THIS IS STAUFF

RESPONSE AND FLEXIBILITY • COMPETENT SERVICE • PROMPT DELIVERY •
ENSURED QUALITY • FRIENDLY SERVICE • PROVEN IN PRACTICE

Australia
Stauff Corporation (Pty.) Ltd.
P.O.Box 227
Unanderra Wollongong , N.S.W, 2526
24-26 Doyle Avenue
Unanderra Wollongong , N.S.W, 2526
AUSTRALIA
Tel: +61 2 42 71 18 77
Fax: +61 2 42 71 84 32

Brazil
Stauff Brasil Ltda.
Av. Gupê 10767
Galpão 2 – Bloco A
Barueri – São Paulo – CEP 06422-120
BRAZIL
Tel: +55 (0)11 4772 7200
Fax: +55 (0)11 4772 7210

Canada
Stauff Canada Ltd.
866 Milner Avenue
Scarborough , Ontario M1B 5N7
CANADA
Tel: +1 416 282 46 08
Fax: +1 416 282 30 39

China
Stauff International Trading (Shanghai) Co., Ltd.
Shangdian Mansion, Pudong
331 , Binzhou Road
200126 Shanghai
CHINA
Tel: +86 21 58 45 65 60
Fax: +86 21 58 45 66 80

France
Stauff S.A.
230, Avenue du Grain d'Or
Z.I. de Vineuil-Blois Sud
41354 Vineuil-cedex
FRANCE
Tel: +33 2 54 50 55 50
Fax: +33 2 54 42 29 19

Germany
Walter Stauffenberg GmbH & Co. KG
P.O. Box 1745, 58777 Werdohl
Im Ehrenfeld 4, 58791 Werdohl
GERMANY
Tel: +49 23 92 9160
Fax: +49 23 92 2505

India
Stauff India Pvt. Ltd.
Gat. No. 2340
Pune-Nagar Road, Wagholi
Pune, 412207
INDIA
Tel: +91 202 705 19 90
Fax: +91 202 705 19 89

Italy
Stauff Italia S.R.L.
Via Pola 21/23
20034 Birone di Giussano (MI)
ITALY
Tel: +39 0362 31 21 13
Fax: +39 0362 33 55 36

Korea
Stauff Korea Ltd.
1500-12, Dadae-Dong
Saha-Ku
Pusan, KOREA 604-826
Tel: +82 51 266 6666
Fax: +82 51 266 8866

New Zealand
Stauff Corporation (NZ) Ltd.
P.O. Box 58517
Greenmount, Auckland
Unit D, 103 Harris Road
East Tamaki, Auckland
NEW ZEALAND
Tel: +64 9 271 4812
Fax: +64 9 271 4832

Poland
Stauff Polska Sp. z o. o.
ul. Rdestowa 51
81-591 Gdynia
POLAND
Tel: +48 58 660 1160
Fax: +48 58 629 7952

United Kingdom
Stauff UK
332, Coleford Road, Darnall
Sheffield, S 9 5PH
ENGLAND
Tel: +44 114 251 8518
Fax: +44 114 251 8519

USA
Stauff Corporation
7 Wm. Demarest Place
Waldwick, 07463-1542, New Jersey
USA
Tel: +1 201 444 78 00
Fax: +1 201 444 78 52

Globally available through distributors in all industrial countries

 KLD&DMP www.stauff.com

Ordering Code # :SFT - 2005 - 12A - UK

STAUFF

STAUFF

FILTRATION TECHNOLOGY

Diagtronics

Local solutions for individual customers worldwide

Australia
Stauff Corporation Pty. Ltd.
Postal Office Box 227
Unanderra Wollongong , NSW, 2526
24-26 Doyle Avenue
Unanderra Wollongong , NSW, 2526, AUSTRALIA
Tel: +61 2 42 71 18 77
Fax: +61 2 42 71 84 32

Brazil
Stauff Brasil Ltda.
Av. Gupê 10767
Galpão 2 – Bloco A
Barueri – São Paulo – CEP 06422-120, BRAZIL
Tel: +55 (0)11 4772 7200
Fax: +55 (0)11 4772 7210

Canada
Stauff Canada Ltd.
866 Milner Avenue
Scarborough
Ontario M1B 5N7 , CANADA
Tel: +1 416 282 46 08
Fax: +1 416 282 30 39

China
Stauff International Trading (Shanghai) Co., Ltd.
Shangdian Mansion, Pudong
331 , Binzhou Road
200126 Shanghai, CHINA
Tel: +86 21 58 45 65 60
Fax: +86 21 58 45 66 80

France
Stauff S.A.
230, Avenue du Grain d'Or
Z.I. de Vineuil-Blois Sud
41354 Vineuil-cedex, FRANCE
Tel: +33 2 54 50 55 50
Fax: +33 2 54 42 29 19

India
Stauff India Pvt. Ltd.
Gat. No. 2340,
Pune-Nagar Road, Wagholi
Pune, 412207, INDIA
Tel: +91 202 705 19 90
Fax: +91 202 705 19 89

Italy
Stauff Italia S.R.L.
Via Pola 21/23,
20034 Birone di Giussano (MI), ITALY
Tel: +39 0362 312113
Fax: +39 0362 335536

Korea
Stauff Korea Ltd.
1500-12, Dadae-Dong
Saha-Ku
Pusan, KOREA 604-826
Tel: +82 51 266 6666
Fax: +82 51 266 8866

New Zealand
Stauff Corporation (NZ) Ltd.
Post Office Box 58517
Greenmount, Auckland
Unit J, 103 Harris Road
East Tamaki, Auckland NEW ZEALAND
Tel: +64 9 271 4812
Fax: +64 9 271 4832

Poland
Stauff Polska Sp. z o. o.
ul. Rdestowa 51
81-591 Gdynia, POLAND
Tel: +48 58 660 1160
Fax: +48 58 629 7952

United Kingdom
Stauff UK
332, Coleford Road
Darnall
Sheffield, S 9 5PH, ENGLAND
Tel: +44 114 251 8518
Fax: +44 114 251 8519

USA
Stauff Corporation
7 Wm. Demarest Place
Waldwick, 07463-1542
New Jersey, USA
Tel: +1 201 444 78 00
Fax: +1 201 444 78 52

Distributors and warehouses in all industrial countries.

Walter Stauffenberg GmbH & Co. KG

P. O. Box 17 45 · D-58777 Werdohl
Im Ehrenfeld 4 · D-58791 Werdohl
Tel.: +49 (0) 23 92 9 16-0
Fax: +49 (0) 23 92 25 05
E-mail: sales@stauff.com
Internet: http://www.stauff.com

Stauff Filtration Technology

Stauff Filtration Technology offers a complete range of filtration products and services that will provide the system designer or user with the highest level of contamination control demanded by today's most sophisticated applications. Products include pressure filters, return line filters, elements, spin on filters, suction strainers, and filler breathers for various hydraulic, lubrication and fuel oils.

Stauff has the technical expertise to provide superior filter element designs for the Stauff original filter housings and also for the interchange element market. Stauff manufactures more than 10,000 different elements. Many of these are designed to fit into filter housings produced by other companies while maintaining or surpassing the original performance.

The "Stauff Contamination Control Program" includes the diagnostic services including fluid sampling and laser particle counting products needed to monitor the system contamination level.

Stauff, through its global network of wholly owned companies and technically qualified distributors, is ideally placed to assist its customers in the total contamination process providing a well balanced filtration solution.

STAUFF Diagtronics - Digital Pressure Gauges SPG-DIGI

The new STAUFF SPG-DIGI digital pressure gauge continuously measures and displays in-line pressure as well as capturing and displaying minimum and maximum pressure readings. Typical accuracy is 0.5 % of full scale. The unit can be supplied individually or as part of a Pressure Test Kit.

with adapter
SDA (optional)

Dimensions

- Diameter ø80 mm *(3.15 inch)*
- Thickness 33 mm *(1.3 inch)*

Display

- Text-Display 4 1/2-digit
  Dimension : 50 x 34 mm
  (1.97 x 1.34 inch)
- Text Height: 15 mm *(0.59 inch)*
- Available Units: Bar, PSI, Mpa, kPa, mbar
- "Bar-Graph-Scale" c/w drag indicator
- Back lighted
- Battery Life-Display

G 1/4 or
7/16-20 UNF

Specification

- Measures inline pressure
- ± 0.5 % FS* accuracy
- Measurement of pressure peaks at 10ms intervalls
- Operating temperature : –10°C...50°C *(14...122°F)*
- Ambient temperature : –20°C...80°C *(-4...176°F)*
- Back lighted display
- Battery-life indicator 1500 hours (2 x 1.5 V battery)
- Pressure Connection G 1/4 BSPP or 7/16-20 UNF (stainless steel)
- Zinc die cast housing with TPE protective cover
- Adapter is steel with zinc-plating
- Protection class : EN60529 - IP67

* FS = Full Scale

Display and Functional Description

1 - "Bar-Graph"-Display, actual and maximum pressure (Peak-Hold-function)
2 - Actual value display (height 15mm,*0.59 inch*)
3 - Battery-Life indicator
4 - MIN/MAX- or Full Scale-display

ON OFF - Turns back light on/off

MIN MAX FS - Changes between Min/Max- and Full Scale-Display

MENU ZERO - MENU : Auto-POWER-OFF, choice of units
ZERO-Function

RESET OK - RESET : deletes measured values (MIN/MAX)
OK : confirm selected inputs

Ordering Code and Technical Data

SPG-DIGI-B0100-B-CAL

Type	
SPG	STAUFF Pressure Gauge

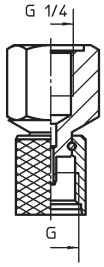
Display	
DIGI	Digital Display

Pressure Range			
Code	**Measuring Range**	**Overload**	**Burst Pressure**
B0016	-1...16 bar *(-14.5...230 PSI)*	40 bar *(580 PSI)*	50 bar *(725 PSI)*
B0100	0...100 bar *(0...1450 PSI)*	200 bar *(2900 PSI)*	800 bar *(11600 PSI)*
B0400	0...400 bar *(0...5800 PSI)*	800 bar *(11600 PSI)*	1700 bar *(24650 PSI)*
B0600	0...600 bar *(0...8700 PSI)*	1200 bar *(17400 PSI)*	2200 bar *(31900 PSI)*

Connection	
B	G 1/4 BSP
U	7/16-20 UNF

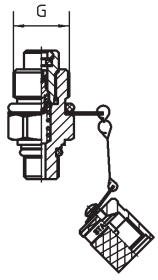
Calibration	
none	Without calibration
CAL	With calibration

Additional Adapter



Adapter SDA
Connection pressure gauge with a test point

Adapter SAD
Only in conjunction with adapter SDA20-G1/4, connection with other test point series / threads



Test Point

For more information about adapters and test points see catalogue STAUFF TEST

Adapter	Adaption from	To Dim. G
SDA20-G1/4	G1/4	M16x2
SDA15-G1/4	G1/4	M16x1,5
SDA12-G1/4	G1/4	S12,65x1,5
SAD20/15-P	M16x2	M16x1,5
SAD20/12-P	M16x2	S12,65x1,5
SAD20/10-P	M16x2	Plug

STAUFF Diagtronics - Pressure Transducers SPT

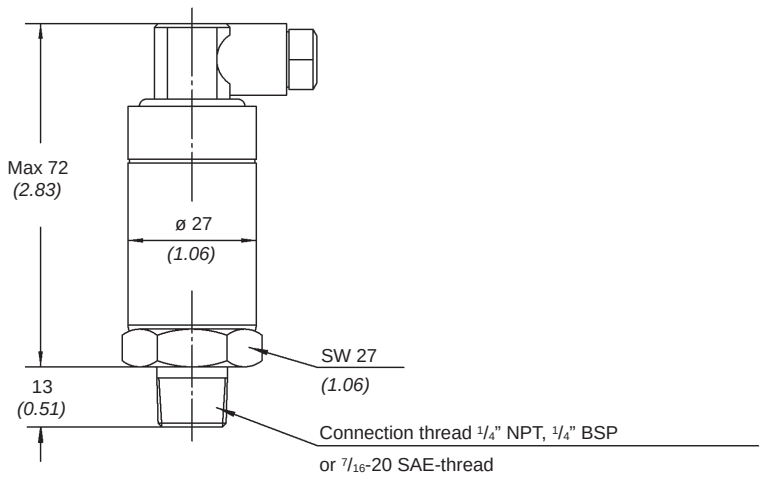
STAUFF pressure transmitters are designed to meet price and performance requirements of Original Equipment Manufacturers. The SPT pressure transmitters use a thin film sensor for pressure ranges 10 bar *(145 PSI)* to 1000 bar *(15000 PSI)*.

