



Catalogue 8 STAUFF Diagtronics

Germany

Walter Stauffenberg GmbH & Co. KG Im Ehrenfeld 4 58791 Werdohl

www.stauff.com

STAUFF products and services are globally available through wholly-owned subsidiaries and a tight network of authorised distributors and representatives in all major industrial regions of the world.

You can find detailed contact information on the last two pages of this product catalogue or at www.stauff.com/contact.

Please note: Unless otherwise stated, all data and figures in this product catalogue are approximate values and are only valid as references, which are not binding (also in respect to any third parties' rights of protection) and thus do not release the customer / user from checking and testing the suitability of the products for the foreseen purposes. Therefore, data and figures can only be used in a limited sense for construction purposes.

The application of the products is beyond the control possibilities of the manufacturer and, therefore, is exclusively subject to the responsibility of the customer / user.

In the event that a liability is nevertheless considered, any compensation will be limited to the value of the goods supplied by the manufacturer and used by the customer / user. As a matter of course, the manufacturer guarantees the perfect quality of all products in accordance with the General Terms and Conditions of Business and Sale.

Subject to modifications due to the ongoing development and improvement of the products.

With the publication of this product catalogue, previous editions are no longer valid.

Introduction	4 - 11
Pressure Gauges	12 - 21
Hydraulic Testers	22 - 57
Oil Analysis Equipment	58 - 77
Appendix (Product-Specific Abbreviations / Global Contact Directory)	78 - 83



®





Catalogue 1 **STAUFF Clamps**

- Block Clamps
- Special Clamps
- Light Series Clamps Saddle Clamps
- U-Bolt Clamps
- Metal Clamps
- Construction Series



Catalogue 2 **STAUFF Connect**

- Tube Connectors
- Assembly Tools and Devices



Catalogue 3 **STAUFF Flanges**

 SAE Flanges Gear Pump Flanges



Catalogue 4 STAUFF **Hose Connectors**

- Hose Connectors
- High-Pressure Hose Connectors



Catalogue 5 **STAUFF Quick Release Couplings**

- Push-to-Connect Couplings
- Multi Couplings
- Screw-to-Connect Couplings



Catalogue 6 **STAUFF Valves**

- Two-Way Ball Valves
- Multi-Way Ball Valves
- Flow Control and Check Valves
- Gauge Isolator Valves





Catalogue 7 STAUFF Test

- Test Couplings
- Test Adaptors
- Test Hoses and Connectors



Catalogue 8 **STAUFF Diagtronics**

- Pressure Gauges
- Hydraulic Testers
- Oil Analysis Equipment



Catalogue 9 **STAUFF Filtration Technology**

- Replacement Filter Elements
- Pressure Filters
- Return-Line Filters
- In-Line Filters
- Spin-On Filters
- Offline and Bypass Filters
- Filtration Systems



Catalogue 10 **STAUFF Hydraulic Accessories**

- Fluid Level and Temperature Indicators
- Tank Filler Breathers
- Giant and Desiccant Air Breathers
- Suction Strainers
- Diffusors





For more than 50 years, the companies of STAUFF Group have been developing, manufacturing and distributing pipework equipment and hydraulic components for mechanical and plant engineering and for service and industrial maintenance.

In addition to mobile and industrial hydraulic machinery, typical applications also include commercial and special purpose vehicles, rail transportation and energy technology. Likewise, STAUFF products are used in marine, oil and gas applications and in the process, food and chemical industries. The overall range currently includes about 50000 standard products as well as numerous special and system solutions according to customer's specifications or based on our in-house development.

All STAUFF products undergo relevant testing in accordance with international regulations and are governed by the high standards of the in-house quality management system. Furthermore, many items have received certifications and approvals from various international institutes, organisations and authorities who have independently confirmed the quality and performance of the products. Wholly-owned manufacturing, sales and service facilities in 18 countries and a tight global network of authorised distribution partners ensure high presence and service paired with a maximum of availability.



Quality Management – ISO 9001:2015 Environmental Management – ISO 14001:2015 Safety Management – ISO 45001:2018 Energy Management – ISO 50001:2018

STAUFF LINE Components



With the seven dedicated STAUFF Line product groups

- STAUFF Clamps
- STAUFF Connect
- STAUFF Flanges
- STAUFF Hose Connectors
- STAUFF Quick Release Couplings
- STAUFF QUICK Release couplings
 STAUFF Valves
- STAUFF valve
 STAUFF Test
- STAUFF Test

from own, in-house development and manufacturing, the companies of the STAUFF Group provide a comprehensive range of components for fastening and connecting pipes, tubes and hoses for mobile and industrial hydraulic applications and many other industries.

The portfolio is completed by components for shutting-off, regulating, throttling and measuring fluid media.

In order to perfectly match each other, STAUFF Line products are designed and offered on a high, uniform level of quality. A large proportion of the range made from steel comes as standard with the premium STAUFF Zinc/Nickel surface coating, which is also optionally available for many of the other components.

This coating offers the most reliable surface protection far beyond the previous market standards – even after transport, handling and assembly of the components – and meets all current legal requirements.

If desired, Original Equipment Manufacturers can be supported with value-added services, from **technical consultation** to **pre-assembly, assembly and kitting** as well as **logistics services**:

- Support with the selection of suitable standard components and ordering options; provision of customised solutions according to customer's specifications or based on our in-house development – from prototyping to large scale production
- Analysis and optimization of existing and design and developments of new systems aimed at increasing the efficiency and performance of machines and equipment and creating value for customers by reducing the total cost
- Pre-assembly, assembly and kitting of individual components to customer-specific system modules
- Individually coordinated procurement solutions (e.g. web shop and electronic data interchange) and supply models (e.g. from warehousing of customised components to Kanban logistics and just-in-time delivery of pre-fabricated system modules to the assembly lines of the customers) aimed at optimising material flows





Aligned with the needs of the market, the product groups

- STAUFF Test
- STAUFF Diagtronics
- STAUFF Filtration Technology
- STAUFF Hydraulic Accessories

include a comprehensive range of analogue and digital measuring equipment and devices, filtration systems and replacement filter elements as well as accessories for the construction of tanks, reservoirs, power packs and gear boxes in mobile and industrial hydraulics. The offer is completed by relevant value-added services:

- Support with the selection of suitable components and ordering options; provision of customised solutions according to customer's specifications or based on our in-house development – from prototyping to large scale production
- Analysis of existing hydraulic circuits aimed at filtration systems, tank components and monitoring devices that perfectly match to the specific requirements, and developing integrated concepts to increase the efficiency and performance of machines and equipment
- Individually coordinated procurement solutions and supply models



STAUFF Diagtronics

With measuring, testing, display and analysis devices and equipment from the STAUFF Diagtronics product range, system operators, maintenance personnel and repair technicians can determine and monitor the essential parameters in mobile and industrial hydraulics: operating pressure, maximum pressure, differential pressure, system temperature, volume flow, contamination and much more.

The range includes analogue and digital pressure gauges, that are either supplied individually or as part of practical pressure test kits including the required connection adaptors and accessories, as well as high-performance hand-held hydraulic testers of the PPC series, that have been developed to meet the growing demands of the industry. The PT-RF series of pressure transmitters and readers are an alternative solution for universal pressure measurements for fluid technology applications. The advantages resulting from the use of the non-contact RFID technology for system operators, maintenance personnel and repair technicians are clear: Measurements can be carried very easily, without extensive training and within a few seconds at the press of a button and then documented in a reliable process – while temporary opening of the system if not required. Potential hazards for people, machines and the environment as well as ingress of contamination into the system can be effectively excluded. Fluid analysis is a crucial element of any oil management program. Early detection of system contamination can prevent costly repairs and downtime.

Portable and permanently installed STAUFF particle counters and monitors enable the precise determination of cleanliness levels of hydraulic media according to international standards.







www.stauff.com/catalogues

The STAUFF online catalogue centre at www.stauff.com/catalougues provides fast and direct access to digital versions of this as well as other STAUFF product catalogues in all available languages.

Online Page-Flip Catalogues

- Easy navigation through index or the powerful full text search functionality
- Contents can be shared and forwarded by e-mail, printed or downloaded and saved in PDF file format
- Also suitable for mobile devices

Download Catalogues

- Download entire product catalogues and save them in PDF file format

Catalogue Request

- Contact form to request printed copies of the product catalogue

The fastest way to the online page-flip catalogue:

The links that can be found at the bottom edge of all pages of this product catalogue will lead you directly to the corresponding page in the online page-flip catalogue.

In doing so, contents can be searched, shared and fo s

Scan the QR code next to the direct link with the camera of your mobile device* and also use the functions in this way.

* may require a suitable app

orwarded by e-mail, printed or downloaded and aved in PDF file format.		
10	Catalogue 8 - Edition 05/2021	www.stauff.com/8/en/#10





www.stauff.com

With the STAUFF Digital Platform available at www.stauff.com, commercial customers and users of STAUFF products can not only inform themselves in all detail about the 50000 components typically available from stock, but also directly purchase these online without complex registration.

Main Functionalities of the STAUFF Digital Platform:



Check stock availability and pricing for STAUFF products in real time



Cross references Search by article designations of other manufacturers / suppliers



Live chat Get directly in touch with the STAUFF customer service and sales team

CAD database

Download 3D models and 2D drawings for STAUFF products General information about the companies of STAUFF Group, latest business and product news as well as complete global contact details also be available.

Advantages as a Registered User of the STAUFF Digital Platform:

Purchase STAUFF products

Taking customer-specific pricing and delivery conditions into account

Ordering w/o searching

Quick ordering by entering article number, quantity and requested delivery date

File upload Direct uploa

Direct upload of orders with multiple positions in CSV or Excel file format

Notepad function

Create project lists to save interesting products for later

www.stauff.com/cad

Immediate access to and free download of 3D models and 2D drawings for a growing number of STAUFF products

www.filterinterchange.com

Online database for the quick and easy identification and interchange of almost all common brands and types of replacement filter elements

Follow STAUFF and keep yourself updated:

f Facebook www.facebook.com/stauffgroup

> Twitter www.twitter.com/stauffgroup



You Tube www.linkedin.com/company/stauff
Youtube

www.youtube.com/stauffgroup





		R)
¥	OTA		
\sim	SIA		

	Introduction	14
	Information on the Pressure Equipment Directive	15
	Accessories for Pressure Gauges	15
	Pressure Gauges	16 - 21
	Analogue Pressure Gauge	16 - 17
	SPG	
	Analogue Pressure Test Kit	18 - 19
???	SMB-20 / SMB-15	
	Digital Pressure Gauge	20
Y	SPG-DIGI / SPG-DIGI-USB	
	Digital Pressure Test Kit	21
1.9	SMB-DIGI / SMB-DIGI-USB	



Pressure Gauges (analogue/digital) and Accessories



Measuring pressure on equipment is indispensable for monitoring and ensuring the smooth functioning and operating safety of these systems.

STAUFF offers a variety of simple pressure measuring devices for liquid and gaseous media. These pressure gauges can be used as both stationary or portable devices. STAUFF addresses the very extensive width of possible system pressures and the strict requirements for precision with a variety of pressure gauge types with different measuring ranges. The glycerine filled gauge range is available with various connection ports to fit many different installation needs. The pressure gauges can be purchased alone or in a test kit. The kits can be supplied with gauges with different pressure ranges and adaptors to satisfy any requirement.

The analog pressure gauges are primarily designed for permanent installations. STAUFF also offers a digital line for analytical troubleshooting.

These digital pressure gauges are also available as a pressure test kit and also make it possible to perform the many different measurement tasks with the help of adaptors and the measuring hose. An important advantage is the possibility to measure pressure peaks with the device, to save them short term and to display them in the display as MIN and MAX values.

In addtion to the individual products, the STAUFF measuring devices are also available as kit.

R

STAUFF



Pressure Gauges

Information on the Pressure Equipment Directive (PED) 97/23/EC Pressure Equipment Directive (PED)

Our pressure gauges (SPG) conform to the European Standard EN 837-1 and are manufactured and tested according to appropriate requirements. Pressure gauges with a full scale value between 0,5 bar and 200 bar / 7.25 PSI and 2900 PSI come under "Good Engineering Practice" and must not carry a CE mark (section 3, paragraph 3).

Pressure gauges (SPG) with a full scale value of less than 0,5 bar / 7.25 PSI and loose diaphragm sealings do not come under the PED and must not carry a CE mark. Our pressure gauges (SPG) with a full scale value of > 200 bar / 2900 PSI receive a CE mark according to the conformity procedure.



Α

The CE mark is attached to the outside of the housing (type designation plate). We are not authorised to CE mark pressure gauges without a company name or a company logo.

Pressure Gauges Accessories



Single Station Gauge Isolator Valve (see Catalogue 6 - STAUFF Valves)



Test Hoses - Gauge Adaptor (see Catalogue 7 - STAUFF Test)



Adjustable Gauge Fitting (see Catalogue 7 - STAUFF Test)



Multi Station Gauge Isolator Valve (see Catalogue 6 - STAUFF Valves)



Gauge Isolator Needle Valves (see Catalogue 6 - STAUFF Valves)



Gauge Adaptor (see Catalogue 7 - STAUFF Test)



Direct Gauge Adaptor (see Catalogue 7 - STAUFF Test)

Pressure Gauge (analogue) - Type SPG



Pressure Gauge (Analogue) Type SPG (Stem Mounting)

Product Description

Area of Application

Mechanical pressure measurement

Features

- Suitable for hydraulic oil and gaseous media compatible with copper based alloys
- Available in nominal sizes 63 and 100 mm / 2.5 and 4 in
 Thread form: for BSP (G1/4 and G1/2),
- NPT (1/4 NPT and 1/2 NPT), SAE (7/16-20 UNF)
- Stainless Steel (1.4301) housing
- Acrylic sight glass
- Glycerine filled
- Standard dual scales with pressure indication in bar and PSI
- U-bolt or flange mounting kit on request

Note: Please contact STAUFF before you use SPG with other media.

Options

- Protective rubber cap
- Additional scale readings including personilisation
- U-bolt and flange mounting kits are available separately as spare parts

Technical Data

- Pressure gauge according to EN 837-1
- Subject to technical modifications

Accuracies SPG-063:

SPG-063:	1.6 (± 1.6 % FS* as per EN 837-1)
SPG-100:	1.0 (± 1.0 % FS* as per EN 837-1)

Permissible Temperatures

•	Ambient:	-20 °C +60 °C / -4 °F +140 °F
•	Media:	max. +60 °C / max. +140 °F

Protection Ratings

IP 65: for all manometer SPG-100 and SPG-063 > 16 bar / 232 PSI IP 65 protection rating: Dust tight and protected against water jets
 IP 54 for all manometer SPG-063 ≤ 16 bar / 232 PSI due to pressure compensation opening IP 54 protection rating: Dust protected and protected against



Pressure Gauge (Analogue) Type SPG (Panel Mounting)

Order Codes



 Ø 63 mm, with G1/4 or 1/4 NP1 connection
 063

 Ø 100 mm, with G1/2 or 1/2 NPT connection
 100

③ Pressure Ranges

Pressure Ranges for style of scale 01 - bar/PSI	Code	Pressure Ranges for style of scale 05 - PSI/bar	Code
-1 1,5 bar / -14.5 21 PSI	(-00001)-00001.5	-1,02 0 bar / -30 inHg 0 PSI	30HG30
-1 3 bar / -14.5 43 PSI	(-00001)-00003	-1,02 2,07 bar / -30 inHg 30 PSI	03030
0 10 bar / 0 145 PSI	00010	0 2,07 bar / 0 30 PSI	00030
0 16 bar / 0 232 PSI	00016	0 4,14 bar / 0 60 PSI	00060
0 25 bar / 0 362 PSI	00025	0 6,89 bar / 0 100 PSI	00100
0 40 bar / 0 580 PSI	00040	0 11,03 bar / 0 160 PSI	00160
0 60 bar / 0 870 PSI	00060	0 13,79 bar / 0 200 PSI	00200
0 100 bar / 0 1450 PSI	00100	0 20,68 bar / 0 300 PSI	00300
0 160 bar / 0 2320 PSI	00160	0 34,74 bar / 0 500 PSI	00500
0 250 bar / 0 3625 PSI	00250	0 41,37 bar / 0 600 PSI	00600
0 400 bar / 0 5801 PSI	00400	0 68,95 bar / 0 1000 PSI	01000
0 600 bar / 0 8702 PSI	00600	0 103,42 bar / 0 1500 PSI	01500
0 680 bar / 0 9862 PSI	00680	0 137,90 bar / 0 2000 PSI	02000
0 700 bar / 0 10152 PSI	00700	0 206,84 bar / 0 3000 PSI	03000
0 1000 bar / 0 14503 PSI	01000	0 275,79 bar / 0 4000 PSI	04000
		0 344.74 bar / 0 5000 PSI	05000

Note: Others on request. Information always refer to the pressure setting of the outside scale.

(4) Styles of Scales

bar / PSI (bar outside/PSI inside - standard option Europe)	01
bar	02
PSI	03
PSI / bar (PSI outside/ bar inside - standard option North America)	05
kPa / PSI (kPa outside/ PSI inside)	10

Note: Others on request.

(5) Adaption

Stem mounting
Panel mounting

(6) Process Connection

0 ... 413,69 bar / 0 ... 6000 PSI

0 ... 517,11 bar / 0 ... 7500 PSI

0 ... 689,48 bar / 0 ... 10000 PSI

-		
	G1/4 (only SPG-063)	B04
	G1/2 (only SPG-100)	B08
	1/4 NPT (only SPG-063)	N04
	1/2 NPT (only SPG-100)	N08
	7/16-20 UNF (only SPG-063)	U04

06000

07500

10000

Note: Others on request.

(7) Accessories

S

~		
	No accessory	(none)
	U-bolt assembly	U
	Front flange assembly (for panel mount only)	F
	Rear flange assembly	R
	U-bolt and front flange assembly	
	(for panel mount only)	UF
	Protective rubber cap (for stem mount only)	G

* FS = Full Scale

splashing water



Pressure Gauge (analogue) - Type SPG



SPG-063 ... S ...

SPG-063 ... P ... U

SPG-063 ... P ... F

Dimensions SPG-063

Version	Dimension (mm/in)												
Pressure Gauge	ØA	ØB	ØC	ØD	ØE	ØF	В	C	E	F	F1	G	
SDC-062	69			G1/4	-	-	54	15	32	6,5	-	-	
3F0-003	2.72	-	-	7/16-20 UNF			2.13	.59	1.26	.26			
	69	72	62	G1/4	-	-	-	15	32	6,5		56	
SPG-063 U	2.72	2.83	2.44	1/4 NPT 7/16–20 UNF				.59	1.26	.26	-	2.20	
	85		62	G1/4	75 68	75	68		15	32	1	6,5	
SPG-063 F	3.35	-	2.44	7/16-20 UNF	2.95	2.68	-	.59	1.26	.04	.26	-	



SPG-100 ... S ...

SPG-100 ... P ... U

SPG-100 ... P ... F

Dimensions SPG-100

Version	Dimension (mm/ _{in})											
Pressure Gauge	ØA	ØB	ØC	ØD	ØE	ØF	В	C	E	F	F1	G
CDC 100	107			G1/2		-	87	23	48	8		
5PG-100	4.21	-		1/2 NPT			3.43	.91	1.89	.31	7-	-
SDC 100 U	107	107	100	G1/2				23	48	8		81,5
3FG-100 0	4.21	4.21	3.94	1/2 NPT	-	-	-	.91	1.89	.31	3.21	3.21
SDC 100 E	132		100	G1/2	116	107		23	48	8	1,25	
5PG-100 F	5.20] -	3.94	1/2 NPT	4.57	4.21	-	.91	1.89	.31	.05	-

* FS = Full Scale

Dimensional drawings: All dimensions in mm (in).

Pressure Test Kit (analogue) - Type SMB-20 / SMB-15



Pressure test kit (analogue) with SPG-063 (3x) Pressure test kit (analogue) with SPG-100 (1x)

Product Description

custom-designed foam inserts.

Please see on page 19 for standard options.

test kit.

In addition to the individual SPG gauges, the STAUFF

The SMB Pressure Test Kits are assembled in various versions, in accordance with customer wishes. All pressure test kits are supplied in a handy case with

Custom kits available upon request. Please contact STAUFF.

Pressure Gauges are also available as part of a pressure

Order Codes



1 Series and Type

Pressure Test Kit, analogue (STAUFF Test 20) SMB-20 Pressure Test Kit, analogue (STAUFF Test 15) SMB-15

(2) Number of Pressure Gauges

	0
1 pressure gauge SPG-063	1
2 pressure gauges SPG-063	2
3 pressure gauges SPG-063	3
1 pressure gauge SPG-100	/100-1

③ Pressure Ranges

-	
-1 3 bar / -14.5 43 PSI	(-1)-003
0 10 bar / 0 145 PSI	010
0 16 bar / 0 232 PSI	016
0 25 bar / 0 362 PSI	025
0 40 bar / 0 580 PSI	040
0 60 bar / 0 870 PSI	060
0 100 bar / 0 1450 PSI	100
0 160 bar / 0 2320 PSI	160
0 250 bar / 0 3625 PSI	250
0 400 bar / 0 5801 PSI	400

Note: Please indicate pressure ranges in bar. For one pressure gauge please replace xxx.

For two pressure gauges please replace xxx/xxx.

For three pressure gauges please replace xxx/xxx/xxx.

(4) Material Surface

Steel, zinc/nickel plated W3

For further information see Catalogue 7 - STAUFF Test.



A

Standard Option for Pressure Test Kits (analogue) - Type SMB-20 / SMB-15

Series	Components	Order Codes	Series	Components	Order Codes		
	1x Test hose (2000 mm length)	SMS-20-2000-B-W3		1x Test hose (2000 mm length)	SMS-15-2000-B-W3		
	1x Pressure gauge Ø 63 mm	SPG-063-xxx	SMB-15-1-xxx-W3	1x Pressure gauge Ø 63 mm	SPG-063-xxx		
	1x Gauge adaptor G1/4	SMA-20-G1/4-B-OR-W3		1x Gauge adaptor G1/4	SMA-15-G1/4-B-OR-W3		
CMD 20 1 xxx W2	1x Direct gauge adaptor G1/4	SMD-20-G1/4-B-0R-W3		1x Direct gauge adaptor G1/4	SMD-15-G1/4-B-0R-W3		
3WID-20-1-XXX-W3	1x Test coupling G1/4	SMK-20-G1/4-B-C-W3		1x Test coupling G1/4	SMK-15-G1/4-B-B-W3		
	1x Test coupling M10 x 1	SMK-20-M10x1-B-A-W3		1x Test coupling M14 x 1,5	SMK-15-M14x1.5-B-B-W3		
	1x Thread adaptor G3/8	SRS-20-G3/8-B-W3		1x Thread adaptor G3/8	SRS-15-G3/8-B-W3		
	1x Thread adaptor G1/2	SRS-20-G1/2-B-W3		1x Thread adaptor G1/2	SRS-15-G1/2-B-W3		
xxx/xxx/xxx = pressure range	xxx/xxx/xxx = pressure ranges see on page 18 (please indicate pressure ranges in bar)						

Custom kits available upon request. Please contact STAUFF.

