical data**
**Ambient conditions**

- Media temperature: max. 105°C (221°F)
- Ambient temperature: -25°C ... 80°C (-13°F ... 176°F)
- Storage temperature: -20°C ... 80°C (-4°F ... 176°F)
- Compensated range: 0°C ... 85°C (32°F ... 285°F)
- Load cycles (10°): 100

**Electrical data and output**

- Input voltage: 7 V ... 12 V DC
- Current consumption:  $\leq 5$  mA
- Output signal: 0 V ... 3 V DC
- Response time:  $\leq 1$  ms
- Long-term stability: < 0,2 % FS\*/a
- Vibration loading: IEC 68-2-6/10 ... 500 Hz
- Shock loading: IEC 68-2-29

**Pressure ranges and accuracies**

Ordering code Sensor PPC-04/12-PT-	015 /2	150 /2	400 /2	600 /2
Pressure measuring range (bar) (PSI)	-1 ... 15** (-15 ... 210)	0 ... 150 (0 ... 2.175)	0 ... 400 (0 ... 5.800)	0 ... 600 (0 ... 8.700)
Type of measurement	Relative pressure	Absolute pressure	Absolute pressure	Absolute pressure
Maximum pressure (bar) (PSI)	30 (435)	300 (4.350)	800 (11.600)	1.200 (17.400)
Burst pressure (bar) (PSI)	150 (2.175)	900 (13.000)	1.200 (17.400)	1.800 (26.100)
Accuracy ( $\pm\%$ FS*)	typ. 0,25	0,25	0,25	0,25
Accuracy ( $\pm\%$ FS*)	max. 0,5	0,5	0,5	0,5
Temperature measuring range (°C) (°F)	-25 ... 105 (-13 ... 221)	-25 ... 105 (-13 ... 221)	-25 ... 105 (-13 ... 221)	-25 ... 105 (-13 ... 221)
Accuracy ( $\pm\%$ FS*)	1,5	1,5	1,5	1,5

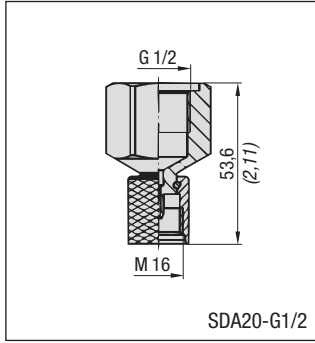
\* FS = Full Scale

\*\* 0 ... 15 bar (0 ... 210 PSI) in conjunction with hydraulic testers of the PPC-04 /2 series

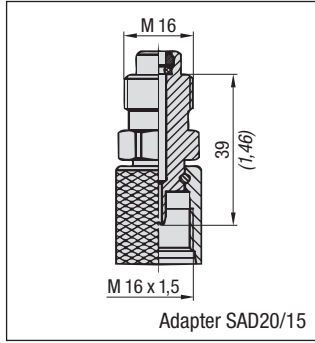
Note: A PPC-04/12-CAB3 (3 m / 10 ft.) cable is needed to connect the PPC-04/12-PT /2 pressure sensors to the current PPC-04 /2 or PPC-06/08/12 hydraulic testers. A PPC-04/12-CAB5-EXT (5 m / 16 ft.) extension cable is also available as an option!

**Connection adapters for the PPC pressure sensors**

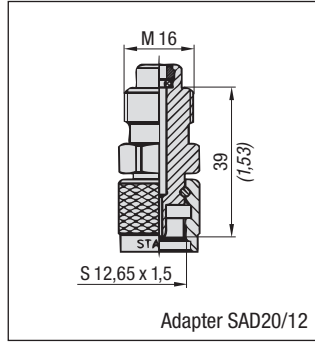
In addition to the PPC-04/12-PT /2 pressure sensors, different adapters and adapter sets are available that not only connect to the familiar STAUFF Test 20 system (SDA20-G1/2 adapter) but also to the test points of the STAUFF Test 15/12/10 series (SAD20/15-P, SAD20/12-P, SAD20/10-P). All of these adapters are included as standard with a PPC complete system (see page 23).



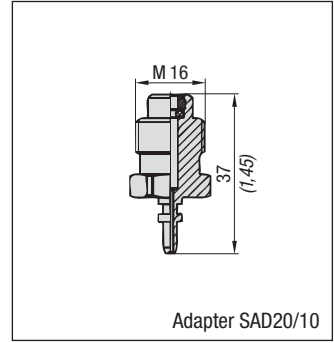
SDA20-G1/2



Adapter SAD20/15



Adapter SAD20/12



Adapter SAD20/10

You can find additional information about available connection adapters in our "STAUFF Test" catalogue.

**Product description**

The PPC-04/12-TS screw-in temperature sensor measures current temperatures directly in the pipeline and is compatible with the PPC-04/12-SFM flow turbine (see page 18) and the SGV-16S-G straight threaded joint (see the figure). The new PPC-04/12-TSH rod-type temperature sensor is especially designed to determine the media temperatures in tanks and containers. Both sensors can measure media temperatures without problems up to 125°C (257°F) and are connected to the PPC hydraulic testers by way of a PPC-04/12-CAB3 (3 m / 10 ft.) cable to be ordered separately.



SGV-16S with PPC-04/12-TS



Sensor PPC-04/12-TSH

**Specifications**

- **Materials**
  - Housing (TS) Steel (C15K), galvanized and yellow chromated
  - Gaskets (TS) FKM (Viton®)
  - Rod (TSH) Stainless steel 1.4304
  - Handle (TSH) Delrin
- **Weight (TS)** 100 g (0,22 lbs.)
- **Weight (TSH)** 120 g (0,26 lbs.)
- **Measurement medium** liquids (in the case of aggressive media, only after consultation)
- **5-pin connection**
- **Connection**
  - a) STAUFF Test connection
  - SGV-16S in the pipeline (TS, see figure)
  - b) Screw-in thread M 10 x 1 (TS, see figure)

**Technical data**

**Ambient conditions**

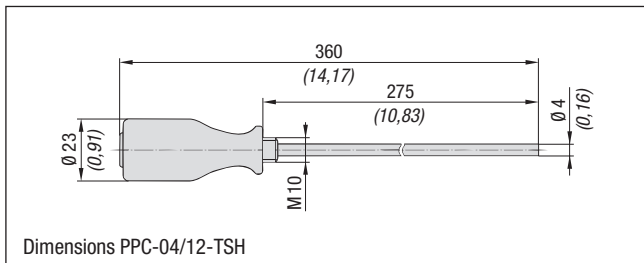
- **Media temperature:** max. 125°C (257°F)
- **Ambient temperature:** -25°C ... 70°C (-13°F ... 158°F)
- **Storage temperature:** -25°C ... 80°C (-13°F ... 176°F)

**Electrical data**

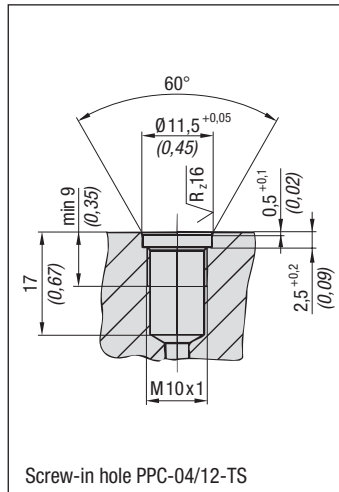
- **Response time T<sub>0.9</sub> (TS)** approx. 13,5 s
- **Response time T<sub>0.9</sub> (TSH)** approx. 9,1 s
- **Safety class (TS)** EN 60529 - IP54

**Measuring range**

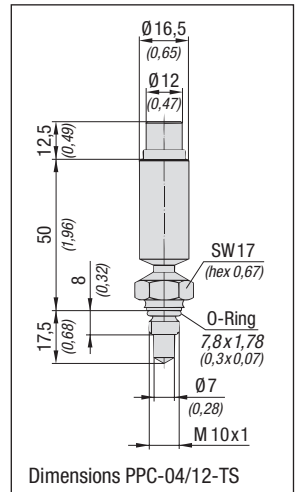
- **Measuring range:** -25°C ... 125°C (-13°F ... 257°F)
- **Operating pressure (TS):** 630 bar (9.000 PSI)
- **Maximum pressure (TS):** 800 bar (11.600 PSI)
- **Burst pressure (TS):** 1.200 bar (17.400 PSI)
- **Accuracy:** ± 1,5°C



Dimensions PPC-04/12-TSH



Screw-in hole PPC-04/12-TS



Dimensions PPC-04/12-TS

**Product description**

The PPC-04/12-SDS-CAB rotational speed sensor allows non-contact speed measurement of rotating components. The sensor is based on an opto-electrical measurement principle that determines the rotational speed with high accuracy using a reflecting strip on the shaft. The contact rotational speed measurement is obtained by using a contact adapter that is mounted to the sensor, and which makes contact with the rotating component during measurement. This also produces high-accuracy measurement results. In the case of especially small areas, using the focusing adapter facilitates measurement.



