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

mensor

Applications

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

Special features

- Measuring ranges up to 0 ... 700 bar / 10,000 psi (up to two 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 touchscreen, 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-CAL 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.

Data sheets showing similar products and accessories:
Calibration software WIKA-CAL; see data sheet CT 95.10
Pressure supply case, filling tube; see data sheet CT 91.41
Precision pressure reducing valve, volume displacer; see data sheet CT 91.42

WIKA

Part of your business

Specifications
Model CPG2500

Reference pressure sensors

Pressure range	Standard	Optional
Accuracy [1]	0.01 % FS	0.01 % IS-50 [3]
Gauge pressure	0 ... 0.025 up to 0 ... 700 bar [4] 0 ... 0.36 up to 10000 psi	0 ... 1 up to 0 ... 400 bar 0 ... 15 up to 6,000 psi
Bi-directional	-0.025 ... +0.025 up to -1 ... 700 bar -0.36 ... +0.36 up to -15 ... 10,000 psi	-1 ... 10 up to -1 ... 400 bar -15 ... 150 up to -1 ... 6,000 psi
Absolute pressure	0 ... 0.35 up to 0 ... 701 bar abs. 0 ... 5 up to 0 ... 10,015 psi abs.	0 ... 1 up to 0 ... 401 bar abs. 0 ... 15 up to 0 ... 6,015 psi abs.
Precision [2]	0.003 % FS	0.003 % IS
Optional barometric reference		
Function	The barometric reference can be used to switch pressure types [5] (absolute <=> gauge). With gauge pressure sensors, the measuring range of the sensor must begin with -1 bar / -15 psi in order to carry out an absolute pressure emulation.	
Measuring range	552 ... 1,172 mbar abs. / 8 ... 17 psi abs.	
Accuracy [1]	0.01 % of reading	
Pressure units	38 and 2 freely programmable	

1) 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.
2) It is defined as the maximum deviation between two measurements at one point under laboratory conditions which includes linearity, hysteresis and repeatability of the measuring instrument.
3) 0.01 % IS-50 accuracy: 0 ... 50 % of the measuring span 0.01 % of half the measuring span and 0.01 % of reading between 50 ... 100 % of measuring span.
4) Measuring range < 70 mbar measuring span ⇒ 0.03 % FS.
5) 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 Option: 19" rack-mounting with side panels incl. rack-mounting kit
Dimensions in mm	see technical drawings
Weight	approx. 2.3 kg / approx. 5 lbs.
Display	
Screen	6.7" LCD (640 x 240 pixel)
Screen division	1 window per sensor
Resolution	4 ... 6 digits
Keyboard	Colour touchscreen
Warm-up time	approx. 15 min
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	Standard: without Option: 6 mm Swagelok® tube fitting, 1/4" Swagelok® tube fitting, 1/4" female NPT fittings, 1/8" female NPT fittings or 1/8 female BSP fittings
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)

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 / 32 ... 158 °F
Humidity	0 ... 95 % r. h. (relative humidity, non-condensing)
Compensated temperature range	15 ... 45 °C / 59 ... 113 °F

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

CE conformity, approvals and certificates

CE conformity

EMC directive [6]	2004/108/EC, EN 61326 emission (group 1, class A) and interference immunity (industrial application)

Approval

GOST	Metrology/measurement technology, Russia

Certificate

Calibration [7]	Standard: 3.1 calibration certificate per EN 10204 Option: DKD/DAkkS calibration certificate

[6] **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.
[7] Calibration in a horizontal position.

