Precision pressure indicator
1- or 2-channel version
Model CPG2500

WIKA data sheet CT 25.02

Applications

- Factory calibration laboratories
- Calibration service companies and service industry
- Research and development laboratories

Special features

- Measuring ranges from 0 ... 25 mbar to 0 ... 700 bar (up to 2 separate internal precision sensors possible)
- Pressure type positive and negative gauge, absolute pressure and also differential pressure possible via two sensors
- Precision down to 0.003 % IS (IntelliScale)
- Accuracy down to 0.01 % IS (IntelliScale)

Precision pressure indicator model CPG2500

Description

Application

The CPG2500 is a modular pressure measuring instrument, incorporating up to two high-precision pressure sensors (in two separate channels) and a barometric reference as an option.

Due to a DKD/DAkkS certified accuracy of the entire measuring chain of 0.01 % (optional 0.01 % IS-50), it is predominantly used as a factory/working standard for the verification and/or calibration of the widest range of pressure measuring instruments.

Functionality

A colour touch-screen, combined with a user-friendly menu, guarantees the maximum ease of operation and all this is available in a number of different languages. Various functions, such as min/max memory, pressure rate, tare or differential pressure measurement via two sensors, ensure that this precision pressure measuring instrument can be used for many different applications.

Software

WIKA EasyCal standard calibration and documentation software makes calibrating any type of pressure measuring instrument easy and enables the simple production of calibration certificates or the customer can create his own test programs, e.g. with the help of LabVIEW® software.

Complete test and calibration systems

On request, complete mobile or stationary test systems can be manufactured. For integration into existing systems, RS-232, Ethernet, IEEE-488.2 (as an option) interfaces or an optional analog output of DC 0 ... 10 V are available.

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Specifications
Model CPG2500

Reference pressure sensors

Pressure range	Standard	Optional
Accuracy	0.01 % FS	0.01 % IS-50 [1]
Gauge pressure	0 ... 0.025 to 0 ... 700 bar [2]	0 ... 1 to 0 ... 400 bar
Bi-directional	-1 ... -0.025 to +0.025 ... +700 bar [2]	-
Absolute pressure	0 ... 0.35 to 0 ... 701 bar abs.	0 ... 1 to 0 ... 401 bar abs.
Precision	0.003 % FS	0.003 % IS
Optional barometric reference		
Function	The barometric reference can be used to switch pressure types [3] (absolute <=> gauge). With gauge pressure sensors, the measuring range of the sensor must begin with -1 bar in order to carry out an absolute pressure emulation.	
Measuring range	552 ... 1,172 mbar abs.	
Accuracy	0.01 % of measured value	
Pressure units	38 and 2 freely programmable	

1) 0.01 % IS-50 accuracy: 0 ... 50 % of the measuring span 0.01 % of half the measuring span and 0.01 % of the measured value between 50 ... 100 % of measuring span.
2) Measuring range < 70 mbar measuring span ⇒ 0.03 % FS.
3) For a pressure type emulation, we recommend a native absolute pressure sensor, since the zero point drift can be eliminated through a zero point adjustment.

Base instrument

Instrument	
Instrument version	Standard: desktop case optional: 19" rack-mounting with side panels incl. rack-mounting kit
Dimensions in mm	see technical drawings
Weight	approx. 2.3 kg
Display	
Screen	6.7" LCD (640 x 240 pixel)
Screen division	1 window per sensor
Resolution	4 ... 6 digits
Keyboard	Colour touch-screen
Warm-up time	approx. 15 minutes
Connections	
Number of integrateable sensors (selectable)	Standard: 1 reference pressure sensor Option: 2nd reference pressure sensor and barometric reference
Pressure connections	up to 400 bar: 7/16-20 F SAE/MS, 6 mm Swagelok® tube fitting inclusive above 400 bar: Autoclave F250C/HIP HF4
Pressure adapters	on request
Permissible pressure media	clean, dry, non-corrosive, non-inflammable and non-oxidising gases (> 1 bar liquids possible)
Overpressure protection	110 % (optional external relief valve kit available)

WIKA data sheet CT 25.02 · 12/2012

Base instrument

Voltage supply	
Power supply unit	AC 100 ... 240 V, 50 ... 60 Hz
Power supply	DC 5 V, 3 A
Permissible ambient conditions	
Storage temperature	0 ... 70 °C
Relative humidity	0 ... 95 % r.H. (non-condensing)
Compensated temperature range	15 ... 45 °C
Communication	
Interface	Standard: RS-232, Ethernet Option: IEEE-488 or 0 ... 1 / 0 ... 5 / 0 ... 10 V analog output
Command sets	Mensor, WIKA SCPI, Mensor 2100
Response time	approx. 100 ms