**Specifications**

- Material: ABS
- Weight: approx. 230 g (0,5 lbs.)
- 5-pin connection
- Both contacting and non-contacting measurement possible

Note: We wish to point out that using the PPC-04/12-CAB5-EXT extension cable (5 m / 16 ft.) for connecting the rotational speed sensor may result in inaccuracies. We recommend not extending the 2 m (6,5 ft.) permanent cable connection provided on the sensor!

**Technical data**

**Ambient conditions**

- Ambient temperature: 0°C ... 70°C (32°F ... 158°F)
- Type of measurement: Optical, red LED

**Electrical data**

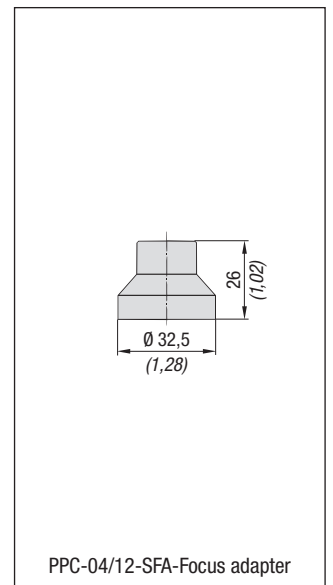
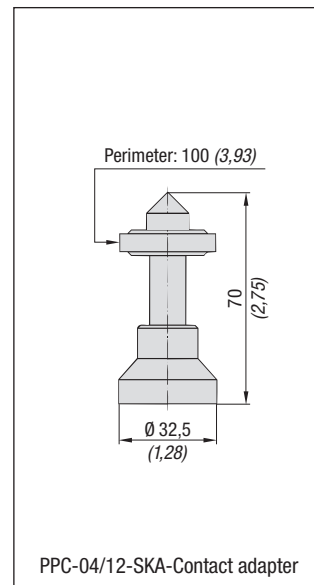
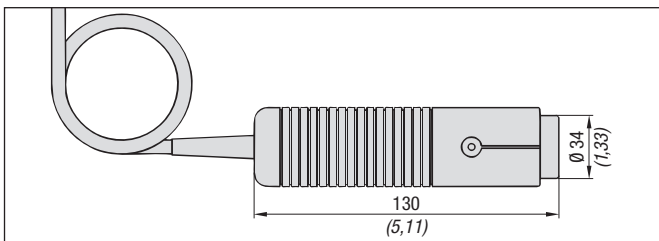
- Output signal: 0 V ... 3 V DC

**Measuring/display range**

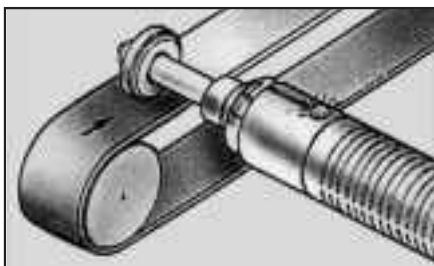
- Measuring range: 20 ... 10.000 RPM
- Measuring distance: 25 ... 500 (1 ... 20)
- Measuring angle: ± 45°
- Accuracy: < 0,5 % FS\*
- Resolution: ± 5 RPM

\* FS = Full Scale

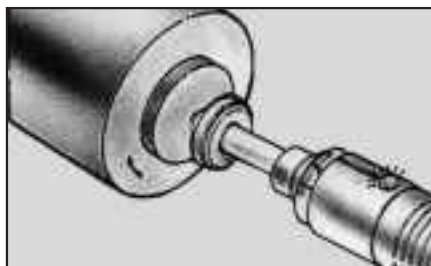
**PPC-04/12-SDS-CAB rotational speed sensor**



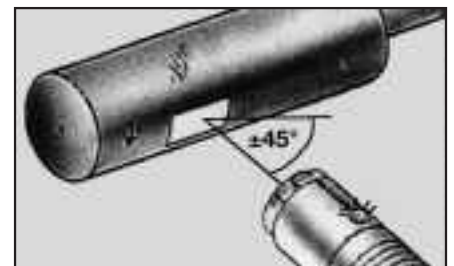
**Application examples**



**Fig. 1** – Contacting rotational speed measurement with the contact adapter



**Fig. 2** – End face rotational speed measurement with the contact adapter



**Fig. 3** – Rotating shaft / non-contacting rotational speed measurement using the focusing adapter and marking strip



## Product description

The PPC-04/12-SFM flow turbine is permanently installed in the pipeline where the oil flow rotates the internal axial turbine. The frequencies generated are processed by digital electronics (a signal converter). Flow effects causing interference are compensated in this process. In the new, redesigned version, the signal converter is now directly integrated into the PPC-04/12-SFM flow turbine. This allows even simpler operation and supports permanent coupling of the turbine and signal converter components that are matched to one another.

The new turbine also improves the response times/reaction times (from a previous 400 ms to 50 ms) and increases measurement accuracy. The PPC-04/12-SFM flow turbine is available in six versions for various flow speeds. A pressure sensor (see page 15) can be connected in parallel to the flow turbine by way of the integrated test point. In addition, the oil temperature can also be measured using the temperature sensor connection (see page 16).



## Specifications

- Housing material: Aluminium (black anodised)
- Gaskets: FKM (Viton®)
- 5-pin connection
- Flow measurement connection: See the table on page 19
- Pressure measurement connection: SMK 20 (M 16 x 2)
- Temperature measurement connection: M 10 x 1 (standard screw plug)

## Technical data

### Ambient conditions

- Max. media temperature: 80°C (176°F)
- Ambient temperature: 10°C ... 60°C (50°F ... 140°F)
- Storage temperature: -20°C ... 80°C (-4°F ... 176°F)
- Permissible particle size: < 25 Micron
- Viscosity range: 15 ... 100 cSt