Series	Components	Order Codes	Series	Components	Order Codes
	1x Test hose (2000 mm length)	SMS-20-2000-B-W3		1x Test hose (2000 mm length)	SMS-15-2000-B-W3
	2x Pressure gauges Ø 63 mm	SPG-063-xxx	SMB-15-2-xxx/xxx-W3	2x Pressure gauges Ø 63 mm	SPG-063-xxx
	1x Gauge adaptor G1/4	SMA-20-G1/4-B-0R-W3		1x Gauge adaptor G1/4	SMA-15-G1/4-B-0R-W3
CMD 20 2 YVY/YVY W2	1x Direct gauge adaptor G1/4	SMD-20-G1/4-B-0R-W3		1x Direct gauge adaptor G1/4	SMD-15-G1/4-B-0R-W3
SWID-20-2-XXX/XXX-W3	1x Test coupling G1/4	SMK-20-G1/4-B-C-W3		1x Test coupling G1/4	SMK-15-G1/4-B-B-W3
	1x Test coupling M10 x 1	SMK-20-M10x1-B-A-W3		1x Test coupling M14 x 1,5	SMK-15-M14x1.5-B-B-W3
	1x Thread adaptor G3/8	SRS-20-G3/8-B-W3		1x Thread adaptor G3/8	SRS-15-G3/8-B-W3
	1x Thread adaptor G1/2	SRS-20-G1/2-B-W3		1x Thread adaptor G1/2	SRS-15-G1/2-B-W3
xxx/xxx/xxx = pressure range	es see on page 18 (please indicate pres	ssure ranges in bar)			

Custom kits available upon request. Please contact STAUFF.

Series	Components	Order Codes	Series	Components	Order Codes
	2x Test hoses (2000 mm length)	SMS-20-2000-B-W3		2x Test hoses (2000 mm length)	SMS-15-2000-B-W3
	3x Pressure gauges Ø 63 mm	SPG-063-xxx		3x Pressure gauges Ø 63 mm	SPG-063-xxx
	1x Gauge adaptor G1/4	SMA-20-G1/4-B-0R-W3		1x Gauge adaptor G1/4	SMA-15-G1/4-B-OR-W3
CMD 20 2 yyy/yyy/yyy W2	2x Direct gauge adaptors G1/4 SMD-20-G1/4-B-OR-W3		CMD 15 2 YYY/YYY/YYY W2	2x Direct gauge adaptors G1/4	SMD-15-G1/4-B-OR-W3
3WID-20-3-XXX/XXX/XXX-W3	3x Test couplings G1/4	SMK-20-G1/4-B-C-W3	3WID-13-3-XXX/XXX/XXX-W3	3x Test couplings G1/4	SMK-15-G1/4-B-B-W3
	3x Test couplings M10 x 1	SMK-20-M10x1-B-A-W3		3x Test couplings M14 x 1,5	SMK-15-M14x1.5-B-B-W3
	1x Thread adaptor G3/8	SRS-20-G3/8-B-W3		1x Thread adaptor G3/8	SRS-15-G3/8-B-W3
	1x Thread adaptor G1/2	SRS-20-G1/2-B-W3		1x Thread adaptor G1/2	SRS-15-G1/2-B-W3
xxx/xxx/xxx = pressure range	es see on page 18 (please indicate pre	ssure ranges in bar)			

Custom kits available upon request. Please contact STAUFF.

Series	Components	Order Codes	Series	Components	Order Codes			
	1x Test hose (2000 mm length)	SMS-20-2000-B-W3		1x Test hose (2000 mm length)	SMS-15-2000-B-W3			
	1x Pressure gauge Ø 100 mm	SPG-100-xxx	-	1x Pressure gauge Ø 100 mm	SPG-100-xxx			
	1x Gauge adaptor G1/2	SMA-20-G1/2-B-0R-W3		1x Gauge adaptor G1/2	SMA-15-G1/2-B-0R-W3			
CMD 20/100 1 xxx W2	1x Direct gauge adaptor G1/2	SMD-20-G1/2-B-0R-W3	CMD 15/100 1 year W2	1x Direct gauge adaptor G1/2	SMD-15-G1/2-B-OR-W3			
SIVID-20/100-1-XXX-WS	1x Test coupling G1/2	SMK-20-G1/2-B-C-W3	SIMB-15/100-1-XXX-W3	1x Test coupling G1/4	SMK-15-G1/4-B-B-W3			
	1x Test coupling M10 x 1	SMK-20-M10x1-B-A-W3		1x Test coupling M14 x 1,5	SMK-15-M14x1.5-B-B-W3			
	1x Thread adaptor G3/8	SRS-20-G3/8-B-W3		1x Thread adaptor G3/8	SRS-15-G3/8-B-W3			
	1x Thread adaptor G1/2	SRS-20-G1/2-B-W3		1x Thread adaptor G1/2	SRS-15-G1/2-B-W3			
xxx/xxx/xxx = pressure range	xxx/xxx/xxx = pressure ranges see on page 18 (please indicate pressure ranges in bar)							

Custom kits available upon request. Please contact STAUFF.

Accessories	(Connection	Adaptors	
AUUUUUUUU		Aduptors	1

<u>G 1/4</u>	M16 x 2	G	Adaptor	Adaption from	to Dimension G
	E E E E E E E E E E E E E E E E E E E		SDA-20-G1/4-W3	G1/4	M16 x 2
			SDA-15-G1/4-W3	G1/4	M16 x 1,5
			SDA-12-G1/4-W3	G1/4	S12,65 x 1,5
	SAD adaptor	1 Alexandre	SAD-20/15-B-W3	M16 x 2	M16 x 1,5
SDA adaptorG	Only in conjunction with the <u>G</u>		SAD-20/12-B-W3	M16 x 2	S12,65 x 1,5
gauge to a test coupling	connects to other test coupling sizes	STAUFF Test or comparable	SAD-20/10-B-W3	M16 x 2	Plug-in system

Other adaptors are available.

ര

Digital Pressure Gauge • Type SPG-DIGI / SPG-DIGI-USB (Data Logger)



SPG-DIG

STAUFF SPG-DIGI-USB SPG-DIGI-USB



B0016

(2)



CAL

Product Description

The STAUFF SPG-DIGI digital pressure gauges are designed for digital measurement and display of pressure in hydraulic systems, especially for oils, lubricants and water. Current measured values as well as min and max values can be displayed with a precision of 0.5% of the full scale value.

The SPG-DIGI is optionally available in the USB version, equipped with an internal data memory. A measurement started on the measuring device is automatically stored in the internal data memory in the universal .csv file format. The measurement data can then be transferred to the PC using the supplied mini USB cable. The device shows up on the PC as a USB data storage medium, so that no additional software is required for transferring the data. This allows easy export of the data, e.g. into Microsoft Excel®.

The measurement data are stored in the internal memory with a resolution of up to 100 ms for short measurements and a pressure peak monitoring of 10 ms. Up to ten measurement series can be stored in the device. The maximum measurement duration for each measurement is 24 h.

The STAUFF SPG-DIGI digital pressure gauges are available individually or as part of a complete pressure test kit. They are very robust, reliable, easy to operate and bear a CE mark.

Features

- Bar graph display (drag pointer)
- Backlit display
- Zero point correction Battery status indicator
- Gauge ability to swivel 360°

Technical Data (for SPG-DIGI-USB)

) measurement series
ax. 24 h
to 100 ms
creases with duration
measurement)
ax: 10 ms
ate/time/pressure value/
in. pressure/max. pressure
SV

A USB connecting cable is supplied as a standard.





euro Dongoo

)	Pressure hanges	
	-1 5 bar / -14.5 72 PSI	B0005
	-1 16 bar / -14.5 232 PSI	B0016
	0 100 bar / 0 1450 PSI	B0100
	0 400 bar / 0 5801 PSI	B0400
	0 600 bar / 0 8702 PSI	B0600
	0 1000 bar / 0 14504 PSI	B1000

③ Process Connection

with calibration certificate

3

B

	G1/4	В
	7/16-20 UNF	U
4	Calibration	
	without calibration certificate	(none)

CAL

4

Pressure Ranges

Version	Pressure Range (bar/PSI)	Maximum Pressure (bar/PSI)	Burst Pressure (bar/PSI)
DOODE	-1 5	30	50
60005	-14.5 72	435	725
P0016	-1 16	32	160
60010	-14.5 232	464	2321
P0100	0 100	200	800
00100	0 1450	2900	11603
0	0 400	800	1700
D0400	0 5801	11603	24656
POGOO	0 600	1200	2400
60000	0 8702	17404	31908
R1000	0 1000	1500	2500
B1000	0 14504	0 21756	0 36259

Technical Data

Materials

- Housing made of die-cast Zinc with TPE
- Wetted parts: Stainless Steel 1.4404, NBR (Buna-N[®]), ceramics
- Seals:
- NBR (Buna-N®) FKM (Viton®) or EPDM on request Weight
- Max. weight: 360 g / .79 lbs

Display

- Text display 4 1/2 digits
- Size:
- 50 x 34 mm / 1.97 x 1.34 in Actual value display: 15 mm / .59 in
- MIN/MAX or FS* display: 8 mm / .31 in
- Units:

bar, PSI. Mpa (not for 5 bar and 16 bar), kPa (not for 1000 bar),

mbar (only for 5 bar and 16 bar)

· Pressure peak measurement with 10 ms sampling rate Illuminated measured value display

Accuracy

- ±0.25% FS* typ. / ±0.5% FS* max.
- Resolution: 4096 steps

Permissible Temperature ranges Ambient temp.:

-10 °C ... +50 °C / +14 °F ... +122 °F -20 °C ... +80 °C / -4 °F ... +176 °F

-20 °C ... +60 °C / -4 °F ... +140 °F

- Media temp.: Storage temp.:
- · Relative humidity:
- Battery life:
- max. 600 hours (operation without illumination, 2 x 1.5 V DC AA (LR6-AA) alkaline)

< 85%

Process Connections

- G1/4 or 7/16-20 UNF, Stainless Steel 1.4404
 - IEC 60068-2-6 / 10 ... 500 Hz / 5 g
 - IEC 60068-2-27 / 11 ms / 25 g
- Load change (10⁶): 100
- Protection Rating
- IP 65:

Vibration:

Shock:

Dust-tight and protected against water jets (SPG-DIGI-USB: IP65 only with cover installed)

* FS = Full Scale

STAUFF

Pressure Test Kit (digital) - Type SMB-DIGI



Digital Pressure Test Kit (SPG-DIGI-USB)

Product Description

In addition to the individual SPG-DIGI 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 custom-designed foam inserts.

Components

В

U

(none)

CAL

Standard Option SMB-DIGI-20

- Digital Pressure Gauge SPG-DIGI or SPG-DIGI-USB*
 Test Hose (2 m / 6.56 ft), M16 x 2, pressure-resistant
- 600 bar (8702 PSI) SMS-20-2000-B-W3
- Adaptor SDA (G1/4 to M16 x 2) SDA-20-G1/4-W3
- Hose Connector SSV-20-W3
- Test Coupling SMK-20-G1/4-B-C-W3
- Test Coupling SMK-20-M10x1-B-A-W3
- Thread Adaptor SRS-20-G3/8-B-W3
- Thread Adaptor SRS-20-G1/2-B-W3
 Operating manual (multilingual) on CD
- Supplied with a mini USB connecting cable

Order Codes

-1 ... 16 bar / -14.5 ... 232 PSI

0 ... 100 bar / 0 ... 1450 PSI

0 ... 400 bar / 0 ... 5801 PSI

0 ... 600 bar / 0 ... 8702 PSI

Pressure Ranges



B0016

B0100

B0400

B0600

Version Pressure Range (bar/PSI) Maximum Pressure (bar/PSI) Burst Pressure (bar/PSI) -1 ... 5 30 50 B0005 435 -14.5 ... 72 725 -1 ... 16 32 160 B0016 -14.5 ... 232 464 2321 0...100 200 800 B0100 0 ... 1450 2900 11603 0 ... 400 800 1700 B0400 24656 0 ... 5801 11603 0...600 1200 2400 B0600 0 ... 8702 17404 31908

Accessories (Connection Adaptors)



Other adaptors are available.





	Introduction	25
	Overview	26
	Functional Block Diagrams	27
	Hydraulic Testers	28 - 33
N	PPC-04-plus PPC-04-plus-CAN	28
	PPC-06/08-plus	29
	PPC-PAD-plus	30 - 33
	Pressure Sensors	34 - 35
and a	Sensor-PPC-04/12-P	34
and the second	Sensor-PPC-CAN-P	35
	Temperature Sensors	36 - 37
ant the	Sensor-Sensor-PPC-04/12-T	36
S. F.F.	Sensor-Sensor-PPC-CAN-T	37
	Pressure / Temperature Sensors	38 - 39
3	Sensor-PPC-04/12-PT	38
STATE OF STATE	Sensor-PPC-CAN-PT	39

B

	®
MISTALIEE	

	Flow Turbine	40 - 41		Pressure Transmitter	51 - 55
	Flow-meter-PPC-04/12-SFM	40		Overview	51
	Flow-meter-PPC-CAN-SFM	41		PT-RF	52
*	Rotational Speed Sensor Sensor-Sensor-PPC-04/12-SDS-CAB	42		Reader-PT-RF	53
\$*\$\$ •	Current / Voltage / Frequency Converter Sensorconverter-PPC	43		Complete Systems PT-RF-SET	54
No.	Accessories	44	4	Accumulator Adaptor SBAA / SDAA	55
A Start Start	CAN Accessories	45		Flow Indicators	56 - 57
	Complete Systems	46 - 48		Flow Indicators SDM / SDMKR	56 - 57
100	PPC-04/06/08-plus-SET	46			
	PPC-04-CAN-SET	47			
	PPC-PAD-plus Starter System	48			
	Ordering Tables	49 - 50			
	For analogue Hydraulic Testers	49			
	For CAN Hydraulic Testers	50			





В

Hydraulic Testers of the PPC Series



The STAUFF measuring and test equipment from the PPC Series is ideal for measuring all relevant parameters in fluid technology systems such as pressure, differential pressure, temperature, flow rate and power.

Depending on the type, they allow evaluation, storing and further processing on PCs or notebooks. They have been developed specifically for the growing demands of system monitoring, fault tracing and parameter measuring in hydraulic and pneumatic systems.

There are many different areas of application:

- Industrial hydraulics
- · Mobile, agricultural and forestry hydraulics
- Ship and offshore hydraulics
- Chemicals and petrochemicals
- · Energy and air-conditioning systems
- Heating and sanitary systems

One of the features of the new generation of the PPC-04plus Hydraulic Tester is its uncomplicated operation. Even in difficult lighting situations, the multi-line backlit LCD display allows the user to read out the measured values quickly and reliably. The new Hydraulic Tester is available in two variants, either with two inputs for analogue sensors or with a CAN interface for connecting up to three digital sensors. Both versions are equipped with an internal data memory and a USB port and are operated with an internal power supply (lithium-ion battery pack).

The Hydraulic Testers from the PPC-06/-08-plus Series offer the option of connecting three or four analogue sensors, depending on the model. Older sensors from the STAUFF Diagtronics product range and third-party sensors can also be used with these devices without problems. Both Hydraulic Testers are equipped with a large internal data memory and an integrated USB interface and can run for several hours in battery mode. The supplied software makes it possible to view the measured values not only as numbers but also as diagrams on a PC.

The powerful PPC-PAD-plus is the latest device in this range of Hydraulic Testers. This multifunction device is a new development and was specially adapted to the increased requirements in fluid technology and the user demands. This powerful analytics device features a touch screen that makes operation even easier and more efficient. The obtained measured values can be shown on the 7" touch display in different modes to allow effective, solution-based analyses. The modular structure of the sensor inputs is also new. This allows the basic unit to be expanded with a variety of different sensor inputs by adding more input modules.

Another new feature are the extensive options of storing a countless variety of measuring tasks as templates, which can be called up immediately when needed. This means that even complex recurring measuring tasks can be started more or less straight away.

The CAN bus sensors from STAUFF use the automatic sensor detection to enable a plug-and-play solution that is easy to install.

The hydraulic testers and the sensors from the PPC Series are available as calibrated models and are supplied with a calibration certificate. Subsequent calibration can be requested with a special order designation.

STAUFF[®]

Hydraulic Testers of the PPC Series - Product Overview

Hydraulic Testers					
Options	PPC-04-plus	PPC-04-plus-CAN	PPC-06-plus	PPC-08-plus	PPC-PAD-plus
Battery mode	•	•	•	•	•
Number of sensor inputs	2 (max. 2 analogue sensors)	1 x CAN (max. 3 CAN sensors)	3	4	Analogue max. 6 + 6 CAN channels each with max. 24 sensors
Option for adding sensor inputs	-	-	-	-	•
PC interface	USB	USB	USB	USB	USB/Ethernet/WIFI
Online function	•	•	•	•	•
Internal data memory	•	•	•	•	•
Programming of automatic test sequence	-	-	•	•	•
Internal trigger function	-	-	•	•	•
Touch screen	-	-	-	-	•
Illuminated display	•	•	•	•	•
Curve shown on the display	-	-	-	-	•
PC software kit	•	•	•	•	•
Pressure measurement	•	•	•	•	•
Temperature measurement	•	•	•	•	•
Flow rate measurement	•	•	•	•	•
Rotational speed	•	-	•	•	•
Frequency measurement	with optional current/voltage/ frequency converter	integrated into the device			
Analogue third-party sensors	with optional current/voltage/ frequency converter	integrated into the device			
STAUFF CAN Sensor	-	•	-	-	•
Third-party CAN sensors	-	_	-	-	max. 5 third-party sensors on CAN-Y

 \bullet = standard, - = not available







Hydraulic Testers

Hydraulic Testers of the PPC Series



В

(12) (11) (11) (13) 4 1 10 10 10 10 8 9 (7)(5)

1 Hydraulic Tester PPC-04-plus

- max. two analogue sensors can be connected at the same time
- 2 Hydraulic Tester PPC-06-plus max. three analogue sensors can be connected at the same time
- ③ Hydraulic Tester PPC-08-plus
- max. four analogue sensors can be connected at the same time
- 4 Hydraulic Tester PPC-PAD-plus max. six analogue sensors can be connected at the same time
- 5 Pressure Sensor Sensor-PPC-04/12-P

- 6 Pressure/Temperature Sensor Sensor-PPC-04/12-PT 7 Rotational Speed Sensor Sensor-PPC-04/12-SDS-CAB with integrated connection cable, either with Contact Adaptor Adaptor-PPC-04/12-SKA-Contact or Focusing Adaptor Adaptor-PPC-04/12-SKA-Focus
- 8 Temperature Sensor Sensor-PPC-04/12-T Rod-Type Temperature Sensor Sensor-PPC-04/12-TSH
- 9 Turbine Flow Meter Flow-meter-PPC-04/12-SFM with integrated signal converter, with option for connecting pressure and temperature sensors
- 1 5-pin Connection Cable for sensors Cable-PPC-04/12-3 (3 m/9.84 ft), alternatively with extension cable Cable-PPC-04/12-5-EXT (5 m/16.40 ft)
- 1 PPC Connection Cable as part of the PC set PC-SET-06/08-plus-SW-CAB (USB)
- 2 Standard micro USB cable (included in the delivery) (13) Standard micro USB cable (included in the delivery)
- or Ethernet cable

Hydraulic Testers PPC-Series (CAN Version)



- ① Hydraulic Tester PPC-04-plus-CAN with one CAN interface
- 2 Hydraulic Tester PPC-PAD-plus with 6 CAN interfaces
- 3 CAN Pressure Sensor Sensor-PPC-CAN-P
- 4 CAN Temperature Sensor Sensor-PPC-CAN-T
- (5) CAN Pressure/Temperature Sensor Sensor-PPC-CAN-PT 6 CAN Turbine Flow Meter Flow-meter-PPC-CAN-SFM
- (9) CAN Terminating Resistor Resistor-PPC-CAN (1) Standard micro USB cable (included in the delivery) (1) Standard micro USB cable (included in the delivery) or Ethernet cable
- with integrated signal converter, with option for connecting pressure and temperature sensors

⑦ CAN Connection Cable Cable-PPC-CAN-X 8 CAN Y-Splitter Cable Cable-PPC-CAN-Y

www.stauff.com/8/en/#27

Catalogue 8 - Edition 05/2021

Hydraulic Testers • Type PPC-04-plus / PPC-04-plus-CAN





Product Description

The PPC-04-plus and PPC-04-plus-CAN Hydraulic Testers have been developed for the growing demands in mobile and industrial hydraulic systems. They are perfectly suited for the precise determination of pressure, temperature, volume flow and rotational speed.

- Multi-line, backlit LCD display
- Max. two analogue sensors can be connected at the same time
- With CAN interface, max. three digital sensors can be connected at the same time
- Integrated data memory for 15000 data records
- External storage by using a USB memory stick (1 GB included)
- Max. CAN bus length: 50 m / 164 ft (CAN version)

The Hydraulic Testers are available in two versions. The PPC-04-plus, analogue version, comes with two inputs for connecting up to two analogue sensors at the same time. The PPC-04-plus-CAN comes with an CAN interface for connecting up to three digital sensors at the same time. Both versions provide automatic sensor recognition, thus making the tedious and often time-consuming parameterization of sensors redundant.

The units can be easily operated via the keyboard and the individual device configurations can be viewed and managed.

Due to its extremely robust construction and oil-resistant rubber coating, the Hydraulic Testers can withstand impacts, vibrations, dust and moisture (protection class up to IP 67) and is designed for use in particularly harsh conditions.

The internal battery (Lithium Ion pack) can be charged via an micro USB connection, this connection can be also used to transfer the internally stored datas to a PC or notebook. Furthermore, this connection is also provided for real-time presentation of the measured values on the PC.

The PPC-04-plus devices can store up to 15000 data records and 270000 measured values. The included PPC software is compatible with popular PC operating systems (Windows XP®, Windows Vista®, Windows 7®, Windows 8® and Windows 10®) and permits various evaluation methods.

It is also possible to connect the Pressure Sensors under load, 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 Sensors with identical measuring ranges.

The units are also available as a complete set. See pages 46 / 47 for further information.



