Calibration

USB pressure sensor
With USB adapter and software
Model CPT2500

WIKA data sheet CT 05.01

EAC   (G)   for further approvals,
see page 4

Applications

- Calibration service companies and service industry
- Quality assurance
- Recording and monitoring of pressure profiles
- Pressure spike measurement

Special features

- Recording interval adjustable from 1 ms ... 10 s
- Measuring ranges from -600 ... 0 mbar to 0 … 1,000 bar [-9 ... 0 psi to 0 ... 14,500 psi]
- Accuracy: 0.2 %, optionally 0.1 % (incl. calibration certificate)
- No external voltage supply required
- Software for recording of the measured value, calibration and evaluation

USB pressure sensor model CPT2500 with USB adapter model CPA2500

Description

Extensive application possibilities
The model CPT2500 USB pressure sensor can be connected to any PC with a USB interface, via the model CPA2500 USB adapter.
For the USB adapter, there are stainless steel pressure sensors with measuring ranges up to 1,000 bar [14,500 psi] available. The USB adapter automatically recognises the measuring range of the connected pressure sensor and guarantees a high-accuracy pressure measurement.

Functionality
The measuring interval for pressure recording can be set in the range from 1 ms ... 10 s. With a recording interval of more than 5 ms the following data is recorded in addition to the current measured value:
- the mean value over the recording interval
- the maximum and minimum values during the recording interval

Thus pressure spikes within the overall recording interval can be very easily identified. It is also possible to set start and stop conditions for the recording. In this way it is possible to detect pressure spikes with a resolution of up to 1 ms.

Software
The USB-ScanSoft software can be downloaded free of charge from the website. With it, all settings for recording the pressure profiles can be made. The recorded measured values can be graphically displayed and evaluated.
Apart from the USB-ScanSoft software, the WIKA-Cal calibration software is available for calibration tasks. Using this software, the data is automatically transferred into a printable calibration certificate. WIKA-Cal also offers, over and above PC-supported calibration, the management of the calibration and instrument data, and data transfer via a USB interface.

Data sheets showing similar products and accessories:
Hand-held pressure indicators; model CPH6200; see data sheet CT 11.01
Hand-held pressure indicators; model CPH6300; see data sheet CT 12.01
Test pumps, hydraulic; CPP series; see data sheet CT 91.05
Hand test pump, pneumatic; model CPP30; see data sheet CT 91.06
Calibration software; WIKA-Cal; see data sheet CT 95.10

WIKA
Part of your business

Complete service case

For easy transport and safe storage, the USB adapter is delivered in a compact transport case, which can also hold one or more pressure sensors.

Certified accuracy

For each reference pressure sensor, the accuracy for the complete measuring chain is certified by a factory calibration certificate which accompanies the instrument. On request, we can provide a DAkkS calibration certificate for this instrument.

Specifications

USB pressure sensor model CPT2500 (complete measuring chain)						
Measuring range						
Gauge pressure	mbar	-600 ... 0	-600 ... +600	-400 ... 0	-400 ... +400	-250 ... 0
		-250 ... +250	-100 ... +100	-20 ... +60 [1]	-20 ... +40 [1]	-20 ... +25 [1]
		0 ... 25 [1]	0 ... 40 [1]	0 ... 60 [1]	0 ... 100	0 ... 160
		0 ... 250	0 ... 400	0 ... 600		
	bar	-1 ... 0	-1 ... 1.5	-1 ... 3	-1 ... 5	-1 ... 9
		-1 ... 15	-1 ... 24	-1 ... 39	0 ... 1	0 ... 1.6
		0 ... 2.5	0 ... 4	0 ... 6	0 ... 10	0 ... 16
		0 ... 25	0 ... 40	0 ... 60	0 ... 70	0 ... 100
		0 ... 160	0 ... 250	0 ... 400	0 ... 600	0 ... 1,000
	psi	0 ... 5	0 ... 10	0 ... 15	0 ... 20	0 ... 30
		0 ... 50	0 ... 100	0 ... 150	0 ... 200	0 ... 300
		0 ... 500	0 ... 1,000	0 ... 1,500	0 ... 2,000	0 ... 3,000
		0 ... 6,000	0 ... 8,000	0 ... 14,500		
Absolute pressure	mbar abs.	0 ... 250	0 ... 400	0 ... 600		
	bar abs.	0 ... 1	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6
		0 ... 10	0 ... 16	0 ... 25	0.8 ... 1.2	
	psi abs.	0 ... 5	0 ... 10	0 ... 15	0 ... 20	0 ... 30
		0 ... 50	0 ... 100	0 ... 150	0 ... 200	
Overpressure safety						
3 times	≤ 25 bar			≤ 360 psi		
2 times	> 25 bar ... ≤ 600 bar			> 360 psi ... ≤ 8,700 psi		
1.5 times	> 600 bar			> 8,700 psi		
Resolution	Dependent on pressure range (max. 4 ½-digits)					
Accuracy of the measuring chain [2]	■ 0.2 % FS (resolution: 4-digits) ■ 0.1 % FS (resolution: 4 ½-digits) [3]					
Pressure types	■ Gauge pressure ■ Absolute pressure of 0 ... 25 bar abs. [0 ... 360 psi abs.] ■ Vacuum from -1 ... +39 bar [-14.5 ... 560 psi]					

