

# Portable Low-Pressure Controller Model CPC2000

WIKA Data Sheet CT 27.51

## Applications

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

## Special Features

- Pressure ranges: 0 ... 1 mbar to 0 ... 1,000 mbar
- Accuracy: up to 0.1%
- Integrated, automatic pressure generation
- Portable; only external power supply required
- Pressure steps can be easily defined



Portable Low-Pressure Controller Model CPC2000

## Description

### Application

The main applications for this instrument are within the heating, ventilation, air-conditioning, filtration, clean-room, and medical industries, either as high-accuracy, precise pressure measuring instruments or for calibration.

### Functionality

The CPC2000 is a mains-powered pressure controller with automatic, internal pressure generation and pressure reference. The pressure supply comes from an integrated, electric pump, which provides both positive and negative pressure respectively to the two hose connectors. Each time the instrument is powered up, an automatic zero-point adjustment is carried out, so that subsequent measurements are not affected by zero drift.

Each subsequent calibration needs only the minimum of setting up. First, using the SETUP key, one of the stored pressure units and the pressure step size is selected.

Then, once the end value has been entered in the Control mode, the pressure can be easily increased or decreased by the defined pressure step size using the navigation keys. To check whether the calibration assembly and/or the test item has a leak, the TEST key can be used. With this, the pressure is locked in the test assembly and any subsequent decrease in pressure which occurs is measured and indicated along with the decay time.

### Digital interface

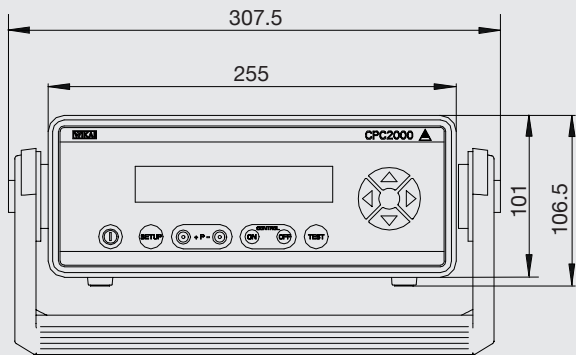
The equipment has an RS-232 interface, enabling communication and data exchange with a PC.

### Calibration certificate

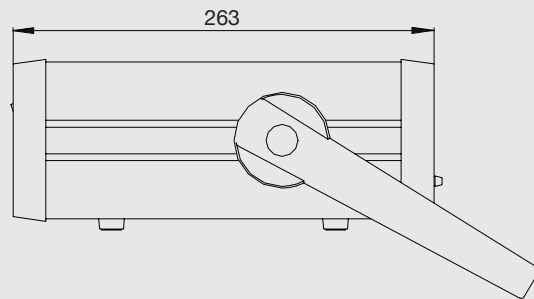
The accuracy of the instrument is certified by a works calibration certificate. If required, a DKD calibration certificate, from our own DKD laboratory, can also be provided for the instrument.