PPC-04-plus with 2 sensor inputs for max. 2 analogue sensors

Order Codes

PPC-04-plus -

1 Series and Type Hydraulic Tester

	J · · · · · · · · · · · · · · · · · · ·		
୦	Version		
Ś			
	Analogue version	(none)	
	CAN version	CAN	

Technical Data

Materials

Housing made of ABS in a rubber protective

Dimensions and Weight

- W x H x D: 96 x 172 x 54 mm / 3.78 x 6.77 x 2.13 in
- Weight: ca. 540 g / 1.19 lbs

Measurements / Display

- Pressure: in bar, PSI, mbar, kPa, MPa
- Temperature: in °C und °F
- Volume flow: in I/min and US GPM
- Rotational speed: in 1/min and RPM
 Display: FSTN-LCD, graphic,
- LED backlit
- Visible area: 62 x 62 mm / 2.44 x 2.44 in
 - Resolution: 130 x 130 Pixel

Power Supply

- External:
- max. 1000 mABattery: Lithium lon pace
 - Lithium lon pack 3,7 V DC / 2250 mAh or 3,7 V DC / 4500 mAh CAN version

Micro USB socket, type B +5V DC,

 Operating time with the rechargeable battery: approx. 8 hours

Sensor Inputs

- Push-in connection: 5-pol., push-pull or 5-pol., M12x1, SPEEDCON, connector (CAN version)
- Automatic sensor recognition
- Sampling rate: 1 ms
- Accuracy: $< \pm 0.2\%$ FS* ± 1 Digit



R

TALIE

PPC-04-plus-CAN with CAN interface for max. 3 sensors (max. 50 m / 164 ft cable length)

CAL

	③ Calibration
PPC-04-plus	Without calibrat

Without calibration certificate	(none)
With calibration certificate	CAL

Note:

CAN

Calibration certificate is only available for the analogue Hydraulic Tester PPC-04-plus.

Permissible Temperatures

Ambient:Storage:	0 °C +50 °C / +32 °F +122 °F -25 °C +60 °C / -13 °F +140 °F
Relative humidity:CE certified	< 80 %

Interfaces

USB device:	Online transmission between unit and PC via PPC-Soft-plus (software)
	Measured value transmission:
	ACT/MIN/MAX, min. 5 ms
	USB standard: 2.0, fullspeed
	Push-in connection:
	Micro USB socket, shielded, type B
USB host:	Connection for USB stick, max. 4 GE
	USB standard: 2.0, fullspeed,
	max. 100 mA
	Push-on connection:
	USB socket, shielded, type A

Protection Rating

 IP 54 protection rating: Dust protected and protected against splashing water

 (CAN version)
 IP 67 protection rating: Dust tight and protected against splashing water

Software

A PC set, consisting of a USB connection lead, length 1 m / $3.28\,$ ft and the corresponding PC software, is included in the scope of delivery.

The measured data and curves can be easily transferred and processed by using PPC-Soft-plus software as well as exported to Microsoft Excel \circledast .

SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG Dimensional drawings: All dimensions in mm (in).



Hydraulic Testers - Type PPC-06-plus / PPC-08-plus



PPC-08-plus with 4 sensor inputs

Order Codes



(3) Calibration

Without calibration certificate With calibration certificate

Version	No. Sensor Inputs	Integrated Data Memo Measured Value Points	ory for Memory Curves
06-plus	3	1000000	240000
08-plus	4	Points	Points

Software

* FS = Full Scale

A PC set, consisting of a USB connection lead, length 1,5 m / 4.9 ft and the corresponding PC software, is included in the scope of delivery.

The measured data and curves can be easiliy transferred and processed by using PPC-Soft-plus software as well as exported to Microsoft Excel®



Technical Data

Material

• W x H x D:

· Weight:

(none)

CAL

Housing made of fibreglass-reinforced PA

Dimensions and Weight

106 x 235 x 53 mm / 4.17 x 9.25 x 2.09 in 530 g / 1.17 lbs

Measurements / Display

- Pressure: in bar, PSI, mbar, kPa, MPa
- Temperature: in °C and °F in I/min and US GPM
- · Volumen flow: Rotational speed: in 1/min and RPM
- Digital LCD display: 128 x 64 Pixel
- Visible area:
- 72 x 40 mm / 2.84 x 1.58 in Automatic numeral height adjustment
- Numeral height: 6 mm / .24 in with eight-line display Data output for connection to neotebook or PC
- 12-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

Measured Data Memory

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

Power Supply

- Power supply: 110/230 V AC (50/60 Hz)
- · Rechargeable battery charging unit Internal nickel metal hydride (NiMh) battery
- 7.2 V / 700 mAh
- · Operating time with the rechargeable battery: approx. 8 hours

Sensor Inputs (5-Pin)

- Automatic sensor detection
- Input signal: $0 \dots 3 \text{ V DC} (\text{R} = 470 \text{ k}\Omega)$
- · Frequency range: 0,5 Hz ... 30 kHz
- Sampling rate: 1 ms
- $< \pm 0,25 \% FS^{*}$ Accuracy:

Data Output

- Integrated USB port (USB 2.0)
- Online data transmission to a PC
- Speed individually eligible (5 ms ... 60 s)

Permissible Temperature

- Ambient: 0 °C ... +50 °C / +32 °F ... +122 °F
- Storage: -25 °C ... +60 °C / -13 °F ... +140 °F
- < 0.02 % / °CTemperature error:
- · Relative humidity: < 80 %
- CE certified
- · IP 54 protection rating: Dust protected and protected against splashing water



Product Description

The PPC-06/08-plus Hydraulic Testers have been especially developed for the growing demands of system monitoring and troubleshooting in hydraulic and pneumatic systems.

- Automatic sensor recognition
- Larger data memory
- Possible to record MIN-/MAX values over long periods
- Internal trigger function
- External trigger function
- Online data transmission
- Display lighting
- · Programming by PC and notebook
- Integrated USB interface

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

The individual PPC-06-plus and PPC-08-plus Hydraulic Testers differ in the number of sensor inputs (3-channel or 4-channel technology).

Both Hydraulic Testers can measure, store and process all relevant hydraulic parameters such as pressure, differential pressure, temperature, rotational speed and flow. The comprehensive programmer options, and the internal memory capacity in particular, allow for diverse measurements, trigger functions or measuring data from third-party sensors.

The PPC-06/08-plus devices can store up to 1000000 measuring value points and 240000 curve memory points. The stored values can be transferred using the built-in USB interface to a PC or notebook. The included PPC software is compatible with popular PC operating systems (Windows XP®, Windows Vista®, Windows 7®, Windows 8® and Windows 10®) and permits various evaluation methods.

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

The units are also available as a complete set. See page 46 for further information.

Hydraulic Tester • Type PPC-PAD-plus





Product Description

The application options for hydraulic technology have increased significantly in all areas of drive and control systems.

This trend is particularly evident in the fields of machinery, plant and automotive engineering. At the same time, hydraulics and electronics are becoming increasingly more interlinked.

The new PPC-PAD-plus Multifunction Hand-Held Hydraulic Tester was developed especially for high demands and helps you to master these new challenges. It has never been so easy to track the complex processes in these industries through measurements, displays and analyses. Possible areas of application include preventive maintenance, commissioning, troubleshooting and machine optimisation. The increased requirements of these modern applications (e.g. more measuring points, longer cables and higher immunity to interference) have driven the further development of the CAN bus

The new PPC-PAD-plus has a 7" touch screen which makes operation very simple, even for complex tasks.

The modular design also ensures best possible adaptation to a variety of different measuring tasks. Different input modules are offered for connecting additional sensors. These modules can easily be replaced by the user. There is an option of running the basic device with max. two additional modules in the device.

The CAN Bus Sensors from STAUFF use the automatic sensor detection of the bus to allow an easy-to-install plug-and-play solution (max. CAN bus length 100 m/328 ft). The device is compatible with the existing sensors from the PPC Series.

One great advantage is the option to generate a variety of different templates for recurring measuring tasks and saving these in so-called containers. Calling up these templates for recurring measuring tasks ensures interpretation and comparability of the results at all times. This can even go so far as executing these templates automatically at the press of a button.

The newly integrated WIFI function also allows the device to be controlled via remote access, which means that executing measuring tasks and calling up the recorded data from a different location are no longer a challenge.

The PPC-Analyze PC Software offers additional methods for analysis, control and remote service using LAN and USB connections. In combination with this software, the PPC-PADplus is a very user-friendly hydraulic tester that is suitable for all types of diagnostic applications.

Product Features (for basic device)

- · Portable multifunction hand-held tester · Measuring, monitoring and analysis of pressure,
- temperature, volumetric flow rate and mass flow rate
- · Measurement recording with a resolution of up to 1 ms
- Measurement and display of over 50 channels
- Sensor inputs can be expanded with additional input modules · 2 frequency inputs for connecting third-party sensors or
- digital inputs/outputs 7" touch display, suitable for operation with gloves,
- robust 3 mm glass, resolution 800 x 480 pixels Connection of third-party CAN open sensors possible
- · Analogue input module with galvanic isolation available
- · Display of measured values: numerical, bar graph, pressure gauge, points, curve diagram
- Saving and loading project templates
- Defining of quick values possible (green, yellow, red)
- Memory for up to 1 billion measured values
- The measured data can be recorded (automatically), saved and analysed with the PPC-Analyze PC Software over a LAN, WIFI or USB connection.
- Max. CAN bus length: 100 m/328 ft

Technical Data (for basic device)

Inputs/Outputs

- · CAN sensor inputs:
- 2 CAN bus networks, each with 24 STAUFF CAN bus channels. Alternatively on CAN Y with up to 5 third-party CAN open sensors. Baud rate adjustable for third-party CAN

24 V DC power supply/max, 250 mA. Mixed operation of STAUFF CAN and third-party CAN within one CAN bus line not possible. Internal terminating resistor 120 Ω . Supports CAN 2.0 A/CAN 2.0 B

- Sampling rate: 1 ms = 1000 measured values/s
- M12x1; 5-pin with SPEEDCON®. Plug-in connection: integrated connector
- Digital input/output and frequency input: Dual assignment input that can be used either as DIGITAL-IN and DIGITAL-OUT, or two frequency inputs are provided through switchover. Also possible as detection of direction of rotation
- Connection: M12x1 SPEEDCON® female (5-pin)

Galvanically isolated

Active low: 0...1.4 V,

Active high: 3...30 V

Frequency (0 Hz...20 kHz)

24 V DC, 80 mA

- Input:
- · Power supply:
- Input signals:
- Level/threshold:
- Accuracy:
- $\leq \pm 0.1\%$ Input module slots: Flexible addition of up to 2 modules

Touch Display

- Size/resolution: 7". 800 x 480 pixels
- · Brightness: 450 cd
- · Can be operated with gloves

Calculation Channels

- Number: Functions:
 - /, *, +, -, f'(t), Integral, sin, cos, tan, x², SQRT, xy
- Maximum number of calculation from channels/ calc channel: 3

Interfaces

- USB device: Data transfer between device and PC USB host 1+2: USB 2.0, connection of external memory media Internal memory: 12 GB Connection of network cables LAN:
- Wireless communication
- PPC-PAD-plus-W: WIFI

Ambient Conditions

- · Ambient temperature: -10...+50 °C
- -20...+60 °C Storage temperature:
- Bel humidity: < 80%
- Environmental testing: 1 m drop test
- (EN 60721-3-7) Vibrations: EN 60721-3-7, 7M3
- · Protection rating: IP 65
 - (EN/IEC 60529:2014)
- External power supply
- 110/240 V AC 24 V DC/3.5 A
- Connection: 3-pin

Rechargeable Battery

Lithium-ion pack, 14.4 V/3350 mAh

Materials

- Housing: ABS/PC (thermoplastic)
- Protective housing cover: TPE (thermoplastic elastomer)
- Flammability rating: UE94V0
- Dimensions (w x h x d): 282 x 195 x 85 mm
- · Weight: 1880 g (without input module)
- VESA connection: 100 x 100 mm / M4 metric





Hydraulic Tester • Type PPC-PAD-plus

Order Codes for Basic Device



Delivery Includes

- PPC-PAD-plus Hydraulic Tester Connection for 2 CAN bus networks (optional modules, see below)
- Power Supply Unit 110 V/240 V 24 V DC/2.5 A incl. country-specific adaptor
- (EN, US, UK, AUS)
- USB 2.0 cable (2 m/6.56 ft)
- (none) Instructions for use
 - CAL PC Software

Expansion Modules (Input Modules) for the PPC-PAD-plus

The PPC-PAD-plus is equipped with two input module slots for individually adapting the device to the application. The input modules are available in various versions and can easily be retrofitted or replaced by the user. The analogue input modules are also available with a calibration certificate.

Product Characteristics / Technical Data (for input modules)

Analogue Input Module

The analogue input module is equipped with three analogue connections IN 1 - 3 for sensors with automatic sensor detection (STAUFF ANALOGUE) and an analogue connection IN 4/5 for up to two third-party sensors without automatic sensor detection (e.g. standard industrial sensors).

 3 sensor inputs with sensor detection (p/t/Q/n) for PPC sensors

Plug-in connection: 5-pin, push-pull, combination integrated male/female connector

- · Sampling rate: 1 ms = 1000 measured values/s
- Operating temperature range: -10 °C...+50 °C
- -20 °C...+60 °C Storage temperature range: 152 g
- · Weight:
- Input for third-party sensors: 2 sensor inputs (analogue), for measuring current and voltage 1 ms = 1000 measured values/s Sampling rate: Voltage measuring range: -10...+10 V DC Current measuring range: 0/4...20 mA +24 V DC/max. 100 mA Supply for ext. sensors: Plug connection: M12x1; 5-pin female connector

Analogue Input Module with Galvanically Isolated Sensor Inputs

This input module offers the same options as the analogue input module, but with the connections galvanically isolated from the PPC-PAD.

· As the "analogue input module", but with sensors inputs galvanically isolated from the PPC-PAD-plus.

CAN Input Module

The CAN Input Module is equipped with two passive CAN bus connections for third-party sensors without automatic sensor detection (third-party CAN).

In addition, this slot offers the option of connecting the PPC-PAD to an existing CAN BUS network using the SAE J1939 protocol for the purpose of reading messages from other CAN bus nodes. This can be the bus of a vehicle or machine, for example. The CAN module is passive and cannot be detected by other CAN masters.

Both connections are galvanically isolated from each other and from the device.

- 2 x M12x1 5-pin connector input for connecting to CAN
- systems such as CANopen, CAN generic and SAE-J1939
- Plua-in connection:
- 2 x M12 5-pin female, CAN1xx, CAN2xx,
- each galvanically isolated Number of CAN1xx channels:
- 24
- Number of CAN2xx channels: 24
- CAN 2.0 A, CAN 2.0 B Standards
- Supported protocols: CANopen, SAEJ1939 and CAN generic, mixed operation of several CAN protocols possible
 - Terminating Resistor: Can be activated or

deactivated - Supply for signal connection:

- Passive, no external supply · Operating temperature range: -10 °C...+50 °C
- Storage temperature range: -20 °C...+60 °C Weight:
 - 127 g

Order Codes for Input Modules



SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG

Hydraulic Tester • Type PPC-PAD-plus





Function Description

- Illuminated, glare-free colour display for good readability in all situations, 7" size for a clear overview of comprehensive information
- 2 Suitable for operation with gloves, robust 3 mm glass, resolution 800 x 480 pixels
- ③ High protection against moisture and dirt, protection rating IP 65
- Intuitive operation with clear icons and function-related buttons and apps
- (5) Integrated mount for carrying strap
- Robust, oil-resistant housing protection for use in rough environments and for absorbing impacts
- ⑦ Additional large tactile keyboard for reliable operation even in difficult conditions

(8) Optional CAN Module for monitoring CAN systems or connecting third-party CAN sensors
 (9) Optional analogue input module for connecting STAUFF Sensors with sensor detection

- (1) USB host interface for connecting USB mass storage devices
- 1 Analogue third-party sensors also with high speed functionality
- Power supply unit with universal country-specific adaptors, strong battery power and fast charging times, energy saving options for extended operating periods
- 3 2 x CAN bus networks, each with up to 24 channels
- 2 frequency inputs or D-IN/D-OUT
- (5) USB device interface for connecting to a PC, laptop, etc.
- 6 LAN interface for remote monitoring, measured value transfer or remote control

Connection Example for Analogue Sensors / CAN Sensors



В

Hydraulic Tester • PPC-PAD-plus **Display**

		4 💷 🖾	🕸 🗢 🕬 🖬 🕅 🕯	
Excavator S	PC 🕨 Hydraulic	7 Tri	igger Logic	
NAME	ACTUAL	NAME	ACTUAL	
CANC-1 Pressure Valve 1	54.637 bar	CANY-3 Frequency 1	1326.12 Hz	
CANX-2 Flow	16.235 L/min	Pressure Front	80.236 bar	
CANX-3 Temperature out	16.4 °C	INA-2 Oil Temperature	47.263 ·c	
CALC-1 Power	1.478 kW	FI Engine Speed	827.9 1/min	, i
CANY-1 Temperature in	23.36 °c	CANB-101 Engine Temperature	73.62 °c	
CANY-2 Pressure Valve 2	269.365 bar	CANB-201 Engine Pressure	347.53 bar	

R

STALIEF



- Up to 12 channels in one display
- Colour assignment for the individual channels
- Display can be changed between ACT, MIN and MAX values
- Up to 8 freely selectable channels simultaneously in one curve display
- Choose between ACT and MIN/MAX value display
- Freely scalable
- · For analysis, up to two cursors with measured value and delta display can be shown

Reassign	channel				ۍل
CH. NAM	(E	NOMINAL CH.	ACTUAL CH.	STATE	
ANX-2 Press	ure 1	0 - 60 bar S/N 1204016617	0 - 60 bar S/N 12D4016617	ОК	X
ANX-1 Press	ure 2	0 - 600 bar S/N 1445133623	0 - 600 bar S/N 1445133623	ОК	_
ANX-3 Press	ure 3	0 - 150 bar S/N 1204016919	0 - 150 bar S/N 1204016919	ОК	0
ALC-1 Delta	Pressure	-60 - 150 bar	-60 - 150 bar S/N	ОК	~
ANX-5 Flow		0 - 600 L/min S/N 1204017305	0 - 600 L/min S/N 1204017305	ОК	Ĭ
NA-3 Temp	erature 1	-50 - 250 °C	-50 - 250 °C	ок	

R 🖬 Edit Name Formula_01 × Formula (CH1-CH2)*CH3 + x + tan CH3 x² xy 1 2 3 😇 , 0

- Standar TI -7 45.558 Pressure 1 45.912 0.28 0.78 Pressure 2 m 99.24 ba 99.44 Pressure 3 CANX-5 Flow 381.33 382.11 Temperature 1 22.54 ť. Temperature 2 88.93 89.24 1
- Numerical display of 6 channels with bar chart
- Display of the measuring range, freely definable warning and alarm values (red, yellow, green) and min/max values



- · Repeating measuring tasks can be conveniently saved as a template
- A comparison of the preset measuring setup is also carried out when a template is selected
- Use of a template ensures comparability of the measurements

es Messeell

· An existing template can be duplicated and modified as required







The PPC-Analyze Software that is included with the tester can display, analyse and export the recorded curves.

In addition, measurements can be shown on the monitor in real time using WIFI, Ethernet or USB.

- . Up to four measuring channels can be created
- In addition to the predefined standard functions such as delta values or hydraulic output, it is also possible to enter custom formulas

TALIFI

Pressure Sensor • Type Sensor-PPC-04/12-P









SAD-20/12-B-W3





SAD-20/10-B-W3

Order Codes



Pressure Range and Accuracies

Version	Pressure Range and	Accuracies				
Sensor- PPC-04/12-P-	Pressure Measuring Range (^{bar} / _{PSI})	Type of Measurement	Maximum Pressure (^{bar} / _{PSI})	Burst Pressure (^{bar/} PSI)	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.
015	-1 15	Relative	30	150	0.05	0,5
	-14.5 217	pressure	435	2175	0,25	
060	0 60	Absolute	120	500	0,25	0,5
	0 870	pressure	1740	7251		
150	0 150	Absolute pressure	300	900	0,25	0,5
	0 2175		4351	13053		
400	0 400	Absolute pressure	800	1200	0,25	0,5
	0 5801		11603	17404		
600	0 600	Absolute pressure	1200	1800	0,25	0,5
	0 8702		17404	26106		
601	0 600 **	Absolute	1200	2500	0.05	0,5
	0 8702	pressure	17404	36259	0,20	

* FS = Full Scale

** Pressure peaks up to 1000 bar / 14503 PSI

Connection Adaptors for PPC Sensors

In addition to the Pressure Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA-20-G1/4-W3), but also to the Test Couplings

of the STAUFF Test 15/12/10 series (SAD-20/15-B-W3, SAD-20/12-B-W3, SAD-20/10-B-W3). For further information please see Catalogue 7 - STAUFF Test.

Product Description

B

The Pressure Sensor-PPC-04/12-P can be used with all analogue Hydraulic Testers of the PPC series, due to their 5-pin connection. Due their sturdy Stainless Steel design, the quick response times (< 1 ms) and the high accuracy (±0,25% FS* typ.) with automatic sensor recognition, the Pressure Sensors are a reliable and flexible solution for the Hydraulic Testers of the PPC series.

Note: A Connection Cable-PPC-04/12-3 (3 m / 9.84 ft) is needed to connect the Pressure Sensor-PPC-04/12-P to the current Hydraulic Testers. An Extension Cable-PPC-04/12-5-EXT (5 m / 16.40 ft) is also available as an option. See page 44 for further information.

Sensor-PPC-04/12-P	
Pressure Measurement	yes
Temperature Measurement	no
Process Connection	G1/4
Туре	analogue 5-pin connection

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FKM (Viton®) gasket
- Weight: 85 g / .19 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after contactation)

100

1 ms

0 ... 3 V DC

< 0,2 % FS* /a

- 5-pin connection
- Pressure connection G1/4 (without adaptor)

Ambient Conditions

- · Media temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Ambient temperature: Storage temperature:
- Load cycles (10⁶):
- **Electrical Data**
- Input voltage: 9 ... 36 V DC
- Output signal:
- Response time:
- · Long-term stability:
- · Vibration loading: Shock loading:
- acc. to IEC 60068-2-6 (20 g) acc. to IEC 60068-2-27 (50 g)

-25 °C ... +105 °C /-13 °F ... +221 °F

-25 °C ... +85 °C / -13 °F ... +185 °F



Hydraulic Testers

CAN Pressure Sensor - Type Sensor-PPC-CAN-P



Pressure Range and Accuracies

Version	Pressure Range and Accuracies					
Sensor- PPC-CAN-P-	Pressure Measuring Range (^{bar} / _{PSI})	Type of Measurement	Maximum Pressure (^{bar} / _{PSI})	Burst Pressure (^{bar} / _{PSI})	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.
016	-1 16	Relative	32	150	0.25	0,5
	-14.5 232	pressure	464	2175	0,25	
060	0 60	Absolute	120	500	0.05	0,5
	0 870	pressure	1740	7251	0,25	
160	0 160	Absolute pressure	320	900	0,25	0,5
	0 2320		4641	13053		
400	0 400	Absolute pressure	800	1200	0.25	0,5
	0 5801		11603	17404	0,25	
600	0 600	Absolute	1200	1800	0.05	0,5
	0 8702	pressure	17404	26106	0,25	
601	0 600 **	Absolute	1200	2500	0.05	0,5
	0 8702	pressure	17404	36259	0,20	
* FS = Full Sca	le		**Pressure pea	ks up to 1000 bar / 1	4503 PSI	

Connection Adaptors for PPC Sensors

In addition to the CAN Pressure Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA-20-G1/4-W3), but also to the Test

Couplings of the STAUFF Test 15/12/10 series (SAD-20/15-B-W3, SAD-20/12-B-W3, SAD-20/10-B-W3). For further information please see Catalogue 7 - STAUFF Test.

automatic sensor recognition, the CAN Pressure Sensors are a

Connecting the CAN Pressure Sensor to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page 45 for further information.