1) For ranges < 100 mbar there is an accuracy of 0.2 % FS.
2) It is defined by the total measurement uncertainty, which is expressed with the coverage factor (k = 2) and includes the following factors: the intrinsic performance of the instrument, the measurement uncertainty of the reference instrument, long-term stability, influence of ambient conditions, drift and temperature effects over the compensated range during a periodic zero point adjustment.
3) Reference conditions: 15 ... 25 °C [59 ... 77 °F]

Reference pressure sensor model CPT2500

Process connection [1] [2]	■ G ½ B ■ G ½ B flush with NBR O-ring ■ G ½ B flush with EPDM O-ring ■ G 1 B flush with NBR O-ring ■ G 1 B flush with EPDM O-ring ■ ¼ NPT ■ ½ NPT
Pressure units	Freely selectable depending on the measuring range

	■ mbar ■ bar ■ psi ■ Pa ■ kPa	■ MPa ■ mmHg ■ inHg (0 °C) ■ inHg (60 °F) ■ mWs

Material

Wetted parts [3]	Stainless steel (standard)	
	Elgiloy®	
	NBR sealing	> 25 bar [360 psi] additionally
	Flush version	■ Stainless steel ■ Hastelloy C4
	O-ring	■ NBR ■ FKM/FPM ■ EPDM
Internal pressure transmission medium	Synthetic oil	■ With measuring ranges up to 16 bar [250 psi] ■ Flush diaphragm
	Halocarbon oil	For oxygen version
	Listed by FDA for food industry	

Sensor data

Accuracy [4]	≤ 0.2 % of span at reference conditions [5]
Compensated range	0 ... 80 °C [32 ... 176 °F]
Mean temperature coefficient	≤ 0.2 % of span/10 K (outside the reference conditions)
Measuring rate	1,000 measurements/s

Permissible ambient conditions

Medium temperature [1]	-25 ... +100 °C [-13 ... +212 °F] [6]
Operating temperature	-20 ... +80 °C [-4 ... +176 °F]
Storage temperature	-40 ... +100 °C [-40 ... +212 °F] [6]
Relative humidity	0 ... 95 % r. h. (non-condensing)

Case

Material	Stainless steel
Ingress protection	IP67
Dimensions	See technical drawing
Weight	Approx. 220 g [0.49 lbs]

1) As an oxygen version, a flush version is not available. In an oxygen version, the model CPT2500 is only available in overpressure ranges ≥ 0.25 bar [≥ 0.4 psi], with medium temperatures between -10 … +50 °C [14 … 122 °F] and using stainless steel or Elgiloy® wetted parts.
2) Process connection and O-ring depending on the selected pressure measuring range.
3) For pressure measuring ranges 0 ... 25 mbar, 0 ... 40 mbar and 0 ... 60 mbar [0 ... 0.4 psi, 0 ... 0.6 psi and 0 ... 0.9 psi] all wetted parts are made of stainless steel, silicon, aluminium, gold, silicone.
4) It is defined by the total measurement uncertainty, which is expressed with the coverage factor (k = 2) and includes the following factors: the intrinsic performance of the instrument, the measurement uncertainty of the reference instrument, long-term stability, influence of ambient conditions, drift and temperature effects over the compensated range during a periodic zero point adjustment.
5) Reference conditions: 15 ... 25 °C [59 ... 77 °F]
6) For pressure measuring ranges of 0 ... 25 mbar, 0 ... 40 mbar and 0 ... 60 mbar [0 ... 0.4 psi, 0 ... 0.6 psi and 0 ... 0.9 psi], the medium temperature and storage temperature are limited to 80 °C [176 °F].

