Portable low-pressure controller Model CPC2000

mensor

EAC

for further approvals
see page 3

Applications

- Mobile calibration of low-pressure measuring instruments
- Supply of very low positive or negative pressures
- Accurate measurement of small overpressures or differential pressures

Special features

- Pressure ranges: 1 ... 1,000 mbar
- Accuracy: to 0.1 % FS
- Integrated, automatic pressure generation
- Portable, also usable without power supply unit due to Li-Ion battery
- Simple operation

Portable low-pressure controller model CPC2000

Description

Application
The main applications for this instrument are in the areas of heating, ventilation, air-conditioning, filtration, cleanroom, and medical technology as a calibrator or as highly accurate measurement equipment and/or precise pressure transducer.

Functionality
The model CPC2000 low-pressure controller is a mains or battery-operated pressure controller with internal, automatic pressure generation and pressure reference. The pressure generation is achieved using an integrated, electric pump, which makes a positive and/or negative pressure available on both the tube connections. As soon as the instrument is switched on, a zero point setting is automatically carried out, so that a zero-point drift is eliminated.

The subsequent preparation of a calibration requires only a few settings. First, using the MENU button, select one of the stored pressure units and the variable pressure change step in the range of 0 ... 50 %.

Then, once the full scale has been entered in control mode, the pressure can be easily increased or decreased by the defined level using the navigation buttons. To check whether the calibration assembly or the test item has a leak, the LEAK button can be used. With this, the pressure is locked into the test assembly and any pressure drop there might be, as well as the time this takes, is measured and displayed.

Interface
The instrument has an RS-232 and USB interface, enabling communication and data exchange with a PC.

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Software

WIKA-Cal calibration software is available for the CPC2000. WIKA-Cal also offers, over and above PC-supported calibration, the management of the calibration and instrument data in an SQL database.

Certified accuracy

The accuracy of the instrument is certified by a factory calibration certificate. On request, we can provide a DKD/DAkkS calibration certificate for this instrument.

Specifications
Model CPC2000

Reference pressure sensor							
Pressure range							
Gauge pressure	mbar	0 ... 1	0 ... 10	0 ... 50	0 ... 100	0 ... 500	0 ... 1,000
Accuracy [1]	% FS [2]	0.3	0.1				
Calibration interval	365 days						
Pressure units	Pa, kPa, hPa, bar, mbar, psi, inH$_2$O, inHg, mmHg, Torr						
Overpressure protection	5 times; ≤ 100 mbar 2 times; > 100 mbar ... ≤ 1,000 bar						

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 correction.
2) FS = Full span = end of measuring range - start of measuring range

Base instrument	
Instrument	
Instrument version	Benchtop instrument with carrying handle
Dimensions	102.6 x 257 x 271 mm (4.04 x 10.12 x 10.67 in) without carrying handle
Weight	4.6 kg (10.14 lbs)
Warm-up time	approx. 15 min
Pressure generation	internal, electric pump
Ingress protection	IP20
Display	
Screen	backlit, multi-line graphic display
Resolution	4 ... 5 digits depending on range and units
Keyboard	Membrane keypad
Connections	
Pressure connections	6,6 x 11 mm (0.26 x 0.43 in) (hose diameter D = 6 mm (0.24 in))
Permissible pressure media	Ambient air
Wetted parts	Ni, Al, CuBe, PUR
Functions	
Menu languages	German, English, Spanish and French
Zero point setting	automatic (at definable time intervals) manual (ZERO button)
Voltage supply	
Supply voltage	DC 24 V, 1 A
Power consumption	24 VA
Battery type	Li-Ion
Battery life	approx. 8 h

Base instrument	
Permissible ambient conditions	
Operating temperature	10 ... 40 °C (50 ... 104 °F)
Storage temperature	-10 ... +70 °C (14 ... +158 °F)
Humidity	30 … 80 % r. h. (non-condensing)
Control parameters	
Control steps	0 ... 50 % individually adjustable or 100 %
Control speed	approx. 5 s (dependent upon test volume)
Communication	
Interface	RS-232 and USB
Response time	1 value/s

