

Portable pressure calibrator Model CPH7650

WIKA data sheet CT 17.02

Applications

- Calibration service companies and service industry
- Measurement and control laboratories
- Quality assurance

Special features

- Measurement and electrical pressure generation at the touch of a button with integrated pump, from -0.85 ... +20 bar (-12 ... 290 psi)
- Accuracy: 0.025 % FS (incl. calibration certificate)
- Generation/measurement of 4 ... 20 mA, and DC 24 V voltage supply to power transmitters
- Robust case design, IP67



Portable pressure calibrator, model CPH7650

Description

General information

The portable pressure calibrator model CPH7650 is a compact, portable pressure calibrator, which has been designed for mobile use as well as for stationary workshop and laboratory testing. An integrated electrical pump enables you to generate pressures up to 20 bar (300 psi) and an integrated electrical module also enables you to supply transmitters or sensors with a current of max. 30 mA (voltage (idling) = DC 24 V), in addition to the traditional measurement of current and voltage signals.

Accuracy

The exchangeable model CPT6000 reference sensor offers an accuracy of 0.025 % of span. The temperature compensation of the built-in sensor safeguards the accuracy for applications in the field. Readings can be displayed in one of 13 standard units.

Features

With the portable pressure calibrator, not only are accurate pressure measurements possible, but also exact current and voltage measurements, as well as a DC 24 V voltage supply for test items are enabled. Pressure values and electrical measured values are simultaneously shown in the display. The calibrator is integrated into a robust, as well as dust and waterproof transport case. Thus the mobile pressure calibrator is particularly suited to use in harsh industrial environments.

With the built-in NiMH rechargeable battery, a battery life of approximately 50 hours or 125 pump cycles up to 20 bar (290 psi) is guaranteed. The external universal power supply is designed for an operating voltage of AC 100 ... 240 V.

Software

The WIKA-Cal calibration software is available for online calibrations in connection with a PC. Using this software, the data is automatically transferred into a printable calibration certificate. Furthermore, WIKA-Cal also offers, over and above PC-supported calibration, the management of the calibration and instrument data in an SQL database. A USB interface is available for the data transfer.

Certified accuracy

For the CPH7650, the accuracy is certified by a factory calibration certificate which accompanies the instrument. On request, we can provide a DKD/DAkkS calibration certificate for this instrument.

Specifications Model CPH7650

Measuring ranges	
Pressure ¹⁾	
Gauge pressure	-1 ... +20 bar, -1 ... +10 bar, 0 ... 20 bar, 0 ... 10 bar
Absolute pressure	0 ... 10 bar abs., 0 ... 20 bar abs.
Overpressure limit ²⁾	3 times
Accuracy	0.025 % FS
Resolution	5-digit
Temperature compensation	15 ... 35 °C (59 ... 95 °F)
Temperature coefficient	0.002 % of span/°C outside of 15 ... 35 °C (59 ... 95 °F)
Current	
Measuring range	0 ... 24 mA (max. load 1,000 Ω)
Resolution	1 μA
Accuracy	0.015 % of reading ±2 μA (simulation and measurement)
Voltage	
Measuring range	DC 0 ... 30 V
Resolution	1 mV
Accuracy	0.015 % of reading ±2 mV (measurement)

1) Via exchangeable model CPT6000 reference pressure sensors

2) The electrical pump can generate -0.85 ... +20 bar (-12 ... 290 psi).

Base instrument	
Pressure supply	-0.85 ... +20 bar (-12 ... 290 psi), via integrated electric pump
Pressure connection for test item	G ½" female thread
Permissible media	For dry, clean and non-aggressive gases
Output	
Voltage supply	DC 24 V
Power supply	
Battery type	NiMH rechargeable battery
Permissible ambient conditions	
Operating temperature	-10 ... +50 °C (14 ... 122 °F)
Storage temperature	-20 ... +60 °C (-4 ... +140 °F)
Relative humidity	35 ... 85 % r. h. (non-condensing)

Base instrument	
Communication	
Interface	USB via special interface cable
Case	
Case	NK-7TM resin
Front panel	Aluminium
Ingress protection	IP67 (case closed) IP40 (case opened)
Dimensions	387.4 x 304.8 x 177.8 mm (15.25 x 12 x 7 in)
Weight	approx. 7 kg (15.5 lbs.)