USB adapter model CPA2500	
Communication	
PC connection	Standard USB connector (type A)
Electrical sensor connection	Circular connector, 7-pin, M16 x 0.75
Recording interval	1 ms ... 10 s, adjustable via software
Recording options	Selectable start/stop conditions
Voltage supply	
Supply voltage	Supply via USB interface
Permissible ambient conditions	
Operating temperature	-25 ... +50 °C [-13 ... +122 °F]
Storage temperature	-25 ... +70 °C [-13 ... +158 °F]
Relative humidity	0 ... 95 % r. h. (non-condensing)
Case	
Dimensions	See technical drawing
Weight	Approx. 120 g [0.265 lbs]

Approvals

| Logo	Description	Region
CE	**EU declaration of conformity for model CPA2500**	European Union
	EMC directive EN 61326 emission (group 1, class B) and immunity (controlled electromagnetic environment)	
	RoHS directive	
CE	**EU declaration of conformity for model CPT2500**	European Union
	EMC directive EN 61326 emission (group 1, class B) and immunity (commercial applications, laboratories, service centres and workshops)	
	Pressure equipment directive PS > 200 bar; module A, pressure accessory	
	RoHS directive	

Optional approvals

Logo	Description	Region
EAC	**EAC** EMC directive	Eurasian Economic Community
(logo)	**PAC Russia** Metrology, measurement technology	Russia
-	**MChS** Permission for commissioning	Kazakhstan

Certificates

Certificates	
Calibration	■ 3.1 inspection certificate per EN 10204 (factory calibration) ■ DAkkS calibration certificate (traceable and accredited in accordance with ISO/IEC 17025)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

Dimensions in mm [in]

USB pressure sensor model CPT2500


USB adapter model CPA2500
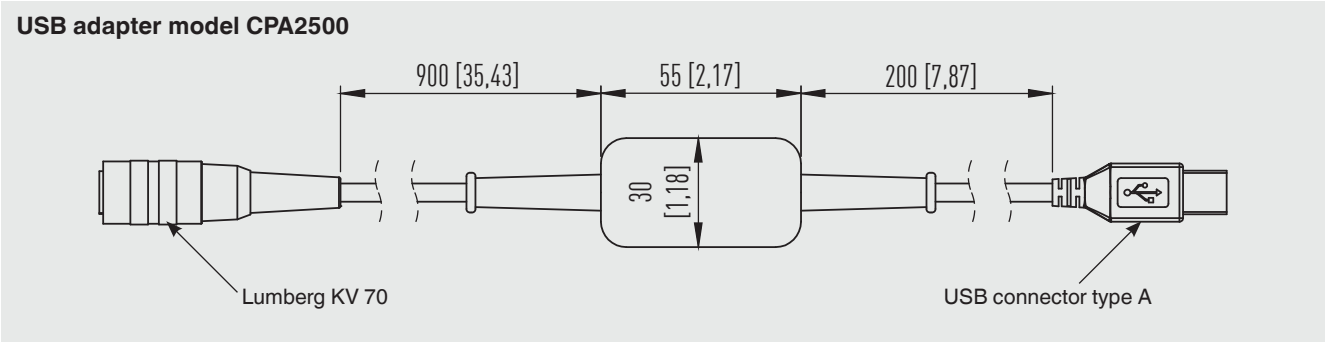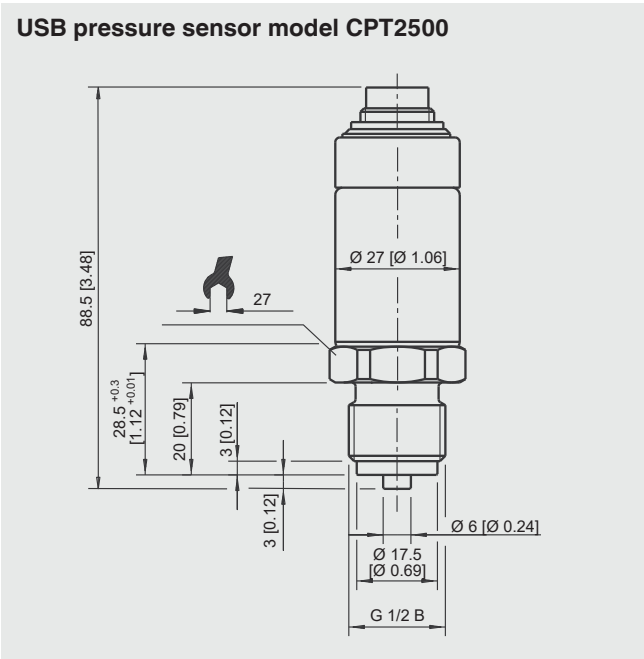
USB-ScanSoft configuration and evaluation software

The USB-ScanSoft software is required for the operation of the model CPT2500 USB pressure sensor in conjunction with the model CPA2500 USB adapter. This enables the configuration of the pressure sensor and also the selection of the various recording settings.

Using this software, several CPT2500's can be operated in parallel with the model CPA2500 USB adapter. One CPA2500 is required per CPT2500. The maximum number of sensors depends on the system.