Sensor-PPC-CAN-P	
Pressure Measurement	yes
Temperature Measurement	no
Process Connection	G1/4
Туре	CAN connection 5-pin, M12x1

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FKM (Viton®) gasket)
- Sensor identification LED
- Weight: 85 g / .19 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after contactation)
- 5-pin SPEEDCON connection plug
- Pressure connection G1/4 (without adaptor)

Ambient Conditions

- -25 °C ... +105 °C /-13 °F ... +221 °F Media temperature:
- -25 °C ... +85 °C / -13 °F ... +185 °F Ambient temperature:
- Storage temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Load cycles (10⁶): 100

CANopen Interface

- CANopen protocol profile DS406 v3.2
- with manufacturer-specific additions
- LSS service DS305 v2.0

Electrical Data

Shock loading:

- · Response time: 1 ms
- Long-term stability: < 0,2 % FS* /a acc. to IEC 60068-2-6 (20 g) Vibration loading:
 - acc. to IEC 60068-2-27 (50 g)

- SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG
- Dimensional drawings: All dimensions in mm (in).

Temperature Sensor - Type Sensor-PPC-04/12-T









M02

B04

(none)

CAL

Product Description

В

The Screw-in Temperature Sensor-PPC-04/12-T measure current temperature directly in the pipeline and are compatible with the Flow Turbine Flow-meter-PPC-04/12-SFM and the Straight Threaded Joint SGV-16S-G-W3 (only process connection M10x1, see figure below).

See product information of Flow Turbine on page 40.

The Rod-type Temperature Sensor-PPC-04/12-TSH is especially designed to determine the media temperatures in tanks and containers.

Note: A Connection Cable-PPC-04/12-3 (3 m / 9.84 ft) is needed to connect the Temperature Sensor-PPC-04/12-T or -TSH to the current Hydraulic Testers. An Extension Cable-PPC-04/12-5-EXT (5 m / 16.40 ft) is also available as an option. See page 44 for further information.

Sensor-PPC-04/12-T	
Pressure Measurement	no
Temperature Measurement	yes
Process Connection	M10x1 or G1/4
Туре	analogue 5-pin connection

Sensor-PPC-04/12-T-M02 with SGV-16S-G-W3

For further information please see Catalogue 7 - STAUFF Test.



Order Codes

Screw-in Temperature Sensor (T) Process Connection M10x1



U	ochos and type	
	Temperature Sensor	Sensor-PPC-04/12
2	Version	
	Screw-in	Т
	Rod-type	TSH

Technical Data

Suitable for liquids

(in the case of aggressive media only after contactation) 5-pin connection

Stainless Steel

FKM (Viton®)

Materials

Housing (T):

Handle (TSH):

 Gaskets (T): Bod (TSH):

Stainless Steel 1.4304 Delrin

Weight

 Screw-in (T) M02 (M10x1): 70 g / .15 lbs B04 (G1/4): 55 g / .12 lbs 120 g / .26 lbs

Rod-type (TSH):

Connection

- STAUFF Test connection SGV-16S-G-W3 in the pipeline (only M10x1)
- Screw-in thread (T): M10x1 or G1/4 (see figure) Screw-in thread (TSH): M10

Ambient Conditions (Screw-in Temperature Sensor)

- Media temperature: -40 °C ...+150 °C / -40 °F ... +302 °F
- Ambient temperature: -40 °C ... +85 °C / -40 °F ... +185 °F
- Storage temperature: -40 °C ... +85 °C / -40 °F ... +185 °F

Ambient Conditions (Rod-type Temperature Sensor)

- -25 °C ... +125 °C / -13 °F ... +257 °F Media temperature:
- Ambient temperature: -25 °C ... +70 °C / -13 °F ... +158 °F
- Storage temperature: -25 °C ... +80 °C / -13 °F ... +176 °F

Measuring Range

M10x1

(4) Calibration

G1/4

- -40 °C ...+150 °C / -40 °F ... +302 °F Measuring range (T):
- Measuring range (TSH): -25 °C ... +125 °C / -13 °F ... +257 °F

(3) Process Connection (only for Version T)

Operating pressure (T): 630 bar / 9137 PSI

Without calibration certificate

With calibration certificate

.33)

G1/4 Ø18,8 (.74)

- Maximum pressure (T): 800 bar / 11603 PSI 2150 bar / 31183 PSI
- Accuracy:
- **Electrical Data** Input signal:
- Output signal:
- Response time (T)
- M02 (M10x1):
 - $T_{50} \le 4 \text{ s}, T_{90} \le 14 \text{ s}$ $T_{50} \le 4 \text{ s}, T_{90} \le 12 \text{ s}$
- · Response time (TSH): T₉₀ ≤ 9,1 s
- Vibration loading:
- Shock loading:

B04 (G1/4)

acc. to IEC 60068-2-6 (20 g)

acc. to IEC 60068-2-27 (50 g)



Burst pressure (T): ±1 % FS



7 ...12 V DC 0 ... 3 V DC


В





Process Connection M10x1

Order Codes



Process Connection G1/4

Sensor-PPC-CAN



Ø22



Product Description

The CAN Temperature Sensor-PPC-CAN-T are specially designed for use with the CAN Hydraulic Testers. This sensor is using the CANopen protocol to transfer the measurement values to the CAN Hydraulic Testers. The Sensor-PPC-CAN-T is compatible with the CAN Flow Turbine Flow-meter-PPC-CAN-SFM and the Straight Threaded Joint SGV-16S-G-W3 (only process connection M10x1, see figure below). See product information of CAN Flow Turbine on page 41.

Most technical details are the same as with the Temperature Sensor-PPC-04/12-T.

Due their sturdy Stainless Steel design with automatic sensor recognition, the CAN Temperature Sensor is a reliable and flexible solution for the CAN Hydraulic Tester. The status of the sensor is indicated via LED.

Connecting the CAN Temperature Sensor to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page 45 for further information.

Sensor-PPC-CAN-T

Pressure Measurement	no
Temperature Measurement	yes
Process Connection	M10x1 or G1/4
Туре	CAN connection 5-Pin, M12x1

Sensor-PPC-CAN-T-M02 with SGV-16S-G-W3

For further information please see Catalogue 7 - STAUFF Test.





(3)	Process	Connection	(only	tor	Version
	M10x1				

CANopen protocol profile DS301, Typ 2.0A

with manufacturer-specific additions

M02

3

(4) Calibration

CANopen Interface

Electrical Data • Output signal:

 Response time M02 (M10x1):

B04 (G1/4):

Shock loading:

Vibration loading:

LSS service DS305 v2.0

G1/4

Τ.

Т

2

Janbration	
Without calibration certificate	(none)
With calibration certificate	CAL

CAN bus

 $T_{50} \le 4 \text{ s}, T_{90} \le 12 \text{ s}$

 $T_{50} \le 4 \text{ s}, T_{90} \le 14 \text{ s}$

acc. to IEC 60068-2-6 (20 g)

acc. to IEC 60068-2-27 (50 g)

CAL

(4)

T)

M02

B04

Technical Data

Suitable for liquids

(in the case of aggressive media only after contactation)

- 5-pin SPEEDCON connection plug
- Sensor identification LED

Materials

Housing:	Stainless Steel
Gaskets:	FKM (Viton®)

Weight

M02 (M10x1): 70 g / .15 lbs 55 g / .12 lbs

B04 (G1/4):

Ambient Conditions

•	Media temperature:	-40 °C+150 °C / -40 °F +302 °F
	Ambient temperature:	-40 °C +85 °C / -40 °F +185 °F

-40 °C ... +85 °C / -40 °F ... +185 °F Storage temperature:

Measuring Range

Measuring range:	-40 °C+150 °C / -40 °F +302
Operating pressure:	630 bar / 9137 PSI
Maximum pressure:	800 bar / 11603 PSI
 Burst pressure: 	2150 bar / 31183 PSI
	0 66 0/ EC

Accuracy:

°F

±0,66 % FS

* FS = Full Scale SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG Dimensional drawings: All dimensions in mm (in).





Pressure / Temperature Sensor - Type Sensor-PPC-04/12-PT







M16

S 12,65 x 1,5

SAD-20/12-B-W3

Without calibration certificate

With calibration certificate





SAD-20/10-B-W3

(none)

CAL

Product Description

The Pressure / Temperature Sensor-PPC-04/12-PT can be used with all Hydraulic Testers of the PPC series, due to the 5-pin connection. This sensor is able to measure and display temperatures on the Hydraulic Testers.

Due the sturdy Stainless Steel design, the quick response time (< 1 ms) and the high accuracy ($\pm 0,25\%$ FS* typ.) with automatic sensor recognition, the Pressure / Temperature Sensor is a reliable and flexible solution for the Hydraulic Testers of the PPC series.

Note: A Connection Cable-PPC-04/12-3 (3 m / 9.84 ft) is needed to connect the Pressure / Temperature Sensor to the current Hydraulic Testers. An Extension Cable-PPC-04/12-5-EXT (5 m / 16.40 ft) is also available as an option. See page 44 for further information.

Sensor-PPC-04/12-PT-

Pressure Measurement	yes
Temperature Measurement	yes
Process Connection	G1/2
Туре	analogue 5-pin connection

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FKM (Viton®) gasket
- Weight: 200 g / .44 lbs
- · Suitable for gases and liquids (in the case of aggressive media, only after contactation)

100

-25 °C ... +105 °C /-13 °F ... +221 °F

-25 °C ... +85 °C / -13 °F ... +185 °F

0 °C ... +85 °C / +32 °F ... +285 °F

- 5-Pin connection
- Pressure connection G1/2 (without adaptor)

Ambient Conditions

- Media temperature:
- Ambient temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Storage temperature:
- Compensated range:
- Load cycles (10⁶):

Electrical Data

- Input voltage: 7 ... 12 V DC • Output signal: 0 ... 3 V DC
- Response time:
- Long-term stability:
- Vibration loading: acc. to IEC 60068-2-6 (20g) acc. to IEC 60068-2-27 (50g)

< 0,2 % FS* /a

1 ms

Shock loading:

Order Codes



Pressure / Temperature Sensor Sensor-PPC-04/12-PT

② Version

See table

Pressure Range and Accuracies

Version	Pressure Range and Accuracies								
Sensor- PPC-04/12-PT-	Pressure Type of Measuring Maximum Measure- ment Burst Pressure (bar/Psi) Accuracy Pressure (±% FS*) Accuracy (±% FS*) Massimum Measure- (bar/Psi) Pressure (bar/Psi) Pressure (bar/Psi) Tressure (bar/Psi) Tressure (bar/Psi) Tressure (bar/Psi) Accuracy (±% FS*) Accuracy (±% FS*)		Accuracy (±% FS*) max.	Temperature Measuring Range (°C/°F)	Accuracy (±% FS*)				
015/2	-1 15	Relative	30	150	0.25	0.5	-25 105	1.5	
015/2	-14.5 217	pressure	435	2175	0,20	0,5	-13 221	1,0	
060/0	0 60 Absolute 120 500	0.05	0.5	-25 105	4.5				
060/2	0 870	pressure	1740	7251	0,25	0,5	-13 221	1,0	
150/0	0 150	Absolute	300	900	0.05	0.5	-25 105	1 5	
150/2	0 2175	pressure	4351	13053	0,25	0,5	-13 221	1,0	
400/0	0 400	Absolute	800	1200	0.05	0.5	-25 105	1,5	
400/2	0 5801	pressure	11603	17404	0,25	0,5	-13 221		
coo/o	0 600	Absolute	1200	1800	0.05	0.5	-25 105	4.5	
600/2	0 8702	pressure	17404	26106	0,25	0,5	-13 221	1,5	
C01/0	0 600 **	Absolute	1200	2500	0.05	0.5	-25 105	4.5	
601/2	0 8702	pressure	17404	36259	0,25	0,5	-13 221	1,5	

FS = Full Scale

Connection Adaptors for PPC Sensors

In addition to the Pressure / Temperature Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA-20-G1/2-W3), but also to the Test For further information please see Catalogue 7 - STAUFF Test.

Couplings of the STAUFF Test 15/12/10 series (SAD-20/15-B-W3, SAD-20/12-B-W3, SAD-20/10-B-W3).

B



B



See table

Pressure Range and Accuracies

Version	Pressure Range and Accuracies								
Sensor- PPC-CAN-PT-	Pressure Measuring Range (^{bar} / _{PSI})	Type of Measure- ment	Maximum Pressure (^{bar} / _{PSI})	Burst Pressure (^{bar} / _{PSI})	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.	Temperature Measuring Range (°C/°F)	Accuracy (±% FS*)	
016	-1 16	Relative	32	150	0.25	0.5	-25 105	±2K typ./	
010	-14.5 232	pressure	464	2175	0,20	0,0	-13 221	±3K max.	
060	0 60	Absolute	120	500	0.00		-25 105	±2K typ./	
000	0 870	pressure	1740	7251	0,20	0,0	-13 221	±3K max.	
160	0 160	Absolute	320	900	0.05 0.5	0.5	-25 105	±2K typ./	
100	0 2320	pressure	4641	13053	0,20	0,5	-13 221	±3K max.	
400	0 400	Absolute	800	1200	0.05	0.5	-25 105	±2K typ./	
400	0 5801	pressure	11603	17404	0,25	0,5	-13 221	±3K max.	
600	0 600 Absolute 1200 1800	0.05	0.5	-25 105	±2K typ./				
600	0 8702	pressure	17404	26106	0,25	0,5	-13 221	±3K max.	
601	0 600 **	Absolute	1200	2500	0.05	0.5	-25 105	±2K typ./	
001	0 8702	pressure	17404	36259	0,25	0,5	-13 221	±3K max.	

* ES = Full Scale

** Pressure peaks up to 1000 bar / 14503 PSI

Connection Adaptors for PPC Sensors

In addition to the CAN Pressure / Temperature Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA-20-G1/2-W3), but also to the Test Couplings of the STAUFF Test 15/12/10 series

(SAD-20/15-B-W3, SAD-20/12-B-W3, SAD-20/10-B-W3). For further information please see Catalogue 7 - STAUFF Test.

time (< 1 ms) and the high accuracy ($\pm 0,25\%$ FS* typ.) with automatic sensor recognition, the pressure / temperature sensor is a reliable and flexible solution for the CAN Hydraulic Tester. The status of the sensor is indicated via LED.

Connecting the CAN Pressure / Temperature Sensor to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page 45 for further information.

PPC-CAN-PT Pressure Measurement yes **Temperature Measurement** yes G1/2 Process Connection Туре CAN connection 5-pin, M12x1

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FKM (Viton®) gasket
- Sensor identification LED
- Weight: 200 g / .44 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after contactation)
- 5-pin SPEEDCON connection plug
- Pressure connection G1/2 (without adaptor)

Ambient Conditions

Media temperature: -25 °C ... +105 °C /-13 °F ... +221 °F Ambient temperature:

100

- -25 °C ... +85 °C / -13 °F ... +185 °F Storage temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- · Compensated range: 0 °C ... +85 °C / +32 °F ... +185 °F
- Load cycles (10⁶):

CANopen Interfaces

- CANopen protocol profile DS406 v3.2
- with manufacturer-specific additions
- LSS service DS305 v2.0

Electrical Data

Response time:	1 ms
Vibration loading:	acc. to IEC 60068-2-6 (20g)
Shock loading:	acc. to IEC 60068-2-27 (500

acc. to IEC 60068-2-27 (50g)

SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG Dimensional drawings: All dimensions in mm (in).



Flow Turbine - Type Flow-meter-PPC-04/12-SFM







(none)

CAL

Product Description

The Flow-meter-PPC-04/12-SFM Flow Turbine is permanently installed in the pipeline. The oil flow rotates the internal axial turnine. The frequencies generated are processed by digital electronics (a signal converter). Interferences caused by flow effects are compensated by this process.

The signal converter is now directly integrated into the 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 Flow Turbine also improves the response time (from previously 400 ms to 50 ms) and increases the measuring accuray.

The Flow-meter-PPC-04/12-SFM is available in five versions for various flow speeds. A Pressure Sensor-PPC-04/12-P (see page 34) can be connected in parallel to the Flow Turbine by way of the integrated test coupling. In addition, the oil temperature can also be measured using the connection of the Temperature Sensor-PPC-04/12-T (see page 36).

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

Note: A Connection Cable-PPC-04/12-3 (3 m / 9.84 ft) is needed to connect the Flow Turbine to the current Hydraulic Testers. An Extension Cable-PPC-04/12-5-EXT (5 m / 16.40 ft) is also available as an option. See page 44 for further information.

Order Codes



 8... 300 l/min / 2.11 ... 79.00 US GPM
 SFM-300

 15... 600 l/min / 3.96 ... 158.00 US GPM
 SFM-600

Technical Data

Materials

- Housing: Aluminium (black anodised)
- Gaskets: FKM (Viton®)
- 5-pin connectionPressure measurement
- connection: SMK-20 (M16 x 2)
- Temperature measurement
- connection: M10 x 1 (standard screw plug)

Ambient Conditions

- Media temperature: -20 °C ... +90 °C / -4 °F ... +194 °F
- Ambient temperature: $-10 \degree C \dots + 50 \degree C / + 14 \degree F \dots + 122 \degree F$
- Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
- Permissible particle size: <10 Micron for SFM-015, <25 Micron for others
- Viscosity range: 10 ... 100 cSt

Electrical Data

Response time: 50 ms

Process Connection

Please see table below

Dimensions and Measuring Range

Version	Measuring Range						Dimensions (^{mm} / _{in})							
Flow-meter- PPC-04/12-	Measuring Range (^{1/min} / _{US GPM})	Max. Flow (^{1/min} /us gpm)	Operating Pressure (^{bar} / _{PSI})	Max. Pressure (^{bar} / _{PSI})	Accuracy (at 21 cSt)	Max. Pressure Drop (at FS*) (^{bar} / _{PSI})	G ** (BSP)	G (UNF)	В	D	L	Η	Weight (^g / _{lbs})	
SEM 015	1 15	16,5	350	420	1 /0/ EC*)	1,5	01/0	2/4 16	37	71	136	37	650	
3FIM-015	.27 3.90	4.4	5076	6091	±1(70F3)	21.8	01/2	5/4-10	1.46	2.80	5.35	1.46	1.4	
CEM 060	3 60	66	350	420	±1 (% of the displayed value)	1,5	02/4	1-1/16—16	62	72	190	50	750	
3FIM-000	.79 15.90	17.4	5076	6091		21.8	03/4		2.44	2.83	7.48	1.97	1.6	
SEM 150	5 150	165	350	420	±1 (% of the	1,5	02/4	1 1/16 16	62	72	190	50	750	
3FINI-130	1.32 39.60	43.6	5076	6091	displayed value)	21.8	03/4	1-1/10-10	2.44	2.83	7.48	1.97	1.6	
SEM 200	8 300	330	350	420	±1 (% of the displayed value)	4	01	1 5/10 10	62	76	190	50	1200	
3FINI-300	2.11 79.00	87.2	5076	6091		58	GI	1-5/10-10	2.44	2.99	7.48	1.97	2.6	
SEM 600	15 600	660	290	348	±1 (% of the	5	01 1/4	1/4 1 5/0 10	62	66	212	75	1800	
3FIVI-000	3.96 158.00	174.4	4206	5047	displayed value)	72.5	01-1/4	1-5/0-12	2.44	2.60	8.35	2.95	4	



Hydraulic Testers

В

CAN Flow Turbine • Type Flow-meter-PPC-CAN-SFM



(none)

CAL

(1) Series and Type

\sim		
	CAN Flow	Turbine

(2) Version

1 15 I/min / .27 3.90 US GPM	SFM-015
3 60 I/min / .79 15.90 US GPM	SFM-060
5 150 l/min / 1.32 39.60 US GPM	SFM-150
8 300 l/min / 2.11 79.00 US GPM	SFM-300
15 600 l/min / 3.96 158.00 US GPM	SFM-600

Technical Data

Materials

- Housing: Aluminium (black anodised)
- Gaskets: FKM (Viton®)
- 5-pin SPEEDCON connection plug · Pressure measurement
 - SMK-20 (M16 x 2) connection:
- Temperature measurement
- connection: M10 x 1 (standard screw plug)

Ambient Conditions

- Media temperature: -20 °C ... +90 °C / -4 °F ... +176 °F
- -10 °C ... +50 °C / +14 °F ... +122 °F • Ambient temperature: -20 °C +80 °C / -4 °F +176 °F
- Storage temperature:
- Permissible particle size: <10 Micron for SFM-015 (CAN), <25 Micron for others
- Viscosity range: 10 ... 100 cSt

Dimensions and Measuring Range

Version	Measuring Range				Dimensions (mm/in)									
Flow-meter- PPC-CAN-	Measuring Range (^{1/min} /us gpm)	Max. Flow (^{I/min} /us gpm)	Operating Pressure (^{bar} / _{PSI})	Max. Pressure (^{bar} / _{PSI})	Accuracy (at 21 cSt)	Max. Pressure Drop (at FS*) (^{bar} / _{PSI})	G ** (BSP)	G (UNF)	В	D	L	Н	Weight (^g / _{lbs})	
SEM 015	1 15	16,5	350	420 1,5	1,5	,5 01/0	2/4 16	37	78,8	136	37	650		
3FW-015	.26 3.90	4.4	5076	6091	±1 (% F3)	21.8	G1/2	3/4-10	1.46	3.10	5.35	1.46	1.43	
SEM 060	3 60	66	350	420	±1 (% of the	1,5	02/4	1-1/16–16	62	79,4	190	50	750	
3FW-000	.79 15.90	17.4	5076	6091	displayed value)	21.8	03/4		2.44	3.13	7.48	1.97	1.65	
SEM 150	5 150	165	350	420	±1 (% of the	1,5	G3/4	02/4	1 1/16 16	62	79,4	190	50	750
5FIVI-150	1.32 39.60	43.6	5076	6091	displayed value)	21.8		1-1/10-10	2.44	3.13	7.48	1.97	1.65	
SEM 200	8 300	330	350	420	±1 (% of the	4	01	1 5/16 16	62	81,3	190	50	1200	
3FW-300	2.11 79.00	87.2	5076	6091	displayed value)	58	ui	1-3/10-10	2.44	3.20	7.48	1.97	2.65	
SEM 600	15 600	660	290	348	±1 (% of the	5	01.1/4	1 5/0 10	62	76,2	212	75	1800	
3FW-000	3.96 158.00	174.4	4206	5047	displayed value)	72.5	01-1/4	1-3/0-12	2.44	3	8.35	2.95	3.97	

* FS = Full Scale

** Standard option

SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG Dimensional drawings: All dimensions in mm (in).

www.stauff.com/8/en/#41

Electrical Data

3 Calibration

Without calibration certificate

UNF version available on request.