Certificates

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

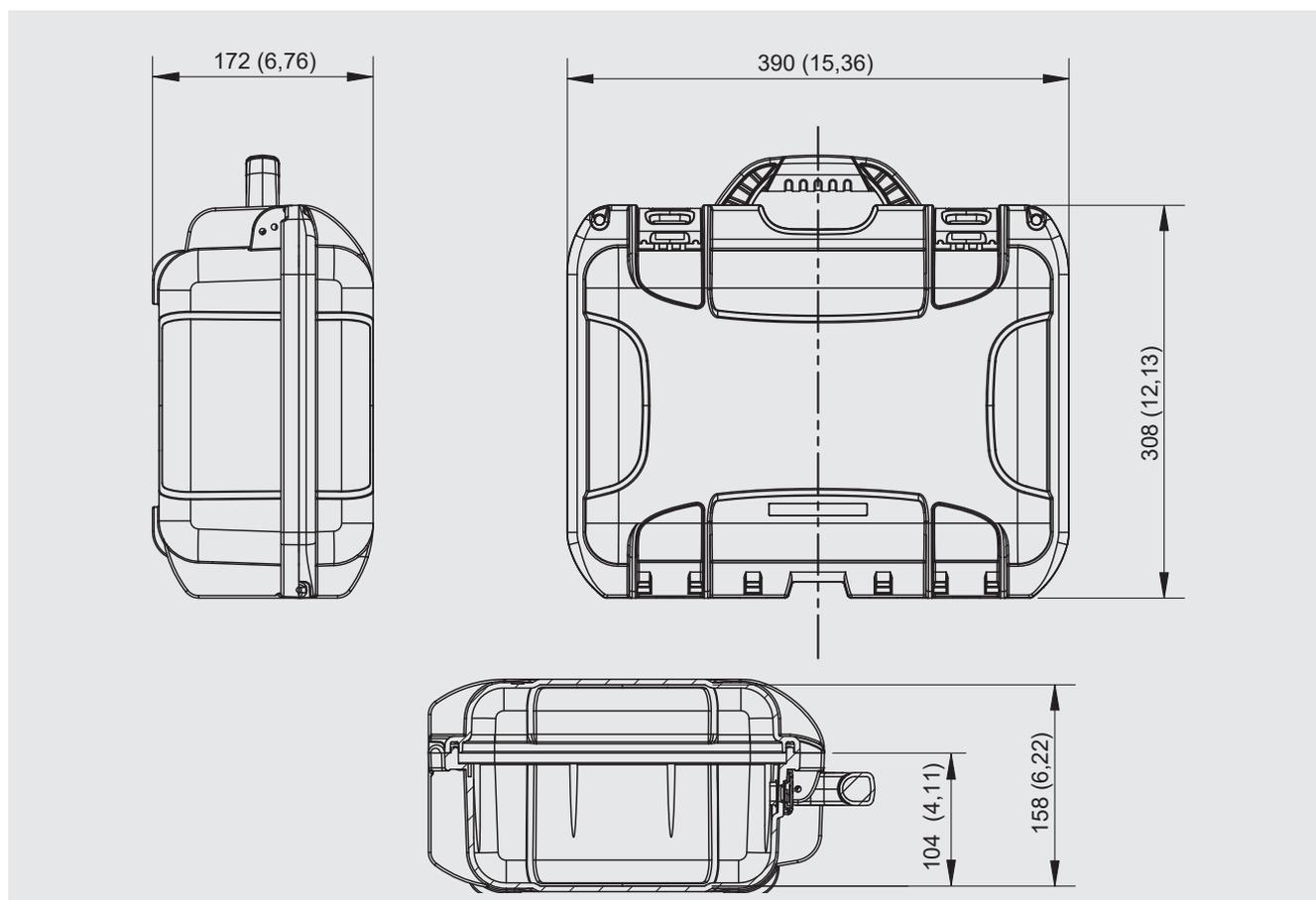
Approvals and certificates, see website

Available pressure range and resolution

Pressure range and factors		
	Gauge pressure	-1 ... +20 bar (-14.5 ... 290 psi)
	Overpressure limit	40 bar (580 psi)
Unit	Conversion factor	
psi	1	300.00
bar	0.06894757	20.684
mbar	68.94757	20,684
kPa	6.894757	2,068.4
MPa	0.00689476	2.0684
kg/cm ²	0.07030697	21.092
cmH ₂ O (4 °C)	70.3089	21,093
cmH ₂ O (20 °C)	70.4336	21,130
inH ₂ O (4 °C)	27.68067	8,304.2
inH ₂ O (20 °C)	27.72977	8,318.9
inH ₂ O (60 °F)	27.70759	8,312.3
mmHg (0 °C)	51.71508	15,515
inHg (0 °C)	2.03602	610.81

3) Electrical pump: -0.85 ... +20 bar (-12 ... 290 psi)

Dimensions in mm (in)



Features

Pressure supply

The CPH7650, through an integrated electrical pump, enables the provision of -0.85 ... +20 bar.