With a stainless steel case and compact design, STAUFF SPT pressure transmitters provide a high performance sensor package featuring excellent vibration resistance and long service life. OEM applications include hydraulics, pneumatics HVAC compressor control, machine tools, robotics and off road equipment.

Features:

- Thin film sensor
- Rugged stainless steel body
- Compact size
- Work pressure up to 1000 bar *(15000 PSI)*
- Highly stable
- Temperature compensated
- Protected against reverse polarity, short circuit output and suppressor diode for high voltage protection
- Connections available BSP , NPT and SAE (male)
- Protection class (IP 65 / NEMA 5)
- Input 10-30 VDC
- Output 4…20mA

DIN 43 650 miniature L-plug



All dimensions in mm *(inch)*

Ordering Code - Standard Ranges - SPT* Series

Code	Pressure Range		Maximum Pressure**		Burst Pressure ***	
B0010	0-10 bar	*(0-145 PSIG)*	35 bar	*(507 PSI)*	42 bar	*(609 PSI)*
B0016	0-16 bar	*(0-232 PSIG)*	80 bar	*(1160 PSI)*	96 bar	*(1392 PSI)*
B0025	0-25 bar	*(0-363 PSIG)*	50 bar	*(725 PSI)*	96 bar	*(1392 PSI)*
B0040	0-40 bar	*(0-580 PSIG)*	80 bar	*(1160 PSI)*	400 bar	*(5800 PSI)*
B0060	0-60 bar	*(0-870 PSIG)*	120 bar	*(1740 PSI)*	550 bar	*(7980 PSI)*
B0100	**0-100 bar**	***(0-1450 PSIG)***	**200 bar**	***(2900 PSI)***	**800 bar**	***(11600 PSI)***
B0160	**0-160 bar**	***(0-2320 PSIG)***	**320 bar**	***(4640 PSI)***	**1000 bar**	***(14500 PSI)***
B0250	**0-250 bar**	***(0-3630 PSIG)***	**500 bar**	***(7250 PSI)***	**1200 bar**	***(17400 PSI)***
B0400	**0-400 bar**	***(0-5800 PSIG)***	**800 bar**	***(11600 PSI)***	**1700 bar**	***(24650 PSI)***
B0600	0-600 bar	*(0-8700 PSIG)*	1200 bar	*(17400 PSI)*	2400 bar	*(34800 PSI)*
B1000	0-1000 bar	*(0-14500 PSIG)*	1500 bar	*(21750 PSI)*	3000 bar	*(43500 PSI)*
P00300	***0-300 PSIG***	**(0-20 bar)**	***725 PSI***	**(49 bar)**	***3625 PSI***	**(247 bar)**
P00400	*0-400 PSIG*	(0-27 bar)	*725 PSI*	(49 bar)	*3625 PSI*	(247 bar)
P00500	*0-500 PSIG*	(0-34 bar)	*1160 PSI*	(79 bar)	*5800 PSI*	(395 bar)
P00600	***0-600 PSIG***	**(0-34 bar)**	***1160 PSI***	**(79 bar)**	***5800 PSI***	**(395 bar)**
P01000	*0-1000 PSIG*	(0-68 bar)	*1740 PSI*	(118 bar)	*7975 PSI*	(543 bar)
P01500	***0-1500 PSIG***	**(0-102 bar)**	***2900 PSI***	**(197 bar)**	***11600 PSI***	**(789 bar)**
P02000	*0-2000 PSIG*	(0-136 bar)	*2900 PSI*	(197 bar)	*11600 PSI*	(789 bar)
P03000	***0-3000 PSIG***	**(0-204 bar)**	***7250 PSI***	**(493 bar)**	***17400 PSI***	**(1184 bar)**
P05000	***0-5000 PSIG***	**(0-340 bar)**	***11600 PSI***	**(789 bar)**	***24650 PSI***	**(1677 bar)**
P07500	***0-7500 PSIG***	**(0-510 bar)**	***17400 PSI***	**(1184 bar)**	***34800 PSI***	**(2367 bar)**
P10000	*0-10000 PSIG*	(0-680 bar)	*17400 PSI*	(1184 bar)	*34800 PSI*	(2367 bar)
P15000	*0-15000 PSIG*	(0-1020 bar)	*21750 PSI*	(1480 bar)	*43500 PSI*	(2959 bar)

Note: * Bold ranges are stocking program
** Maximum pressure, causing no permanent changes in specifications but may lead to zero and span shifts.
*** Burst pressure, leading to permanent changes in specifications (i.e. zero offsets) or destruction of the transmitter.

Order Code

SPT-B0100-N04-420-MD

- **STAUFF Pressure transmitter**
- **Code Pressure Range (see table above, column code)**
- **Mini DIN Plug**
- **4-20 mA Output 2-wire**
- **Connection Thread**

B04	1/4" BSP
N04	1/4" NPT
S04	7/16"-20 SAE-thread

STAUFF Pressure Transmitters Specifications

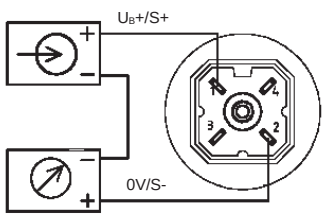
Specifications	
Sensing principle Pressure reference	thin film, relative pressure {absolute reference to 250 PSIA}
Pressure connection **Material:** - wetted parts - case - internal transmitting liquid	$^1/_4$ NPT male $^1/_4$ BSP male $^7/_{16}$ - 20 SAE male 1.4571 and 1.4542 stainless steel (316 SS and PH17-4 SS) 1.4301 stainless steel (304 SS) silicone oil piezoresistive sensors to 20 bar *(300 PSI)*, {halocarbon oil or oxygen service}, no liquid fill used for thin film sensors > 20 bar *(300 PSI)*
Supply voltage U_B Output and load limitations: Output signal and maximum load Upper cutoff frequency Response time (10...90%)	10-30 DC Volts 4-20 mA 2-wire system RA [Ohm} < (U [V] - 10V) / 0.02 A 150Hz < 1 miliseconds
Accuracy (linearity, including hysteresis and repeatability) Repeatibility Hysteresis 1 year stability	≤ 0.50% of span (B.F.S.L.) ≤ 0.05% of span ≤ 0.1% of span ≤ 0.2% of span (under reference conditions)
Temperature Media Ambient Storage Compensated range Temperature error (reference 21˚C *(70˚F)*) on zero point on span	 -30˚C to +85˚C *(-22˚F to +185˚F)* -30˚C to +85˚C *(-22˚F to +185˚F)* -40˚C to +100˚C *(-40˚F to +212˚F)* 0˚C to +80˚C *(+32˚F to +176˚F)* < 0.3% of span per 10ºC *(18˚F)* change < 0.2% of span per 10ºC *(18˚F)* change
CE conformity	89/336/EWG Interference emission and immunity according to EN61326 97/23/EWG Pressure equipment directive
Shock resistance Vibration resistance	1000g according to IEC 60068-2-27 50g according to IEC 60068-2-6
Electrical connection Weight Dimensions Electrical protection Environmental protection	4-pin miniature L-plug per DIN 43 650 approximately 0.1 kg *(0.2lb)* see drawing protected against reserve polarity, short circuit, and overvoltage IP 65 (NEMA 5) according to IEC 60529 with L-plug (4-pin)

Electrical connections

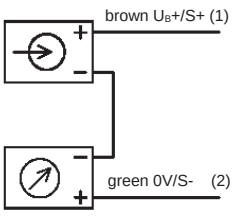
Wiring

2-wire system

DIN 43 650 plug



flying lead



2-wire system

Wire	Coding	DIN Plug	Wire Color
Supply +	UB+ / S+	pin1	Brown
Signal -	0V / S-	pin2	Green

Notes

STAUFF Diagtronics Hydraulic Tester PPC

The STAUFF PPC series of Hydraulic Tester are state-of-the-art instruments designed to diagnose certain variables in today's hydraulic and pneumatic systems like pressure, differential pressure, temperature, flow and hydraulic power. Depending on the type chosen, the STAUFF PPCs can analyze, store and process all data in a PC or notebook. The Hydraulic Testers are specially designed for today's increasing demands of system monitoring, trouble-shooting and determination of important values. The PPC units can be applied in the following wide range of applications :

· Industrial Hydraulics
· Mobile and Agriculture Hydraulics
· Marine and Offshore Hydraulics
· Chemical and Petrochemical Industry
· Energy and Air-condition Industry
· Sanitary Industry

The PPC-04 /2 is a very easy to handle mobile measuring device controlled by only 8 buttons and allows the connection of up to two sensors. The measured data is displayed on the double spaced screen as numeric values.

The larger PPC-06 / 08 / 12 Hydraulic Testers are available as three, four or six channel models having an internal data storage capability of up to 250,000 data points. The unit displays measurements not only as numeric values but also in graphic form.

The PPC-04 /2 series has been completely revised. The display is now double spaced to monitor both connected sensors at one time. This new revision (marked with the "/2" in the designation) also now operates with the same sensors as the series PPC-06 / 08 / 12, this makes handling, connecting, and measuring easier, saving time and cost.

STAUFF Diagtronics Hydraulic Tester PPC

The table shown below gives you a short overview of the STAUFF Hydraulic Testers; you will find more detailed information about your selected product on the pages dedicated to each unit.

Hydraulic Tester

PPC-04 /2	PPC-06 / 08 / 12
2 sensor inputs Memory –function for minimum and maximum (MIN-/MAX) values	PPC-06: 3 sensor inputs Memory capacity for 60.000 data points PPC-08: 4 sensor inputs Memory capacity for 125.000 data points PPC-12: 6 sensor inputs Memory capacity for 250.000 data points
Display for numeric values	Display for numeric values and graphs
Download of numeric values to a PC	Download of numeric values and graphics (diagrams) to a PC
Battery or rechargeable battery and external power supply	Rechargeable battery and external power supply
External / Auxiliary sensors not possible	External / Auxiliary sensors possible
Description see pages 10 and 11	Description see pages 12 and 13

Sensors

The sensors are compatible with the Hydraulic Testers PPC-04 /2 and PPC-06 / 08 / 12	
Pressure Transducer	Description see pages 15 and 16
Flow Turbines and Meters	Description see pages 18 to 21
Rotational Speed Sensor	Description see page 17
Only PPC-06 / 08 / 12-series : External / Auxiliary sensors for special measurements, see page 22	

STAUFF Diagtronics Hydraulic Tester PPC - 04 /2

Hand-held measuring unit ideal for maintenance, service and commissioning of hydraulic systems.

Today's hydraulic systems require a precise, quick and uncomplicated way of measuring important hydraulic parameters. For this purpose STAUFF offers the ideal solution: The PPC-04 /2.

New revised model:

- **Double spaced display**
- **5-pin-sensor input** (now compatible with sensors of the PPC-06/08/12 series)
- **"ZERO"-function**

The portable measuring device PPC-04 /2 is controlled by 8 buttons enabling the user to easily obtain data on working pressure, peak pressure, differential pressure, temperature, flow and rotational speed.

The PPC-04 /2 provides two separate sensor inputs which automatically identify the sensor connected to it. The new double spaced display now shows the values of both sensor inputs at one time. The unit and scale can be changed during use.

The PPC-04 /2 is insensitive to dirt and is designed to be used wherever hydraulic control and components are in use. The heavy duty rubber cover protects the unit from damage during use in extreme conditions. The PPC-04 /2 is powered either by a standard 9V battery (PPC-04-B /2), or by an integrated rechargeable battery (PPC-04-A/-AP /2).

Operation for an extended period of time is supported with the use of an AC power adaptor, which also charges the re-chargeable-battery.

With the RS-232 port (not for PPC-04-A /2 and PPC-04-B /2) the PPC-04 /2 can be directly connected to the serial port of a PC or notebook. The PPC-04 /2-software is compatible with all Windows 3.1®, Windows 95®, Windows 98®, Windows NT® and Windows XP® operating systems.

PPC-04 /2-Kits are supplied complete with adapters to connect the unit to STAUFF Test 20/15/12 and STAUFF Test 10 test points, even under pressure. Temperature and Flow measurements are possible using Temperature Sensor PPC-04/12-TS or SFM flow turbines mounted in the hydraulic line. Rotational speed can be measured using the STAUFF PPC-04/12-SDS rotational speed sensor.

In order to measure differential pressure two transducers of the same pressure range must be used.