With calibration certificate

PPC-CAN

Response time: 50 ms

Process Connection

Please see table below

Interferences caused by flow effects are compensated by this process. The signal converter is now directly integrated into the CAN 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 CAN Flow Turbine also improves the response times/ reaction times (from a previous 400 ms to 50 ms) and increases measurement accuracy.

The CAN Flow Turbine is available in five versions for various flow speeds. A CAN Pressure Sensor-PPC-CAN-P (see page 35) can be connected parallel to the CAN Flow Turbine by the way of the integrated test coupling. In addition, the oil temperature can also be measured using the connection of the Temperature Sensor-PPC-CAN-T (see page 37).

In general, the CAN Flow Turbine can handle flows in either direction. The specified technical data an the calibration (available as an option) apply only when the flow through the CAN Flow Turbine matched the recommended flow direction. A double-headed arrow is shown on the nameplate of the Flow-meter-PPC-CAN-SFM. The thicker end of the double-headed arrow specifies the recommended direction of the flow.

Connecting the CAN Flow Turbine to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page 45 for further information.

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





Sensor-PPC-04/12-SDS-CAB





Adaptor-PPC-04/12-SKA-Contact

Sensor-PPC-04/12-SDS-CAB

(none)

CAL

ര

TALIER

Product Description

B

The Sensor-PPC-04/12-SDS-CAB Rotational Speed Sensor allows non-contact speed measurement of rotating components. The sensor is based on a opto-electrical measurement principle that determines the rotational speed with highaccuracy using a reflecting strip on the shaft.

The contact rotational speed measurement is obtained by using a Contact Adaptor 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 espacially small areas, using the focusing adaptor facilities measurement.

Note: The analogue Rotational Speed Sensor-PPC-04/12-SDS-CAB can only be used with analogue Hydraulic Testers.

Technical Data

- Material:
- ABS · Weight: 230 g / .51 lbs
- 5-pin connection
- · Both contacting and non-contacting measurement possible

20 ... 10000 1/min

±45°C

±5 1/min

 $\leq \pm 0,5$ % FS*

25 ... 500 mm (1 ... 20 in)

• Type of measurement: optical, red LED

Ambient Conditions

- 0 °C ... +70 °C / +32 °F ... +158 °F • Ambien temperature:
- **Measuring Range**
- Measuring range:
- Measuring distance:
- Measuring angle:
- Accuracy:
- Resolution:

Electrical Data Input signal:

0 ... 3 V DC Output signal: 7 ...12 V DC

Note: We recommended not extending the 2 m / 6.56 ft permanent cable connection provided on the sensor!

Order Codes



Adaptor-PPC-04/12-SFA-Focus



Rotational Speed Sensor

- (2) Calibration
 - Without calibration certificate With calibration certificate

Order Codes

Focus Adaptor



Adaptor-PPC-04/12-SFA-focus Focus Adaptor

Applications Examples

Fig. 1 -Contacting rotational speed measurement with the contact adaptor



Fig. 2 -

End face rotational speed measurement with the contact adaptor



(1) Series and Type Contact Adaptor Adaptor-PPC-04/12-SKA-contact

Contact Adaptor

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

 $\widehat{1}$







Current/Voltage/Frequency Converter = Type Sensorconverter-PPC

Product Description

with the Hydraulic Tester.

Specifications



Order Codes



(1) Series and Type

Current/Voltage/Frequency Converter

Analogue Signal Measurement

Measuring of electric signals from a third-party sensor (e.g. 4 - 20 mA, 0 - 10 V) with the Sensorconverter-PPC.

The Sensorconverter-PPC is used, for example, for to measurue the current consumption on proportional valves or for determining the switching statuses of motors or pumps. This allows the PPC testers to read these third-party sensors. Typical applications for generating and measuring a force/displacement diagram or torque/volumetric flow characteristic curves.

The following input signals can be processed:

 Voltage (DC) 	-48 V+48 V
	CAN: ±0.5% FS;
	Analogue: ±1% FS
 Current (DC) 	-200 mA+200 mA
	CAN: ±0.5% FS;
	Analogue: ±1% FS
 Current (DC) 	-4+4 A
	±1.5% FS
 Long term stability 	0.1% span/a

Frequency Signal Measurement

Measuring of electric frequencies from a third-party sensor

The Sensorconverter-PPC is used to make frequency signals (e.g. from turbine flow meters, volumetric flow meters and speedometers) measurable for PPC Hydraulic Testers. The adaptor can process sinusoidal and square signals from 1 Hz to 5 kHz with amplitudes from 100 mV to 24 V.

The following input signals can be processed:

15000 Hz; 100 mV24 V
CAN: ±0.1% FS @ < 100 Hz
CAN: ±0.5% FS @ > 100 Hz
Analogue: ±1%
0.1% span/a

Sensorconverter-PPC

Dimensions:	100x100x61 mm
Material:	ABS
Weight:	240 g
 Operating temperature 	0+60 °C
 Storage temperature 	-20+85 °C
 Rel. humidity 	< 80 °C
 Protection rating 	IP40 (EN 60529)
External power supply	
 Power supply 	1130 V DC

The PPC Sensor Converter offers users the option of connecting

third party sensors to the PPC Hydraulic Tester which are not equipped with a STAUFF sensor detection. These can have different output levels and can therefore also be easily measured

Power supply for third-party sensor (galvanically isolated)

 vortage 	24 V DU ±2 V
 Current without PSU 	max. 50 mA
 Current with PSU 	max. 100 mA

Connection example for voltage measurement



Connection example for pressure sensor 600 bar, 0...20 mA



Connection example for flow meter 160 l/min, 1 kHz



The measured data are transferred to the Hydraulic Testers directly with the normal CAN or analogue Connection Cables.

Connection and Extension Cables (analogue)



Connection Cable-PPC-04/12-3 Extension Cable-PPC-04/12-5-EXT

hand connect the Hydraulic Testers with a PC or laptop. The following items are available:

Product Description

Order Codes

Different Connection and Extension Cables for all Hydraulic Testers of the PPC series are available. These cables on the one hand, connect the sensors to the Hydraulic Testers and on the other

PC Connection Cable as a component

of the PC-SET-PPC-04-plus-SW-CAB

ß

Connection and Extension Cables

A Cable-PPC-04/12-3 Connection Cable is required to connect the sensors to the current Hydraulic Testers PPC-04/06/08-plus or PPC Pad. The cable comes with a 5-pin push/pull connection at each end and has a length of 3 m / 9.84 ft.

Note: This cable cannot be used with older Hydraulic Testers and/or sensors (with 4-pin connection)! The Cable-PPC-04/12-5-EXT Exentsion Cable has a length of 5 m/16 ft. Note: Please keep in mind that it is generally recommended

not to exceed a total cable length of 8 m / 26.25 ft!

PC Connection Cable and PC Software

Order Code

A PC set, consisting of a USB connecting lead (1 m / 3.28 ft) and the corresponding PC software.

Note: The appropriate PC set is included when purchasing a PPC-04-plus and /or PPC-04-plus-CAN Hydraulic Tester.

PC Connection Cable and PC Software

Order Code

A PC set, consisting of a USB connecting lead (1,5 m / 4.92 ft) and the corresponding PC software.

PC Connection Cable as a component

of the PC-SET-PPC-06/08-plus-SW-CAB

ര

Note: The appropriate PC set is included when purchasing a PPC-06/08-plus and/or PPC-PAD-plus Hydraulic Testers.

Cable-PPC-04/12-3 PC-SET-PPC-04-plus-SW-CAB PC-SET-PPC-06/08-plus-SW-CAB (1) Series and Type (1) Series and Type (1) Series and Type PC-SET-PPC-04-plus-SW-CAB PC-SET-PPC-06/08-plus-SW-CAB Standard Connection PC Set PC Set Cable-PPC-04/12-3 Cable for Sensors Cable-PPC-04/12-5-EXT Extension Cable





CAN Accessories

B



CAN Terminating Resistor-PPC-CAN

Each sensor on the end of a CAN bus has to be closed with

a CAN Terminating Resistor. The resistor is also necessary

Product Description

To connect the CAN bus sensors to the CAN Hydraulic Testers are different cable lengths are available, depending on customers requirements. The CAN sensors work on a bus system as displayed in the connection overview on page 32. All connections are 5-pin SPEEDCON connection plugs. The following items are available:

CAN Connection Cable

Order Codes

CAN Y-Splitter Cable

The CAN Connection Cable is available in different lengthsTo connect a new sensor to the CAN bus, a CAN Y-Splitterbetween 0,5 m / 1.64 ft and 20 m / 65.62 ft.Cable is necessary.

2

 $\widehat{2}$

Order Code

Cable-PPC-CAN-Y

Cable-PPC-CAN-R

1	Series and Type	
	CAN Connection Cable	Cable-PPC-CAN
୦	Length	

Cable-PPC-CAN

	- J	
	0,5 m / 1.64 ft	0.5
	2 m / 6.65 ft	2
	5 m / 16.40 ft	5
	10 m / 32.81 ft	10
	20 m / 65.62 ft	20

(1) Series and Type CAN Y-Splitter Cable 0,3 m / .98 ft Cable-PPC-CAN-Y

(1) Series and Type CAN Terminating Resistor

CAN Terminating Resistor

when only one sensor is used.

Order Code

Cable-PPC-CAN-R



Complete Systems for analogue Hydraulic Testers PPC-04/06/08-plus



Complete Systems PPC-06/08-plus

Product Description

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

Components

Standard Options for Complete Systems PPC-04-plus Ix Case

- 1x Hydraulic Tester PPC-04-plus
- 1x Power supply incl. country-specific adaptor
- Up to 3 Pressure Sensor-PPC-04/12-P with installed adaptors for STAUFF Test 20 (M16 x 2)
- Up to 2 Connection Cables (3 m / 9.84 ft)
- Ix Temperature Sensor-PPC-04/12-T-M02 with installed SGV-16S-G-W3 (optional)
- 3x Adaptors SAD for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1x Operating instructions (multilingual) on CD
- 1x PC software for PPC-04-plus
- Ix PC connection cable

Standard Options for Complete Systems PPC-06/08-plus Ix Case

- 1x Hydraulic Tester PPC-06-plus or PPC-08-plus
- 1x Power supply incl. country-specific adaptor
- . Up to 3 Pressure Sensors with installed adaptors STAUFF Test 20 (M16 x 2)
- Up to 3 Connection Cables (3 m / 9.84 ft)
- 1x Temperature Sensor-PPC-04/12-T-M02 with installed SGV-16S-G-W3 (optional)
- 3x Adaptors SAD for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1x Printed operating instructions (German and English)
- 1x Operating instructions (multilingual) on CD
- 1x PC software for PPC-06/08-plus
- Ix PC connection cable

Note: Please contact STAUFF for calibrated version.



Complete Systems PPC-04-plus

Order Codes



Pressure Range and Pressure Sensor

Pressure Range Pressure Sensor						
000	When ordering a complete system with one or two pressure sensors, specify "000" for the pressure range of the 2. and / or 3. pressure sensors.					
015						
060		Pressure Range 2. Pressure Sensor				
150	Pressure Range		Pressure Range 3. Pressure Sensor			
400	1. Pressure Sensor					
600						
601						
e.g.	015 (15 bar)	060 (60 bar)	000 (0 bar)			
Please keep in mind that two pressure sensors with identical measuring ranges are necessary for differential pressure measurements.						



Complete Systems Type PPC-04-CAN-SET



Complete Systems PPC-04-CAN-SET

Product Description

Complete Systems for Hydraulic Testers PPC-04-plus-CAN are assembled in different versions according to customer wishes. The complete systems are supplied in a handy case with individually designed pockets/sections and have space for the components listed below.

Components

Standard Options for Complete Systems PPC-04-plus-CAN

1x Case

- 1x Hydraulic Tester PPC-04-plus-CAN
- 1x Power Supply incl. country-specific Adaptor
- Up to 3 CAN Pressure Sensor-PPC-CAN-P with installed Adaptors for STAUFF Test 20 (M16 x 2)
- 1x CAN Temperature Sensor-PPC-CAN-T-M02 with installed SGV-16S-G-W3 (optional)
- 3x Adaptors SAD for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- Up to 3 CAN Connecting Cables
- Up to 2 CAN Y-Splitter Cables
- 1x CAN Terminating Resistor
- 1x Operating instructions (multilingual) on CD
- 1x PC software
- 1x PC connection cable

Note: Please contact STAUFF for calibrated version.

Order Codes

PPC - 04-CAN-SET -	2 -	T - 016 /	/ 060 /	/ 000	- CAL
$(1) \qquad (2)$	3 (4 5	6	$\overline{\mathcal{O}}$	8
(1) Series and Type		(5) Pressure F	Range and P	ressure S	ensors
Hydraulic Tester	PPC	1. CAN Press	ure Sensor		see table
(2) Version		6 Pressure F	Range and P	ressure S	ensors
CAN version with CAN interface 04-	CAN-SET	2. CAN Press	ure Sensor		see table
		7 Pressure F	Range and P	ressure S	ensors
③ Number of CAN Pressure Sensors		3. CAN Press	ure Sensor		see table
With one CAN Pressure Sensor	1				
With two CAN Pressure Sensors	2	8 Calibration	ו		
With three CAN Pressure Sensors	3	Without calib	ration certificat	te	(none)
(A) CAN-Temperature Sensor		With calibrati	on certificate		CAL
Without CAN Temperature Sensor T and SCV	(nono)				
Without GAN-Temperature Sensor Land SGV	(none)				
with GAN-remperature Sensor I and SGV	1				

Pressure Range and CAN Pressure Sensor

Pressure Range	ge CAN Pressure Sensor					
000	When ordering a complete system with one or two CAN pressure sensors, specify "000" for the pressure range of the 2. and / or 3. CAN pressure sensors.					
016						
060]					
160	Pressure Range	Pressure Range	Pressure Range			
400	1. CAN Pressure Sensor	2. CAN Pressure Sensor	3. CAN Pressure Sensor			
600						
601						
e.g.	016 (16 bar)	060 (60 bar)	000 (0 bar)			
Please keep in mind that two CAN pressure sensors with identical measuring ranges are necessary for differential pressure measurements.						

PPC Starter System • Type PPC-PAD-plus



Content of the case may vary

Product Description

An initial starter kit with hydraulic tester, different input modules, cables and accessories is also available in a case. This contains everything required for the preferred sensor connection variant. This means that cables for connecting 4 CAN bus sensors or 3/6 analogue sensors as well as the required input modules are included. Sensors and test couplings are not included and have to be ordered separately.

The case is robust, lightweight and contains two special foam inserts that protect the device and any accessories in a well structured storage solution.

The sets are available with a device with or without WIFI capability and can also be purchased as a calibrated version with certificate.

Individual Components

Delivery standard for complete system SET-PPC-PAD-plus PPC-PAD-plus

- 24 V DC/2.5 A power supply unit incl. country-specific adaptor
- USB 2.0 cable (2 m/6.56 ft)
- Instructions for use
- PC Software
- Case

And the following equipment, depending on the set:

SET-PPC-PAD-plus-ANALOG-3

- 1 analogue input module
- 3 analogue cables, 3 m

SET-PPC-PAD-plus-ANALOG-6

- 2 analogue input modules
- 6 analogue cables, 3 m

SET-PPC-PAD-plus-CAN-4

- 2 CAN cables, 0.5 m
- 2 CAN cables, 2 m
- 2 Y-splitters
- 2 terminating resistors



Trolley is optionally available (Trolley-Frame-Koffer-PPC-06/08/Pad)

Order Codes



1	Series and Type	
	Hydraulic Tester	SET-PPC-PAD-plus
2	WIFI	
	Without WIFI	(none)
	With WIFI	W
3	Version	
	for 3 analogue sensors	ANALOG-3
	for 6 analogue sensors	ANALOG-6
	for 4 CAN sensors	CAN-4

(4) Calibration

Without calibration certificate	(none)
With calibration certificate	CAL



Ordering table for measuring and test instruments

This list shows the individual components for the PPC-04-plus, PPC-06-plus, PPC-08-plus and PPC-PAD-plus Hydraulic Testers with their exact Order Codess.

* Pressure spikes up to 1000 bar/14500 psi

Description	Order Codes			
1. Hydraulic Tester PPC-04-plus				
Hydraulic Tester PPC-04-plus with 2 sensor inputs, including accessories	PPC-04-plus			
Hydraulic Tester PPC-04-plus with 2 sensor inputs, including accessories, calibrated	PPC-04-plus-CAL			
CAN Hydraulic Tester PPC-04-plus-CAN with one CAN bus interface, including accessories	PPC-04-plus-CAN			
Power Supply Unit (110/230 V AC) for PPC-04-plus with USB connection, including country-specific adaptor	Power-supply-PPC-04-plus-110/230V-USB			
Case PPC-04-plus (with foam insert)	Case-PPC-04-plus			
PC Connection Cable and PC Software for PPC-04-plus	PC-SET-PPC-04-plus-SW-CAB			
2. Hydraulic Testers PPC-06/08-plus				
Hydraulic Tester PPC-06-plus with 3 sensor inputs, including accessories	PPC-06-plus			
Hydraulic Tester PPC-06-plus with 3 sensor inputs, including accessories, calibrated	PPC-06-plus-CAL			
Hydraulic Tester PPC-08-plus with 4 sensor inputs, including accessories	PPC-08-plus			
Hydraulic Tester PPC-08-plus with 4 sensor inputs, including accessories, calibrated	PPC-08-plus-CAL			
Power Supply Unit (110/230 V AC) for PPC-06/08-plus, including country-specific adaptor	Power-supply-PPC-04/12-110/230V			
Case PPC-06/08/Pad (with foam insert)	Case-PPC-06/08/Pad			
PC Connection Cable and PC Software for PPC-06/08-plus	PC-SET-PPC-06/08-plus-SW-CAB			
Trolley	Trolley-Frame-Koffer-PPC-06/08/Pad			
3. Hydraulic Testers PPC-PAD-plus				
Hydraulic Tester PPC-PAD-plus with 2 CAN interfaces including accessories	PPC-PAD-plus			
Hydraulic Tester PPC-PAD-plus with 2 CAN interfaces, including accessories, calibrated	PPC-PAD-nlus-CAI			
Hydraulic Tester PPC-PAD-plus with 2 CAN interfaces, including accessories, WEI canability	PPC-PAD-plus-W			
Hydraulic Tester PPC-PAD-Plus with 2 CAN interfaces, including accessories, WIFI capability, calibrated	PPC-PAD-plus-W-CAL			
Analoque Input Module	INPUT-MODUL-ANALOG-PPC-PAD-plus			
Analogue Input Module, calibrated	INPUT-MODUL-ANALOG-PPC-PAD-plus-CAL			
Analogue Input Module, galvanically isolated sensor inputs	INPUT-MODUL-ANALOG-PPC-PAD-plus-GALV			
Analogue Input Module, galvanically isolated sensor inputs, calibrated	INPUT-MODUL-ANALOG-PPC-PAD-plus-GALV-CAL			
CAN Input Module	INPUT-MODUL-CAN-PPC-PAD-plus			
Connector for third-party sensor inputs M12 5-pin	PLUG-PPC-PAD-plus-AUX-M12A/5			
Carrying Strap	Carry-strap-PPC-PAD-plus			
Power Supply Unit (110/230 V AC) for PPC-PAD-plus, including country-specific adaptor	Power-Supply-PPC-PAD-plus-MULTI			
Case PPC-06/08/Pad (with foam insert)	Case-PPC-06/08/Pad			
Trolley	Trolley-Frame-Koffer-PPC-06/08/Pad			
4. Current/Voltage/Frequency Converter/Third-Party Sensors				
Current/Voltage/Frequency Converter/Third-Party Sensors (up to 4 A DC/48 V DC)	Sensorconverter-PPC			
5. Cables				
Analogue				
Connection Cable 3 m/9.84 ft (5-pin connection on both ends)	Cable-PPC-04/12-3			
Extension Cable 5 m/16.40 ft (5-pin connection on both ends)	Cable-PPC-04/12-5-EXT			
CAN				
CAN Connection Cable 0.5 m/1.64 ft	Cable-PPC-CAN0.5			
CAN Connection Cable 2 m/6.65 ft	Cable-PPC-CAN2			
CAN Connection Cable 5 m/16.40 ft	Cable-PPC-CAN5			
CAN Connection Cable 10 m/32.81 ft	Cable-PPC-CAN10			
CAN Connection Cable 20 m/65.62 ft	Cable-PPC-CAN20			
CAN Y-Splitter Cable 0.3 m/0.98 ft	Cable-PPC-CAN-Y			
CAN Terminating Resistor	Resistor-PPC-CAN			



Ordering Table for Sensor System

All available individual components for the PPC Hydraulic Testers are listed here with their exact Order Codess.

* Pressure spikes up to 1000 bar/14500 psi

All pressure, temperature and flow rate sensors are available as calibrated versions. Please add "-CAL" to the Order Codes.