### Electrical data

- Response time: 50 ms

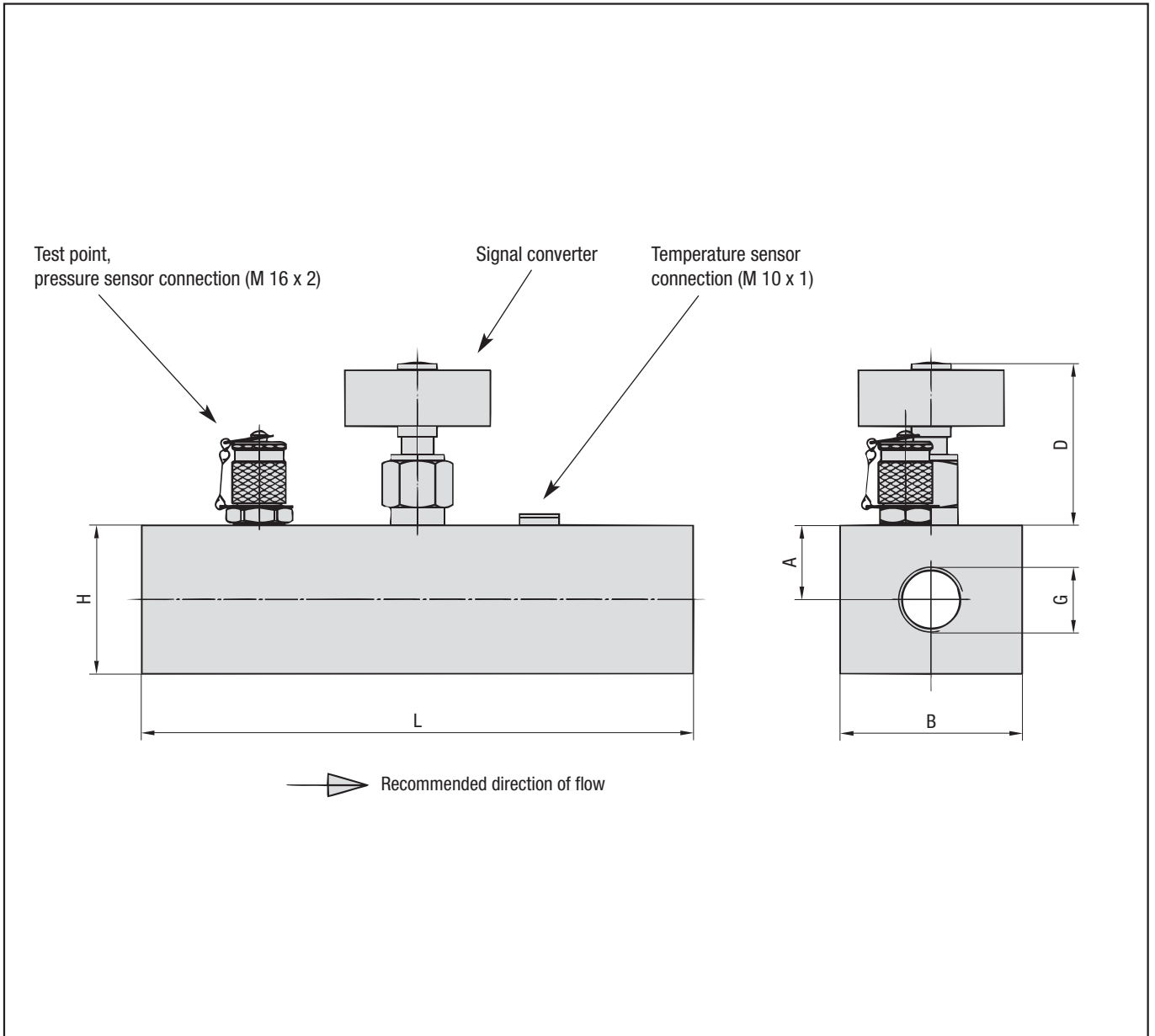
## Measuring range

Flow turbine PPC-04/12-	SFM-015	SFM-060	SFM-150	SFM-300	SFM-600	SFM-750
Measuring range l/min (US GPM)	1 ... 15 (0,3 ... 3,9)	4 ... 60 (1,0 ... 15,9)	6 ... 150 (1,6 ... 39,6)	10 ... 300 (2,7 ... 79)	20 ... 600 (5,3 ... 158)	25 ... 750 (6,6 ... 198)
Maximum flow l/min (US GPM)	16,5 (4,4)	66 (17,4)	165 (43,6)	330 (87,2)	660 (174,4)	825 (218)
Operating pressure bar (PSI)	420 (6.090)	420 (6.090)	420 (6.090)	420 (6.090)	350 (5.000)	480 (6.960)
Maximum pressure bar (PSI)	500 (7.300)	500 (7.300)	500 (7.300)	500 (7.300)	420 (6.090)	575 (8.340)
Accuracy (at 21 cSt)	1 (% FS*)	1	1	1	1	1
Maximum pressure drop (at FS*) bar (PSI)	1,5 (21,8)	1,5 (21,8)	1,5 (21,8)	4,0 (58)	4,0 (58)	5,0 (72,5)
Weight g (lbs.)	650 (1,4)	750 (1,6)	750 (1,6)	1.200 (2,6)	1.800 (4)	2.100 (4,6)

\* FS = Full Scale

In general, the PPC-04/12-SFM flow meter can handle flows in either direction. The specified technical data and the calibration available as an option (see the ordering table on page 27) apply only when the flow through the flow meter matches the recommended flow direction. A double-headed arrow is shown on the nameplate of the PPC-04/12-SFM. The thicker end of the double-headed arrow specifies the recommended direction of flow.

Dimensions



Flow meter PPC-04/12- Dimension	SFM-015	SFM-060	SFM-150	SFM-300	SFM-600	SFM-750
G (BSP)	G 1/2	G 3/4	G 3/4	G 1	G 1 1/4	-
G (SAE)	3/4" - 16	1" 1/16 - 16	1" 1/16 - 16	1" 5/16 - 16	1" 5/8 - 12	1" 7/8 - 12
A	18,5 (0,73)	25 (0,98)	25 (0,98)	25 (0,98)	37,5 (1,48)	37,5 (1,48)
B	37 (1,46)	62 (2,44)	62 (2,44)	62 (2,44)	62 (2,44)	100 (3,94)
D	80 (3,15)	80 (3,15)	80 (3,15)	84 (3,31)	75 (2,95)	79 (3,11)
L	136 (5,35)	190 (7,48)	190 (7,48)	190 (7,48)	212 (8,35)	212 (8,35)
H	37 (1,46)	50 (1,97)	50 (1,97)	50 (1,97)	75 (2,95)	75 (2,95)

Connecting the PPC-04/12-SFM flow meter to the hydraulic testers of the current PPC series requires the separately-ordered PPC-04/12-CAB3 (3 m / 10 ft.) cable. As an option, a PPC-04/12-CAB5-EXT extension cable (5 m / 16 ft.) is also available.

### Product description

The PPC-04/12-SVC gear flow meter is permanently installed in the pipeline of the hydraulic system. Highly accurate, low-noise flow measurements can be performed with this meter because of a very accurate gear pair. A wide range of viscosities can be handled and even values for aggressive media (brake fluids, Skydrole, biodegradable lubricants, isocyanates, greases, etc.) can be measured by using different gaskets. The PPC-04/12-SVC flow meters are available in four versions (up to 300 l/min, 79 US GPM) and are resistant to pressures up to 400 bar (5.800 PSI) or 315 bar (4.570 PSI).



### Specifications

- Housing material: GGG 40
- Gaskets: FKM (Viton®)
- 5-pin connection
- Flow measurement connection: See the table on page 21

### Ambient conditions and measuring range

- Maximum media temperature: 110°C (230°F)
- Ambient temperature: 10°C ... 50°C (50°F ... 122°F)
- Storage temperature: -20°C ... 80°C (-4°F ... 176°F)
- Permissible particle size: < 25 Micron
- Viscosity range: See the charts

### Electrical data

- Response time: 400 ms

A special cable with a quick response time (6 ms) is available for the PPC-04/12-SVC. The PPC-06/12-SVC-FAST may only be connected to port 3 of the hydraulic tester (only available on the PPC-08 and PPC-12 hydraulic testers) and does not support automatic sensor recognition.

### Technical data

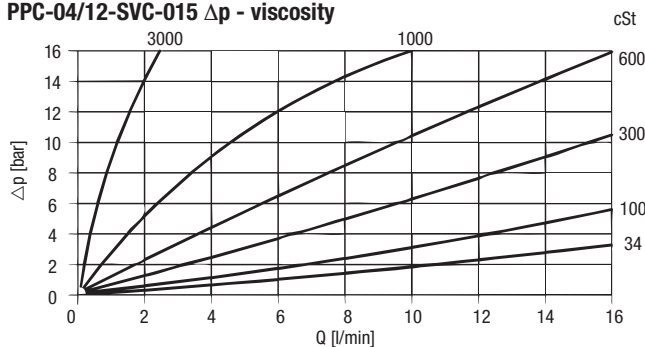
Flow meter PPC-04/12-	SVC-015	SVC-060	SVC-150	SVC-300
Measuring range l/min (US GPM)	0,2 ... 15 (0,05 ... 3,9)	0,4 ... 60 (0,1 ... 15,9)	0,6 ... 150 (0,2 ... 39,6)	1 ... 300 (0,3 ... 79)
Maximum flow l/min (US GPM)	16,5 (4,4)	66 (17,4)	165 (43,6)	330 (87,2)
Operating pressure bar (PSI)	400 (5.800)	400 (5.800)	315 (4.570)	315 (4.570)
Maximum pressure bar (PSI)	480 (7.300)	480 (7.300)	375 (5.440)	375 (5.440)
Accuracy (bei 21 cSt)	0,5 (% FS*)			
Maximum pressure drop (bei FS*)	See the chart			
Weight kg (lbs.)	3,8 (8)	8,1 (21,4)	23 (61,6)	27 (72,3)