Note ! This unit does not have internal data collection and logging capability.

Hydraulic Tester PPC-04-B /2, PPC-04-A /2 and PPC-04-AP /2

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

Measures/Display:

- Pressure in bar and *PSI*
- Temperature in ˚C and ˚*F*
- Flow in l/min and *GPM (US)*
- Rotational speed U/min and *RPM*

- Double spaced LCD-Display (4-digit) Text height 8 mm *(0,32 inch)*
- Automatic recognition and identification of sensors connected
- Data output to transfer data to PC or notebook (PPC-04-AP /2 only)
- Plastic ABS housing with protective rubber cover integrated with stand and carrying straps
- Auto power off after 15 minutes

* FS = Full Scale

Power supply:

- External power supply 110/230 VAC (PPC-04-A/-AP /2 only)
- 9V / 110mA/h block battery IEC 6F 22
- PPC-04-B /2 operating time with rechargeable batteries 5 hours
- KFZ-adaptor 24VDC (PPC-04-A/-AP /2) (optional)

Connections:
Sensor input (5-pin)

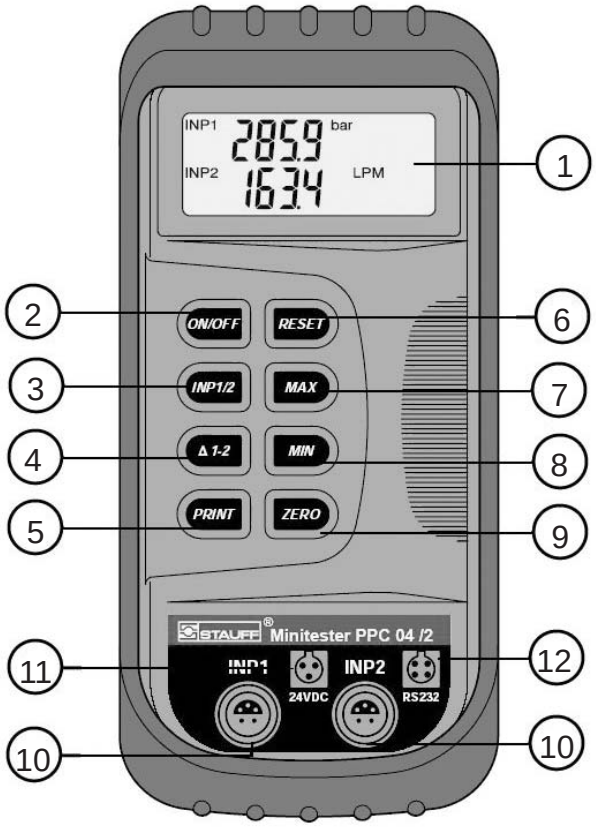
- Automatic sensor identification
- Input signal U = 0…3 VDC (R=470kΩ)
- Scanning rate ≤ 2 ms
- Accuracy < 0,3% FS ± 2 Digit

Data output (4-pin, RS232-port)

General:

- Temperature range 0...50˚C (*32...122˚F)*
- Storage Temperature -20...60˚C (*-4...140˚F)*
- Relative Humidity < 85%
- Protection Level EN60529 - IP54
- Dimensions L/W/H 145 x 70 x 40 mm *(5.71 x 2.76 x 1.57 inch)*
- Weight approx. 330 g (*0.73 lbs.)*

Functional description PPC 04/2



1.	**DISPLAY**	Double spaced LCD-display, display INP1and INP2 or Δ P-value; battery status
2.	**ON/OFF**	Power on/off Switch
3.	**INP 1/2**	Selects whether meter will display measurement from Input 1 or Input 2
4.	**Δ1-2**	Displays the differential value of INPUT 1 minus INPUT 2
5.	**PRINT***	Sends displayed measurements to PC or notebook
6.	**RESET**	Resets minimum and maximum values to zero, calibration for Δp-measurement
7.	**MAX**	Displays the maximum value since meter was last reset or turned on. (f.e. pressure peak display)
8.	**MIN**	Displays the minimum value since meter was last reset or turned on
9.	**ZERO**	Zero-point adjustment
10.	**INP1 / INP2**	5 pin sensor input
11.	**24 VDC⁺**	External power supply or KFZ-adaptor socket
12.	**RS 232***	Data output to transmit measured values to PC or notebook

* only PPC-04-AP /2 ⁺ only PPC-04-A /2 and PPC-04-AP /2

STAUFF Diagtronics Hydraulic Tester PPC-06/08/12

Technical Specification

Type	Number of Sensor inputs	Data storage capacity up to ... data points
PPC-06	3	60,000
PPC-08	4	125,000
PPC-12	6	250,000

- Measure Pressure, Temperature, Flow Rate, Frequency or Rotational Speed
- Integrated Data Storage
- Permanent Recording of Min/Max Values
- Menu-Driven Interface
- Automatic Recognition and Identification of connected Sensors
- Rugged Design
- Windows Compatible Software on CD-ROM
- RS-232-port for PC-connection
- Large, automatic scaling LCD-Display
- Online-data transfer

The PPC-06/08/12 Hydraulic Testers are state-of-the-art instruments designed to provide the latest in diagnostic evaluation of hydraulic and pneumatic systems. These units are available in either three, four or six channel models. Additional to the features of the PPC-04 /2-series the PPC-06/08/12 units have an integrated data storage for data recording and further processing.

The ergonomically designed case and large automatic scaling LCD display make it easy to use in even the most demanding environments.

The three different Hydraulic Testers PPC-06/08/12 differ in their data storage capacity, and in the number of sensor input ports (three, four or six channel model).

These hand held meters provide measurement and display of pressure, temperature, flow, differential pressure, as well as rotational speed. They are the perfect tools to capture diagnostic measurements at remote locations. Also new to these meters are the functions for calculating power and flow run-out. Permanent recording, a special trigger-function and the connection of auxiliary sensors are also additional features.

The PPC-06 Hydraulic Tester can store up to 60,000, the PPC-08 up to 125,000 and the top-of the-line unit PPC-12 up to 250,00 data points. These measurements can be transferred directly to a PC or notebook via an RS-232 interface. The new PPC Software is compatible with all Windows 95®, Windows 98®, Windows NT® and Windows XP® operating systems and allows various data analysis and reports.

The PPC-06/08/12 units offer the latest in automatic sensor identification technology, eliminating the time consuming task of programming each individual sensor. This technology allows you to just plug in the sensor and you are ready to take measurements. The PPC-06/08/12 Hydraulic Tester will also allow you to program the individual inputs to accept other data collection formats, such as 4-20mA, 1-10 Volt or frequency.

Consult STAUFF for further details about the new PPC-06/08/12 Hydraulic Tester and kits.

Hydraulic Tester PPC-06, PPC-08 and PPC-12

	Sensor input (5-pin)	Data storage capacity (number of data points)
PPC-06	3	60,000
PPC-08	4	125,000
PPC-12	6	250,000

Measures / Display:
- Pressure in bar and *PSI*
- Temperature in °C and *°F*
- Flow in l/min and *US GPM*
- Rotational speed in U/min and *RPM*
- Digital LCD-display 128x64 pixels
- Automatic character height scaling
- Automatic sensor identification
- Data output for data transfer to PC or notebook
- Reinforced polyamide glass material
- 11-key tactile touch membrane
- EMC Protection (EMV):
  Electromagnetic interference
  DIN/EN 50081, Part 1
  Immunity to emitted interference
  DIN/EN 50082, Part 2
- Auto power Off

Memory Functions:
- Variable storage rate
- Variable measuring period (2s ... 100h)
- Manual and automatic triggering

Power supply:
- Recharge circuit for use with external power supply
- Internal NiCd-rechargeable battery 7.2V / 700mA/h
- Operating time with rechargeable batteries 5 hours

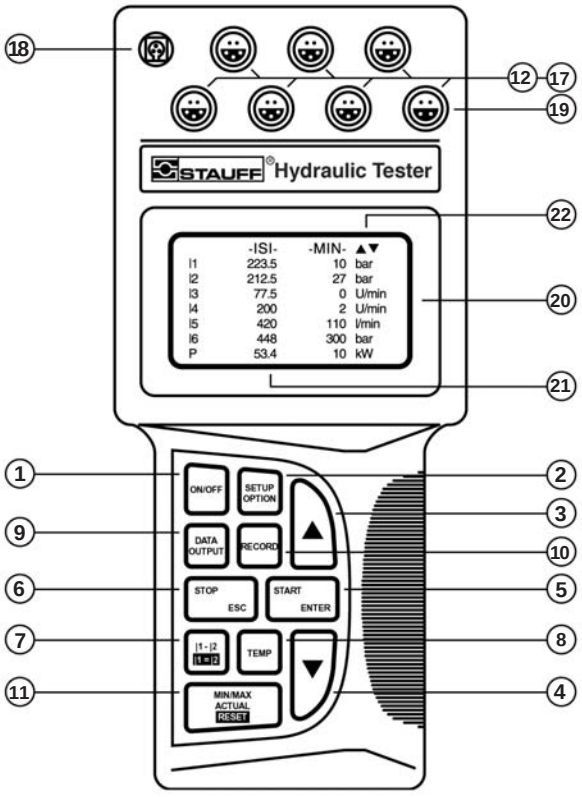
Connections:
Sensor input (5-pin)
- Automatic sensor identification
- Input signal U = 0…3 VDC (R = 470kΩ)
- Frequency input via input socket 13
- Frequency range 0.5 Hz ... 30 kHz
- Scanning rate < 1 ms
- Accuracy < 0.3 % FS* ± 2 digit

Data output 4-pin, RS-232 interface (push/pull)
- Adjustable baud rate : 1200 ... 38400 PBS
- 8 data bits, 1 stop bit

General
- Temperature range 0 ... 50°C *(32 ...122°F)*
- Storage temperature -20 ... 60°C *(-4 ... 140°F)*
- Relative humidity < 80%
- Protection class EN 60529 - IP54
- Dimensions L/W/H 235 x 106 x 52,5mm *(9.25 x 4.17 x 2.07 inch)*
- Weight 700 g *(1.54 lbs)*