Approvals and certificates

CE conformity	
EMC directive [4]	2004/108/EC, EN 61326 emission (group 1, class A) and interference immunity (industrial application)
Approvals	
KazInMetr	
Certificate	
Calibration [5]	incl. 3.1 calibration certificate per EN 10204
	Option: DKD/DAkkS calibration certificate

4) **Warning!** This is class A equipment for emissions and is intended for use in industrial environments. In other environments, e.g. residential or commercial installations, it can intefere with other equipment under certain conditions. In such circumstances the operator is expected to take the appropriate measures.
5) Calibration in a horizontal position.

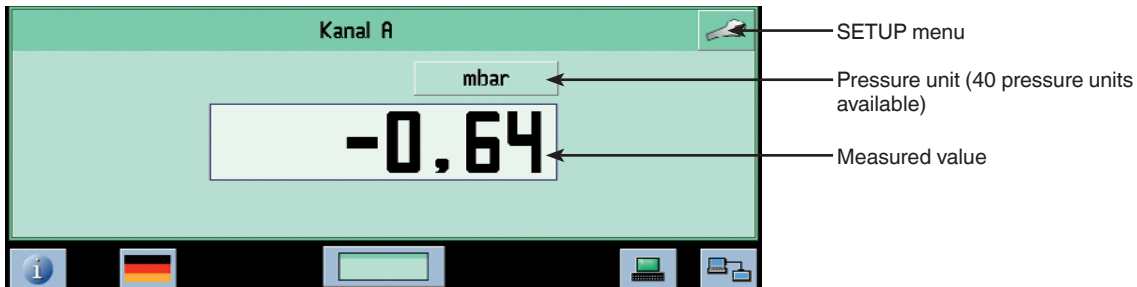Approvals and certificates, see website

Display configuration and available functions

The instrument is available with either one or two internal precision pressure controllers (single or dual channel version); their display along with optional functions can be easily configured via touch-screen.
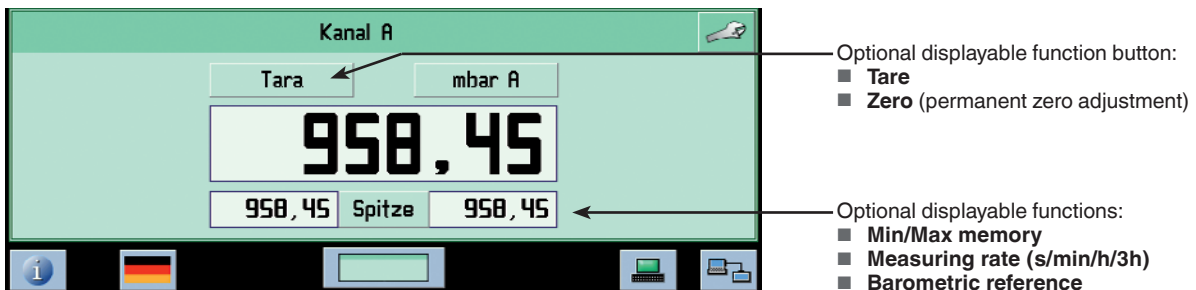Except for the pressure unit which is configured directly via the pressure unit button, all settings can be easily accessed and configured via the SETUP menu button (top right on the screen).

1-channel version

a) Standard screen display

SETUP menu

Pressure unit (40 pressure units available)

Measured value

b) Screen display along with extra-functions enabled (configurable via SETUP menu)

Optional displayable function button:
- **Tare**
- **Zero** (permanent zero adjustment)

Optional displayable functions:
- **Min/Max memory**
- **Measuring rate (s/min/h/3h)**
- **Barometric reference**

Further optional available functions (configurable via SETUP menu)
- **Head correction** (between reference and test item)
- **Signal filtering**
- **Differential pressure measurement** (only possible with dual channel version)

Dual channel variant (two integrated precision sensors)
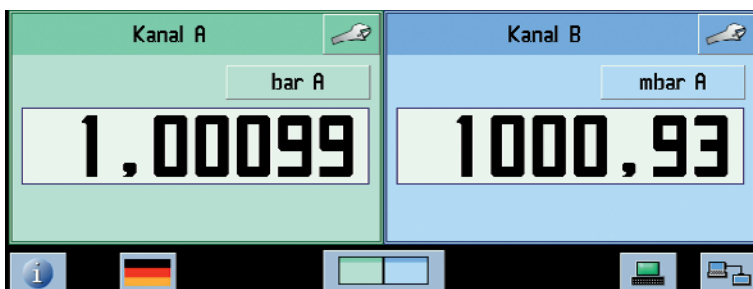
Explanation of the lower toolbar

A toolbar with the following functions is located at the bottom of the display. By pressing a particular button the respective submenu will appear.