Approvals

| Logo	Description	Country
CE	**EU declaration of conformity** ■ EMC directive EN 61326-1 emission (group 1, Class B) and immunity (industrial application) ■ RoHS directive	European Union
EAC	**EAC (option)** ■ EMC directive ■ Low voltage directive	Eurasian Economic Community
	GOST (option) Metrology, measurement technology	Russia
	BelGIM (option) Metrology, measurement technology	Belarus
	KazInMetr (option) Metrology, measurement technology	Kazakhstan
-	**MTSCHS (option)** Permission for commissioning	Kazakhstan
	UkrSEPRO (option) Metrology, measurement technology	Ukraine
	Uzstandard (option) Metrology, measurement technology	Uzbekistan
-	**CPA (option)** Metrology, measurement technology	China

Certificates

Certificate	
Calibration [3]	Standard: 3.1 calibration certificate per DIN EN 10204 Option: DKD/DAkkS calibration certificate
Recommended recalibration interval	1 year (dependent on conditions of use)

3)   Calibration in a horizontal position.
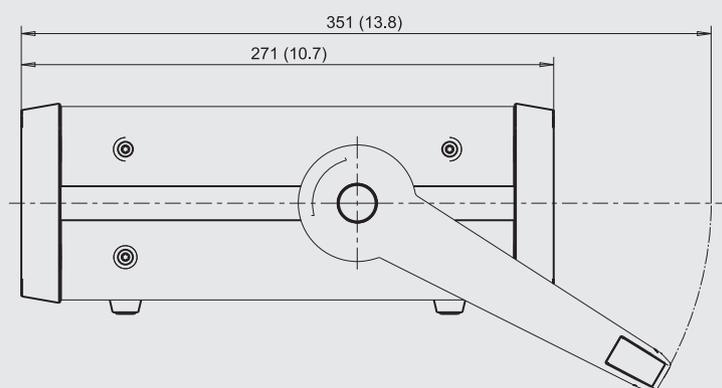
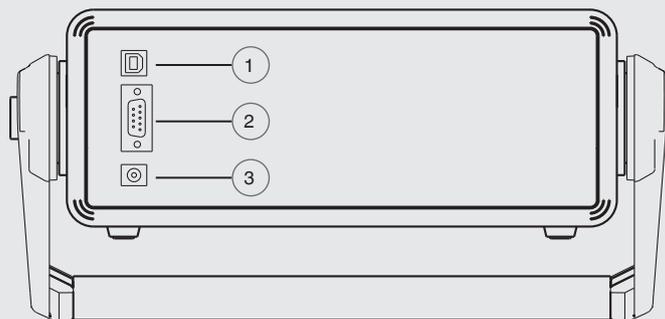Approvals and certificates, see website

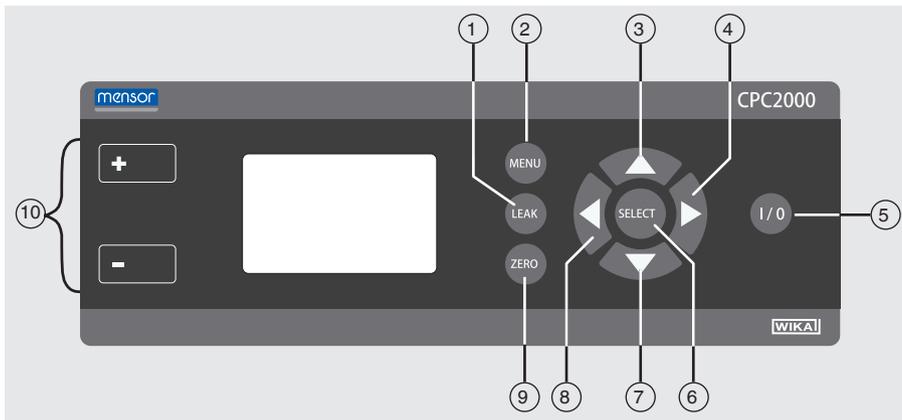## Dimensions in mm (in)