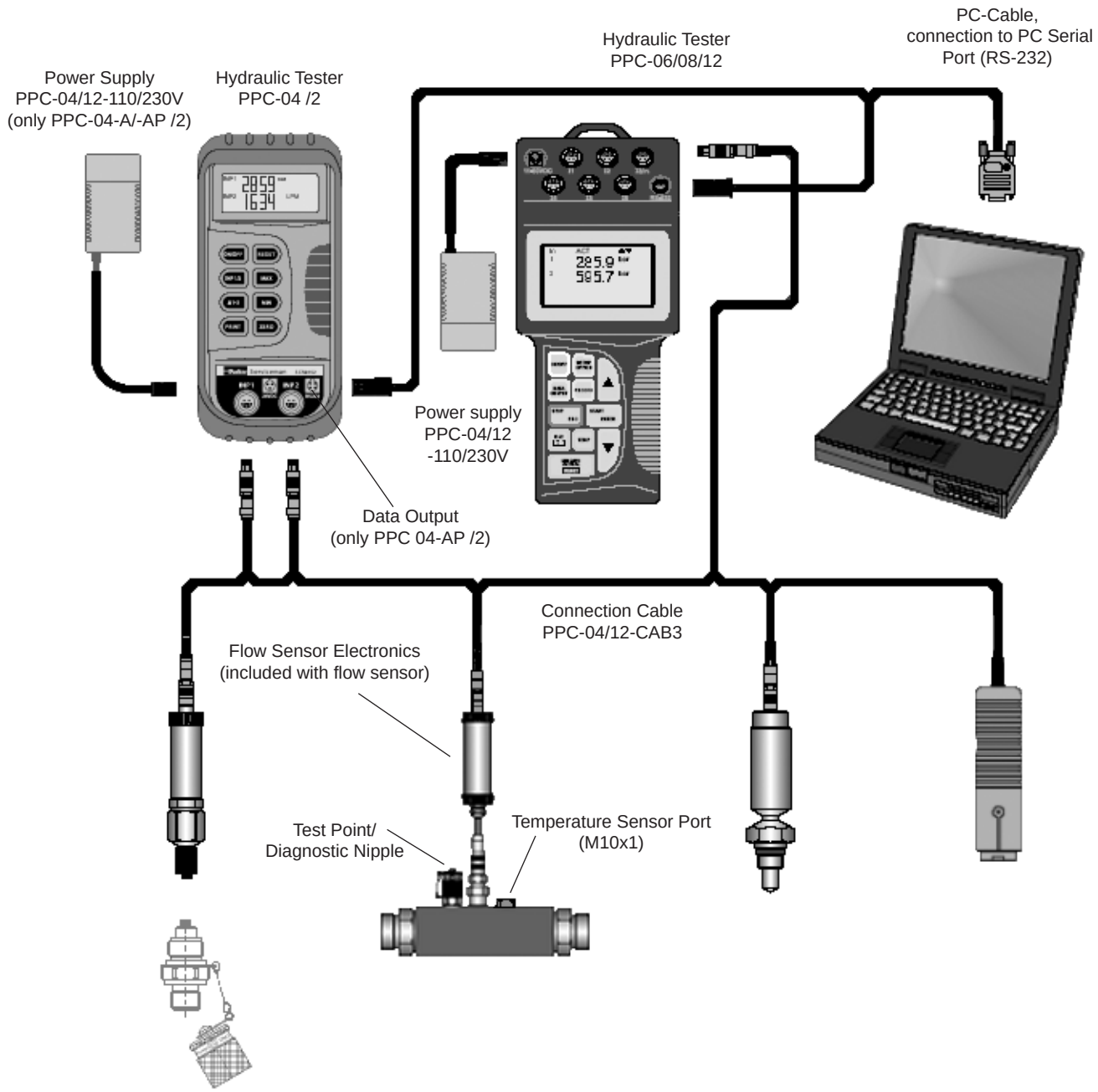
* FS = Full Scale

Functional description PPC-06 / 08 / 12



1 ON/OFF Turns unit on / off.
2 SETUP/OPTION Change system settings (date/clock, storage operation)
3/4 ARROWS Select line and function values.
5 START/ENTER Change function values and start measurements.
6 STOP/ESC Stop or terminate functions.
7 I1-I2 Differential value between input 1 and input 2.
I1=I2 Zero adjustment (Tare-function)
8 TEMP Displays the measured temperature values for all channels.
9 DATA-OUTPUT Displays output to PC, or graphic display.
10 RECORD To record and store measurements.
11 MIN/MAX/ACTUAL Displays the minimum and maximum and actual values.
RESET Reset deletes values.
12-17 INPUT Inputs for up to six sensors. (automatic sensor recognition)
18 EXTERNAL POWER SUPPLY 11-30 VDC Input for external power supply and charging of internal battery.
19 DATA OUTPUT RS-232 port for connecting to the PC, or external trigger module.
20 GRAPHIC LCD-DISPLAY Displays measured values, adjustment menus and graphics.
21 ADDITIONAL LINE Displays the power or flow run out values.
22 STATUS LINE Shows the designation of the measured value or the menu name.

Accessories Diagram PPC-04/06/08/12



Pressure:
Sensor
PPC-04/12-PT-XXX,
more connection-adapters
available (SDA,SAD)

Flow:
Flow Meter
PPC-04/12-SFM-XXX

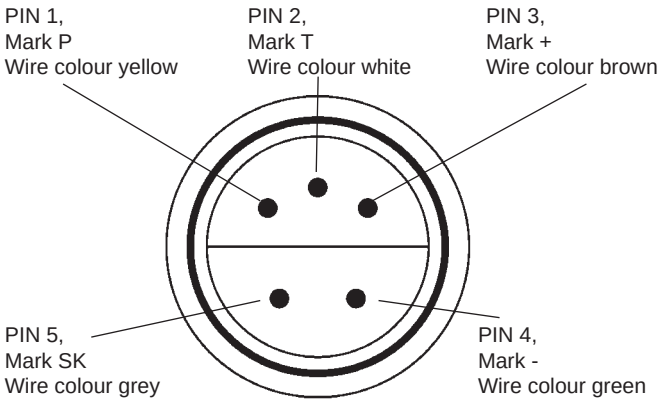
Temperature:
Sensor
PPC-04/12-TS,
for use with adapters
(SGV-J3/4-G)

Rotational Speed:
Sensor
PPC-04/12-SDS

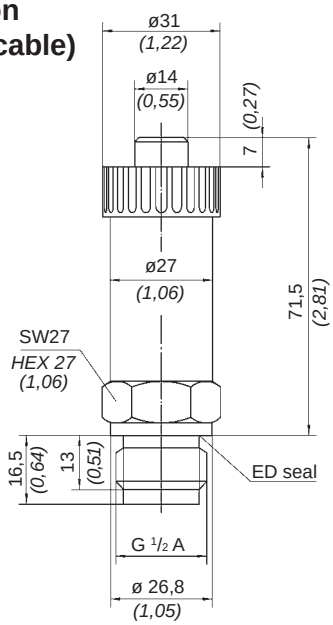
Sensor PPC-04/12-PT-XXX-CAB with adapter SDA20-G1/2

Sensor PPC-04/12-PT-XXX with adapter SDA20-G1/2

Cable End (PIN Out)



Dimension (without cable)



All dimensions in mm *(inch)*

Technical Data

Type (Piezoresistive)	Sensor PPC-04/12-PT-015	Sensor PPC-04/12-PT-100	Sensor PPC-04/12-PT-400	Sensor PPC-04/12-PT-600
Pressure range	-1...15 bar *(-15...210 PSI)* (Relative)	0...100 bar *(0...1450 PSI)* (Absolute)	0...400 bar *(0...5800 PSI)* (Absolute)	0...600 bar *(0...8700 PSI)* (Absolute)
Overload pressure	20 bar *(290 PSI)*	150 bar *(2175 PSI)*	800 bar *(11600 PSI)*	1000 bar *(14700 PSI)*
Burst pressure	45 bar *(650 PSI)*	500 bar *(7250 PSI)*	1200 bar *(17400 PSI)*	1800 bar *(26100 PSI)*
Hysteresis (±%FS* typ./max)	0,10/0,25	0,10/0,20	0,08/0,15	0,05/0,10
Repeatability (±%FS* typ./max)	0,08/0,15	0,08/0,15	0,08/0,15	0,08/0,15
Non-conformity (±%FS* typ./max)	0,25/0,50	0,25/0,50	0,25/0,50	0,25/0,50

Ambient Conditions

• Media temperature	-25…105°C *(-13…221°F)*
• Ambient temperature	-20…85°C *(-4…185°F)*
• Storage temperature	-40…125°C *(-40…257°F)*
• Compensated range	0…85°C *(32…285°F)*

Voltage Requirement

• Excitation voltage	7…12 VDC
• Current consumption	≤ 5 mA

Output

• Output signal	U=0...3 VDC
• Temperature deviation	<± 0,03% FS*/°C
• Response time	< 1 ms
• Long-term stability	< 0,2% FS*/a
• Service Life	10 Million Cycles
• Max Shock load	IEC 68 2-29
• Charateristic curve deviation	<± 0,5% FS*

Connection

• Media application	gases, fluids (for use with aggressive media, please consult STAUFF)
• Transducer connection	with adapter Stauff-Test 20 (M16x2), without adapter G 1/2A

Material

• Transducer/Diaphragm	Stainless steel
• Coupler	Carbon steel zinc plated yellow chromated
• Seal	FPM (Viton®)

General

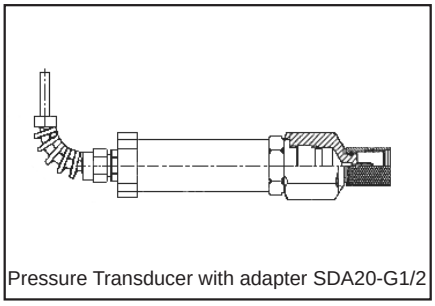
• Male Stud	G 1/2 (BSPP)
• Weight	Approx. 200g *(0,44 lbs)*

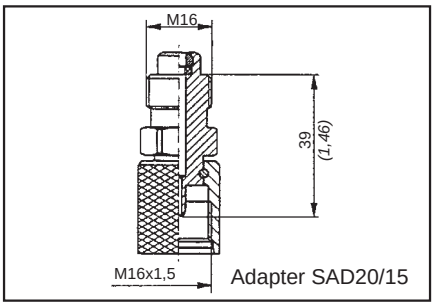
* FS = Full Scale

Connecting adapters for PPC pressure sensors

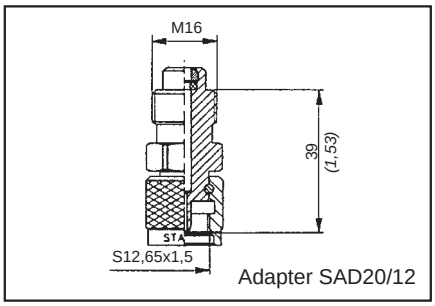
There are several different adapters and adapter sets available to connect the PPC pressure transducers not only to the well known STAUFF Test 20 series (adapter SDA20-G1/2) but also to the test points series STAUFF Test 15/12/10 (adapter SAD20/15-P, SAD20/12-P, SAD20/10-P). All these adapters are supplied in the PPC-Kits as standard (for more information see page 23).

For more information about available adapters please see page 3 or the separate catalogue “STAUFF TEST”.

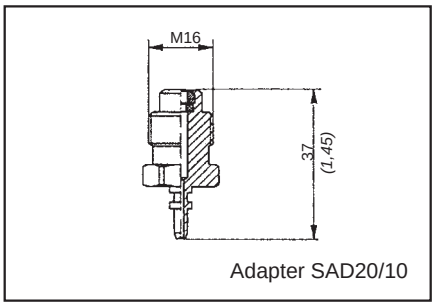

Pressure Transducer with adapter SDA20-G1/2



Adapter SAD20/15



Adapter SAD20/12

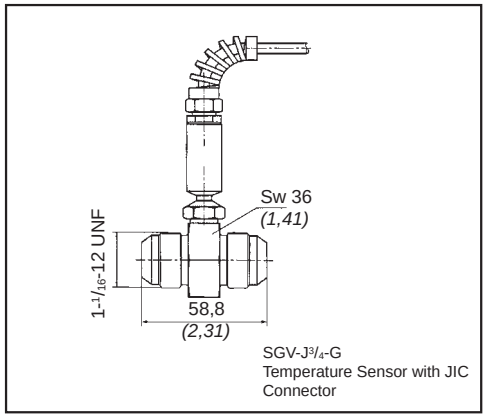


Adapter SAD20/10

Temperature Sensors

The sensor PPC-04/12-TS-CAB measures the actual temperature of the media directly in-line. With the integrated cable (2m /*6,5 ft.*) all data are transferred to the Hydraulic tester.

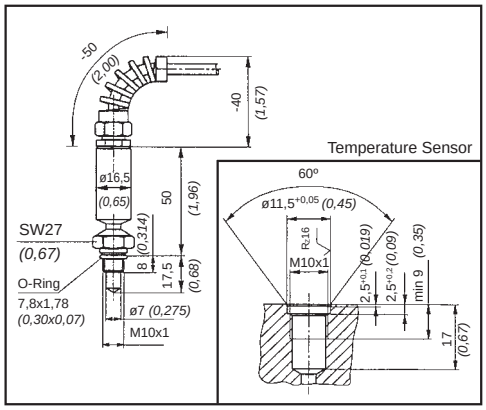
The temperature sensor is also compatible with the flow turbines PPC-04/12-SFM (see page 18) and is suitable with temperatures up to 125°C *(257°F)*.



SGV-J3/4-G
Temperature Sensor with JIC Connector

Technical Data Sensor PPC-04/12-TS-CAB

• Probe system	Silicon Chip
• Measuring range	-25...125˚C *(-13...257˚F)*
• Ambient temperature	0...70˚C *(32...158˚F)*
• Media temperature	-25...125˚C *(-13...257˚F)*
• Storage temperature	-25...80˚C *(-13...176˚F)*
• Output signal	U=0...3 VDC
• Accuracy	± 1.5 % FS*
• Response time	approx. 13,5 s
• Max. working pressure	630 bar *(9000 PSI)*
• Media application	Fluids (for use with aggressive media please consult STAUFF)
• Cable length	2 m *(6,5 ft)*, round plug Series 712
• Connection	a) STAUFF-Test JIC fitting SGV-J3/4-G for in-line installation b) Port Connection M10 x 1



All dimensions in mm *(inch)*

• Material (sensor)	Steel
• Surface treatment	zinc-plated, yellow chromated
• Sealing	FPM
• Protection level	EN 60529 - IP 65

* FS = Full Scale

Rotational Speed Sensor PPC-04/12-SDS-CAB

Rotational speed measurement (RPM) is made possible with the use of the PPC-04/12-SDS-CAB non-contact sensor. Speed is measured using a photo-electric cell which counts revolutions via a reflecting strip or marking on the rotating surface resulting in a high level of accuracy. Additionally a contact sensor is available. A mechanical contact adapter is connected to the speed sensor, which is held onto the rotating surface during measurement.
When used with particularly small surfaces, accuracy may be improved by using a special focusing adapter.
Standard cable length is 3m *(10 ft)*, fixed to the sensor, to achieve best results and correct values this length should not be altered by other extension cables.