Description	Order Codes
1. Pressure Sensors G1/4 (without adaptor)	
Analogue	
Pressure range from -1 15 bar/-14.5 217 psi relative pressure	Sensor-PPC-04/12-P-015
Pressure range from 0 60 bar/0 870 psi absolute pressure	Sensor-PPC-04/12-P-060
Pressure range from 0 150 bar/0 2175 psi absolute pressure	Sensor-PPC-04/12-P-150
Pressure range from 0 400 bar/0 5801 psi absolute pressure	Sensor-PPC-04/12-P-400
Pressure range from 0 600 bar/0 8702 psi absolute pressure	Sensor-PPC-04/12-P-600
Pressure range from 0 600 bar/0 8702 psi absolute pressure* CAN	Sensor-PPC-04/12-P-601
Pressure range from -1 16 bar/-14.5 232 psi relative pressure	Sensor-PPC-CAN-P-016
Pressure range from 0 60 bar/0 870 psi absolute pressure	Sensor-PPC-CAN-P-060
Pressure range from 0 160 bar/0 2321 psi absolute pressure	Sensor-PPC-CAN-P-160
Pressure range from 0 400 bar/0 5801 psi absolute pressure	Sensor-PPC-CAN-P-400
Pressure range from 0 600 bar/0 8702 psi absolute pressure	Sensor-PPC-CAN-P-600
Pressure range from 0 600 bar/0 8702 psi absolute pressure*	Sensor-PPC-CAN-P-601
2. Pressure/Temperature Sensors G1/2 (without adaptor)	
Analogue	
Pressure range from -1 15 bar/-14.5 217 psi relative pressure	Sensor-PPC-04/12-PT-015
Pressure range from 0 60 bar/0 870 psi absolute pressure	Sensor-PPC-04/12-PT-060
Pressure range from 0 150 bar/0 2175 psi absolute pressure	Sensor-PPC-04/12-PT-150
Pressure range from 0 400 bar/0 5801 psi absolute pressure	Sensor-PPC-04/12-PT-400
Pressure range from 0 600 bar/0 8702 psi absolute pressure	Sensor-PPC-04/12-PT-600
Pressure range from 0 600 bar/0 8702 psi absolute pressure*	Sensor-PPC-04/12-PT-601
CAN	
Pressure range from -1 16 bar/-14.5 232 psi relative pressure	Sensor-PPC-CAN-PT-016
Pressure range from 0 60 bar/0 870 psi absolute pressure	Sensor-PPC-CAN-PT-060
Pressure range from 0 160 bar/0 2321 psi absolute pressure	Sensor-PPC-CAN-PT-160
Pressure range from 0 400 bar/0 5801 psi absolute pressure	Sensor-PPC-CAN-PT-400
Pressure range from 0 600 bar/0 8702 psi absolute pressure	Sensor-PPC-CAN-PT-600
Pressure range from 0 600 bar/0 8702 psi absolute pressure*	Sensor-PPC-CAN-PT-601
3. Process Connection Adaptors for PPC Pressure Sensors	
Adaptor G1/4 to M16 x 2 (STALIEE Test 20)	SDA-20-G1/4-W3
Adaptor G1/2 to M16 x 2 (STALLEE Test 20)	SDA-20-G1/2-W3
Adaptor M16 X 2 to M16 x 1 5 (STALIEE Test 20 to STALIEE Test 15)	SAD-20/15-R-W3
Adaptor M16 X 2 to S12 65 x 1 5 (STALLEE Test 20 STALLEE Test 12)	SAD-20/12-B-W3
Adaptor M16 X 2 to plug-in system (STALIFE Test 20 to STALIFE Test 10)	SAD-20/10-B-W3
4. Temperature measurement (temperature sensors -40°C +150 °C/-40 °F +302 °F)	
Aralagua	
Analogue	Sanaar DDC 04/12 T M02
Sciew-III Temperature Sensor for line installation (C1 (A)	Selisui-FFG-04/12-1-M02
Ded two Tomperature Sensor for tank/reconvoir measurements	Selisui-FFG-04/12-TCH
Straight Fitting with M10 x 1 connection (for PPC_04/12_T_M02)	Sch301-FF-0-04/12-1311
	30V-103-0-W3
Screw-In Temperature Sensor for line installation (M10 v 1)	Sensor-DDC-CAN-T-M02
Screw-In Temperature Sensor for line installation (G1/4)	Sensor-PPC-CAN-T-BO2
Straight Fitting with M10 x 1 connection (for PPC_CAN_T_M02)	SCN.16S_G_W3
5. Flow Rate Measurement (Turbine Flow Meter SFM with integrated signal converter)	500-105-0-W5
Analogua	
Analogue	Flow motor DDC 04/10 CEM 015
Measuring range from 4 = 60 l/min / 1. 15 0 LIC CDM	Flow-meter DDC 04/12-SFM-060
Measuring range from 6 150 l/min / 1 15.9 US GPM	Flow-meter DDC 04/12-SFM-000
Measuring range from 10	Flow-meter DDC 04/12-SFM-130
Measuring range from 20 _ 600 l/min / 5.2 _ 159 US CDM	Flow meter DDC 04/12 SEM 600
Measuring range from 20 600 i/min / 5.3 156 05 GPW	FIUW-IIIELEI-PPG-04/12-SFM-000
Van	Flow motor DDC CAN SEM 015
Modeling range from 6 150 l/min / 1 6 20 6 US CPM	Flow-motor-DDC-CAN-SEM-150
Modeuring range from 10 200 //min/ / 1.0 39.0 US GMM	
Measuring range from 20 = 600 l/min / 5.2 = 150 UC CDM	Flow motor DDC CAN SEM 600
INTERSUTING FAILURE TOTAL TOTAL AND A THE TABLE TO A THE TABLE TABLE TABLE TABLE TABLE TABLE TABLE TABLE TABLE	FIUW-III881-440-9411-9411-900
6. Rotational speed measurement	
Analogue	
Speed Sensor With Integrated Connection Cable 2 m/b.56 T	Selisur-PPC-04/12-SUS-CAB
Contract Audptor	Audptor-DDC-04/12-SEA-focus
I UCUBILITY AUDITUD	Auaptor FF 0-04/12-31 A-10603

Pressure Transmitter



The PT-RF series of pressure transmitters are an alternative solution for universal pressure measurements for fluid technology applications, which will provide benefits for system operators, maintenance personnel and repair technicians as well as for original equipment manufacturers.

The advantages resulting from the use of the new technology for system operators, maintenance personnel and repair technicians are clear: Measurements can be carried very easily, without extensive training and within a few seconds at the press of a button and then documented in a reliable process.

Unscrewing and re-installing pressure gauges or other measuring and display devices – practically a temporary opening of the system – is not required. Potential hazards for people, machines and the environment, for example from emitted residual oil in the test hose or leaks at the measuring point, as well as ingress of dirt into the system (e.g. in dusty environments) can be effectively excluded. Original equipment manufacturers will also benefit from this new technology: If the pressure transmitters are installed at their factory already, the innovative technology can provide a competitive edge over alternative suppliers and open up specific advantages for the users, increasing the value retention of their own devices in the long term.

If the pressure transmitters are installed directly in the system or pipeline for permanent use, they protrude only slightly more than conventional hydraulic test couplings and meet the highest demands with regard to space requirements and weight. **Product Description**

maintenance-free.

Technical Data

Wetted Parts

Sealing (B04):

Dimensions:Weight:

Dimensions / Weight

Temperature Range

 Media temp. (N04): Media temp. (B04):

Ambient temp.:

Storage temp.:
 Electrical Data

Sampling rate:Long-term stability:

Load cycles (10⁶):

Vibration loading:Shock loading:

Protection Rating

Materials • Housing:

• Cap:

Pressure Transmitter = Type PT-RF



The pressure transmitters from the PT-RF series are

is transferred to the pressure transmitter via the antenna of the reading device using wireless RFID technology. This means that the pressure transmitters require neither

Stainless Steel 1.4305

Polyamide (glass fibre-reinforced)

-40°C ... +135°C / -40°F ... +275°F

-30°C ... +135°C / -22°F ... +275°F -40 °C ... +85 °C / -40 °F ... +185 °F

-55 °C ...+125 °C / -67 °F ... +257 °F

typ. 250 ms / max. 400 ms

according to IEC EN 60770-1 max. \pm 0,25 % FS* /a

acc. to IEC 60068-2-6 (20 g)

acc. to IEC 60068-2-27 (30 g) 11ms

high-pressure and steam cleaning

59 x 26 mm / 2.32 x 1.02 in

FKM (Viton®)

80 g / .18 lbs

10

IP69 protection rating: Dust tight and protected against

internal nor external power supply and are completely

- Suitable for liquid and gaseous media

integrated into fluid technology plants and systems permanently or temporarily using the appropriate process connection adapters. The energy required for a measurement

(1.94) (.94) (.94) (.74) (.74) (.74)(.74)

Process connection G1/4 (B04)





R

Process connection 1/4NPT (N04)

Order Codes



Pressure Range and Accuracies

Version	Pressure Range and Accuracies					
Pressure Trans- mitter PT-RF	Pressure Range (^{bar} / _{PSI})	Type of Measurement	Maximum Pressure (^{bar} / _{PSI})	Burst Pressure (^{bar} / _{PSI})	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.
P00016	0 16	Relative pressure	32	48	0.25	0,5
B00010	0 232		464	696	0,20	
POOCEO	0 60	Relative pressure	120	180	0,25	0,5
D00000	0 870		1740	2610		
B00160	0 160	Relative pressure	320	480	0.25	0.5
B00100	0 2320		4641	6961	0,25	0,5
B00400	0 400	Relative pressure	800	1200	0.05	0.5
D00400	0 5801		11603	17405	0,25	0,5
DOOCOO	0 600	Relative pressure	1200	1800	0.05	0.5
DUUUUU	0 8702		17404	26107	0,25	0,5

Temperature behaviour: max. \pm 0,2 % FS* /10K (test condition 25 °C; 45 % r. H.)

* FS = Full Scale

Process Connection Adaptors for Pressure Transmitter PT-RF

Various adaptors are available in addition to the pressure transmitters from the PT-RF series, allowing connection to the known STAUFF Test 20 system as well as installation in pipes.



SDA-20-G1/4-W3 Adaptor for process connection G1/4 (B04) on test coupling STAUFF Test 20 (connection thread M16 x 2)



SRS-G1/4-***-V-G-W3 Straight fitting with adaptor Note: Please replace *** with tube-Ø and series (L or S).



SMD-20-1/4NPT-W3 Adaptor for process connection 1/4NPT (N04) on test coupling STAUFF Test 20 (connection thread M16 x 2)

Dimensional drawing: All dimensions in mm (in).

STAUFF

Reader = Type Reader-PT-RF



B

Order Code

(1) Series and Type

Standard option:

Reader-PT-RF

Quick guide

adaptors

Manual and software on CD

USB 2.0 cable (1 m / 3.28 ft)

Reader

Set Up



Power Supply

- Battery: Lithium Ion (3,7 V DC / 900 mAh)
 Operating time approx. 6h (approx. 1800 individual
- measurement)

Temperature Range

- Ambient temp.: -20 °C ... +70 °C / -4 °F ... +158 °F
- Storage temp.: -25 °C ... +60 °C / -13 °F ... +140 °F
 CE certified

Product Description

The hand-held readers transfer the energy required for a measurement to the pressure transmitter using RFID technology. All that is required is a maximum distance of 1.5 cm / 0.6 in from the antenna to the tip of the pressure transmitter for the duration of the measurement.

When the pressure transmitter is activated by the press of a button, a current measured value is determined within only 0.5 seconds and then immediately transmitted back to the reading device together with other relevant information and then output on the illuminated display and stored. Over 15,000 of these measurement sets can be stored in the internal memory of the device.

PC Software

The software included with the delivery allows transmission of the stored measured values from the reading device to the PC, subsequent evaluation and export, e.g. to Microsoft Excel®.

Electrical Data / Interface

- Sampling rate: typ. 250 ms / max. 400 ms
- Interface: Micro USB
 EMV: EN 61326-
 - EN 61326-1:2013
 - EN 300330

Protection Rating

 IP65 protection rating: Dust tight and protected against water jets

Type of Measurement

Start Measurement

1. Switch on the reader using the 0 function button.

During the brief start process, the charge state of the lithium ion battery (Battery) is shown on the display and the share of the currently occupied data memory (MemUsed) in percent as well as the current date and time.

2. Position the tip of the antenna of the reader inside the measurement range of the pressure transmitter and hold this position as long as possible during the entire measurement process.

Individual Measurement (Single Value)

3. Start the individual measurement by tapping the (a) function button once.

Permanent Measurement (Multiple Values)

3. Start the permanent measurement by holding down the $(\widehat{\mbox{s}})$ function button.

The simplest way of recognising the successful start of a permanent measurement is the change in the corresponding symbol in the upper right-hand corner of the display. The absolute number of the values determined as part of the measurement process is shown below the current pressure.

4. End a continuous measurement by releasing the
rightarrow function key.



Display after successful individual measurement





Reader-PT-RF

Material

Housing made of ABS

Technical Data

Dimensions / Weight

Dimensions: 76 x 35 x 240 mm / 3.0 x 1.38 x 9.45 in

5 V DC / 1 A power supply incl. country-specific

Reader-PT-RF

• Weight: 220 g / .49 lbs

Measurements / Display

- Pressure: in bar and PSI
- Temperature: in °C and °F
 Display: graphic, LED
- Display: graphic, LED backlit
 Visible area: 55 x 46 mm / 2.17 x 1.81 in
- Resolution: 128 x 64 Pixel

Complete system • Type PT-RF-SET



Complete system in case PT-RF-SET

Product Description

The PT-RF-SET complete system is compiled in different versions according to customer requirements. All complete systems are supplied in a handy carrying case containing individually shaped foam inserts for a maximum of 10 pressure transmitters and 10 process connection adaptors and offering space for the following components:

Standard Option

- 1x Reader-PT-RF
- up to 3 Pressure Transmitters PT-RF
- up to 3 Process Connection Adaptors SDA or SMD
- 1x Manual and Software on CD
- 1x Quick Guide
- 1x USB 2.0 cable(1 m / 3.28 ft)
- 1x Power Supply incl. country-specific adaptors



Order Codes



Pressure Transmitter: Pressure Range and Version

Pressure Range	Version of Pressure Transmitter		
000	When ordering a complete system with one or two pressure transmitters, the pressure range for the		he pressure range for the
000	2 nd and 3 rd pressure transmitter is given	ven as " 000 ".	
016	Version pressure transmitter: B00016 (pressure range: 0 16 bar / 0 232 PSI)		
060	Version pressure transmitter: B00060 (pressure range: 0 60 bar / 0 870 PSI)		
160	Version pressure transmitter: B00160 (pressure range: 0 160 bar / 0 2320 PSI)		
400	Version pressure transmitter: B00400 (pressure range: 0 400 bar / 0 5801 PSI)		
600	Version pressure transmitter: B00600 (pressure range: 0 600 bar / 0 8702 PSI)		
e.g.	400 (400 bar)	600 (600 bar)	000 (0 bar)

Spare Parts / Accessories



Case-Reader-PT-RF

Product Description

In addition to the Charger-Set-Reader-PT-RF which is available as a spare part, the Case-PT-RF-Set is also available as an individual item for assembling a complete system later on.

The Case-Reader-PT-RF is available if only a storage case for the reading device is required. It only provides space for the reading device and the associated accessories (without pressure transmitters and process connection adaptors).

Order Codes



5 V DC / 1 A power supply	y
incl. country-specific	Charger-Set-Reader-PT-RF
adaptors and USB 2.0 cal	ble
Adaptor for pressure transi	mitter (B04) SDA-20-G1/4-W3
Adaptor for pressure transi	mitter (N04)SMD-20-1/4NPT-W3
Straight fitting	CDC C1/4 *** V C W2
with adaptor	ənə-u1/4-****-V-u-W3







Bladder accumulator adaptor SBAA-CV

Bladder accumulator adaptor SBAA-FV

SW 27 (1.06)

Order Codes



Product Description

64 (2.51)

30 (1.18)

Membrane and bladder accumulators are important components of modern hydraulic systems. Monitoring the nitrogen pressure level is becoming ever more important for ensuring correct operation.

The STAUFF Accumulator Adaptor together with the PT-RF pressure sensors allow maintenance personal to quickly and easily check the accumulator pressure without pressure loss. Pressure values, serial numbers, date and time will automatically be stored in the memory of the reader and then easily and conveniently read out on the PC later on.

For this, the Accumulator Adaptor is screwed onto the nitrogene connection of the accumulator and a PT-RF pressure sensor is attached at the side.

Technical Data

max. Pressure:

- Burst Pressure:
- Sealing Material:
- 400 bar / 5801 PSI 1600 bar / 23206 PSI NBR (Buna-N®)

For more information please see our Brochure Accumulator Adaptors Art.No. 9910000503

Application



Bladder accumulator in use with Reader-PT-RF

55

Flow Indicator - Types SDM / SDMKR





016

(4)

See table on page 57

(4) Flow Ranges

(5) Thermometer

Т

Α

3

Α

В

B

Product Description

Analogue flow indicators for measuring the flow rate of fluids in mobile and industrial hydraulics.

The SDMKR is designed with a loading valve for the strain test of the hydraulic system to facilitate precise control of the operating pressure. In addition, this product can also be subjected to a reverse flow direction (without flow rate determination).

Features

- Suitable for Mineral Oil (Aluminium), HFC Fluids and Water (Brass)
- Designed for in-line installation
- Mechanical flow measurement
- Controlling working pressure with a pressure control valve (only SDMKR)
- Flow indication in I/min and GPM for Aluminium units, Brass units have flow indication for Water and Oil both in I/min
- Aluminium unit: Dual scale
- Brass unit: Single scale
- Thread to connect with pressure gauge (only SDM)

Technical Data

Accuracy

(at a kinematic viscosity of 28cSt):

■ Flow: ±4 % FSD

- Temperature: ±2,5 °C / ±5 °F
- Pressure (only SDMKR): ±1.6 % FS*
- Temp. measuring range: +20 °C ... +110 °C /
- +55 °F ... +245 °F • Media temperature permanent: +80 °C / +176 °F
 - temporary (<10 min.): +110 °C / +245 °F

Note: Other thread versions available on request.

Order Codes



③ Housing Material Aluminium Brass (only SDM)

Functional Principal Flow Measuring



The flow indicators SDM and SDMKR have a sharp-edged orifice and a tapered metering piston, which moves in proportion to changes of flow against a spring. In no flow condition the piston closes the opening and the pointer indicates zero.

With increasing flow and differential pressure the piston moves against the calibrated spring. The piston movement is directly proportional to the flow rate and is magnetically coupled to the rotary pointer. During this function the sharp-edged orifice minimises the effects of viscosity. The flow is shown on a calibrated scale in I/min and gal/min.

Controlling Working Pressure with SDMKR

With integrated thermometer (standard option)

Τ.

The pressure control valve of the SDMKR is directly connected to a flow-block and together with the integrated pressure gauge it allows an exact control of the working pressure in the maximum range.

For protection the SDMKR has two rupture disks. At a pressure >420 bar the disks burst and the fluid is by-passed around the valve. The rupture disks (other pressure ranges on request) can be replaced easily.

The SDMKR also permits flow in the reverse direction (without flow rate determination).

Dimensional drawings: All dimensions in mm (in). *FS = Full Scale



Flow Indicators - Types SDM / SDMKR

ਸ਼

С



Dimensions SDM-1500

Technical Data

Max. Working Pressure (^{bar} / _{PSI})	Flow Range (^{Vmin} / _{US GPM}) Aluminum Units	Flow Range Brass Units (only SDM) *	Weight (^{kg} / _{lbs})	Connection T	Order Codes	
420	2 - 16	-	1,36	G3/4	SDM-750-A-016-T	
6091	0.5 - 4	-	3.0	03/4	3DIM-730-A-010-1	
420	2 - 30	-	1,36	63/4	SDM-750-A-030-T	
6091	0.5 - 8	-	3.0	03/4	3DIM-730-A-030-1	
420	2 - 60	-	1,36	63/4	SDM-250-V-060-T	
6091	0.5 - 16	-	3.0	03/4	3DIW-730-A-000-1	
420	4 - 120	-	1,36	63/4	SDM-250-4-120-T	
6091	1 - 32	-	3.0	03/4	3DIW-730-A-120-1	
420	10 - 180	-	1,36	02/4	CDM 750 A 190 T	
6091	4 - 48	-	3.0	03/4	3DIVI-730-A-100-1	
420	-	2 - 30 l/min in oil	3,80	02/4	CDM 750 P 020 T	
6091	-	2- 30 I/min in water	8.40	03/4	3DIW-730-D-030-1	
420	-	3 - 60 l/min in oil	3,80	00/4	CDM 750 D 000 T	
6091	-	3 - 70 l/min in water	8.40	63/4	2DIM-120-D-000-1	
420	-	4 - 120 I/min in oil	3,80	00/4	CDM 750 D 100 T	
6091	-	4 - 140 l/min in water	8.40	63/4	SDIM-130-D-120-1	
350	10 - 200	-	3,0	01 1/0	CDM 1500 A 200 T	
5075	5 - 50	-	6.61	61-1/2	5DIM-1000-A-200-1	
350	20 - 300	-	3,0	01 1/0	CDM 1500 A 200 T	
5075	4 - 80	-	6.61	61-1/2	5DIM-1000-A-300-1	
350	20 - 400	-	3,0	01 1/0	CDM 1500 A 400 T	
5075	5 - 100	-	6.61	61-1/2	5DIVI-1500-A-400-1	
350	-	10 - 200 l/min in oil	8,0	01 1/0	CDM 1500 P 200 T	
5075	-	10 - 200 l/min in water	17.64	01-1/2	3DIW-1300-D-200-1	
350	-	20 - 400 l/min in oil	8,0	01 1/0	CDM 1500 P 400 T	
5075	-	20 - 400 l/min in water	17.64	01-1/2	3DIW-1300-D-400-1	
420	2 - 30	-	6,6	00/4		
6091	0.5 - 8	-	14.55	03/4	3DIVINT-730-A-030-1	
420	5 - 60	-	6,6	00/4		
6091	1.3 - 16	-	14.55	63/4	SDIVIKK-750-A-060-1	
420	5 - 120	-	6,6	01	CDMI/D 750 A 100 T	
6091	1.3 - 32	-	14.55	GI	SDIVIKK-/50-A-120-1	
420	10 - 200	-	6,6	01		
6091	4 - 53	-	14.55	ul	3DIWINK-/30-A-200-I	

Flow Curves - Aluminium Version (Oil)

(Curves reffer to kinematic viscosity of 25cSt):









Flow Curves - Brass Version (Water)



Apin PSI Dar 43.5 SDM-1500-400 36.3 2.5 29 2 21.8 1.5 14.5 SDM-1500-200 7.250.5 0.0 0.0 400 Q in I/min 104 Q in US GPM 50 13 100 26 150 39 200 52 250 66 350 92.5 0 0 300 78

 * The Brass units have a scale for water and oil - in l/min. Dimensional drawings: All dimensions in mm (in).





E

STAUFF

124,5

(1.87) (1.87)

П

Dimensions SDMKR-750





61

62 - 68

62 - 63

64 - 65

66

67

70 - 74

0
U
_







Particle Monitor

Portable

LasPaC-II-P

Overview

Features & Options

Laser Particle Counter

Bottle Sampler Onit
Bottle-Sampler-LasPaC-II
Accessories

Technical Data (Overview) 68

<u>2.0</u>	

LPM-II-plus	70
Interface-LPM-II-USB/ETH	71



AL FOR L

DISPLAY-LPM-II-plus-REMOTE	71
Flow Control Valve	72
LPM-II-DAV	
ATEX Device	73
LPM-IICX	
Oil Sampling Kit	74



Oil Sampling Kit SFSK-1/-2

R STALIFF

Laser Particle Counter - Type LasPaC-II



Fluid analysis is a crucial component of any oil management program. Early detection of potential problems can prevent costly repairs and downtime. The LasPaC-II makes it possible to detect the ISO Cleanness levels of the hydraulic media.