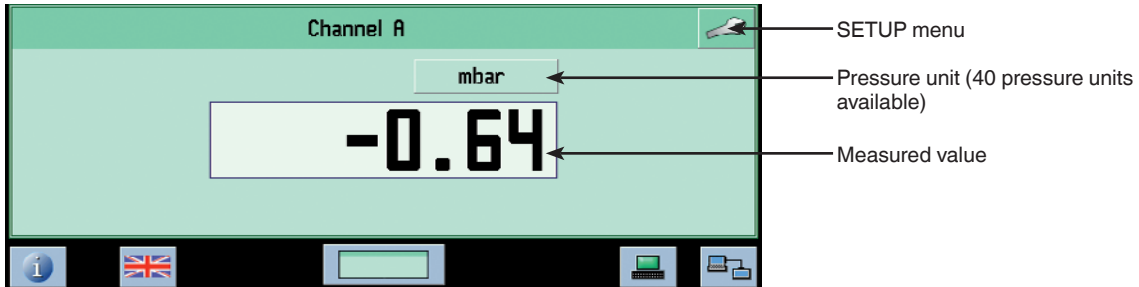Approvals and certificates, see website

Display configuration and available functions

The instrument is available with either one or two internal precision pressure controllers (1- or 2-channel version); their display along with optional functions can be easily configured via touchscreen.
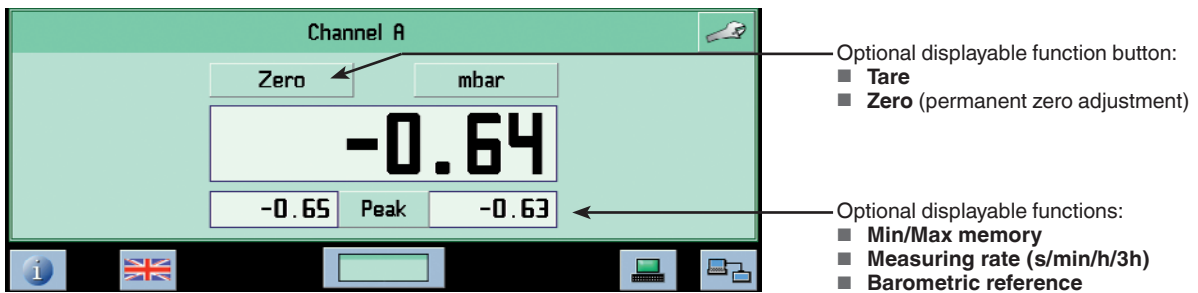Except for the pressure unit which is configured directly via the pressure unit button, all settings can be easily accessed and configured via the SETUP menu button (top right on the screen).

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**

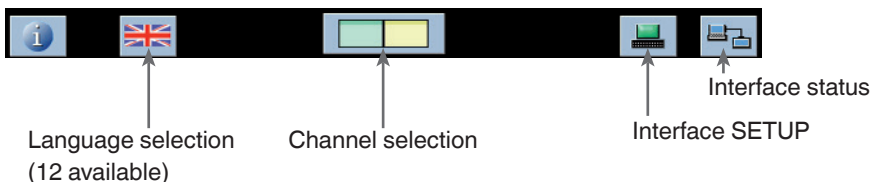**Further optional available functions (configurable via SETUP menu)**
- **Head correction** (between reference and test item)
- **Signal filtering**
- **Differential pressure measurement** (only possible with 2-channel version)