Technical Data Sensor PPC-04/12-SDS-CAB

Input

• Measuring range	20...10.000 RPM
• Measuring distance	25...500 mm *(1...20 inch)*
• Measuring angle	±45˚
• Measurement	optical, red LED

Output

• Output signal	U=0...3 VDC
• Accuracy	<0.5% FS*
• Resolution	±5 RPM

Electrical connection

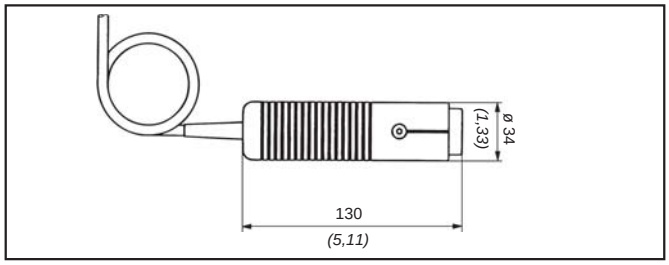
• Cable connected to the sensor	length 3 m *(10 ft)*, round plug (extension cable not recommended)

General

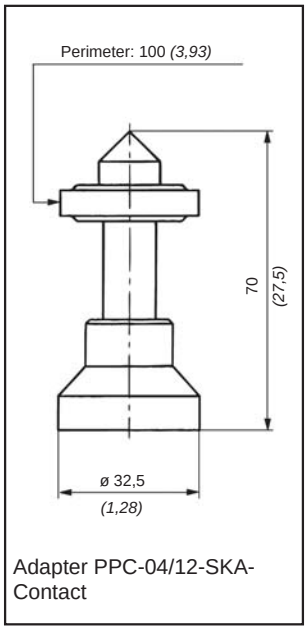
• Material	ABS
• Dimension	D=Ø 34 *(1.34 inch)* L=130 *(5.1 inch)* (without adapter)
• Weight	ca. 230 g *(0.5 lb.)*
• Ambient temperature	0...70˚C *(32...158˚F)*

* FS = Full Scale

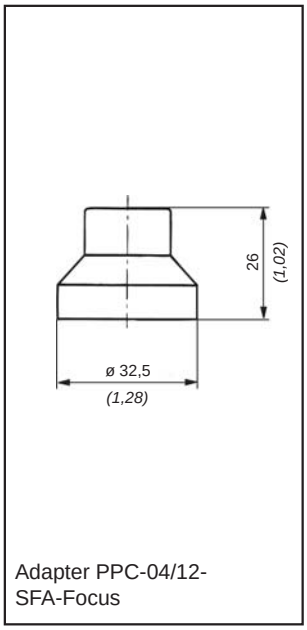
Rotational Speed Sensor PPC-04/12-SDS-CAB



Accessories



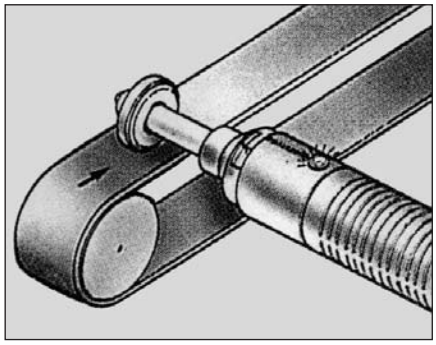
Adapter PPC-04/12-SKA-Contact



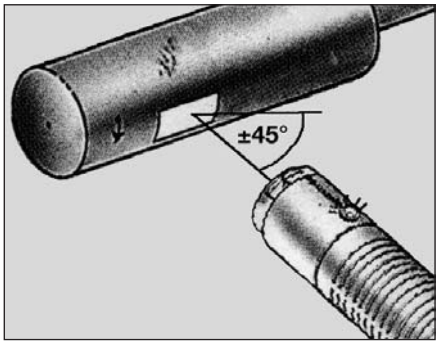
Adapter PPC-04/12-SFA-Focus

All dimensions in mm *(inch)*

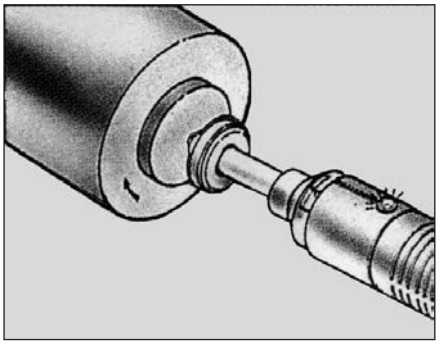
Applications



App. 1 – RPM with contact adaptor using perimiter



App. 2 – rotating shaft non-contact RPM with reflecting strip



App. 3 – RPM with contact adaptor using point

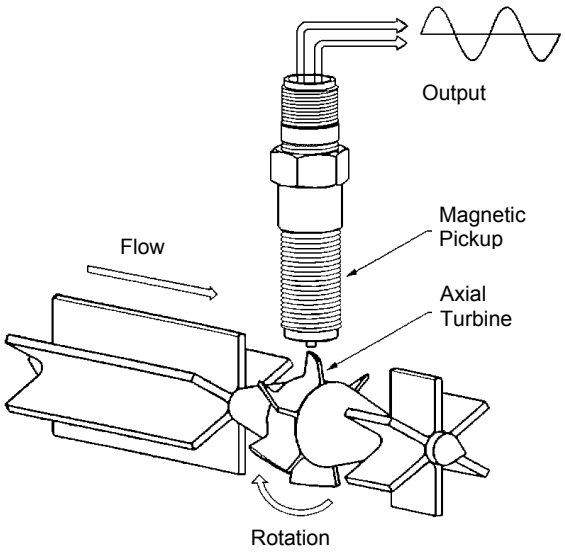
STAUFF Diagtronics – Hydraulic Tester PPC Flow Turbine

Flow-Turbines PPC-04/12-SFM

The PPC-04/12-SFM flow turbine is installed in-line, fluid flow direvtly sets the internal axial turbine into rotation. The resulting frequency is transferred by a digital electronic device (the signal converter) thereby compensating for the influence of interfering flow effects. The flow turbine PPC-04/12-SFM is available in five different measuring ranges.

The flow turbines PPC-04/12-SFM have an integrated test point for connection of a pressure transducer (see page 15). All flow turbines have a connection port to accommodate the temperature sensor PPC-04/12-TS (see page 16).

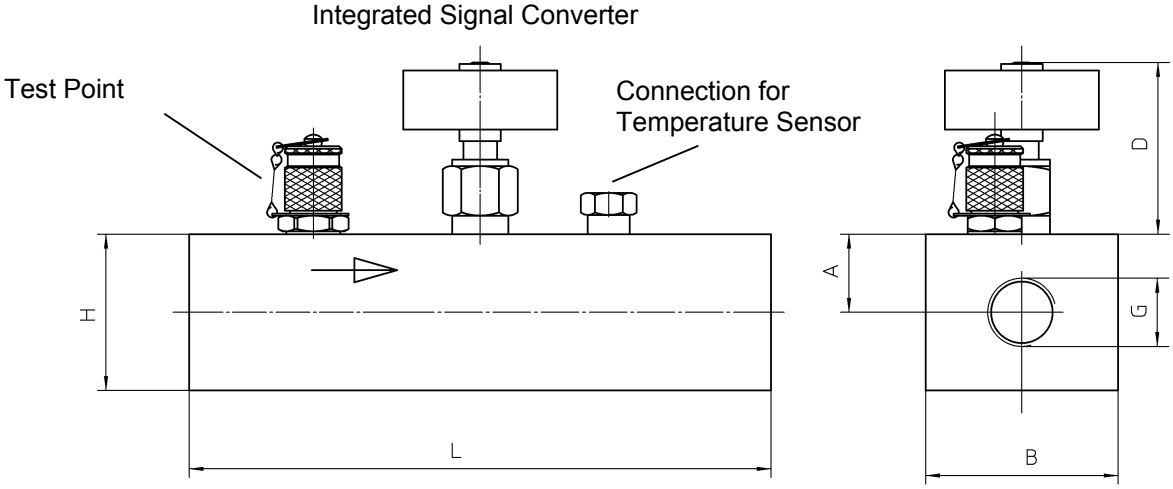
With the new updated version of the flow turbines PPC-04/12-SFM now the signal converter (see page 19) has been intergrated directly into the turbine. This allows a more easy handling and supports the connection between the matched units flow turbine and signal converter.
With the updated version the response time changes from 400 msec to 50 msec and also the accuracy of the types 060, 150, 300 and 600 have improved. The accuracy refers no longer on the full scale but on the actual readings.
Please take note that some dimensions and technical data have changed!



*) FS = Full Scale

Flow Ranges and Dimensions

	Type Sensor PPC-04/12-...		SFM-015	SFM-060	SFM-150	SFM-300	SFM-600
Technical Data	Measuring Range	l/min	1-15	4-60	6-150	10-300	20-600
		(GPM)	(0.26-3.9)	(1.05-15.9)	(1.59-39.6)	(2.65-79)	(5.3-158)
	Pressure Range	bar	420	420	420	420	350
		(PSI)	(6090)	(6090)	(6090)	(6090)	(5000)
	Characteristic Curve		1	1	1	1	1
	Deviation (%FS*)		(% FS)	(% of the actual reading)			
	Max.Pressure Drop	bar	1,5	1,5	1,5	4.0	4.0
	(at FS)	(PSI)	(21.8)	(21.8)	(21.8)	(58)	(58)
	Port Connection (BSPP)		½"	¾"	¾"	1"	1 ¼"
	Port Connection (SAE)		¾"-16	1 1/16"-16	1 1/16"-16	1 5/16"-16	1 5/8"-12
	Weight	kg	0,65	0,75	0,75	1,2	1,8
		(lbs)	(1.4)	(1.6)	(1.6)	(2.6)	(4)
Dimensions	A	mm	18.5	25	25	25	37.5
		(inch)	(0.73)	(0.98)	(0.98)	(0.98)	(1.48)
	B	mm	37	62	62	62	62
		(inch)	(1.46)	(2.44)	(2.44)	(2.44)	(2.44)
	D	mm	80	80	80	84	75
		(inch)	(3.15)	(3.15)	(3.15)	(3.31)	(2.95)
	L	mm	136	190	190	190	212
		(inch)	(5.35)	(7.48)	(7.48)	(7.48)	(8.35)
	H	mm	37	50	50	50	75
		(inch)	(1.46)	(1.97)	(1.97)	(1.97)	(2.95)

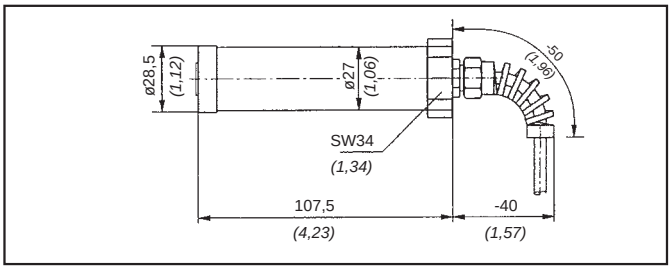


Signal Converter for Flow Turbine PPC-04/12-SFM

The signal converter is supplied with the flow turbine and is essential for flow measurement.

NOTE : Flow turbine and signal converter are matched units and must not be replaced with identical parts.

Dimensions for signal converter for PPC-04/12-SFM



All dimensions in mm *(inch)*

Technical Data Flow-Turbine PPC-04/12-SFM

• Media temperature	-20...150˚C *(-4...302˚F)*
• Viscosity	15...100 cSt
• Calibration viscosity	30 mm²/s *(=30 cSt)*
• Response time	approx. 400 ms
• Accuracy	± 1.0 % FS* at 30 cSt
• Reproducibility	± 0.2 % FS*
• Material of housing	Aluminum
• Surface treatment	black anodized
• Seals	NBR (Buna-N, standard) others on request
• Test point	SMK 20 (M16 x 2)
• Additional connection	M10x1 (standard screw-plug)

Technical Data Signal Converter

• Output signal	U = 0...3 VDC
• Accuracy	≤ 0.3 % FS*
• Working temperature	0...+60˚C *(32...140˚F)*
• Storage temperature	-20...+80˚C *(-4...176˚F)*

• Electrical connection
Turbine end: cable 0.4 m *(1,31 ft)* connected to signal converter with 5pin plug
Connection to unit: cable PPC-04/12-CAB3 3m *(10ft.)*

• Material of housing	stainless steel 1.4301
• Weight	ca. 200 g *(0.44 lbs.)*

* FS = Full Scale

To connect the signal converter to the Hydraulic Tester PPC-04 /2 and PPC-06/08/12 you must use a connection cable PPC-04/12-CAB3 which is not supplied with the flow turbine.