The software also allows different start/stop conditions for the measurements to be defined, in order to easily identify, for example, a single pressure spike.

Graphical evaluation of the measured data (incl. min. and max. values), in addition the measured data can also be exported to other software.
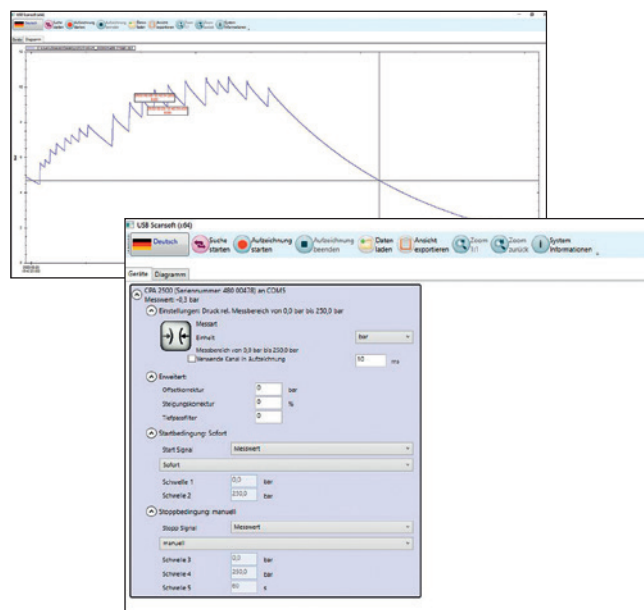
Performance data
- Recording interval of 1 ms ... 10 s
- Data export to other programs e.g. Excel®
- Languages: German, English, French, Italian and Czech

System requirements for USBScanSoft
- CPU with at least 1.2 GHz
- At least 100 MB free hard disc space
- At least 1 GB RAM
- Windows® operating system XP (SP 3), Vista (SP2), 7 (SP1) and 10
- USB interface

Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

WIKA-Cal calibration software

Easy and fast creation of a high-quality calibration certificate

The WIKA-Cal calibration software is used for generating calibration certificates or logger protocols for pressure measuring instruments and is available as a demo version for a cost-free download.

To switch from the demo version to a licenced version, a USB dongle with a valid licence must be purchased.

The preinstalled demo version changes automatically to the selected version when plugging in the USB dongle and remains available as long as the USB dongle is connected to the PC.

- The user is guided through the calibration or logger process
- Management of calibration data and instrument data
- Intelligent preselection via SQL database
- Menu languages: German, English, Italian, French, Dutch, Polish, Portuguese, Romanian, Spanish, Swedish, Russian, Greek, Japanese, Chinese
  More languages are due with software updates
- Customer-specific complete solutions possible

The supported instruments are continuously expanded and even customer-specific adaptations are possible.

For further information, see data sheet CT 95.10

Two WIKA-Cal licences are available together with one hand-held

The WIKA-Cal calibration software is available both for reading the logger data stored in the hand-held as well as for online calibrations together with a PC. The scope of software functions depends on the selected licence.

Several licences can be combined on one USB dongle.

Cal-Template (demo version)	Cal-Template (light version)	Log-Template (full version)
Fully automatic calibration	Semi-automatic calibration	- Live measured value recording for a certain period of time with selectable interval, duration and start time
Limitation to two measuring points	No limitation of the measuring points approached	- Readout of the integrated data logger of the hand-held
- Creation of 3.1. inspection certificates per DIN EN 10204 - Calibration data can be exported to Excel® template or XML file - Calibration of pressure measuring instruments		- Creation of logger protocols with graphic and/or tabular representation of the measuring results in PDF format - Possibility of exporting measuring results as CSV file
Ordering information for your enquiry:		
Is available for a cost-free download	WIKA-CAL-LZ-Z-Z	WIKA-CAL-ZZ-L-Z
	WIKA-CAL-LZ-L-Z	

Accessories

	Order code
Description	**CPH-A-25-**
Plastic case Dimensions: 340 x 275 x 83 mm [13.39 x 10.83 x 3.27 in] Consisting of: ■ USB adapter model CPA2500 ■ USBsoft2500 configuration and evaluation software	-2-
Ordering information for your enquiry:	
1. Order code: CPH-A-25 **2. Option:**	⇓ [ ]

Scope of delivery

- USB pressure sensor model CPT2500
- USB adapter model CPA2500
- USBsoft2500 and USB-ScanSoft software
- Operating instructions
- Calibration certificate

Ordering information

CPT2500 / Unit / Measuring range / Accuracy / Process connection / Special design features / Type of certificate / Pressure adapter / Accessories / Further approvals / Additional ordering information

WIKA

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel.   +49 9372 132-0
Fax   +49 9372 132-406
info@wika.de
www.wika.de