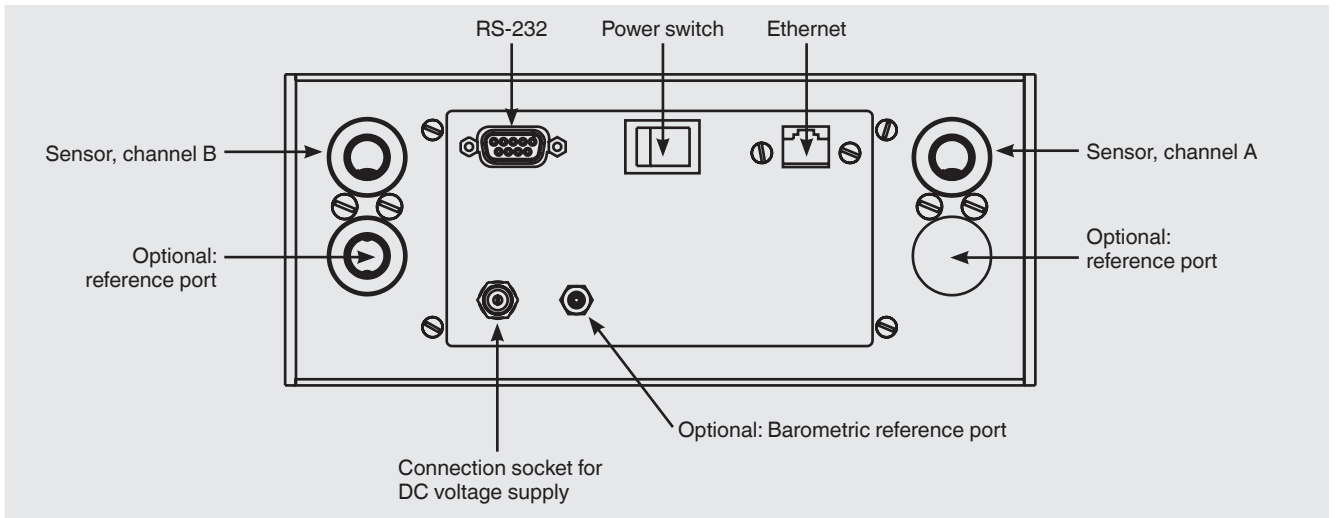## 2-channel version (two integrated precision sensors)
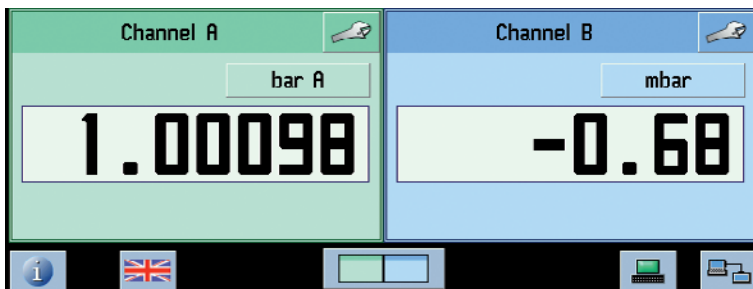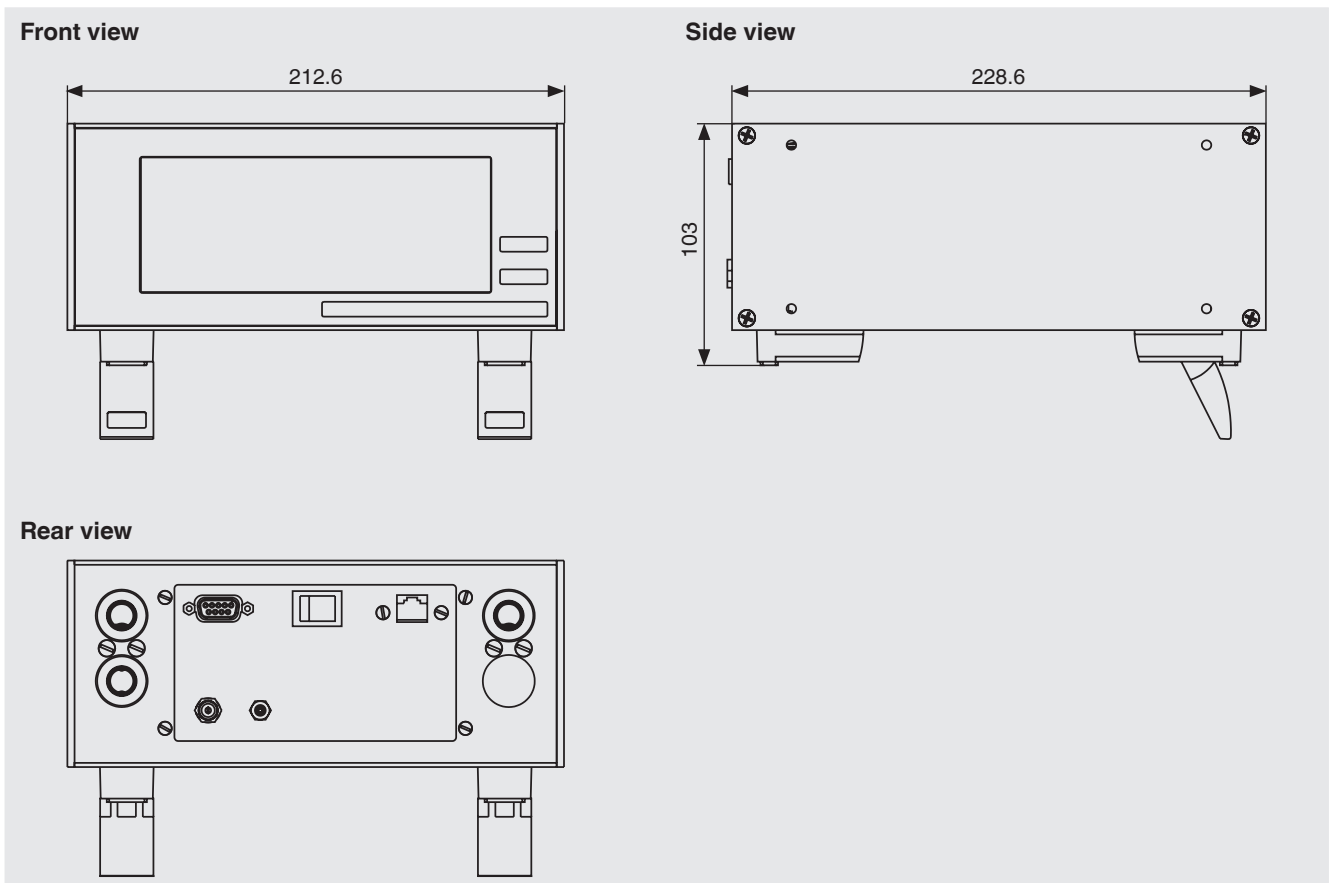