Technical data PPC-04/12-SVC

- Flows up to 300 l/min *(79 US gal/min)*
- 4 measuring ranges
- Working pressure up to 400 bar *(5800 PSI)*
- Accuracy ± 0.5% FS*
- Large viscosity range
- Low noise
- With connecting plate
- With signal converter (without cable)
- Compatible with all STAUFF Hydraulic Tester series PPC
- Automatic scaling / sensor identification
- Output signal U = 0…3 VDC

Flow meter PPC-04/12-SVC (gear volume counter)

The STAUFF flow meter PPC-04/12-SVC measures flow in hydraulic systems. With its high precise gears the PPC-SVC achieves accurate results. With various seal material options the STAUFF volume counter is compatible with a wide range of fluids and various viscosity ranges such as aggressive products like brake fluids, skydrol, biological oils or isocyanates.

Types PPC-04/12-SVC

Type PPC-04/12-SVC-		015	060	150	300
Measuring Range	l/min	0,2...15	0,4...60	0,6...150	1,0...300
	gal/min	*0,05...3,9*	*0,1...15,9*	*0,16...39,6*	*0,26...79,3*
Max. Working Pressure	bar	400	400	315	315
	PSI	*5800*	*5800*	*4570*	*4570*
Overload pressure	bar	480	480	350	350
	PSI	*6960*	*6960*	*5075*	*5075*
Connection (BSPP)		G 3/8	G 1/2	G 1	G 1
Weight	g	2000	5200	9000	13000
	lbs.	*4,41*	*11,46*	*19,84*	*28,66*
Sound level db	A	<60	<70	<70	<72
Resolution	impulse/liter	4082	965	333,33	191
Frequency	Hz [at FS]	1020	965	833,33	955

*FS: Full-Scale

Technical Data

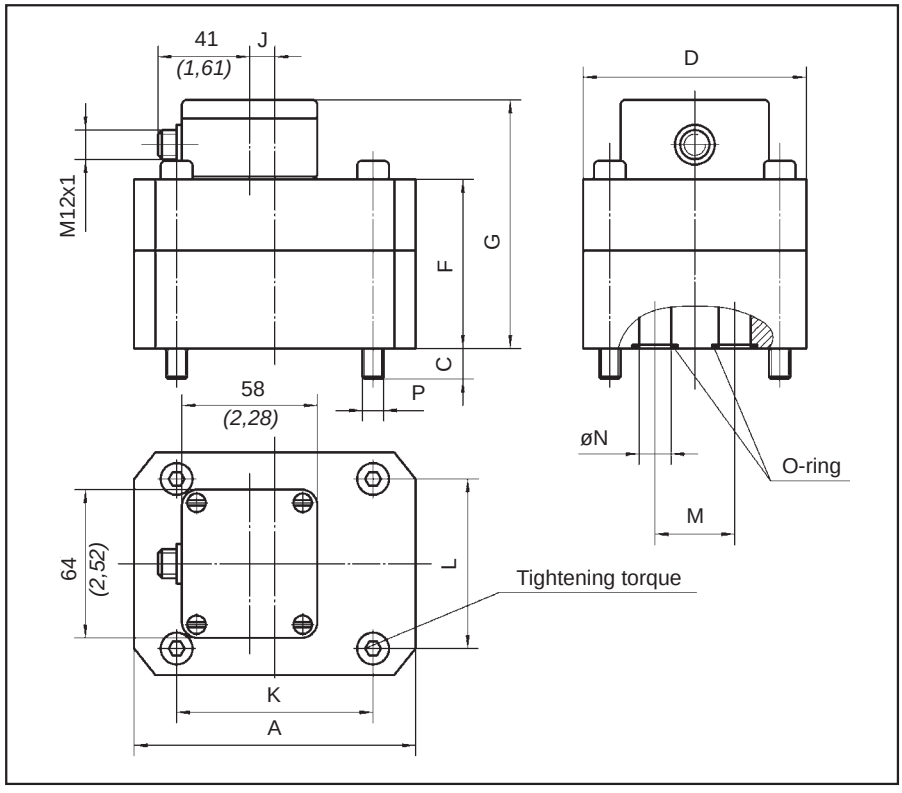
• Accuracy	± 0.5 % FS* ± 0.3 % of measured value (frequency service)
• Repeatability	0.01 % FS*
• Response time	400 ms (in conjunction with signal converter), for shorter response time see advice at the bottom of the page
• Ambient temperature	-30... 80°C *(-22...176°F)*
• Media temperature	-30...120°C *(-22...248°F)*
• Viscosity range	see diagrams next page
• Material housing	GGG40
• Seal material	FPM (Viton) EPDM (on request)
• Style	Gear motor / Bearing material 1.7139, free of non-ferrous heavy metal and silicone

Electrical Data

• Working temperature	10...60°C *(50...140°F)*
• Ambient temperature	0 ...70°C *(32...158°F)*
• Storage temperature	-20...80°C *(-4...176°F)*
• Output	U = 0…3 VDC
• Resistance (Ω)	≤ 500
• Supply voltage	+18 ... +30 VDC
• Current drain	28 mA
• Thermal drift	± 0.05 (% FS /°C)
• Connection (IP 67)	M12x1
• EMC Protection (EMV):	EN 50081 Part 1 EN 50082 Part 2
• Signal hissing	< 5 mV

* FS = Full Scale

Dimensions (without connecting plate)



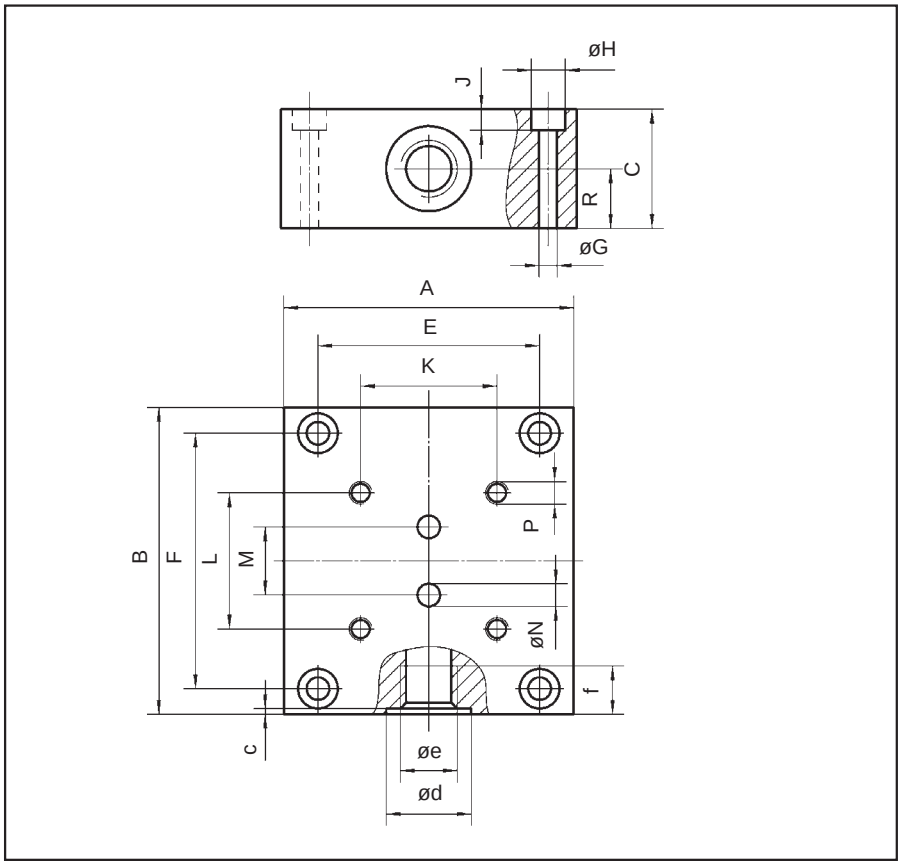
		Type PPC-04/12-SVC-			
		015	060	150	300
Dimensions	A	85 *(3,35)*	120 *(4,72)*	170 *(6,69)*	170 *(6,69)*
	C	13 *(0,51)*	13 *(0,51)*	18 *(0,71)*	22 *(0,87)*
	D	60 *(2,36)*	95 *(3,74)*	120 *(4,72)*	120 *(4,72)*
	F	57 *(2,24)*	72 *(2,83)*	89 *(3,50)*	105 *(4,13)*
	G	94 *(3,70)*	109 *(4,29)*	140 *(5,51)*	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	M6	M8	M12	M12
Moment [Nm]		14	35	120	120

All dimensions in mm *(inch)*

The flow meter PPC-04/12-SVC is always supplied with a connecting plate and a signal converter. To connect the signal converter to a Hydraulic Tester PPC the following cable is required (not supplied with the volume counter PPC-04/12-SVC): PPC-04/12-CAB3 for connection to PPC-04 /2, PPC-06, PPC-08 and PPC-12.

For the PPC-04/12-SVC a special cable with lower response time (6 ms) is available, **Cable PPC-04/12-SVC-FAST**, connect this cable only to port 3, the automatic sensor identification is not supported with this cable.

Dimensions Connecting Plate

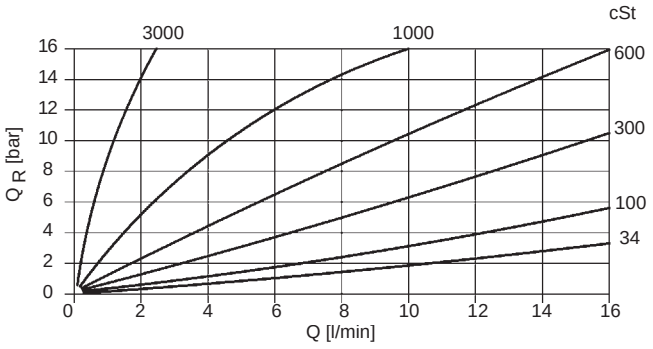


Dimensions		Type PPC-04/12-SVC-			
		015	060	150	300
	A	85 *(3,35)*	100 *(3,94)*	160 *(6,30)*	160 *(6,30)*
	B	90 *(3,54)*	120 *(4,72)*	165 *(6,50)*	165 *(6,50)*
	C	35 *(1,38)*	37 *(1,46)*	80 *(3,15)*	80 *(3,15)*
	E	65 *(2,56)*	80 *(3,15)*	140 *(5,51)*	140 *(5,51)*
	F	76 *(2,99)*	106 *(4,17)*	145 *(5,71)*	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	M6 x14 *(0,55)*	M8 x18 *(0,71)*	M12 x28 *(1,10)*	M12 x28 *(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	G 1/2	G 1	G 1
	f	13 *(0,51)*	15 *(0,59)*	19 *(0,75)*	19 *(0,75)*