Characteristics

The LasPaC-II devices feature a twin laser system and eight channels for different particle sizes in order to gurantee high accuracy and repeatability. These compact unit are easy to handle for mobile and inline applications for systems with pressures up to 400 bar / 5801 PSI. The LasPaC-II is available in three different versions:

LasPaC-II-P: Portable Laser Particle Counter

The LasPaC-II-P is a fully equipped portable laser particle counter.

The LasPaC-II-P features a complete QWERTY keyboard, an integrated thermal printer, an internal rechargeable battery and a large LCD display.

LasPaC-II-M: Mobile Laser Particle Counter

The LasPaC-II-M is a highly accurate laser particle counter. With a competitive price, the LasPaC-II-M is the best compromise between lower cost and briliant accuracy/reliability.

All LasPaC-II devices have an internal data memory and are available within the accompanying $\mathsf{Windows} \ensuremath{\mathbb{R}}$ based software package for reports and data downloads.

C

-					
	VC	r	110		
9				WV.	

Options	LasPaC-II-P (Portable)	LasPaC-II-M (Mobile)	Bottle Sampler 110	Bottle Sampler 500	LPM-II-plus
Laser Type	Twin-Laser	Twin-Laser	-	-	LED Laser
Analysis Range	8 channels (4,6,14,21,25,38,50,68 μm _{ic})	8 channels (4,6,14,21,25,38,50,68 µm _(c))	-	-	8 channels (4,6,14,21,25,38,50,68 μm _{ic})
Power Supply	External	External	-	-	External
Battery Option	Internal	Internal (optional)	-	-	-
Display	Integrated (large)	Integrated (small)	-	-	Internal / External
Keyboard	Integrated	-	-	-	-
Printer	Integrated	-	-	-	-
Data Storage	Internal (for approximately 600 tests)	Internal (for approximately 600 tests)	-	-	Internal (for approximately 4000 tests)
PC Interface	RS-232	RS-232	-	-	RS485, RS232, Modbus, CAN Bus, 4-20 mA Time-Multiplex
Fluid Preparation	-	-	Integrated vacuum/pressure pump	Integrated vacuum/pressure pump	-
Maximal Bottle Size	-	-	110 ml	500 ml	-
Compatible with	Mineral oil and petroleum based fluids, Specific Water Glycol fluids or phosphate ester	Mineral oil and petroleum based fluids, Specific Water Glycol fluids or phosphate ester	Mineral oil and petroleum based fluids	Mineral oil, petroleum based fluids and Specific Water Glycol fluids or phosphate ester	Mineral oil and Specific Water Glycol fluids or phosphate ester





Features & Options: LasPaC-II (General)

Mobile - Compact and Convenient

The LasPaC-II-P (Portable), the LasPaC-II-M (Mobile) and all its accessories are supplied in a light-weight rugged industrial case.

This user-friendly portable case is waterproof and resistant against all common fluids.

Accuracy - Twin-laser, 100% Coverage

In all STAUFF laser particle counting devices, the fluid passes through the measuring cell and through a laser beam. The light from the laser is evaluated by a photo diode.

As the fluid passes through the laser beam the amount of light changes. These changes are directly proportional to size of the particles, and the total volume of particles. In many other particle counters only part of the measuring cell is lighted by the laser, thus only a part of the total amount of particles are registered, and the result is projected.

In contrast, the measuring cell of the LasPaC-II is completely examined, and all particles are registered. In addition to this, a second laser is used to analyze all particles sizes smaller than 6 $\mu m_{\rm ec}$.

Additionally, the integrated booster cylinder allows very precisely dosage of the test fluids. This ensures a very high accuracy with excellent repeatability.

Functional - Calibration to ISO 11 171

The LasPaC-II devices are calibrated with ISO Medium Test Dust (MTD) based on the ISO 11 171:1999 calibration standard.

STAUFF particle counters meet the new ISO 4406 cleanliness classification codes and provide results in the NAS 1638 and the SAE 4059 codes.



For any Type of Application - Large Pressure Range

A big advantage of the LasPaC-II devices is the wide pressure range: Low pressure measurements starting with 2 bar / 29 PSI and high pressure tests up to 400 bar / 5801 PSI result in reliable readings. Many other products available today require special add-on devices or pressure cartridges which need to be recharged for this.

The test hoses, which are provided with the device, allow an easy connection to common test couplings M16 x 2 (STAUFF TEST 20 or comparable).



Global Use - Variable Voltage Supply

The external power supply unit provides most variable voltage ranges of 110 ... 240 V AC. European, UK and US plug adaptors ensure a worldwide applicability of the LasPaC-II.

Always Secure - External Alarms

The LasPaC-II-P devices offer the opportunity to define different alarm levels.

It is possible to configure two separate contamination alarm levels (e.g. clean alarm level and dirt alarm level). When set, an alarm indicator is given to external devices (e.g. indicator light, offline-filter) if the alarm level is reached.

Making the Connection -

Downloading with RS-232 Interface and USB Adaptor The measured data can be downloaded onto any PC or laptop computer via the RS-232 interface or alternativley via a USB adaptor.

The LasPaC-II software supports an easy download for data processing of the recorded measurements.

Several diagrams are available and are automatically generated to offer a very clear arrangement of all data for analysis. Data can also be easily exported to Microsoft Excel®.

Always up-to-date - Integrated Clock

An integrated rechargeable battery-operated clock provides the exact date and time which are shown on every printout.

In addition, every download of measured data is marked with date and time as well. The precise time of measurement is documented on all printouts and for all data stored.

Adaptable - Software Updates

The RS-232 (or USB) interface ensures flexibility for future developments in terms of calibration, evaluation and output. Software updates can easily be installed onto the LasPaC-II devices.



Laser Particle Counter Type LasPaC-II

Cleanliness - High-Speed Flush Valve

To ensure an accurate measurement is taken, the sensor must be cleaned before each test.

The LasPaC-II achieves this by means of an electric operated flush valve. This valve can be opened on demand and between tests by simply depressing the flushing valve push button. The optimized design of the flush valve reduces the rinsing process to the minimum requirement, and ensures a quick restart of the next measurement.

For all Applications - High Compatibility

The LasPaC-II units are compatible with all Mineral Oil and Petroleum based fluids. Phosphate Ester (e.g. Skydrol®) and Water Glycol compatible devices are available upon request. Please contact STAUFF for details.

More Oil Information - The Moisture/ Temperature Sensor

The LasPaC-II also offers the option of adding an integral moisture / temperature sensor.

This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in $^{\circ}$ C).

Please note that the moisture/ temperature sensor is not compatible with Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.

For further information please see on page 67.

Optional - Bottle Sampling Unit

Highly aerated fluids may lead to inaccurate results.

Therefore a de-aeration facility has been incorporated into the optional bottle sampling units.

Both sizes (110 ml and 500 ml) of the bottle sampling unit are delivered with an external power supply, and allow the user to properly condition the sample fluid prior to any measurements taken. For further information please see on page 66.

Please note that the moisture/ temperature sensor as mentioned above does not work in conjunction with the bottle sampling unit.

Scope of Delivery

Each kit of a laser particle counter STAUFF LasPaC-II includes:

- 1x Laser particle counter STAUFF LasPaC-II
- 1x LasPaC-II-M / LasPaC-II-P: Waste hose 2 m / 3.65 ft
- 1x Pressure hose: 1,5 m / 2.67 ft
- Ix Waste bottle
- 1x External power supply including cable with European, UK and USA plug adaptors
- 1x RS-232 connecting cable, 1 m / 1.78 ft including RS-232 to USB converter
- 1x Software CD "LasPaC-II View"
- Ix User guide LasPaC-II
- 1x User guide LasPaC-II View
- 3x Thermal printer paper (only with LasPaC-II-P)



Laser Particle Counter - Type LasPaC-II-P (Portable)



Product Description

The LasPaC-II-P (Portable) is the most complete way to measure the contamination level of your system. With the LasPaC-II-P you have the ability to measure, analyze and document your results immediately without the need of any additional equipment.



Light-Weight Rugged Industrial Case

Features

Quick Results - Fast Results and Easy Operation

The integrated complete QWERTY keyboard, a large LCD display and intuitive handling all lead to the easy and quick operation of the LasPaC-II Portable. The optimized flushing process of the LasPaC-II-P is quick and effective, and allows for continuously accurate measurements.

Black and White - Integrated Printer

The integrated printer in the LasPaC-II-P supports print-outs in the field, thus providing immediate documentation. Every printout confirms date and time of your measurement.

Independent Use - Rechargeable Battery Mode

The integrated rechargeable battery of the LasPaC-II-P allows the use of on site measurements, even in the event where access of an external power source is not available. The measurement data is stored in the internal memory of the unit and can be transferred to a computer when required.

Once charged the LasPaC-II-P can run approximately 100 tests before recharging is needed again.

Options

- Moisture / Temperature Sensor This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in °C).
 For further information please see on page 67.
- Phosphate Ester (e.g. Skydrol®) or specific Water Glycol fluids units on request



Integrated Printer

Order Codes



(1)	Series and Types	
	Laser Particle Counter	LasPaC-II
2	Version	
	Portable	Р

③ Fluid Compatibility

 Mineral Oil, Petroleum based fluids (standard option)
 M

 Phosphate Ester (e.g. Skydrol®)
 E

 Specific Water Glycol fluids
 G

(4) Moisture/ Temperature Sensor Without moisture/ temperature sensor

Without moisture/ temperature sensor	0
With moisture/ temperature sensor	W

Please note: The moisture/ temperature sensor is not suitable for Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.





Oil Analysis Equipment

Laser Particle Counter - Type LasPaC-II-P (Portable)



Highspeed Flush Valve

Technical Data

Dimensions and Weight

551 x 358 x 226 mm / 21.69 x 14.09 x 8.90 in 13 kg / 28.66 lbs

QWERTY keyboard

(384 dots per line)

Integrated thermal printer

Keyboard / Printer

Keyboard:

L/W/H:

Weight:

- Printer:
- **Power Supply**
- Voltage range: 110 ... 240 V AC 12 ... 24 V DC
- European, UK and US power plug adaptors included
- Number of tests before recharging is required: 100

Calibration

- Calibration:
- Analysis range:
- ISO Medium Test Dust (MTD) according to ISO 11 171:1999 ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12

Pressure / Viscosity

Pressure range:	2 400 bar /
	29 5801 PSI
Viscosity range:	1 400 cSt

Laser SensorsHigh accuracy laser:

High accuracy laser: 4 ... 6 μm_(c)
 Standard accuracy laser: 6 ... 68 μm_(c)

0

Measured channels: 4, 6, 14, 21, 25, 38, 50, 68 μm(ε)

Computer Interfaces of the LasPaC-II-P

- The orifice of the sensor has a cross section of 0,9 x 0,9 mm / .04 x .04 in
- The maximum concentration is ISO 4406 Code 24 (160.000 p/ml)

Accessories

- Bottle Sampling Unit 110 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml
 (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (Version E) (for Phosphate Ester (e.g. Skydrol®) available on request)
- For further information please see on page 66.Screen filter:500 μm (see on page 67)

Hose Connections Test coupling STA

Test coupling STAUFF Test 20 or comparable (M16 x 2)

Sample Volume

- 8 ml (short)
- 15 ml (normal)
- 30 ml (dynamic)
- 24 ml (bottle sampler)
- 15 ml (continuous)



Easy Connection to common Test Couplings

Permissible Temperature

Operating: +5 °C ... +80 °C / +41 °F ...+176 °F

Data Output

- Cumulative particle counts, as well as cleanliness classes according to ISO 4406 (1999) / SAE AS 4059 Rev.D (2001) and ISO 4406 (1191) / NAS 1638 (1964)
- Max. Concentration
- ISO 24

Accumulator

Internal rechargeable battery

Data Storage

600 tests

Fluid Compatibility

- Mineral Oil, Petroleum based fluids
- Phosphate Ester and Water Glycol compatible devices on request

Computer Interface

- RS-232 communication port as standard
- USB adaptors included

External Alarm

 External alarm socket with switching outputs max. 24 V DC/AC, 1 A

Software

 Downloading and storage of the data with included "LasPaC-II View" software. Further processing with Microsoft Excel® possible.

STAUFF

Laser Particle Counter • Type LasPaC-II-M (Mobile)



LasPaC-II-M with integrated battery (standard option)

Product Description

The LasPaC-II-M is a highly accurate laser particle counter. With a competitive price, the LasPaC-II-M is the best compromise between lower cost and briliant accuracy/reliability.



LasPaC-II-M also available without integrated battery

Features

Versatile - Lightweight and Convenient

The LasPaC-II-M (Mobile) is designed for applications where it is necessary to have a small, light and robust service unit.

Low Cost - Same Functions for a Budget Price

Without losing the quality in measurement accuracy, reliability and repeatability the LasPaC-II-M is a cost effective alternative to the fully equipped LasPaC-II-P.

Options

- Moisture / Temperature Sensor This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in °C).
 For further information please see on page 67.
- Phosphate Ester (e.g. Skydrol®) or specific Water Glycol fluids units on request
- LasPaC-II-M also available without integrated battery

Order Codes



1) Type and Series

Ŭ	Laser Particle Counter	LasPaC	-11
2	Version		
-	Mobile		М
(3)	Fluid Compatibility		
Ŭ	Mineral Oil, Petroleum based fluids (standard	l option)	М
	Phosphate Ester (e.g. Skydrol®)		Е
	Specific Water Glycol fluids		G
4	Moisture/ Temperature Sensor		
-	Without moisture/ temperature sensor		0
	With moisture/ temperature sensor		W
	Please note: The moisture/ temperature sens suitable for Phosphate Ester (e.g. Skydrol®)	or is not and Wate	er

Glycol fluids.

(5)	Battery	
	With internal rechargeable battery (standard option)	В
	Without internal rechargeable battery	0



Oil Analysis Equipment

Laser Particle Counter • Type LasPaC-II-M (Mobile)



LasPaC-II-M with small Bottle Sampler



Display and Buttons

Technical Data

Dimensions and Weight

340 x 295 x 152 mm / 13.40 x 11.61 x 5.98 in 4,75 kg / 10.47 lbs

Power Supply

L/W/H:

Weight:

- Voltage range:
- 110 ... 240 V AC 12 ... 24 V DC
- European, UK and US power plug adaptors included
 Number of tests before recharging is required: 60

Calibration

- Calibration:
- Analysis range:

Pressure / Viscosity

- Pressure range:
- Viscosity range:
- 2 ... 400 bar / 29 ... 5801 PSI 1 ... 400 cSt

ISO Medium Test Dust (MTD)

according to ISO 11 171:1999

ISO 8-24, ISO 4406 Code,

NAS 1638 Code 2-12,

SAE AS 4059 Code 2-12

Laser Sensors

- High accuracy laser: 4 ... 6 µm_(c)
- Standard accuracy laser:6 ... 68 µm_(c)
- Measured channels: 4, 6, 14, 21, 25, 38, 50, 68 μm_{\odot}
- The orifice of the sensor has a cross section of 0,9 x 0,9 mm / .04 x .04 in
- The maximum concentration is ISO 4406 Code 24 (160.000 p/ml)

Accessories

- Bottle Sampling Unit 110 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (Version E) (for Phosphate Ester (e.g. Skydrol®) available on request) For further information please see on page 66.
- Screen filter: 500 μm (see on page 67)

Hose Connections

• Test coupling STAUFF Test 20 or comparable (M16 x 2)

- Sample Volume • 8 ml (short)
- 15 ml (normal)
- 30 ml (dynamic)
- 24 ml (bottle sampler)
- 15 ml (continuous)

Permissible Temperature

Operating: +5 °C ... +80 °C / +41 °F ...+176 °F

Data Output

- Cumulative particle counts, as well as cleanliness classes according to ISO 4406 (1999) / SAE AS 4059 Rev.D (2001) and ISO 4406 (1191) / NAS 1638 (1964)
- Max. Concentration
- ISO 24

Data Storage

600 tests

Fluid Compatibility

- Mineral Oil, Petroleum based fluids
- Phosphate Ester and Water Glycol compatible devices on request

Computer Interface

- · RS-232 communication port as standard
- USB adaptors included

Software

 Downloading and storage of the data with included "LasPaC-II View" software. Further processing with Microsoft Excel® possible.

Internal Rechargeable Battery

· Standard option with internal rechargeable battery



www.stauff.com/8/en/#65

Bottle Sampling Unit • Typ Bottle-Sampler-LasPaC-II





Bottle Sampling Unit 110 ml and Accessories

Product Description

C

Analysis Everywhere - Bottle Sampling Unit

If a direct particle count on your system is not possible, the LasPaC-II bottle sampler units allow you to take measurement samples for analysis at a later time.

Conditioning - The De-aeration Facility

A highly aerated fluid may lead to inaccurate results; therefore a de-aeration process has been incorporated into the bottle sampling units. By evacuating the air from the sampling chamber,

aeration within the fluid is removed, and the fluid is properly conditioned prior to sampling.

Your Choice - 110 ml or 500 ml Size

STAUFF offers two sizes of bottle sampling units for the LasPaC-II devices: the 110 ml and the 500 ml units.

The 110 ml unit is supplied in an extra case including various accessories such as power supply, sampling hoses, pressure hoses, bottles (sample and waste) and adaptors. It is designed for mobile applications and is only compatible with Mineral Oil and Petroleum based fluids.

The standard version of the 500 ml unit is compatible with Mineral Oil and Petroleum based fluids; a Phosphate Ester (e.g. Skydrol®) compatible version of the 500 ml unit is available on request. Please contact STAUFF for details.

The 500 ml bottle sampling unit is delivered with the required power supply.

Please note that the moisture / temperature sensor does not work in combination with bottle sampler devices.



Bottle Sampling Unit 110 ml



Bottle Sampling Unit 500 ml

Order Codes



	(3) Unit
	110 ml Bottle Sampling Unit
110-M	suitable for Mineral Oil and
	Petroleum based fluids only
	500 ml Bottle Sampling Unit
500 M/O	suitable for Mineral Oil and
500-W/G	Specific Water Glycol fluids,
	Petroleum based fluids only
	500 ml Bottle Sampling Unit
500-E	suitable Phosphate Ester
	(e.g. Skydrol®)





Product Description

More Oil Analysis - Oil Saturation and Temperature

In Mineral Oils and non-aqueous fire resistant fluids, water is undesirable. Once the water exceeds a saturation level (about 500 ppm for Mineral Oils) the fluid starts to appear hazy. Above this level there is a danger of free water accumulating in the system. This can lead to corrosion and accelerated wear.

As an option, all LasPaC-II devices provide accurate and repeatable measurement of the saturation level of water in oil with the moisture / temperature sensor. The sensor is located internally in a specially designed housing and is positioned in the low pressure constant flow line.

Additional Information - Oil Temperature Readings

Beside the saturation level the optional moisture / temperature sensor of the LasPaC-II units has the ability to measure the fluid temperature. This allows to provide a reference temperature for the RH (relative humidity / % saturation of water in oil) readings.

Both results, RH % and °C, are displayed on the main / test progress screen and on the printed analysis.

Please note: Due to the temperature gradient existing between the system tapping point and the RH / temperature module, the temperature reading can be 5° to 10° less than the actual system temperature, depending on operating conditions. The moisture / temperature sensor is not suitable for bottle sampling.

Laser Particle Counter Accessories



Product Description: Screen Filter

An optional Screen Filter is available for heavily contaminated systems. The filter device is assembled directly to the supply line and allows particle counts in ambient conditions where normally the contamination is too high for a reliable test.

The Stainless Steel Filter has a mesh of 500 μm and is cleanable.

Saturation Levels

Since the effects of free (also emulsified) water are more harmful than those of dissolved water, water levels should remain always well below the saturation point.

However, even water in solution can cause damage, and therefore every reasonable effort should be made to keep saturation levels as low as possible.

There is no such thing as too little water. As a guideline, we recommend maintaining saturation levels below 50 % in all equipment.

Different oils have different saturation levels, and % saturation is the best and most practical measurement.

These results can be converted to ppm (parts per million), if the oil type saturation / temperature characteristic is known.





Order Codes



① Type of Accessories / Spare Parts

Waste hose 2 m / 6.56 ft Pressure hose 1,5 m / 4.92 ft 110 ml certified clean bottle (5 pieces) 250 ml certified clean bottle (5 pieces) 110 ml glass sample bottle (5 pieces) 250 ml glass sample bottle (5 pieces) 500 ml glass sample bottle (5 pieces) Printer paper LasPaC-II-P (5 pieces) RS 232 to USB converter Screen filter Hose-LasPaC-II-Waste-2m SMS-20-1500-A-W3 Set-Bottle-LasPaC-II-110-C Set-Bottle-LasPaC-II-250-C Set-Bottle-LasPaC-II-250-C Set-Bottle-LasPaC-II-250 Set-Bottle-LasPaC-II-500 Set-Paper-LasPaC-II-Printer Adaptor-PPC-04/12-RS232-to-USB-CAB Screen-Filter-LasPaC-II



Laser Particle Counter - Technical Data

ſ			
U	J	J	

	Kat		
Туре	LasPaC-II-P (Portable)	LasPaC-II-M (Mobile)	LPM-II-plus
Dimensions (^{mm} / _{in}) (W x D x H)	551 x 358 x 226 21.69 x 14.09 x 8.90	340 x 295 x 152 13.40 x 11.61 x 5.98	141,63 x 123 x 65 5.58 x 4.85 x 2.65
Weight (^{kg} / _{lbs})	13 28.66	4,75 10.47	1,6 3.53
Keyboard	QWERTY keyboard integrated	-	5 Button Display Settings
Printer	Thermal printer integrated (384 dots per line)	-	-
Viscosity Range	1 400 cSt	1 400 cSt	<= 1000 cSt
Calibration	MTD, ISO 11 171:1999	MTD, ISO 11 171:1999	MTD, ISO 11171:1999
Analysis Range	ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12	ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12	ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12
Sensitivity	4, 6, 14, 21, 25, 38, 50, 68 µm _(c)	4, 6, 14, 21, 25, 38, 50, 68 μm _(c)	4, 6, 14, 21, 25, 38, 50, 68 μm _(c)
Sample Volume	8 ml (short) 15 ml (normal) 30 ml (dynamic) 24 ml (bottle sampler) 15 ml (continuous)	8 ml (short) 15 ml (normal) 30 ml (dynamic) 24 ml (bottle sampler) 15 ml (continuous)	Adjustable by user
Pressure Range (^{bar} / _{PSI})	2 400 29 5801	2 400 29 5801	Please refer differential pressure diagram
Operating Temperature (°c/ _{°F})	+5+80	+5 +80	-25+80
Max. Concentration	ISO 24	ISO 24	ISO 24
Power Supply	110 240 V AC 12 24 V DC	110 240 V AC 12 24 V DC	110 240 V AC 9 36 V DC, <2,2W
Battery	Internal rechargeable battery	Internal rechargeable battery	-
Data Storage	600 tests	600 tests	4000 tests
Fluid Compatibility	Mineral Oil / Petroleum based fluids; Phosphate Ester and water glycol compatible devices on request	Mineral Oil / Petroleum based fluids; Phosphate Ester and Water Glycol compatible devices on request	Mineral Oil / Petroleum based fluids; Phosphate Ester and Water Glycol compatible devices on request
PC Interface	RS-232	RS-232	RS-232
External Alarm	External alarm socket	-	External Alarm
Hose Connections	Test coupling STAUFF Test 20 or comparable (M16 x 2)	Test coupling STAUFF Test 20 or comparable (M16 x 2)	Test coupling STAUFF Test 20 or comparable (M16 x 2)
Accessories	Moisture/temperature sensor Bottle sampling unit (110 ml / 500 ml) Screen filter (500 µm)	Moisture/temperature sensor Bottle sampling unit (110 ml / 500 ml) Screen filter (500 µm)	Remote Display Interface Module Flow Control Valve









Particle Monitor - LPM-II-plus





Product Description

The LPM-II-plus Particle Monitor determines the contamination level of the measured fluid on eight size channels and offers precise and complete determination of particle sizes in accordance with international standards.