Explanation of the lower toolbar

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

Interface status

Language selection (12 available)

Channel selection

Interface SETUP

Electrical and pressure connections - rear

RS-232   Power switch   Ethernet

Sensor, channel B

Optional:
reference port

Sensor, channel A

Optional:
reference port

Optional: Barometric reference port

Connection socket for
DC voltage supply

Dimensions in mm

Front view

212.6

Side view

228.6

103

Rear view

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.

A template helps the user and guides him through the creation process of a document.

In order to switch from the demo version to a full version of the respective template, a USB key with the template has to be purchased.

The pre-installed demo version automatically changes to the selected full version when the USB key is inserted and is available as long as the USB key is connected to the computer.

- Creation of calibration certificates for mechanical and electronic pressure measuring instruments
- Fully automatic calibration with pressure controllers
- Calibration of relative pressure measuring instruments with absolute pressure references and vice versa
- A calibration assistant guides you through the calibration
- Automatic generation of the calibration steps
- Generation of 3.1 certificates per DIN EN 10204
- Creation of logger protocols
- User-friendly interface
- Languages: German, English, Italian and more due with software updates

For further information see data sheet CT 95.10

Calibration certificates can be created with the Cal-Template and logger protocols can be created with the Log-Template.

Cal Demo
Generation of calibration certificates limited to 2 measuring points, with automatic initiation of pressures via a pressure controller.

Cal Light
Generation of calibration certificates with no limitations on measuring points, without automatic initiation of pressures via a pressure controller.

Cal
Generation of calibration certificates with no limitations on measuring points, with automatic initiation of pressures via a pressure controller.
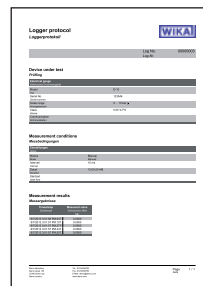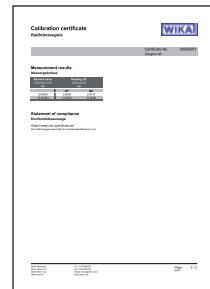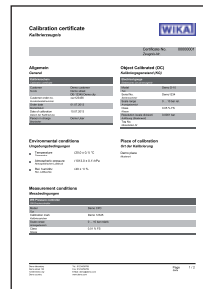
Log Demo
Creation of data logger test reports, limited to 5 measured values.

Log
Creation of data logger test reports without limiting the measured values.

Scope of delivery

- Precision pressure indicator model CPG2500
- 1.5 m / 5 ft power cord
- Operating instructions
- 3.1 calibration certificate per DIN EN 10204

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
- Pressure relief valve kit (up to 400 bar)

Accessories

- Robust transport case
- Pressure adapters
- Interface cable
- WIKA-CAL calibration software

Ordering information

Model / Housing type / Reference pressure sonsor channel A / Reference pressure sonsor channel B / Barometric reference / Type of certificate for barometric reference / Digital interface / Analog output reference pressure sensor channel A / Analog output reference pressure sensor channel B / Additional order information

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