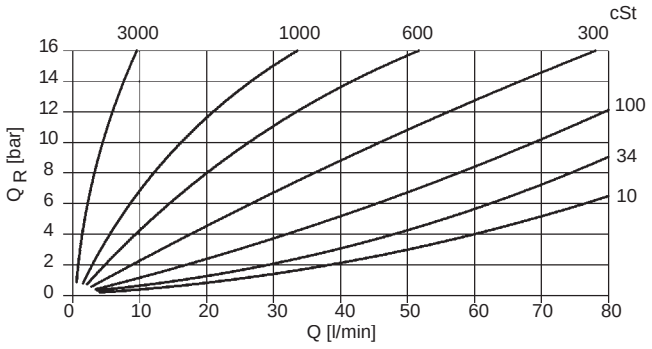
All dimensions in mm *(inch)*

Pressure Drop Curves

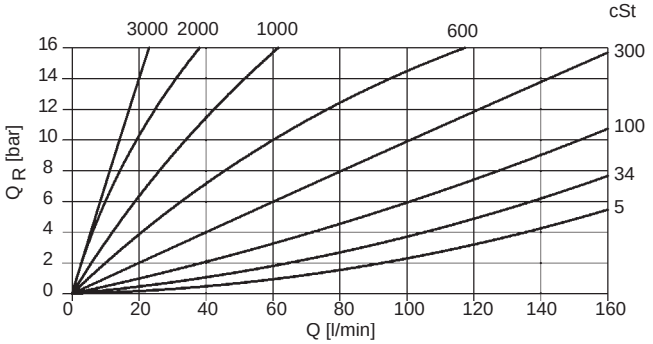
PPC-04/12-SVC-015 Δp - viscosity



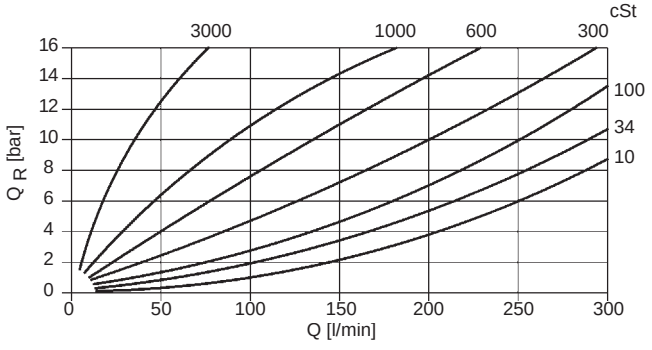
PPC-04/12-SVC-060 Δp - viscosity



PPC-04/12-SVC-150 Δp - viscosity



PPC-04/12-SVC-300 Δp - viscosity



Other Measurements

With the PPC-06/08/12 Hydraulic Tester you are able not only to measure pressure, temperature, rotational speed and flow; in addition the PPC can read various signals (e.g. analogue signals of a load-displacement sensor / electrical current- or voltage-signal of a proportional valve) from external sensors. To measure and to process these signals the Hydraulic Tester PPC-06/08/12 uses the following adapters :

- Auxiliary adapter — Adapter PPC-06/12-VADC-A
- Adapter for external sensors — Adapter PPC-06/12-AUX-A
- External trigger-adapter — Adapter PPC-06/12-TR-A

Adapter PPC-06/12-VADC-A

The auxiliary adapter PPC-06/12-VADC-A measures electrical currents up to 1.5 ADC and voltages up to 48 VDC and transfers these signals to the PPC-unit.

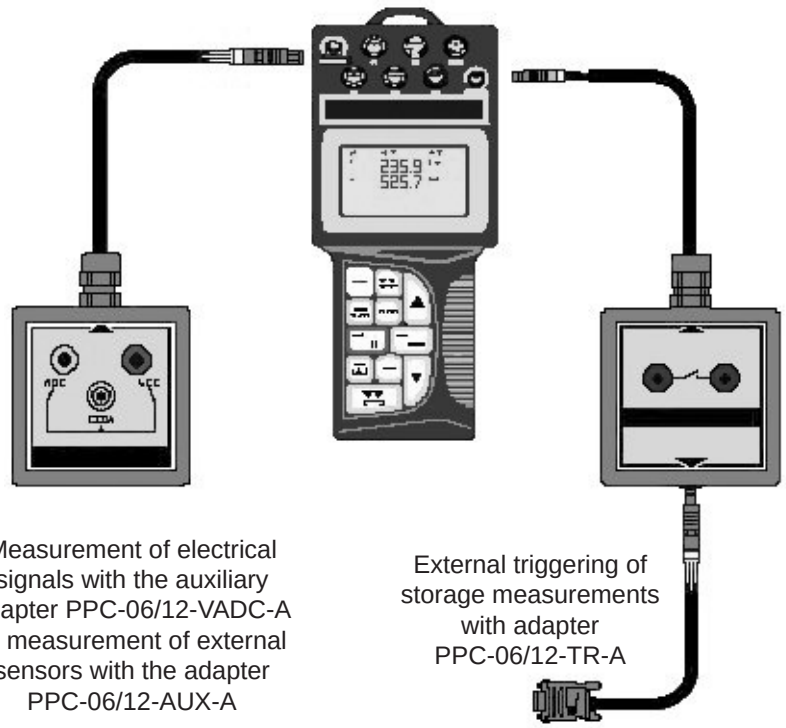
For example these adapters are used to check the inverter state of a motor / pump unit or of a proportional valve.

Adapter PPC-06/12-AUX-A

Signals of external sensors (like 0...20 mA or 0...10 VDC) are measured with the adapter PPC-06/12-AUX-A and are transferred to the PPC-06/08/12 units later on.

With this you can determine and display typical applications like load-displacement diagrams or torque / flow characteristics.

Hydraulic Tester PPC-06/08/12



Measurement of electrical signals with the auxiliary adapter PPC-06/12-VADC-A or measurement of external sensors with the adapter PPC-06/12-AUX-A

External triggering of storage measurements with adapter PPC-06/12-TR-A

Adapter PPC-06/12-TR-A

External signals from a relay contact can be used to start a measurement report with the Hydraulic Testers PPC-06/08/12. The report begins with the start-up of a pump or the release of a valve. To ensure the external relay triggers during online measurements you must connect the adapter PPC-06/12-TR-A directly to a PC or a notebook.

NOTE !!! All three adapters are not for use with the PPC-04 /2 Hydraulic Tester !!!

Adapter PPC-04/12-U5P-S4P

The adapter PPC-04/12-U5P-S4P is an easy solution to adapt the old 4-pin-sensors and flow meters with the new units PPC-04 /2 and PPC-06/08/12 with the 5-pin ports.

Adapter PPC-06/12-RS232-to-USB-CAB

To connect the PPC units to a PC or notebook there are special PC-cables available (PC-SET PPC-04-SW-CAB and PC-SET PPC-06/12-SW-CAB). These cables have an RS-232 connection as standard. To connect these cables to a USB-port of a PC or notebook the adapter PPC-06/12-RS232-to-USB-CAB is an easy solution.

A variety of standard and custom PPC-04/06/08/12-Kits can be supplied to meet customer requirements. All kits are supplied in a handy case including individual foam inserts, which provide room for the following components:

1	Hydraulic Tester PPC-04 /2
1	Power supply
up to 3	Pressure transducers with adapter STAUFF-Test 20
up to 3	Connection Cable
1	Temperature sensor with straight fitting SGV-J3/4-G (not shown here)
3	Adapters for STAUFF-Test series 15,
1	12 and 10 are supplied with each PPC-04 /2-Kit
1	Operators manual

1	Hydraulic Tester PPC-06, PPC-08 or PPC-12
1	Power supply
up to 3	Pressure transducers with adapter STAUFF-Test 20
up to 3	Connection Cable
1	Temperature sensor (optional)
3	Adapters for STAUFF-Test series 15,
1	12 and 10 are supplied with each PPC-06/08/12-Kit
1	Operators manual
1	PC-Software for PPC-06/08/12
1	PC-connection cable

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

PPC	Hydraulic Tester

04-B-SET	2 sensor inputs, without internal storage Battery-powered
04-A-SET	2 sensor inputs, without internal storage, with rechargeable battery and power supply, without data-output
04-AP-SET	2 sensor inputs, without internal storage, with rechargeable battery and power supply, with data-output
06-SET	3 sensor inputs, incl. PC-software and PC-connection cable, internal data storage, for up to 60.000 MIN-/MAX-data points
08-SET	4 sensor inputs, incl. PC-software and PC-connection cable, internal data storage, for up to 125.000 MIN-/MAX-data points
12-SET	6 sensor inputs, incl. PC-software and PC-connection cable, internal data storage, for up to 250.000 MIN-/MAX-data points

Pressure Range for Pressure Transducer	
000/015/100/ 400/600	Pressure range for pressure transducer No.3
For Kits with only two pressure transducers please fill in “000” for the third pressure transducer	
015/100/ 400/600	Pressure range for pressure transducer No.2
015/100/ 400/600	Pressure range for pressure transducer No.1
Please Note: in order to measure differential pressure two transducers of the same pressure range must be used.	

Number of Pressure Transducers	
1	with one pressure transducer
2	with two pressure transducers
3	with three pressure transducers
Note: Maximum three sensors (pressure transducers and temperatures sensor) are allowed for one PPC-06/08/12-Kit at the same time.	

Temperature Sensor	
	without temperature sensor
T	with temperature sensor

STAUFF Diagtronics Hydraulic Tester PPC Order Codes

In the following table all available components for the Hydraulic Tester PPC-04 /2, PPC-06, PPC-08 and PPC-12 are listed with the exact ordering designations and can be individually compiled by the customer with this form.
To make it easier to select the components are sorted according to their range of application. For more individual requirements or compilations please consult your nearest STAUFF distributor. You can use the following table as an order fax form.

Description	Ordering Code	Neces-sary	Optio-nal	Cata-log page	Number of chosen parts
1. Hydraulic Tester PPC 04 /2					
Hydraulic Tester PPC-04-B /2 with 2 Sensor Inputs and Battery	Hydraulic Tester PPC-04-B /2	X		10	
Hydraulic Tester PPC-04-A /2 with 2 Sensor Inputs, Rechargeable Battery and Power Supply (110V / 230V)	Hydraulic Tester PPC-04-A /2				
Hydraulic Tester PPC-04-AP /2 with 2 Sensor Inputs, Rechargable Battery, Power Supply (110V / 230V) and Data Output	Hydraulic Tester PPC-04-AP /2				
2. Hydraulic Tester PPC 06 / 08 / 12					
Hydraulic Tester with 3 Sensor Inputs, Internal Data Storage for up to 60.000 MIN-MAX-data points, incl. PC Software and PC Connection Cable and Power Supply	Hydraulic Tester PPC-06	X		12	
Hydraulic Tester with 3 Sensor Inputs, Internal Data Storage for up to 125.000 MIN-MAX-data points, incl. PC Software and PC Connection Cable and Power Supply	Hydraulic Tester PPC-08				
Hydraulic Tester with 3 Sensor Inputs, Internal Data Storage for up to 250.000 MIN-MAX-data points, incl. PC Software and PC Connection Cable and Power Supply	Hydraulic Tester PPC-12				
3. Pressure Measuring (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Pressure Transducer G 1/2 A without Connection Cable					
Pressure range -1...15 bar (-15...210 PSI) relative pressure	Sensor PPC-04/12-PT-015	X		15	
Pressure range 0...100 bar (0...1450 PSI) absolute pressure	Sensor PPC-04/12-PT-100				
Pressure range 0...400 bar (0...5800 PSI) absolute pressure	Sensor PPC-04/12-PT-400				
Pressure range 0...600 bar (0...8700 PSI) absolute pressure	Sensor PPC-04/12-PT-600				
Pressure Transducer G 1/2 A with integrated Connection Cable 2m (6,5 ft)					
Pressure range -1...15 bar (-15...210 PSI) relative pressure	Sensor PPC-04/12-PT-015-CAB		X	15	
Pressure range 0...100 bar (0...1450 PSI) absolute pressure	Sensor PPC-04/12-PT-100-CAB				
Pressure range 0...400 bar (0...5800 PSI) absolute pressure	Sensor PPC-04/12-PT-400-CAB				
Pressure range 0...600 bar (0...8700 PSI) absolute pressure	Sensor PPC-04/12-PT-600-CAB				
Connection Adapters					
Adapter STAUFF Test 20	SDA20-G1/2		X	16	
Adapter STAUFF Test 20 to STAUFF Test 15	SAD20/15-P				
Adapter STAUFF Test 20 to STAUFF Test 12	SAD20/12-P				
Adapter STAUFF Test 20 to STAUFF Test 10	SAD20/10-P				
4. Temperature Measuring (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Temperature Sensor with integrated Connection Cable 2 m (6,5 ft.)	Sensor PPC-04/12-TS-CAB	X		16	
Temperature Sensor without Connection Cable	Sensor PPC-04/12-TS		X		
Straight Fitting with M10x1 Port Connection for Temperature Sensor	SGV-16S-G				
5. Flow Measuring (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Flow Meter SFM with Signal Converter (without Connection Cable)					
Flow range 1...15 l/min (0,26...4,0 US GPM)	Flow Meter PPC-04/12-SFM-015	X		18	
Flow range 7,5...60 l/min (2...15,9 US GPM)	Flow Meter PPC-04/12-SFM-060				
Flow range 7,5...150 l/min (2...40 US GPM)	Flow Meter PPC-04/12-SFM-150				
Flow range 15...300 l/min (4...79 US GPM)	Flow Meter PPC-04/12-SFM-300				
Flow range 25...600 l/min (6,6...158,5 US GPM)	Flow Meter PPC-04/12-SFM-600				
Flow Meter SVC with Signal Converter (without Connection Cable)					
Flow range 0,2...15 l/min (0,05...4,0 US GPM)	Flow Meter PPC-04/12-SVC-015	X		19	
Flow range 0,4...60 l/min (0,10...15,9 US GPM)	Flow Meter PPC-04/12-SVC-060				
Flow range 0,6...150 l/min (0,16...40 US GPM)	Flow Meter PPC-04/12-SVC-150				
Flow range 15...300 l/min (0,26...79 US GPM)	Flow Meter PPC-04/12-SVC-300				
Connection Cable FAST 6ms (only Port 3, without sensor recognition)	Cable PPC-06/12-SVC-FAST		X		
6. Rotational Speed Measuring (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Rotational **Speed Sensor with integrated Connection Cable 3 m (10 ft.)**	Sensor PPC-04/12-SDS-CAB	X		17	
Contact Adapter	Adapter PPC-04/12-SKA-Contact		X		
Focussing Adapter	Adapter PPC-04/12-SFA-Focus				
7. Other Measurings					
External Trigger Adapter	Adapter PPC-06/12-TR-A		X	22	
Auxiliary Adapter (up to 1,5 ADC / 48 VDC)	Adapter PPC-06/12-VADC-A		X		
Adapter for External Sensors (0...20 mA / 0...10 VDC)	Adapter PPC-06/12-AUX-A		X		
8. Connection and Extension Cable for Measuring Sensors without integrated Cable					
Connection Cable 3m (10 ft)	Cable PPC-04/12-CAB3		X		
Extension Cable 5m (16 ft)	Cable PPC-04/12-CAB5-EXT		X		
Adapter for Hydraulic Tester (5-Pin) with 4Pin-Plug Sensor Cables	Adapter PPC-04/12-U5P-S4P		X		
10. Accessories and Spare Parts					
External Power Supply (110/230 VAC) for PPC 04 / 06 / 08 / 12	Power Supply PPC-04/12-110-230V	X			
PC Software and PC Adapter PPC-04 /2 (RS-232 serial)	PC-SET PPC-04-SW-CAB		X		
PC Software and PC Adapter PPC-06 / 08 / 12 (RS-232 serial)	PC-SET PPC-06/12-SW-CAB		X		
Adapter Cable RS-232 (serial) to USB for PPC and LasPaC	Adapter PPC-04/12-RS232-to-USB CAB		X		
Mobile Car Cable 12V/24V for PPC-04 / 06 / 08 / 12	Cable PPC-04/12-CAB-MOB		X		
Manual PPC-06 / 08 / 12 incl. Quickstart, german	PPC-06/12-Manual-German		X		
Manual PPC-06 / 08 / 12 incl. Quickstart, english	PPC-06/12-Manual-English		X		
Case PPC-04	Case PPC-04		X		
Case PPC-04 large	Case PPC-04-SFM		X		
Case PPC-06 / 08 / 12	Case PPC-06/12		X		