Language selection (12 available)

Channel selection

Interface SETUP

Interface status
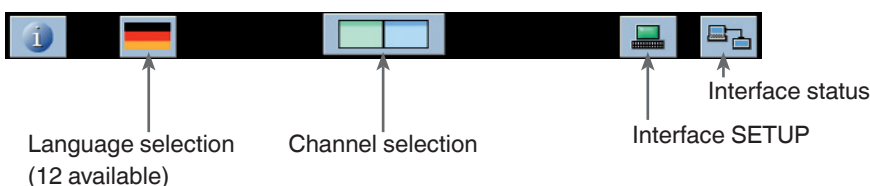
Automatic calibration using CPC2500 and EasyCal calibration software

The WIKA EasyCal calibration software is used for the calibration (inspection equipment monitoring) of mechanical and electronic pressure measuring instruments in accordance with DIN ISO 9000ff.
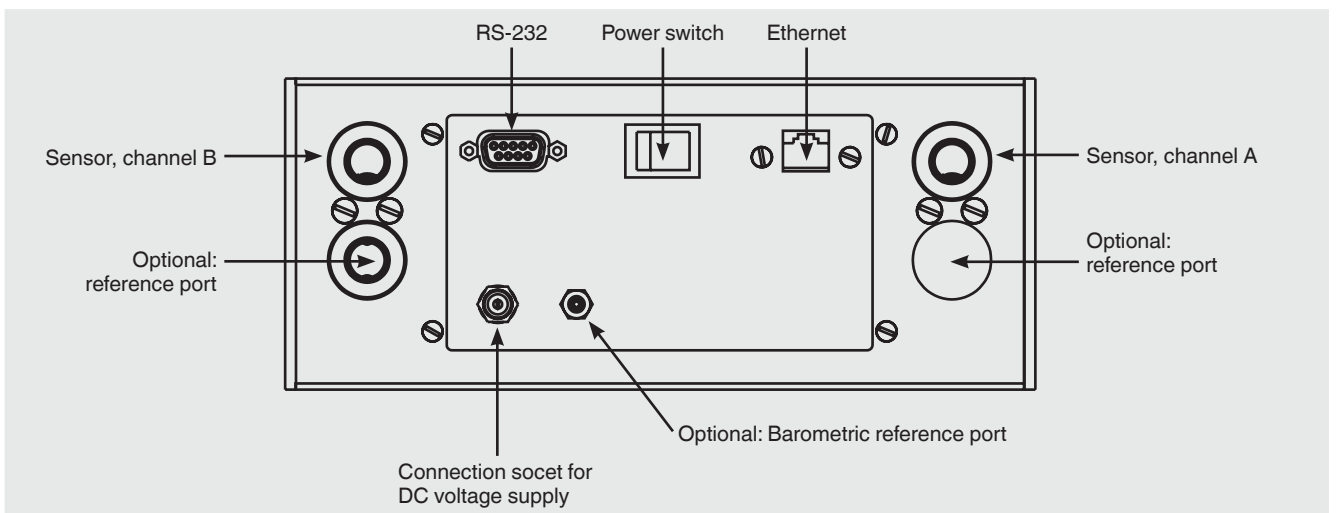