The LPM-II-plus is an automatic, optical particle counter with high-performance LEDs that work on the light obscuration principle. STAUFF recommends recalibrating the measuring equipment at regular intervals.

- Multicolour indicators via LCD (K versions) and LED with output alarm signals as standard
- · Secondary connector to allow the simultaneous control/ download of results during operation
- 4-20mA analogue output as standard (time multiplex)

Options

- · Moisture sensor / temperature sensor: RH in % (relative humidity) and temperatures in °C
- Phosphate Ester- (e.g. Skydrol®) and Water Glycolcompatible devices are available on request
- USB Port for Data transfer (optional)

Technical Data

Channels

>4, 6, 14, 21, 25, 38, 50, 70 μm(c) according to ISO 4406:1999

Measuring Range / Purity Classes

ISO 4406:1999 Code 0 to 25, NAS 1638 Class 00 to 12, AS4059 Rev. E. Tables 1 and 2 Sizes A-F: Classes 000 to 12, ISO 11218 Classes 00 to 12 (lower codes or classes are test time-dependent)

Precision

- ±1/2 Code for 4, 6, 14 μm(c)
- ±1 Code for larger particles

Calibration

· Each device is individually calibrated using ISO Medium Test Dust (MTD) in accordance with ISO 11171 (1999);

Flow

20 ... 400 ml/min / 0.005 ... 0.11 US GPM

Viscosity Range

■ ≤ 1000 mm²/s

70

Medium Temperature

-25 °C ... +80 °C / -13 °F ... +176 °F *pressure-dependent

Order Codes



D

0

(1) Series and Type Particle Monitor

(Incl. LPM-II-CAB-P-FL-3 connecting cable)

(2) Version

With display and keypad	
Without display and keypad	

③ Fluid Compatibility

Fluids based on Mineral Oil and Petroleum (standard) M Phosphate Ester (e.g. Skydrol®) E Specific Water Glycols G

Note: If you have any queries on fluid compatibility, please contact STAUFF.

Ambient Temperature

LMP II-0: -25 °C ... +80 °C / -13 °F ... +176 °F

• LMP II-D: -25 °C ... +55 °C / -13 °F ... +131 °F

Weight

1,6kg / 3.53 lbs

Fluid Compatibility

- . M: suitable for Synthetic and Mineral Oil based fluids, Diesel and Petroleum
- G: Austenitic Stainless Steel, FKM (Viton®): suitable for offshore and aqueous fluids
- E: Austenitic Stainless Steel, Perfluorinated Rubber (FFKM): suitable for Phosphate Ester and aggressive media

Max. Permissible Operating Pressure

420 bar / 6091 PSI static *temperature-dependent (Note: In systems with extreme pressure peaks, please contact STAUFF)

Test Duration

intervals

- Settable between 10 ... 3600 sec., set ex-works to 120 sec.
- As standard with start delay and freely programmable test

Moisture Sensor / Temperature Sensor

- % RH (relative humidity) ±3 %
- ±3 °C / ±32 °F

Volumetric Flow Measurement

As display only

Hose Connections

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

(4) Moisture Sensor / Temperature Sensor

Without moisture sensor / temperature sensor	0
With moisture sensor / temperature sensor	w

(5) Interface

USB interface to transfer measured data
to a data carrier

U

Note: In the case applications with extreme pressure peaks, please contact STAUFF.

Note: Versions "E" and "G" can only be supplied without moisture sensor / temperature sensor

Note: You need an interface module with either a USB or an Ethernet interface for exporting and programming.

Data Storage

Max. 4000 measuring results

Interfaces

- RS485, RS232, Modbus, CAN Bus
- 4-20 mA time multiplex interface
- USB interface to transfer measured data to a data carrier (optional)

International Protection Rating

- IP 65/67: Dust-proof and protected from spray
- Impact resistance rating IK04

Power Supply / Power

- 9 ... 36 V DC, < 2.2 W
- (connecting cable with flying leads is included)

Current Consumption

- 12 V: 70 mA (LPM-II-plus-0), 150 mA (LPM-II-plus-D)
- 24 V: 40 mA (LPM-II-plus-0), 80 mA (LPM-II-plus-D)
- 36 V: 30 mA (LPM-II-plus-0), 60 mA (LPM-II-plus-D)

Housing Surface Treatment

- · Polyurethane based paint, according to BSX34 colour BS381-638 (dark sea grey)
- Tested according to: BS2X34A and BS2X34B,
- MM0114 and SP-J-513-083 Part II. Cl. A
- The unit meets: MIL-PRF-85285

Wetted parts

- M: C46400 Cu Alloy, 316 Stainless Steel, FKM (Viton®), FR4, Sapphire
- G: 316 Stainless Steel, FKM (Viton®), Sapphire
- E: 316 Stainless Steel, Perfluorinated Rubber (FFKM), Sapphire, EPDM





Interface Module with USB or Ethernet Interface • INTERFACE -LPM-II-USB/ETH





Connection diagram: PC connection of the LPM-II-plus Particle Monitor

USB cable



Product Description

The LPM-II-plus is connected to an EDP system or a laptop/PC using an interface module with a USB or an Ethernet interface. Either interface module is connected to the LPM-II-plus using a connecting cable (3 m / 9.84 ft). With the power supply unit connected, the LPM-II-plus is supplied with current via the connecting cable. The interface modules allow you to evaluate the measured data and to carry out programming using the supplied software. In USB operation, the LPM-II-plus can be supplied with current via the USB cable too.

The USB interface is optionally also available with additional 0-10 V or 4-20 mA outputs. The 0-10 V interface provides six ISO channels, the relative humidity and the temperature on eight voltage outputs. The 4-20 mA version, on the other hand, supplies e.g. the NAS code and the relative humidity on two outputs.

The optional USB interface enables the direct transfer of measurement data to a USB data medium.

Remote Display Unit DISPLAY-LPM-II-plus-REMOTE



Connection diagram: Remote display

www.stauff.com/8/en/#71

Order Code



Product Description

In the case of applications outside the operator's field of view or in locations that are difficult to access, it is possible to display via a remote display the values that the LPM-II-plus measured.

- Remote Display
- LPM-II-CAB-P-P-3 connecting cable

71

STAUFF

Flow Control Valve = LPM-II-DAV



Product Description

In systems in which the volumetric flow or the pressure is too high, the optimum flow is achieved with the use of a flow control valve.

It can process pressures from 4 bar \dots 400 bar / 58 PSI \dots 5801 PSI.

The LPM-II-DAV, flow control valve is connected to the hydraulic outlet of the LPM-II-plus via the connection fittings.

Max. Permissible Operating Pressure

• 400 bar / 5801 PSI

(Note: Note that a minimum operating pressure of 4 bar / $58\ \rm PSI$ must be maintained for the proper function of the flow control valve.)



Order Code



① Series and Type Flow Control Valve

(2) Fluid Compatibility

 Fluids based on Mineral Oil and Petroleum (standard)
 M

 Phosphate Ester (e.g. Skydrol®)
 E

 Specific Water Glycols
 G



LPM-II-plus with flow control valve LPM-II-DAV



LPM-II-DAV

Application example



C


Oil Analysis Equipment

Particle Monitor • LPM-II-...-CX



>4, 6, 14, 21, 25, 38, 50, 70 μm(c) acc. to ISO 4406:1999

Measuring Range / Purity Classes

• ISO 4406:1999 Code 0 to 25, NAS 1638 classes 00 to 12, AS4059 Rev. E. tables 1 and 2 sizes A-F: classes 000 to 12, ISO 11218 classes 00 to 12 (lower codes or classes are test time-dependent)

Accurancy

- ±1/2 code for 4, 6, 14 μm(c)
- ±1 code for larger particles

Calibration

· Each device is individually calibrated using ISO Medium Test Dust (MTD) in accordance with ISO 11171 (1999)

Flow

20 ... 400 ml/min / .00511 US GPM

Viscosity Range

■ ≤ 1000 mm²/s

Temperature Range

-25 °C ... + 80 °C / -13 °F ... +176 °F Media: Ambient: -5 °C ... +80 °C / +23 °F ... +176 °F

Weight

5,5 kg / 12.16 lbs

Power Supply

- 9 ... 36 V DC
- www.stauff.com/8/en/#73
- Catalogue 8 Edition 05/2021

- M: suitable for Synthetic and Mineral Oil based fluids. Diesel and Petroleum
- G: Austenitic Stainless Steel, FKM (Viton®): suitable for offshore and aqueous fluids
- E: Austenitic Stainless Steel, Perfluorinated Rubber (FFKM): suitable for Phosphate Ester and aggressive media

Max. Permissible Operating Pressure

- 400 bar / 5801 PSI
- (Note: In systems with extreme pressure peaks, please contact STAUFF)

Test Duration

- Settable between 10 ... 3600 sec., set ex-works to 120 sec. · As standard with start delay and freely programmable
- test intervals

Moisture Sensor / Temperature Sensor

- % RH (relative humidity) ±3 %
- ±3 °C / ±32 °F

Volumetric Flow Measurement

As display only

Hose Connections

Test coupling STAUFF Test 20 or comparable (M16 x 2)

Data Storage

Max. 4000 measuring results

Interfaces

RS485, RS232, Modbus, CAN Bus

- 12 V: 70 mA
- 24 V: 40 mA
- 36 V: 30 mA

Power

<2,2 W

Housing Surface Treatment

- Polyester vinyl paint (light grey)
- Cast
- Stainless Steel
- Material spec.: ANC ABF/C

Wetted Parts

- M: C46400 Cu Alloy, 316 Stainless Steel, FKM (Viton®), FR4, Sapphire
- G: 316 Stainless Steel, FKM (Viton®), Sapphire
- E: 316 Stainless Steel, Perfluorinated Rubber (FFKM), Sapphire, EPDM

ATEX Directive 94/9/EG

Harmonises legal provisions of memberstates for devices and protection systemsfor designated use in potentially explosive areas.

ATEX Classification

- CE 🕼 II 3G Ex nR IIB T6 X
- **ATEX Rating** Zone 2 / Cat. 3G

73

Oil Sampling Kit - Type KIT-SFS



Product Description

C

Fluid analysis is a crucial component of any oil management program. Early detection of potential problems can prevent costly repairs and downtime. STAUFF SFSK oil analysis kits provide the tools to take a sample from a STAUFF test coupling or directly from a reservoir or sump.

For this the supplied hose is directly connected to the test coupling with an adaptor and the fluid is filled into the supplied vials.

But there is also the possibility to draw up the sample directly from a tank with the hand pump and fill it into the vial.

This sample set is available in two versions with BSP and NPT test couplings.

Scope of Delivery

- Contains vacuum pump for drawing samples of oil equipment
- 1 m / 3.28 ft hose for insertion into tank
- Two sample bottles
- STAUFF test points and adaptor allows oil sample to be taken from STAUFF Test 20 test points

Components

SFSK-1

- 1x Fluid Sample Pump FSP-38
- Ix Hose adaptor SHA-20-5.5mm
- 1 m / 3.28 ft Push on 1/4" hose
- 1x SMK-20-1/4NPT-V-D-W3
- 1x SMK-20-7/16UNF-V-E-W3
- Sample bottles

SFSK-2

- Ix Fluid Sample Pump FSP-38
- 1x Hose adaptor SHA-20-5.5mm
- 1 m / 3.28 ft Push on 1/4" hose
- 1x SMK-20-G1/4-B-C-W3
- 1x SMK-20-M10x1-B-A-W3
- Sample bottles





Catalogue 8 - Edition 05/2021



C















Product-Specific Abbreviations	80
Global Contact Directory	82 - 83



Product-Specific Abbreviations

Abbreviation	Product Category	Product Description	Page
Bottle-Sampler-LasPaC-II	Oil Analysis Equipment	Bottle Sampler Unit	66
DISPLAY-LPM-II-plus-REMOTE	Oil Analysis Equipment	Particle Monitor	71
Interface-LPM-II-USB/ETH	Oil Analysis Equipment	Particle Monitor Interface	71
LasPaC-II-M	Oil Analysis Equipment	Laser Particle Counter (Mobile)	64
LasPaC-II-P	Oil Analysis Equipment	Laser Particle Counter (Portable)	62
LPM-II-plus	Oil Analysis Equipment	Particle Monitor	70
LPM-IICX	Oil Analysis Equipment	Particle Monitor (ATEX)	73
LPM-II-DAV	Oil Analysis Equipment	Flow Control Valve	72
PPC-04/06/08-plus	Hydraulic Testers	Complete Systems	46
Sensor-PPC-04/12-P	Hydraulic Testers	Pressure Sensors	34
Sensor-PPC-04/12-PT	Hydraulic Testers	Pressure / Temperature Sensors	38
Sensor-PPC-04/12-SDS-CAB	Hydraulic Testers	Rotational Speed Sensor	42
Flow-meter-PPC-04/12-SFM	Hydraulic Testers	Flow Turbine	40
Sensor-PPC-04/12-T	Hydraulic Testers	Temperature Sensors	36
PPC-04-CAN-SET	Hydraulic Testers	Complete Systems	47
PPC-04-plus	Hydraulic Testers	Hydraulic Testers	28
PPC-04-plus-CAN	Hydraulic Testers	Hydraulic Testers	28
PPC-06/08-plus	Hydraulic Testers	Hydraulic Testers	29
Sensor-PPC-CAN-P	Hydraulic Testers	Pressure Sensors	35
Sensor-PPC-CAN-PT	Hydraulic Testers	Pressure / Temperature Sensors	39
Flow-meter-PPC-CAN-SFM	Hydraulic Testers	Flow Turbine	41
Sensor-PPC-CAN-T	Hydraulic Testers	Temperature Sensors	37
PPC-PAD-plus	Hydraulic Testers	Hydraulic Testers	30
PPC-PAD-plus (Starter System)	Hydraulic Testers	Complete Systems	48
PT-RF	Hydraulic Testers	Pressure Transmitter	52
PT-RF-SET	Hydraulic Testers	Pressure Transmitter (Complete Systems)	54
Reader-PT-RF	Hydraulic Testers	Pressure Transmitter Reader	53
SDM	Hydraulic Testers	Flow Indicators	56
SDMKR	Hydraulic Testers	Flow Indicators	56
Sensorconverter-PPC	Hydraulic Testers	Current / Voltage / Frequency Converter	43
KIT-SFS	Oil Analysis Equipment	Oil Sampling Kit	74
SMB-20 / SMB-15	Pressure Gauges	Analogue Pressure Test Kit	18
SMB-DIGI	Pressure Gauges	Digital Pressure Test Kit	21
SPG	Pressure Gauges	Analogue Pressure Gauge	16
SPG-DIGI / SPG-DIGI-USB	Pressure Gauges	Digital Pressure Gauge	20
SBAA /SDAA	Hydraulic Testers	Accumulator Adaptor for Pressure Transmitter	55









Global Contact Directory

STAUFF products and services are globally available through wholly-owned subsidiaries and a tight network of authorised distributors and representatives in all major industrial regions of the world.

Contact information on this page may be subject to changes and additions over time. Frequently updated and complete contact information can always be found at www.stauff.com.

Germany



Walter Stauffenberg GmbH & Co. KG Im Ehrenfeld 4 58791 Werdohl www.stauff.com/contact





Neuenrade-Küntrop Logistics Centre

Wasserburgstraße 35

58809 Neuenrade



Plettenberg-Ohle Production Site Lennestraße 2 58840 Plettenberg



Meinerzhagen Production Site Neugrünenthal 58540 Meinerzhagen



Meinerzhagen Production Site Am Rottland 7 58540 Meinerzhagen



STAUFF Digital Phoenixplatz 3 44263 Dortmund

Europe

France

STAUFF S.A.S.

230, Avenue du Grain d'Or Z.I. de Vineuil - Blois Sud 41354 Vineuil-cedex Tel.: +33 2 54 50 55 50 Fax: +33 2 54 42 29 19 E-Mail: direction@stauffsa.com www.stauff.fr

Russian Federation

STAUFF LLC

Building 1 19, Leninskaya Sloboda Moscow, 115280 Tel.: +7 495 276 16 50 Fax: +7 495 276 16 51 E-Mail: sales@stauff.ru www.stauff.ru

Further branch offices in Engels, Volzhskiy, Magnitogorsk, Nizhny Novgorod and St. Petersburg.

Ireland

STAUFF UK Ltd. Block B, 9 Ferguson Drive Knockmore Hill Industrial Estate Lisburn, County Antrim, BT28 2EX Tel.: +44 2892 60 69 00 Fax: +44 2892 60 26 88 E-Mail: sales@stauffireland.com www.stauff.co.uk

United Kingdon

STAUFF UK Ltd.

500, Carlisle Street East Off Downgate Drive Sheffield, S4 8BS Tel.: +44 114 251 85 18 Fax: +44 114 251 85 19 E-Mail: sales@stauff.co.uk www.stauff.co.uk

Italy

STAUFF Italia s.r.l Via Borima 21 (Frazione Borima) 23867 Suello (LC)

Tel.: +39 031 65 84 94 Fax: +39 031 65 50 05 E-Mail: sales@stauff.it www.stauff.it

STAUFF UK Ltd.

Badentoy Avenue Badentoy Industrial Estate Portlethen, Aberdeen, AB12 4YB Tel.: +44 1224 78 61 66 Fax: +44 1224 78 61 77 E-Mail: sales@stauffscotland.co.uk www.stauff.co.uk

Poland

STAUFF Polska Sp. z o.o. Miszewko 43 A 80-297 Banino

Tel.: +48 58 660 11 60 Fax: +48 58 629 79 52 E-Mail: sales@stauff.pl www.stauff.pl

STAUFF UK Ltd.

Unit 9, Southampton Trade Park Third Avenue, Millbrook Southampton, S015 0AD Tel: +44 2380 69 87 00 Fax: +44 2380 69 87 01 E-Mail: sales@stauffsouthampton.co.uk www.stauff.co.uk





Appendix

Global Contact Directory



North America

Canada

STAUFF Canada Ltd. 866 Milner Avenue Scarborough Ontario M1B 5N7 Tel.: +1 416 282 46 08 Fax: +1 416 282 30 39 E-Mail: sales@stauffcanada.com www.stauffcanada.com

United States

STAUFF Corporation 7 Wm. Demarest Place Waldwick, 07463-1542 New Jersey Tel.: +1 201 444 78 00 Fax: +1 201 444 78 52 E-Mail: sales@stauffusa.com **www.stauffusa.com**

Further branch office in Canton, Michigan.

South America Brazil

STAUFF Brasil Ltda. Avenida Gupê 10767 Galpão 2 - Bloco A Barueri, São Paulo, CEP 06422-120 Tel.: +55 11 47 72 72 00 Fax: +55 11 47 72 72 10 E-Mail: stauff@stauffbrasil.com www.stauffbrasil.com

Asia

China

STAUFF CHINA

Building 1, No. 128, Die Qiao Road Jushuo Industrial Zone, Kang Qiao Shanghai, 201319 Tel.: +86 21 68 18 70 00 Fax: +86 21 68 18 71 36 E-Mail: info@stauff.com.cn www.stauff.com.cn

Malaysia

STAUFF South East Asia Sdn Bhd No. 8, Jalan SS13/6A Subang Jaya Industrial Estate 47500 Subang Jaya Tel.: +60 3 5637 78 88 Fax: +60 3 5636 78 90 E-Mail: sales@stauff.com.my www.stauff.com.my Further branch offices in Beijing, Changsha, Chengdu, Changchun, Chongqing, Jinan, Harbin, Guangzhou, Shenyang, Wuhan, Xian and Xuzhou.

Thailand

STAUFF (Thailand) Co., Ltd. 10 Soi On-Nut 74/4 Pravet District Bangkok 10250 Tel.: +66 2 721 73 23 / 24 Fax: +66 2 721 73 35 E-Mail: sales@stauff.co.th www.stauff.co.th

India

STAUFF India Pvt. Ltd. Gat no. 26/1 & 27, Sanghar Warehousing Pune - Nagar Road Lonikand - 412216 Tel.: +91 20 6731 4900 Fax: +91 20 6731 4905 E-Mail: sales@stauffindia.com **www.stauffindia.com**

Vietnam

STAUFF Vietnam Ltd. 2nd Floor, CT-IN Building #435 Hoang Van Thu Street Tan Binh District, Ho Chi Minh City Tel.: +84 8 3948 10 41 / 42 Fax: +84 8 3948 10 44 E-Mail: sales@stauff.com.vn www.stauff.com.vn

Korea

STAUFF Korea Ltd. 105, Hwajeonsandan 5-ro Gangseo-gu Busan, 46739 Tel.: +82 51 266 6666 Fax: +82 51 266 8866 E-Mail: info@stauff.co.kr www.stauff.co.kr

Oceania

Australia

STAUFF Corporation Pty Ltd 24-26 Doyle Avenue Unanderra NSW 2526

Tel.: +61 2 4271 9000 Fax: +61 2 4271 8432 E-Mail: sales@stauff.com.au www.stauff.com.au Further branch offices in Adelaide, Brisbane, Melbourne and Sydney.

New Zealand

STAUFF Corporation (NZ) Ltd. Unit D, 103 Harris Road East Tamaki, Auckland 2013

Tel.: +64 9 912 1530 Fax: +64 9 912 1531 E-Mail: sales @stauff.co.nz www.stauff.co.nz Introduction

-

Hydraulic Tester

Oil Analysis Equipment

Appendix



Catalogue 8 STAUFF Diagtronics



Germany

Walter Stauffenberg GmbH & Co. KG Im Ehrenfeld 4 58791 Werdohl

STAUFF products and services are globally available through wholly-owned subsidiaries and a tight network of authorised distributors and representatives in all major industrial regions of the world.

Contact STAUFF

www.stauff.com/contact