Optional calibration certificate are available for all PPC Hydraulic Testers and sensors. Also all units and sensors can be calibrated after initial purchase. You must order these calibrated components and the additional calibration with special order designations as listed in the table below.

Description	Ordering Code	Neces-sary	Optio-nal	Cata-log page	Number of chosen parts
1K. Hydraulic Tester PPC 04 /2 calibrated					
Hydraulic Tester PPC-04-B /2 calibrated with 2 Sensor Inputs and Battery	Hydraulic Tester PPC-04-B-CAL /2	X		10	
Hydraulic Tester PPC-04-A /2 calibrated with 2 Sensor Inputs, Rechargeable Battery and Power Supply (110V / 230V)	Hydraulic Tester PPC-04-A-CAL /2				
Hydraulic Tester PPC-04-AP /2 calibrated with 2 Sensor Inputs, Rechargable Battery, Power Supply (110V / 230V) and data output	Hydraulic Tester PPC-04-AP-CAL /2				
Additional Calibration PPC-04 /2	CAL-PPC-04		X		
2K. Hydraulic Tester PPC 06 / 08 / 12 calibrated					
PPC 06-calibrated	Hydraulic Tester PPC-06-CAL	X		12	
PPC 08-calibrated	Hydraulic Tester PPC-08-CAL				
PPC 12-calibrated	Hydraulic Tester PPC-12-CAL				
Additional Calibration PPC-06 / 08 / 12	CAL-PPC-06/12		X		
3K. Pressure Measuring calibrated (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Pressure Transducer calibrated G 1/2 A without Connection Cable		X		15	
Pressure range -1...15 bar (-15...210 PSI) relative pressure	Sensor PPC-04/12-PT-015-CAL				
Pressure range 0...100 bar (0...1450 PSI) absolute pressure	Sensor PPC-04/12-PT-100-CAL				
Pressure range 0...400 bar (0...5800 PSI) absolute pressure	Sensor PPC-04/12-PT-400-CAL				
Pressure range 0...600 bar (0...8700 PSI) absolute pressure	Sensor PPC-04/12-PT-600-CAL				
Pressure Transducer calibrated G 1/2 A with integrated Connection Cable 2 m (6,5 ft)					
Pressure range -1...15 bar (-15...210 PSI) relative pressure	Sensor PPC-04/12-PT-015-CAB-CAL	X		18	
Pressure range 0...100 bar (0...1450 PSI) absolute pressure	Sensor PPC-04/12-PT-100-CAB-CAL				
Pressure range 0...400 bar (0...5800 PSI) absolute pressure	Sensor PPC-04/12-PT-400-CAB-CAL				
Pressure range 0...600 bar (0...8700 PSI) absolute pressure	Sensor PPC-04/12-PT-600-CAB-CAL				
Additional Calibration Pressure Sensor	CAL-PPC-04/12-PT		X		
4K. Temperature Measuring calibrated (Connection and Extension Cable for Measuring Sensors without intergrated see paragraph 8)					
Temperature Sensor with integrated Connection Cable 2 m (6,5 ft.)	Sensor PPC-04/12-TS-CAB-CAL	X		16	
Temperature Sensor without Connection Cable	Sensor PPC-04/12-TS-CAL		X		
Additional Calibration Temperature Sensor	CAL-PPC-04/12-TS				
5K. Flow Measurring calibrated (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Flow Meter SFM with Signal Converter (without Connection Cable)		X		18	
Flow range 1...15 l/min (0,26...4,0 US GPM)	Flow Meter PPC-04/12-SFM-015-CAL				
Flow range 7,5...60 l/min (2...15,9 US GPM)	Flow Meter PPC-04/12-SFM-060-CAL				
Flow range 7,5...150 l/min (2...40 US GPM)	Flow Meter PPC-04/12-SFM-150-CAL				
Flow range 15...300 l/min (4...79 US GPM)	Flow Meter PPC-04/12-SFM-300-CAL				
Flow range 25...600 l/min (6,6...158,5 US GPM)	Flow Meter PPC-04/12-SFM-600-CAL				
Additional Calibration Flow Sensor	CAL-PPC-04/12-SFM		X		
Flow Meter SVC with Signal Converter (without Connection Cable)		X		19	
Flow range 0,2...15 l/min (0,05...4,0 US GPM)	Flow Meter PPC-04/12-SVC-015-CAL				
Flow range 0,4...60 l/min (0,10...15,9 US GPM)	Flow Meter PPC-04/12-SVC-060-CAL				
Flow range 0,6...150 l/min (0,16...40 US GPM)	Flow Meter PPC-04/12-SVC-150-CAL				
Flow range 1,0...300 l/min (0,26...79 US GPM)	Flow Meter PPC-04/12-SVC-300-CAL				
Additional Calibration Flow Sensor	CAL-PPC-04/12-SVC		X		
6K. Rotational Speed Measuring calibrated (Connection and Extension Cable for Measuring Sensors without integrated see paragraph 8)					
Rotational Speed Sensor with integrated Connection Cable 3 m (10 ft.)	Sensor PPC-04/12-SDS-CAB-CAL	X		17	
Additional Calibration Speed Sensor	CAL-PPC-04/12-SDS		X		

Calibration Certificate

Walter Stauffenberg
GmbH & Co. KG

STAUFF®

Im Ehrenfeld 4 D-58791 Werdohl Telefon (0 23 91) 9 16-0

Kalibrier-Zertifikat / Calibration Certificate

Zertifikat-Nr.	*Certificate no:*	123456789
Bezeichnung	*Description of instrument:*	PPC-04-AP /2
Serien-Nr.	*Serial no.:*	1234AB
Auftraggeber	*Customer:*	
Auftraggeber ID-Nr.	*Customer's ID no.:*	987654321 v. 01.01.3000
Auftrags-Nr.	*Order no.:*	214680

Hiermit bestätigen wir, daß das oben genannte Meßsystem unter Beachtung eines zertifizierten Qualitätssicherungssystems nach DIN ISO 9001:2000 kalibriert wurde.

Die für die Kalibrierung verwendeten Meßeinrichtungen werden regelmäßig kalibriert und sind rückführbar auf die nationalen Normale der Physikalisch-Technischen Bundesanstalt (PTB) Deutschlands oder auf andere nationale Normale. Wo keine nationalen Normale existieren, entspricht das Meßverfahren den derzeit gültigen technischen Regeln und Normen.

Die für diesen Vorgang angefertigte Dokumentation kann bei Bedarf eingesehen werden. Alle erforderlichen Meßdaten sind auf den nachfolgenden Seite(n) dieses Kalibrier-Zertifikats aufgelistet.

We hereby confirm that the above mentioned measuring system was calibrated according to DIN ISO 9001:2000, under the observation of a certified quality assurance system. The measuring installations used for calibration are regularly calibrated and are based on the national standards of the German Federal Physical and Technical Institute (PTB) or on other national standards. Should no national standards exist, the measuring procedure corresponds with the technical regulations and norms valid at the time of the measurement.

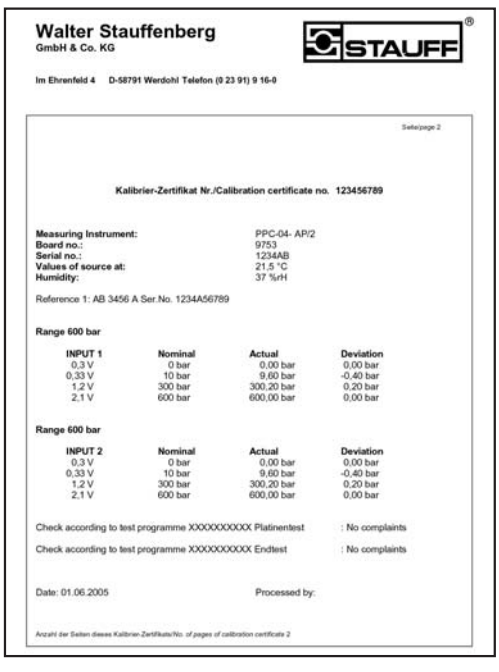
The documents established for this procedure are available for viewing. All the necessary measured data can be found on the following page(s) of this calibration certificate.

Besondere Bemerkungen / *Special remarks*

Kalibrierdatum / *Date of calibration* Bearbeiter / *Processed by*

01.01.3000

Anzahl der Seiten dieses Kalibrier-Zertifikats/No. of pages of calibration certificate 2



Walter Stauffenberg
GmbH & Co. KG

STAUFF®

Im Ehrenfeld 4 D-58791 Werdohl Telefon (0 23 91) 9 16-0

Seite/page 2

Kalibrier-Zertifikat Nr./Calibration certificate no. 123456789

Measuring Instrument:	PPC-04- AP/2
Board no.:	9753
Serial no.:	1234AB
Values of source at:	21,5 °C
Humidity:	37 %rH

Reference 1: AB 3456 A Ser.No. 1234A56789

Range 600 bar

INPUT 1	Nominal	Actual	Deviation
0,3 V	0 bar	0,00 bar	0,00 bar
0,33 V	10 bar	9,60 bar	-0,40 bar
1,2 V	300 bar	300,20 bar	0,20 bar
2,1 V	600 bar	600,00 bar	0,00 bar

Range 600 bar

INPUT 2	Nominal	Actual	Deviation
0,3 V	0 bar	0,00 bar	0,00 bar
0,33 V	10 bar	9,60 bar	-0,40 bar
1,2 V	300 bar	300,20 bar	0,20 bar
2,1 V	600 bar	600,00 bar	0,00 bar

Check according to test programme XXXXXXXXXX Platinentest : No complaints

Check according to test programme XXXXXXXXXX Endtest : No complaints

Date: 01.06.2005 Processed by:

Anzahl der Seiten dieses Kalibrier-Zertifikats/No. of pages of calibration certificate 2

Notes

STAUFF®

Notes