Performance characteristics of EasyCal professional:
- A calibration assistant guides you through the calibration
- User-friendly interface
- Automatic generation of the calibration steps in accordance with DIN EN 837-1
- Generation of 3.1 certificates in accordance with DIN EN 10204
- Customer-specific test reports possible (Access report designer)
- Calibration data storage and instrument management via Access database
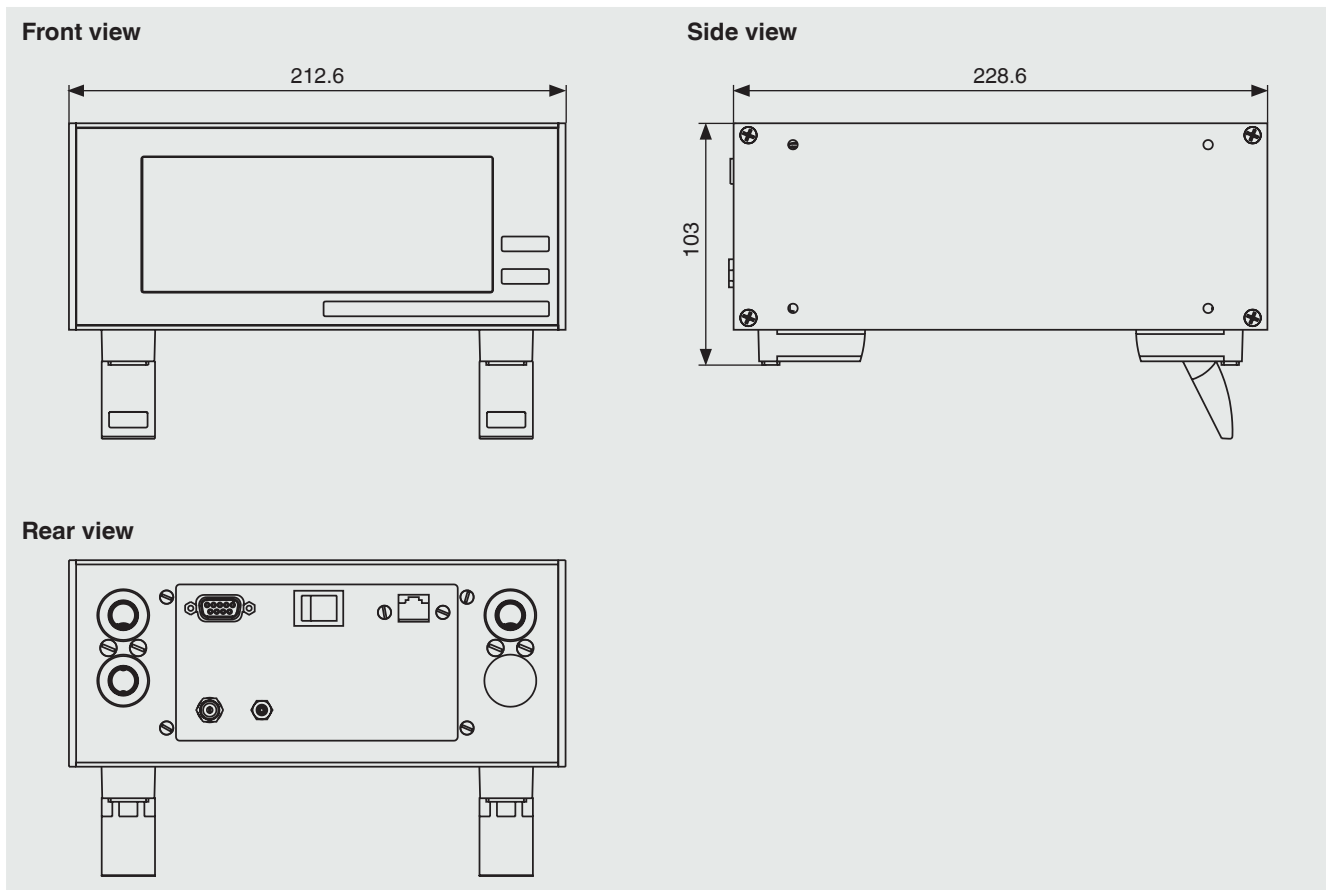- Languages: German/English

Serial communication via RS-232 or IEEE-488.2

Electrical and pressure connections - rear

RS-232 · Power switch · Ethernet

Sensor, channel B

Optional: reference port

Sensor, channel A

Optional: reference port

Connection socet for DC voltage supply

Optional: Barometric reference port

Dimensions in mm

Front view

212.6

Side view

228.6

103

Rear view

Scope of delivery

■ Precision pressure indicator CPG2500
■ 1.5 m power cord
■ Operating instructions
■ 3.1 calibration certificate per DIN EN 10204

Accessories

■ Robust transport case
■ Pressure adapters
■ Pressure relief valve kit
■ Interface cable
■ EasyCal standard calibration software

Options

■ DKD/DAkkS calibration certificate
■ 19" rack mount kit
■ Second internal sensor
■ Barometric reference
■ IEEE-488.2 interface
■ Analog output
■ Complete test and calibration systems

Ordering information

Model / Housing type / Channel A reference sensor / Channel B reference sensor / Barometric reference / Interface / Analog output / Pressure connection adapter / Additional order information

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