Front view
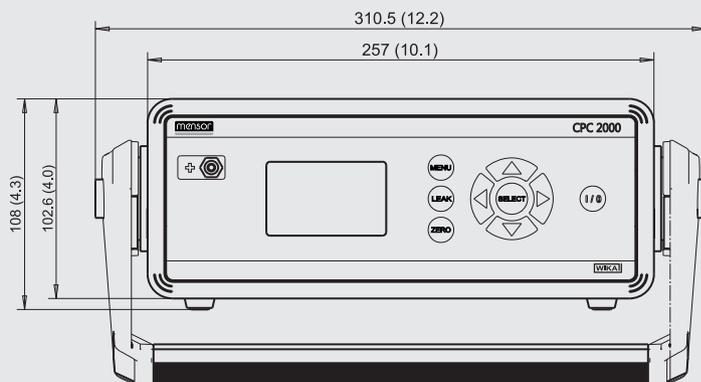
Side view

Electrical connections on the rear

① USB interface

② RS-232 interface

③ Connection for power supply unit

Keyboard and display

User interface

① In control mode: Starts the leak measurement, otherwise without function
② During the control process → Vent, otherwise select SETUP
③ Increase set point by x %
④ Set set point to 100 %
⑤ On/Off button
⑥ SELECT to confirm the entry
⑦ Decrease set point by x %
⑧ Set set point to 0 %
⑨ Zero point setting
⑩ Pressure connections

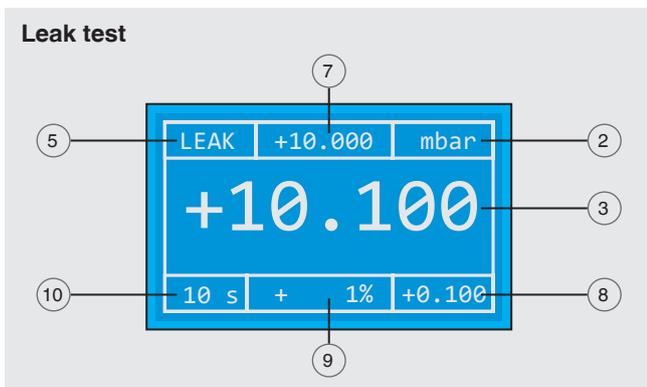## Possible modes and screen displays
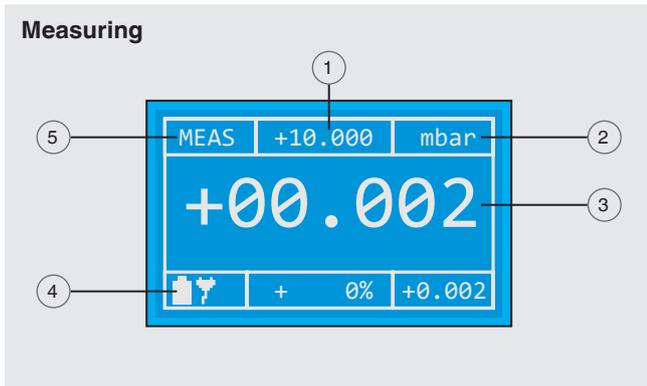
Measuring

In measuring mode, the pressure at the pressure ports is measured with great precision.
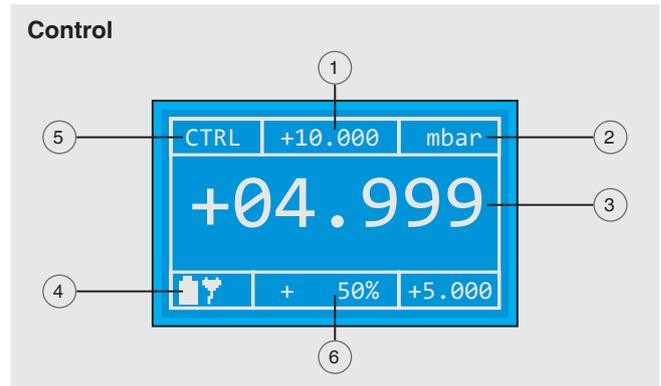
Control

In control mode, pressures are supplied to the pressure ports with high precision.
A set-point change (in a selectable step size) is made via the ▲ / ▼ buttons.

Leak test

In test mode, the pressure drop/time in the connected test assembly is determined.