\* FS = Full Scale

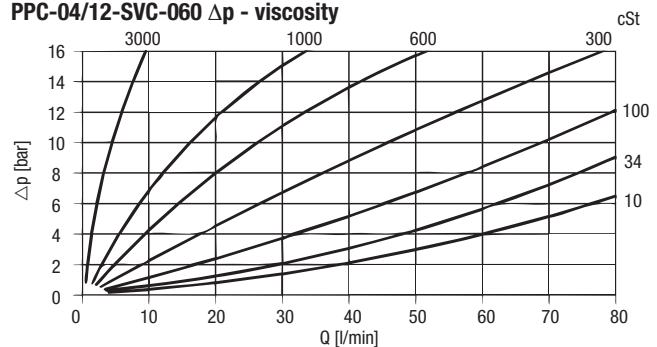
The specified engineering values and the calibration available optionally (see the ordering table, page 27) apply only if the PPC-04/12-SVC flow meter is installed in the recommended direction of flow (from A to B). Appropriate markings are engraved on the flow meter.

### Pressure drop curves/viscosity curves

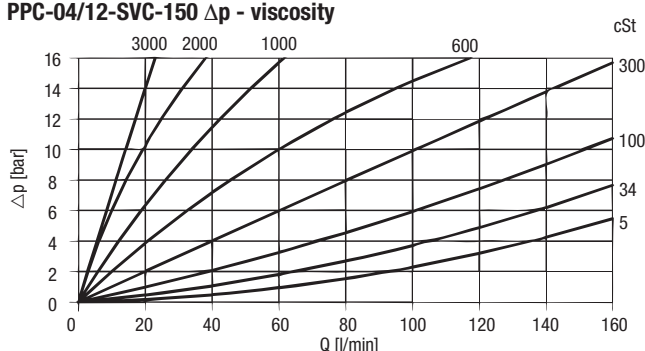
PPC-04/12-SVC-015  $\Delta p$  - viscosity



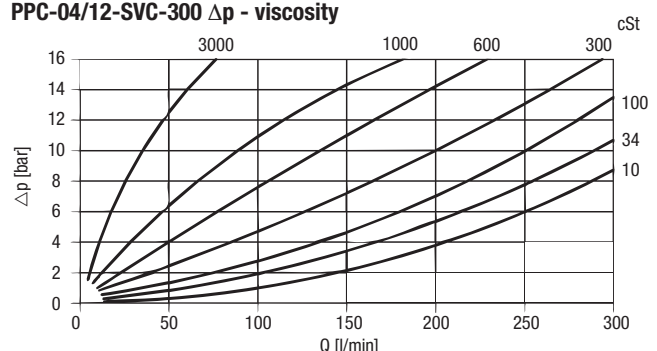
PPC-04/12-SVC-060  $\Delta p$  - viscosity



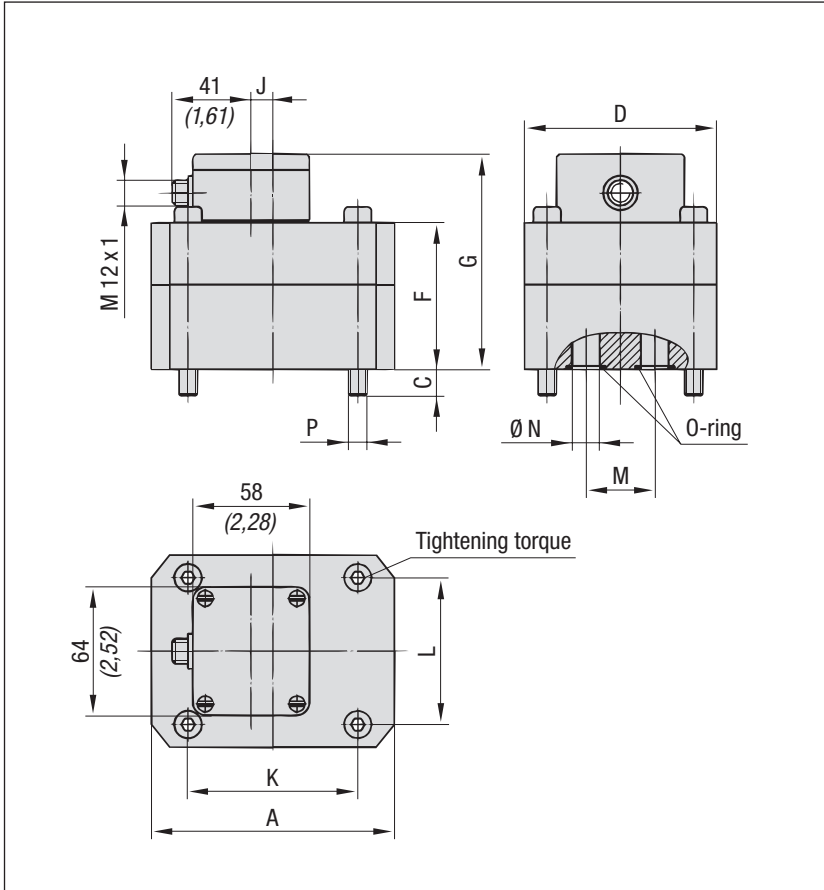
PPC-04/12-SVC-150  $\Delta p$  - viscosity



PPC-04/12-SVC-300  $\Delta p$  - viscosity



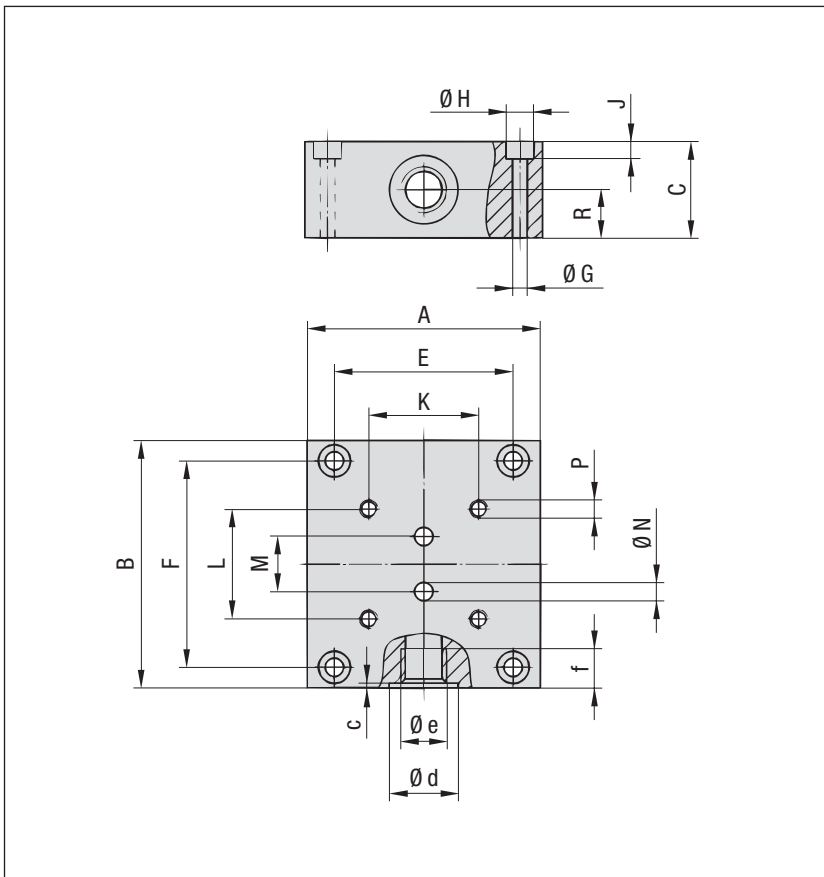
Dimensions



		Flow meter PPC-04/12-			
		SVC-015	SVC-060	SVC-120	SVC-300
Dimensions	A	85 (3,35)	120 (4,72)	170 (6,69)	170 (6,69)
	C	13 (0,51)	13 (0,51)	18 (0,71)	22 (0,87)
	D	60 (2,36)	95 (3,74)	120 (4,72)	120 (4,72)
	F	57 (2,24)	72 (2,83)	89 (3,50)	105 (4,13)
	G	94 (3,70)	109 (4,29)	140 (5,51)	142 (5,59)
	J	-	10,5 (0,41)	46,5 (1,83)	40 (1,57)
	K	70 (2,76)	84 (3,31)	46 (1,81)	46 (1,81)
	L	40 (1,57)	72 (2,83)	95 (3,74)	95 (3,74)
	M	20 (0,79)	35 (1,38)	50 (1,97)	50 (1,97)
	N	9 (0,35)	16 (0,63)	25 (0,98)	25 (0,98)
P	M 6	M 8	M 12	M 12	
Torque [Nm]		14	35	120	120
Weight kg (lbs.)		2 (5,36)	5,2 (11,4)	9 (24,1)	13 (34,8)