## Dimensions in mm

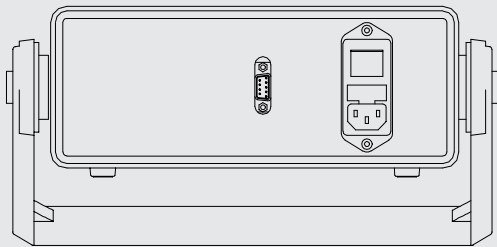
Front view



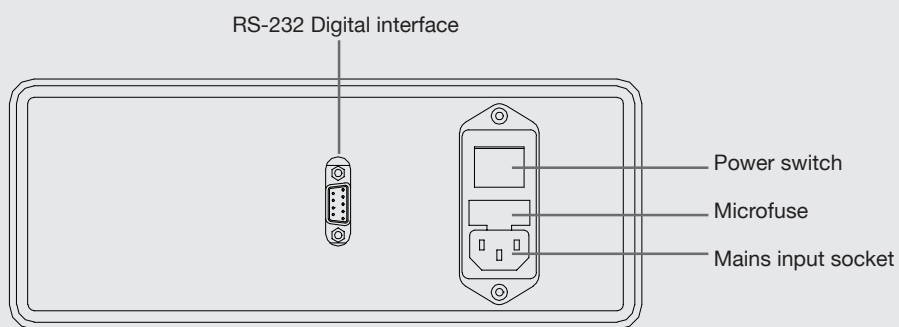
Side view



Rear view



Electrical connections - Rear view



## Specifications

## CPC2000

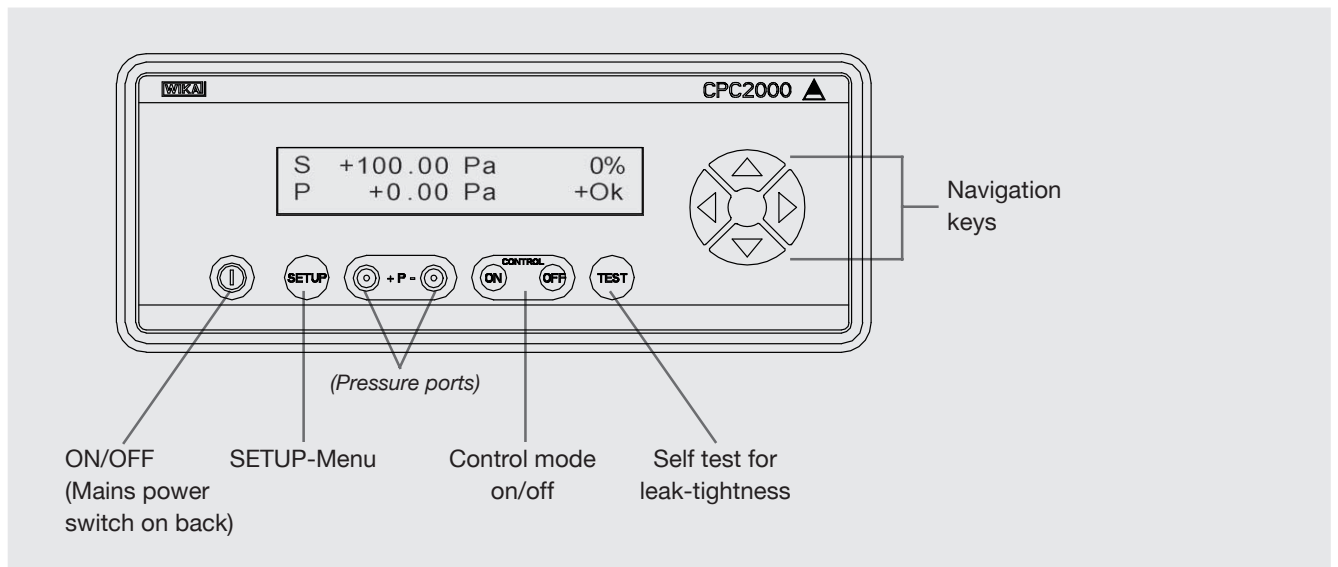
Measuring ranges*	mbar	1	10	100	1000
Overpressure safety	mbar	200	2000	6000	6000
Accuracy	% FS	0.25	0.1	0.1	0.1
Pressure type		gauge pressure and/or differential pressure			
Units		mbar, kPa, hPa, Pa, mmHg (0 °C), mmH <sub>2</sub> O (4 °C), inH <sub>2</sub> O (0 °C), inH <sub>2</sub> O (60 °F) inHg (0 °C), inHg (60 °F)			
Control step size; (selectable)	%	5, 10, 20, 25, 50, 100			
Control rate		approx. 2 sec (dep. on test volume)			
Permissible control volume	ccm	approx. 80 - 250			
Pressure connection	mm	two Ø 6 hose connectors for hose with internal Ø 5			
Pressure medium (in control mode)		ambient air			
Overpressure protection		electronic, at 140 % of measuring range			
Instrument construction		desk-top instrument with mounting bracket			
Display		2-line LCD display			
Resolution	% FS	0.001			
Measuring rate	msec	40 (display); 10 (digital interface)			
Keypad		membrane keypad			
Pressure generation		internal, electric pump			
Digital Interface		RS-232 (9-pin SUB-D connector)			
Power supply	AC	230 V +6/-15%, 50/60Hz (optional: 115 V)			
Power consumption	VA	16			
Permissible					
- Media		non-aggressive gases			
- Operating temperature	°C	10 ... 50			
- Storage temperature	°C	-10 ... +70			
- Humidity (relative)	%	0 ... 80			
- Operating position		horizontal			
Ingress protection		IP31			
Compensated temperature range	°C	15 ... 30			
Temperature coefficients					
- Mean TC of zero		not applicable, due to cyclic zero-point correction			
- Mean TC of range		0.03 % / 10 K			
Mass	kg	approx. 4.3			
Dimensions	mm	288 x 102 x 247 (see Dimensions)			
CE-Mark		certificate of conformity			
Calibration**		Incl. 3.1 calibration report according to DIN EN 10 204			

\* Actual available measuring range, in principal +20 % over stated range.

\*\* Calibrated, in horizontal position.

# Keypad and display

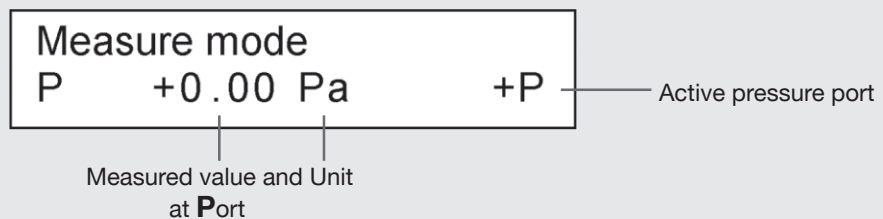
## I) Designation of the keys



## II) Possible modes and display screens

### a) Measure mode

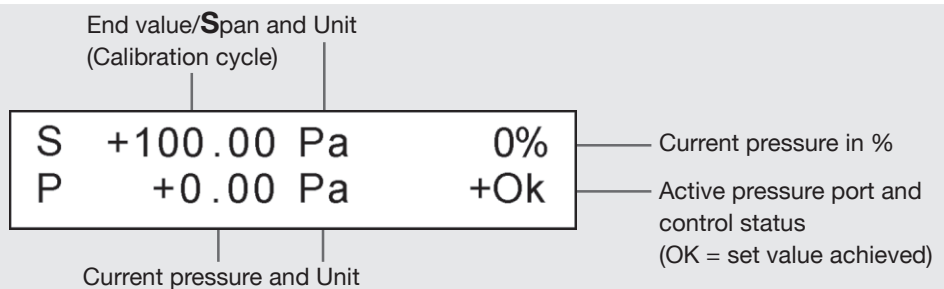
(via key: Control off)