① Full scale
② Pressure unit
③ Measured value
④ Battery status
⑤ Operating mode
⑥ Set point in % of full scale
⑦ Starting value for the leakage measurement
⑧ Pressure drop
⑨ Pressure drop in % of the starting value
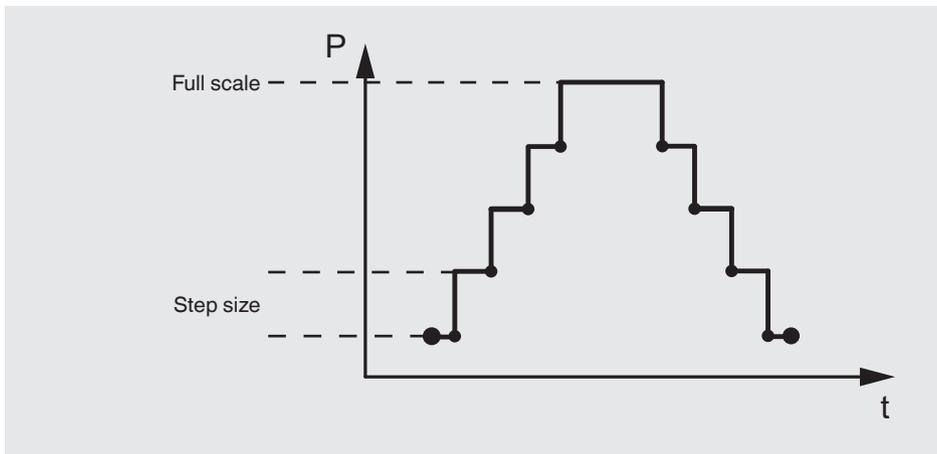⑩ Measurement duration

Menu and calibration procedure

I) General configuration via SETUP menu

SETUP menu items
- Select measuring range
- Select pressure unit (Pa, kPa, hPa, bar, mbar, psi, inH$_2$O, inHg, mmHg, Torr)
- Step size, freely selectable between 0 … 50 % or 100 %
- Select the operating mode (MEAS, CTRL, AUTO)

- Select language (DE, EN, ES, FR)
- Controller settings (zero point setting, interface, display, auto mode, info)

II) Calibration sequence example
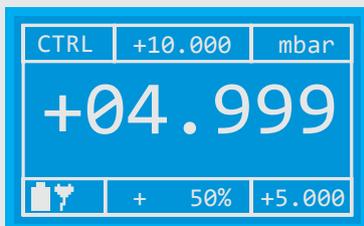

1. Defining the calibration cycle full scale (span)

```
 MENU
-------------------------
▶RANGE.....:      +10.000
 UNIT......:         mbar
 STEPS.....:          50%
 MODE......:         CTRL
 LANGUAGE..:           EN
 SETTINGS            -->
```

To configure the full scale (span):

Select the digit via ◁ ▷ buttons

Change the digit via ⌃ / ⌄ buttons

2. Go back to the main screen and run through the calibration cycle in the defined step size (x %)

```
 CTRL │ +10.000 │   mbar

  +04.999

▯🔧│  +   50% │ +5.000
```

Change set point to x %

Pressure change in % via ⌃ / ⌄ buttons

Change pressure to 100 % via ▷ button

Change pressure back to 0 % via ◁ button

⇒ The newly selected pressure step will be controlled immediately after the set-point change.

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 stick with the template must be purchased.

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

- Creation of calibration certificates for mechanical and electronic pressure measuring instruments
- Fully automatic calibration with pressure controllers
- Calibration of gauge 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.
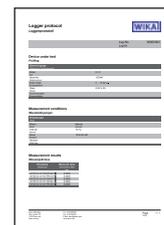
Log Demo
Creation of data logger test reports, limited to 5 measured values.

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

Accessories for CPC2000	Order code
Description	**CPX-A-C2**
Spare power supply unit	-P-
Transport case Robust	-C-
Easy	-E-
Interface cable RS-232	-9-
Ordering information for your enquiry:	
1. Order code: CPX-A-C2	⇓
2. Option:	[ ]

Scope of delivery

- Portable low-pressure controller model CPC2000
- Power supply unit
- Operating instructions
- 3.1 calibration certificate per DIN EN 10204

Options

- DKD/DAkkS calibration certificate

Ordering information

Model / Measuring range / Accuracy / Type of certificate / Power cord / Further approvals / Additional ordering information

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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