The PPC-04/12-SVC gear flow meters always include a connection plate and a signal converter (both already assembled).

Connection plate dimensions



		Connection plate PPC-04/12-			
		SVC-015	SVC-060	SVC-150	SVC-300
Dimensions	A	85 (3,35)	100 (3,94)	160 (6,30)	160 (6,30)
	B	90 (3,54)	120 (4,72)	65 (6,50)	65 (6,50)
	C	35 (1,38)	37 (1,46)	80 (3,15)	80 (3,15)
	E	65 (2,56)	80 (3,15)	140 (5,51)	140 (5,51)
	F	76 (2,99)	106 (4,17)	145 (5,71)	145 (5,71)
	G	7 (0,28)	7 (0,28)	9 (0,35)	9 (0,35)
	H	11 (0,43)	11 (0,43)	15 (0,59)	15 (0,59)
	J	7 (0,28)	7 (0,28)	9 (0,35)	9 (0,35)
	K	70 (2,76)	84 (3,31)	46 (1,81)	46 (1,81)
	L	40 (1,58)	72 (2,83)	95 (3,74)	95 (3,74)
	M	20 (0,79)	35 (1,38)	50 (1,97)	50 (1,97)
	N	6,5 (0,26)	12 (0,47)	25 (0,98)	25 (0,98)
	P	M 6 x 14 (M 6 x 0,55)	M 8 x 18 (M 8 x 0,71)	M 12 x 28 (M 12 x 1,10)	M 12 x 28 (M 12 x 1,10)
	R	17 (0,67)	17,5 (0,69)	28,5 (1,12)	28,5 (1,12)
	c	0,7 (0,03)	0,7 (0,03)	1 (0,04)	1 (0,04)
	d	25 (0,98)	29 (1,14)	42 (1,65)	42 (1,65)
	e	G 3/8 BSP	G 1/2 BSP	G 1 BSP	G 1 BSP
f	13 (0,51)	15 (0,59)	19 (0,75)	19 (0,75)	
Weight kg (lbs.)		1,8 (2,7)	2,9 (5,4)	14 (37,5)	14 (37,5)

Connecting the signal converter to a hydraulic tester of the current PPC series requires the separately ordered PPC-04/12-CAB3 (3 m / 10 ft.) cable.



**Miscellaneous measurements (PPC-06/08/12 only)**

In addition to pressure, temperature, rotational speed and flow measurements, the PPC-06/08/12 hydraulic testers can measure and evaluate different signals from other or third-party sensors. The following connecting adapters are available for these tasks:

- Current/voltage adapter                      PPC-06/12-VADC-A adapter
- Third-party sensor adapter                PPC-06/12-AUX-A adapter
- External trigger adapter                    PPC-06/12-TR-A adapter

**PPC-06/12-VADC-A adapter**

The PPC-06/12-VADC-A current/voltage adapter is used, for example, for measuring current at proportional valves or for determining the switching states of motors or pumps. The following input signals can be processed by this adapter:

- Electric currents up to 1.5 A DC
- Electric voltages up to 48 V DC

The measured data are transmitted directly to the PPC-06/08/12 hydraulic testers by way of the standard connecting cables.

**PPC-06/12-AUX-A adapter**

The PPC-06/12-AUX-A adapter is used to evaluate and process measurements from third-party sensors. Typical applications are the generation and measurement of a force-distance graph or torque-flow characteristic curves.

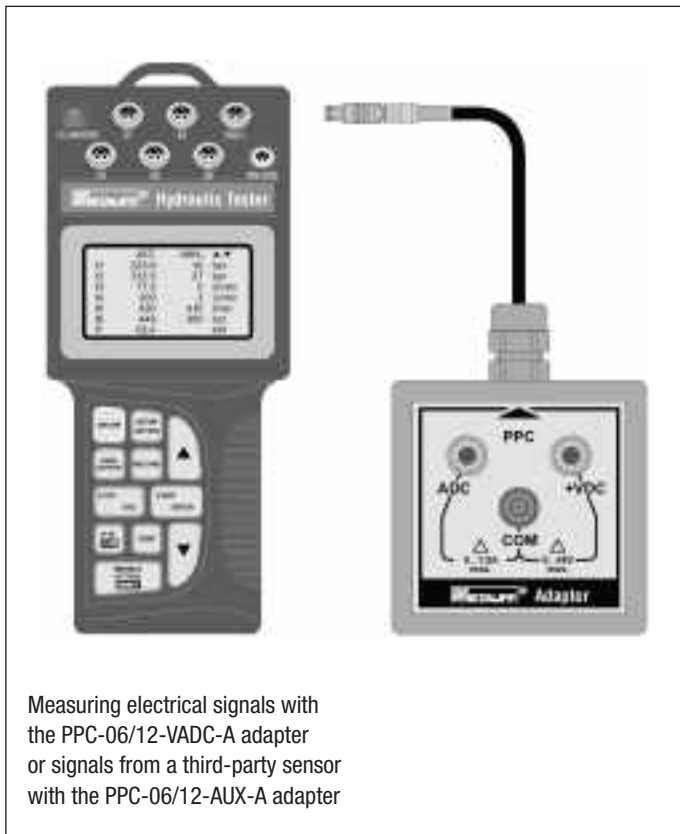
The following input signals can be processed by the PPC hydraulic testers:

- Electric currents up to 0 (4) ... 20 mA
- Electric voltages up to ± 10 V

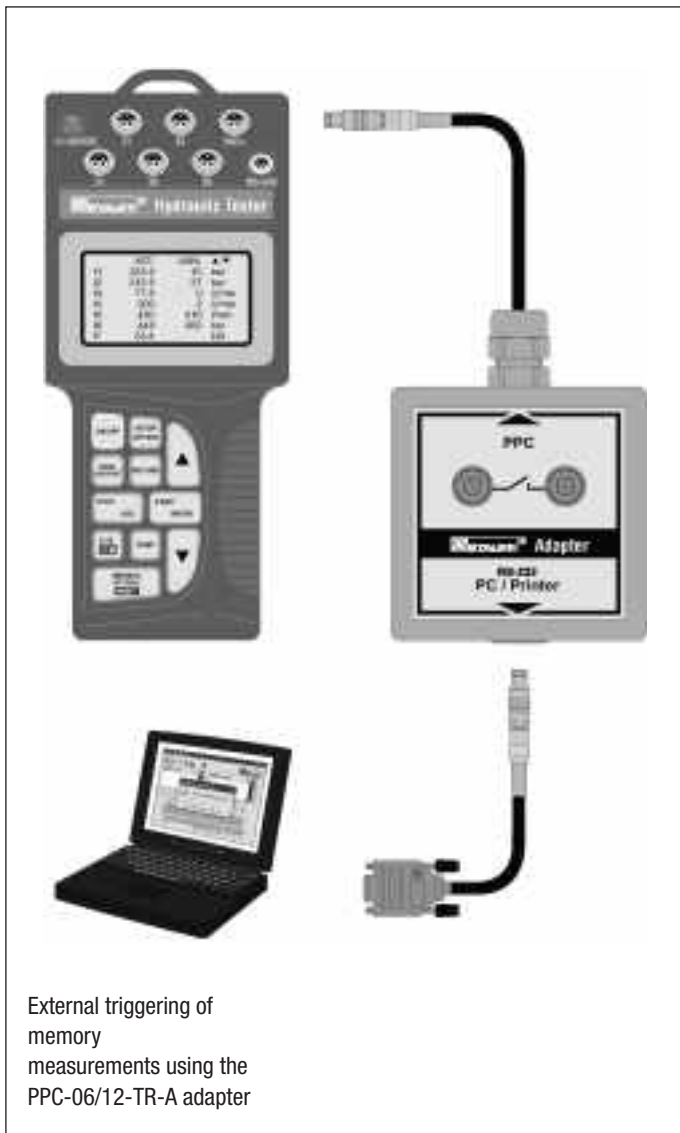
**PPC-06/12-TR-A adapter**

External signals such as relay contacts may be used as start signals for recording measured values in the PPC-06/08/12 hydraulic testers. Recording starts when a pump starts or a valve opens. The PPC-06/12-TR-A adapter is connected directly to a PC, so that external relay triggering operates during online measurements.

**ATTENTION! None of the three adapters is suitable for use with the PPC-04 /2.**



Measuring electrical signals with the PPC-06/12-VADC-A adapter or signals from a third-party sensor with the PPC-06/12-AUX-A adapter



External triggering of memory measurements using the PPC-06/12-TR-A adapter

To complete the range of PPC hydraulic testers, a number of cables, adapters and accessories are also available. With these items, you may customize your hydraulic tester to your needs or ensure continued use of old sensors or measuring equipment. The following items are available for this purpose:

#### **PPC-04/12-CAB3 cable (Standard connecting cable for measuring transmitters)**

A PPC-04/12-CAB3 cable is required to connect the sensors to the current hydraulic testers of the PPC-04 /2 or PPC-06/08/12 series (the only exception is the PPC-04/12-SDS-CAB sensor that already has an integrated connecting cable). The cable comes with a 5-pin push/pull connection at each end and has a length of 3 m (10 ft.).

Note: This cable cannot be used with older hydraulic testers and/or sensors (with the 4-pin connection)!

#### **PPC-04/12-CAB5-EXT cable (Extension cable)**

If the standard PPC-04/12-CAB3 connecting cable (3 m / 10 ft.) is not long enough, an additional PPC-04/12-CAB5-EXT extension cable can be used. This cable has a length of 5 m (16 ft.) and comes with a 5-pin connection on each end, just like the standard cable.

Note: Please keep in mind that it is generally recommended not to exceed a total cable length of 10 m (32 ft.)! It is also recommended not to extend the cable length of the PPC-04/12-SDS-CAB rotational speed sensor.

#### **PPC-04/12-U5P-S4P adapter (Adapting older sensors to current hydraulic testers)**

It is no longer possible to use the old 4-pin measuring transmitters when converting the PPC-04 series (sensors and hydraulic testers) to the current version using 5-pin connections without suitable adapters. The simple and easy solution to this is the PPC-04/12-U5P-S4P adapter. The adapter has a 5-pin connection (connecting to the current PPC-04 /2 or PPC-06/08/12 hydraulic tester) at one end and a 4-pin push/pull connector (for connecting an older sensor) at the other end.

Note: Please keep in mind that the PPC-04/12-SFM flow meter was already equipped with a 5-pin connection before and, for this reason, old flow meters of the SFM series can be connected to the current hydraulic testers of the PPC series using the standard PPC-04/12-CAB3 connecting cable.

#### **PPC-04/12-CAB2-U4P-S5P cable (Adapting current sensors to older measuring equipment)**

The PPC-04/12-CAB2-U4P-S5P cable is intended for using current sensors (5-pin connection) with older hydraulic testers of the PPC-04 series (without the "/2" in the name, with the 4-pin sensor input). This adapter cable has a length of 2 m (6,5 ft.), a 4-pin connection (for connecting to the old PPC-04 hydraulic tester) on one end and a 5-pin push/pull connector (for connecting to the current measuring transmitter) on the other end.

#### **PC-SET PPC-04-SW-CAB and PC-SET PPC-06/12-SW-CAB (PC connection set)**

Appropriate PC sets are available for connecting a hydraulic tester of the PPC series to a PC or notebook. Both sets each contain one PC cable with RS-232 connection (2 m / 6,5 ft.) and the corresponding PC software.

Note: The appropriate PC set is automatically included when purchasing a PPC-06, PPC-08 or PPC-12 hydraulic tester. The PC-SET PPC-04-SW-CAB is only suitable for the PPC-04-AP /2 (to be ordered optionally) because the other two testers of the PPC-04 /2 series do not have a data output.

#### **PPC-04/12-RS232-to-USB-CAB adapter (USB adapter)**

Suitable PC cables (PC-SET PPC-04-SW-CAB and PC-SET PPC-06/12-SW-CAB) are available for connecting a hydraulic tester of the PPC series to a PC or a notebook. As standard, these cables are equipped with a connection for the RS-232 interface. For connection to a USB port, the PPC-04/12-RS232-to-USB-CAB adapter is also available. This makes it simple to adapt the standard PC cable to a USB port. The cable is a length of 1 m (3,3 ft.).

#### **PPC-04/12-CAB-MOB cable (Automobile cable)**

The PPC-04/12-CAB-MOB automobile connection adapter cable is intended for mobile use, or as a supplement to the standard PPC-04/12-110V/230V (110/230 VAC) power supply unit. With this adapter, hydraulic testers of the PPC-04 /2 or PPC-06/08/12 series with integrated rechargeable battery (not the PPC-04-B /2) can be conveniently recharged while on the road.

#### **PPC-06/12-SVC-FAST cable**

A special cable, the PPC-06/12-SVC-FAST, is available for the PPC-04/12-SVC flow meter. With this cable, the response time of the flow meter or of the integrated signal converter is reduced from 400 ms to 6 ms. However, to do this, the cable must be connected to the sensor input jack I3 of the PPC-08 or PPC-12 hydraulic testers (not available in the PPC-04 /2 or PPC-06 hydraulic testers).

Note: Automatic sensor recognition is not supported when this cable is used!

#### **CAL-PPC-04/12... (Subsequent calibration)**

All hydraulic testers and sensors of the PPC series can be subsequently calibrated by way of a separate ordering code (see the ordering table, page 27). The devices sent in are thoroughly tested, adjusted and returned with a calibration certificate (see page 27).

**Product description**

PPC complete systems are assembled in different versions according to customer wishes. All complete systems are supplied in a handy case with individually designed pockets/sections and have space for the components listed below.



**Included:**

- 1 PPC-04 /2 hydraulic tester
- 1 Power supply unit
- Up to 3 Pressure transmitter(s) with installed adapter for STAUFF Test 20 (M 16 x 2)
- Up to 2 Connecting cable(s) (3 m / 10 ft.)
- 1 TS temperature sensor, with installed SGV-16S-G (optional)
- 3 SAD adapters for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1 Operating instructions (multilingual) on CD

**Ordering system**

**PPC - 04 - AP - SET - 3 T - \*\*\* / \*\*\* / \*\*\***

<b>Type</b>	
PPC	Hydraulic Tester

<b>Tester Version</b>	
<b>04-B-SET</b>	2 sensor inputs, without internal data memory, battery-operated
<b>04-A-SET</b>	2 sensor inputs, without internal data memory, with rechargeable battery, power supply unit, without data output
<b>04-AP-SET</b>	2 sensor inputs, without internal data memory, with rechargeable battery, power supply unit and data output (without PC set)

<b>Number of Pressure Transmitters</b>	
<b>1</b>	with one pressure transmitter
<b>2</b>	with two pressure transmitters
<b>3</b>	with three pressure transmitters

<b>Pressure Range Pressure Transmitter</b>	
<b>000/015/150 400/600</b>	Pressure range Third pressure transmitter
<b>000/015/150/ 400/600</b>	Pressure range Second pressure transmitter
When ordering a complete system with one or two pressure transmitters, specify "000" for the pressure range of the second or third transmitters	
<b>015/150/ 400/600</b>	Pressure range First pressure transmitter
Please keep in mind that two pressure transmitters with identical measuring ranges are necessary for differential pressure measurements.	