In Measuring mode the pressure at the pressure ports is measured precisely.

### b) Control mode

(via key: Control on)

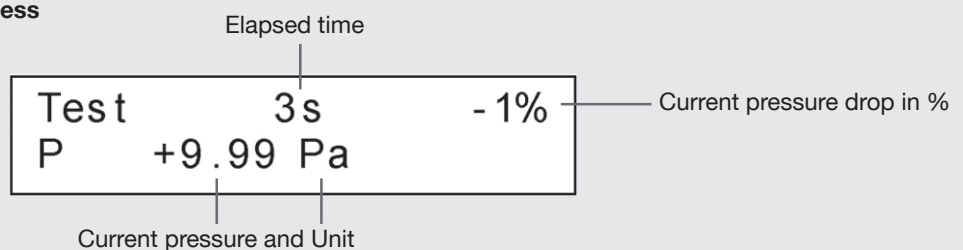


In Control mode very accurate pressures are supplied to the pressure ports.

The set value is altered (in selectable pressure step size) through the navigation keys (upwards/downwards).

### c) Self test for leak-tightness

(via key: TEST)



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

# SETUP und calibration procedure


## I) General configuration via SETUP menu



### SETUP menu items:

(via key: SETUP)

- Select **pressure step size** in % (5, 10, 20, 25, 50, 100)
- Activate **pressure port** ( +P, -P, +P & -P [Diff.])
- Select **pressure units** (Pa, mbar, mmHg, inHg, mmH<sub>2</sub>O, inH<sub>2</sub>O)
- Set **zero function** options (automatic, manual)
- Choose **language** (English, German)
- **Factory default** settings

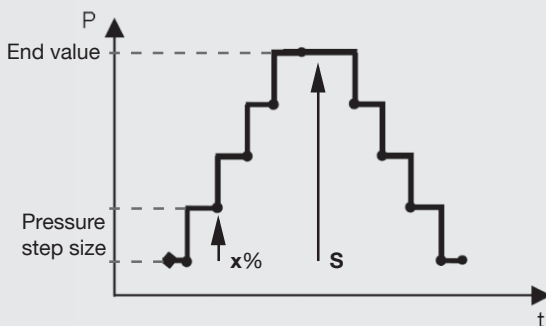
### Menu item configuration:

Select menu item via   -keys

Setting of menu item via   -keys

## II) Operation in control mode

Calibration cycle example



**x%: Pressure step size** (defined via SETUP menu)  
**S: End value [Span]** (defined in Control-on mode)



### 1. Defining the calibration cycle end value (Span)

(Starting point: **Control mode** (via key: Control on))

Cursor on **End value (Span)**

S	+100.00 Pa	0%
P	+0.00 Pa	+Ok

### To configure End value (Span):

Select the digit via   -keys

Change the digit via   -keys



### 2. Move the cursor to the right to x% via -key

### 3. Run through the calibration cycle in the defined pressure step size (x%)

Cursor on **pressure step size**

S	+100.00 Pa	10%
P	+10.00 Pa	+Ok

### Change set value by x%:

Pressure change in % via   -keys

(step size can be defined through the menu)

Current pressure and Unit

OK = Set value has been achieved

Directly after changing the set value, using the navigation keys, by (a step size) of x% the controller starts to control the new pressure. As soon as the value is achieved, the user will be informed by an **OK** in the display

### Scope of supply

- Portable low-pressure controller CPC2000
- Power lead 1.5 m with mains plug
- Operating instructions in English and German language
- 3.1 calibration report according to DIN EN 10 204

### Options

- DKD calibration certificate

### Accessories

- Digital interface cable
- Service tools

## Products and Services within our Testing and Calibration Technology Program

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>■ DKD calibration services for pressure</li><li>■ Repair of calibration units of all makes</li><li>■ Portable pressure measuring devices for testing and calibration tasks</li><li>■ Precision pressure measuring units and pressure controllers</li><li>■ Primary standards for pressure</li><li>■ Testing technology system solutions</li></ul> | <ul style="list-style-type: none"><li>■ DKD calibration services for temperature</li><li>■ Temperature dry well calibrators</li><li>■ Calibration baths and furnaces</li><li>■ Temperature measuring instruments for testing and calibrating tasks</li><li>■ Precision thermometers</li><li>■ Primary standards for temperature</li><li>■ Consulting and training</li></ul> |
|---|---|

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



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