<b>Temperature Sensor</b>	
	without TS temperature sensor with SGV
<b>T</b>	with TS temperature sensor with SGV

**Product description**

PPC complete systems are assembled in different versions, according to customer wishes. All complete systems are supplied in a handy case with individually designed pockets/sections and have space for the components listed below.



**Included:**

- 1 PPC-06, PPC-08 or PPC-12 hydraulic tester
- 1 Power supply unit
- Up to 3 Pressure transmitter(s) with installed adapter for STAUFF Test 20 (M 16 x 2)
- Up to 3 Connecting cable(s) (3 m / 10 ft.)
- 1 TS temperature sensor, with installed SGV-16S-G (optional)
- 3 SAD adapters for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1 Printed operating instructions (German or English)
- 1 Operating instructions (multilingual) on CD
- 1 PC software for the PPC-06/08/12
- 1 PC connecting cable

**Ordering system**

**PPC - 06 - SET - 3 T - \*\*\* / \*\*\* / \*\*\***

<b>Type</b>	
PPC	Hydraulic tester

<b>Tester Version</b>	
<b>06-SET</b>	3 sensor inputs, including PC software and PC connecting cable, internal data memory for up to 60,000 MIN-/MAX values
<b>08-SET</b>	4 sensor inputs, including PC software and PC connecting cable, internal data memory for up to 125,000 MIN-/MAX values
<b>12-SET</b>	6 sensor inputs, including PC software and PC connecting cable, internal data memory for up to 250,000 MIN-/MAX values

<b>Number Pressure Transmitters</b>	
<b>1</b>	with one pressure transmitter
<b>2</b>	with two pressure transmitters
<b>3</b>	with three pressure transmitters

<b>Pressure Range Pressure Transmitter</b>	
<b>000/015/150 400/600</b>	Pressure range Third pressure transmitter
<b>000/015/150/ 400/600</b>	Pressure range Second pressure transmitter
When ordering a complete system with one or two pressure transmitters, specify "000" for the pressure range of the second or third transmitter	
<b>015/150/ 400/600</b>	Pressure range First pressure transmitter
Please keep in mind that two pressure transmitters with identical measuring ranges are necessary for differential pressure measurements.	

<b>Temperature Sensor</b>	
	without TS temperature sensor with SGV
<b>T</b>	with TS temperature sensor with SGV

All available individual components for the PPC-04 /2, PPC-06, PPC-08 and PPC-12 hydraulic testers, with their exact ordering codes, are listed below. They can be configured by the customer individually using this form. In this list, the components are sorted according to application areas/tasks to provide a better overview. In the event of individual desires or configurations, please contact your nearest STAUFF representative. The table below can also be used as a fax ordering form.

Description	Ordering code	Catalogue page	Quantity of the desired parts
<b>1. Hydraulic Tester PPC-04 /2</b>			
Hydraulic Tester PPC-04-B /2 with 2 sensor inputs, without data memory, with battery	Hydraulic Tester PPC-04-B /2	10/11	
Hydraulic Tester PPC-04-A /2 with 2 sensor inputs, without data memory, including rechargeable battery and power supply unit (110/230 V)	Hydraulic Tester PPC-04-A /2	10/11	
Hydraulic Tester PPC-04-A /2 with 2 sensor inputs, without data memory, including rechargeable battery and power supply unit (110/230 V) and data output (without PC set)	Hydraulic Tester PPC-04-AP /2	10/11	
<b>2. Hydraulic Tester PPC-06/08/12</b>			
Hydraulic Tester with 3 sensor inputs, data memory for 60.000 MIN-/MAX values, including PC software and PC connecting cable, including power supply unit	Hydraulic Tester PPC-06	12/13	
Hydraulic Tester with 4 sensor inputs, data memory for 125.000 MIN-/MAX values, including PC software and PC connecting cable, including power supply unit	Hydraulic Tester PPC-08	12/13	
Hydraulic Tester with 6 sensor inputs, data memory for 250.000 MIN-/MAX values, including PC software and PC connecting cable, including power supply unit	Hydraulic Tester PPC-12	12/13	
<b>3. Pressure measurement (for connecting and extension cables for measuring transmitters, see item 8)</b>			
<b>Pressure transmitter G 1/2 A (without connecting cable)</b>			
Pressure range from -1 ... 15 bar (-15 ... 210 PSI) relative pressure*	Sensor PPC-04/12-PT-015 /2	15	
Pressure range from 0 ... 150 bar (0 ... 2.175 PSI) absolute pressure	Sensor PPC-04/12-PT-150 /2	15	
Pressure range from 0 ... 400 bar (0 ... 5.800 PSI) absolute pressure	Sensor PPC-04/12-PT-400 /2	15	
Pressure range from 0 ... 600 bar (0 ... 8.700 PSI) absolute pressure	Sensor PPC-04/12-PT-600 /2	15	
<b>Connection adapters</b>			
Adapter G 1/2 A to M 16 x 2 (STAUFF Test 20)	SDA20-G1/2	16	
Adapter M 16 x 2 to M 16 x 1,5 (STAUFF Test 20 to STAUFF Test 15)	SAD20/15-P	16	
Adapter M 16 x 2 to S 12,65 x 1,5 (STAUFF Test 20 to STAUFF Test 12)	SAD20/12-P	16	
Adapter M 16 x 2 to plug-in (STAUFF Test 20 to STAUFF Test 10)	SAD20/10-P	16	
<b>4. Temperature measurement (for connecting and extension cables for measuring transmitters, see item 8)</b>			
Temperature sensor -25°C ... 125°C (-13°F ... 257°F) for pipeline installation	Sensor PPC-04/12-TS	16	
Rod-type temperature sensor -25°C ... 125°C (-13°F ... 257°F) for tank/container measurements	Sensor PPC-04/12-TSH	16	
Straight threaded adapter with M 10 x 1 connection (for the PPC-04/12-TS sensor)	SGV-16S-G	16	
<b>5. Flow measurement (for connecting and extension cables for measuring transmitters, see item 8)</b>			
<b>SFM flow meters with integrated signal converter</b>			
Measuring range from 1 ... 15 l/min (0,3 ... 3,9 US GPM)	Flow meter PPC-04/12-SFM-015	18/19	
Measuring range from 4 ... 60 l/min (1,0 ... 15,9 US GPM)	Flow meter PPC-04/12-SFM-060	18/19	
Measuring range from 6 ... 150 l/min (1,6 ... 39,6 US GPM)	Flow meter PPC-04/12-SFM-150	18/19	
Measuring range from 10 ... 300 l/min (2,7 ... 79,0 US GPM)	Flow meter PPC-04/12-SFM-300	18/19	
Measuring range from 20 ... 600 l/min (5,3 ... 158,0 US GPM)	Flow meter PPC-04/12-SFM-600	18/19	
Measuring range from 25 ... 750 l/min (6,6 ... 198,0 US GPM)	Flow meter PPC-04/12-SFM-750	18/19	
<b>SVC flow meters with signal converter and connecting plate</b>			
Measuring range from 0,2 ... 15 l/min (0,05 ... 3,9 US GPM)	Flow meter PPC-04/12-SVC-015	20/21	
Measuring range from 0,4 ... 60 l/min (0,1 ... 15,9 US GPM)	Flow meter PPC-04/12-SVC-060	20/21	
Measuring range from 0,6 ... 150 l/min (0,2 ... 39,6 US GPM)	Flow meter PPC-04/12-SVC-150	20/21	
Measuring range from 1 ... 300 l/min (0,3 ... 79,0 US GPM)	Flow meter PPC-04/12-SVC-300	20/21	
FAST cable, 6 ms (only on port 3, without sensor recognition, not for PPC-04 /2 or PPC-06)	Cable PPC-06/12-SVC-FAST	20/21	
<b>6. Rotational speed measurement</b>			
Rotational speed sensor with integrated connecting cable 2 m / 6,5 ft.	Sensor PPC-04/12-SDS-CAB	17	
Contact adapter	Adapter PPC-04/12-SKA-Contact	17	
Focusing adapter	Adapter PPC-04/12-SFA-Focus	17	
<b>7. Miscellaneous measurements (PPC-06/08/12 only)</b>			
External trigger adapter	Adapter PPC-06/12-TR-A	22	
Current/voltage adapter (up to 1,5 A DC / 48 V DC)	Adapter PPC-06/12-VADC-A	22	
Third-party sensor adapter (0 ... 20 mA / 0 ... 10 V DC)	Adapter PPC-06/12-AUX-A	22	
<b>8. Connecting cables for measuring transmitters without integrated cable, extension cable or adapter</b>			
Connecting cable 3 m / 10 ft. (5-pin connection on both ends)	Cable PPC-04/12-CAB3	23	
Extension cable 5 m / 16 ft. (5-pin connection on both ends)	Cable PPC-04/12-CAB5-EXT	23	
Adapter cable from old (4-pin) sensors to current (5-pin) hydraulic testers	Adapter PPC-04/12-U5P-S4P	23	
Adapter cable from current (5-pin) sensors to older (4-pin) hydraulic testers	Cable PPC-04/12-CAB2-U4P-S5P	23	
<b>9. PC connection and software</b>			
PC software and PC adapter for PPC-04 /2 (RS-232 connection)	PC-SET PPC-04-SW-CAB	23	
PC software and PC adapter for PPC-06/08/12 (RS-232 connection)	PC-SET PPC-06/12-SW-CAB	23	
Adapter cable RS-232 to USB for PPC	Adapter PPC-04/12-RS232-to-USB-CAB	23	
<b>10. Accessories and spare parts</b>			
Power supply unit (110 / 230 V AC) for PPC-04 /2 and PPC-06/08/12	Power supply unit PPC-04/12-110V/230V	14	
Automobile cable (12 V / 24 V) for PPC-04 /2 and PPC-06/08/12	Cable PPC-04/12-CAB-MOB	23	
Printed operating instructions PPC-06/08/12 including Quickstart, German	PPC-06/12-MANUAL-GERMAN	24	
Printed operating instructions PPC-06/08/12 including Quickstart, English	PPC-06/12-MANUAL-ENGLISH	24	
PPC-04 case (plastic, with foam insert)	Case PPC-04	24	
PPC-06/08/12 case (aluminium)	Case PPC-06/12	24	



As an additional option, all hydraulic testers and sensors of the PPC series are available with a specially designated calibration (with calibration certificate). In addition, a corresponding calibration can be performed subsequently for all hydraulic testers and sensors. These extra calibrated units must be requested with a separate ordering code (see the table below).

Description	Ordering code	Catalogue page	Quantity of the desired parts
<b>1K. PPC-04 /2 hydraulic tester, calibrated</b>			
Hydraulic Tester PPC-04-B /2 calibrated with 2 sensor inputs, without data memory, with battery	Hydraulic Tester PPC-04-B-CAL /2	10/11	
Hydraulic Tester PPC-04-A /2 calibrated with 2 sensor inputs, without data memory, including rechargeable battery and power supply unit (110/230 V)	Hydraulic Tester PPC-04-A-CAL /2	10/11	
Hydraulic Tester PPC-04-A /2 calibrated with 2 sensor inputs, without data memory, including rechargeable battery and power supply unit (110/230 V) and data output (without PC set)	Hydraulic Tester PPC-04-AP-CAL /2	10/11	
<b>2K. PPC-06/08/12 hydraulic tester, calibrated</b>			
Hydraulic Tester calibrated with 3 sensor inputs, data memory for 60.000 MIN-/MAX values, including PC software and PC connecting cable, including power supply unit	Hydraulic Tester PPC-06-CAL	12/13	
Hydraulic Tester calibrated with numeral for sensor inputs, data memory for 125.000 MIN-/MAX values, including PC software and PC connecting cable, including power supply unit	Hydraulic Tester PPC-08-CAL	12/13	
Hydraulic Tester calibrated with 6 sensor inputs, data memory for 250.000 MIN-/MAX values, including PC software and PC connecting cable, including power supply unit	Hydraulic Tester PPC-12-CAL	12/13	
<b>3K. Pressure measurement, calibrated (for connecting and extension cables for measuring transmitters, see item 8)</b>			
<b>Pressure transmitter G 1/2 A (without connecting cable, calibrated)</b>			
Pressure range from -1 ... 15 bar (-15 ... 210 PSI) relative pressure	Sensor PPC-04/12-PT-015-CAL /2	15	
Pressure range from 0 ... 150 bar (0 ... 2.175 PSI) absolute pressure	Sensor PPC-04/12-PT-150-CAL /2	15	
Pressure range from 0 ... 400 bar (0 ... 5.800 PSI) absolute pressure	Sensor PPC-04/12-PT-400-CAL /2	15	
Pressure range from 0 ... 600 bar (0 ... 8.700 PSI) absolute pressure	Sensor PPC-04/12-PT-600-CAL /2	15	
Subsequent calibration of a pressure sensor	CAL-PPC-04/12-PT	23	
<b>4K. Temperature measurement, calibrated (for connecting and extension cables for measuring transmitters, see item 8)</b>			
Temperature sensor -25°C ... 125°C (-13°F ... 257°F) for pipeline installation	Sensor PPC-04/12-TS-CAL	16	
Subsequent calibration of a TS temperature sensor	CAL-PPC-04/12-TS	16	
Rod-type temperature sensor -25°C ... 125°C (-13°F ... 257°F) for tank/container measurements	Sensor PPC-04/12-TSH-CAL	16	
Subsequent calibration of a TSH temperature sensor	CAL-PPC-04/12-TSH	23	
<b>5K. Flow measurement, calibrated (for connecting and extension cables for measuring transmitters, see item 8)</b>			
<b>SFM flow meter, calibrated, with integrated signal converter</b>			
Measuring range from 1 ... 15 l/min (0,3 ... 3,9 US GPM)	Flow meter PPC-04/12-SFM-015-CAL	18/19	
Measuring range from 4 ... 60 l/min (1,0 ... 15,9 US GPM)	Flow meter PPC-04/12-SFM-060-CAL	18/19	
Measuring range from 6 ... 150 l/min (1,6 ... 39,6 US GPM)	Flow meter PPC-04/12-SFM-150-CAL	18/19	
Measuring range from 10 ... 300 l/min (2,7 ... 79,0 US GPM)	Flow meter PPC-04/12-SFM-300-CAL	18/19	
Measuring range from 20 ... 600 l/min (5,3 ... 158,0 US GPM)	Flow meter PPC-04/12-SFM-600-CAL	18/19	
Measuring range from 25 ... 750 l/min (6,6 ... 198,0 US GPM)	Flow meter PPC-04/12-SFM-750-CAL	18/19	
Subsequent calibration of an SFM flow meter	CAL-PPC-04/12-SFM	23	
<b>SVC flow meter, calibrated, with signal converter and connecting plate</b>			
Measuring range from 0,2 ... 15 l/min (0,05 ... 3,9 US GPM)	Flow meter PPC-04/12-SVC-015-CAL	20/21	
Measuring range from 0,4 ... 60 l/min (0,1 ... 15,9 US GPM)	Flow meter PPC-04/12-SVC-060-CAL	20/21	
Measuring range from 0,6 ... 150 l/min (0,2 ... 39,6 US GPM)	Flow meter PPC-04/12-SVC-150-CAL	20/21	
Measuring range from 1 ... 300 l/min (0,3 ... 79,0 US GPM)	Flow meter PPC-04/12-SVC-300-CAL	20/21	
Subsequent calibration of an SVC flow meter	CAL-PPC-04/12-SVC	23	
<b>6K. Rotational speed measurement, calibration</b>			
Rotational speed sensor, calibrated, with integrated connecting cable 2 m / 6,5 ft.	Sensor PPC-04/12-SDS-CAB-CAL	17	
Subsequent calibration of a rotational speed sensor	CAL-PPC-04/12-SDS	23	

Example of a calibration certificate







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