With this, the operator can supply the test item to be calibrated with pressure on-site and does not need any separate pressure supply.

Current and voltage

In addition to pressure, the portable pressure calibrator also measures and simulates 4 ... 20 mA current loop signals, can measure up to DC 30 V and features an internal DC 24 V voltage supply to power the transmitter being calibrated. The DC 24 V voltage supply is switchable for transmitters with mA as well as V output signal.

Display

It can display two calibration values simultaneously. This means that the external reference sensor and electrical test item values (mA or V) can be displayed simultaneously. The instrument has a large graphic LC display with backlighting.

Pressure ranges

The CPH7650 can be fitted with different reference pressure sensors, so that the pressure calibrator is suitable for the calibration of test items with different pressure ranges up to 20 bar.

Each pressure range can be accurately generated with the integrated electric pump at the touch of a button. The fine adjustment is made with the integrated volume adjuster.

Functions

The CPH7650 has a complete range of useful functions. Switch tests can be carried out and recorded. The deviation of the test item is directly calculated and indicated on the display. A damping function is available. Up to five frequently used instrument settings can be stored and retrieved by pressing a button.

Robustness

The CPH7650 consists of a calibrator, which is built into a rugged service case. With this design, the portable pressure calibrator is suited to extremely harsh operating conditions.

Dirt trap

The CPH7650 should only be used with dry and clean test items. Soiling of the integrated pump, for example, through contaminated test items, can lead to faults on the pump or require the pump to be cleaned.

By using the dirt trap specifically developed for the CPH7650, contamination of the integrated pump can be prevented.

Using the dirt trap

The dirt trap is attached, hand-tight, at the pressure connection of the calibrator. Sealing is achieved via the O-ring fitted on the G 1/2" male thread of the dirt trap. The maximum operating pressure is limited to 25 bar.

The test item is mounted to the upper connection of the dirt trap, using a suitable sealing method.

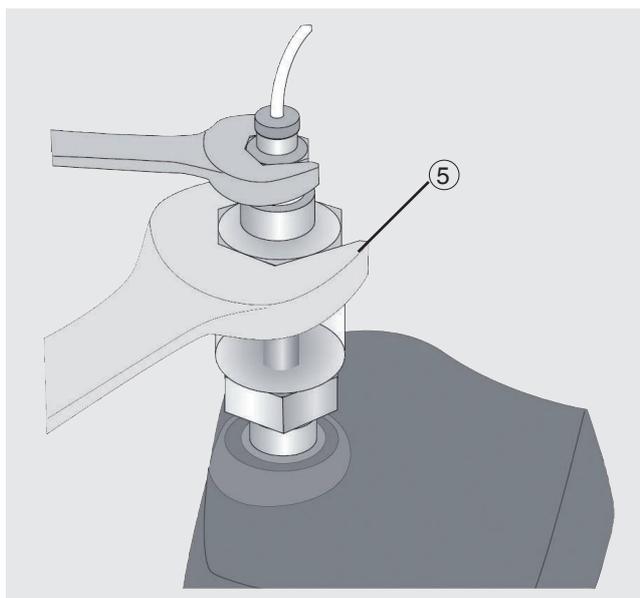
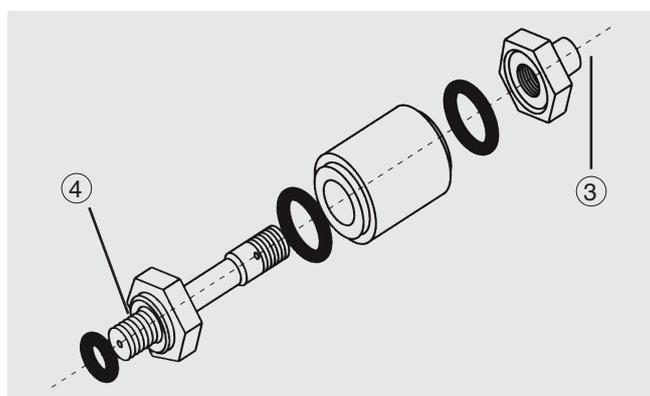
As soon as moisture or dirt accumulates in the transparent chamber, the liquid should be drained via a drain valve and the chamber should be cleaned by subsequent dismantling.

Once the upper dirt trap connection has been unscrewed, the transparent acrylic chamber and the O-rings can be removed and cleaned with a clean cloth.



Dirt trap

- ③ Input
- ④ Output to calibrator
- ⑤ 7/8" or 23 mm spanner



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
- 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.



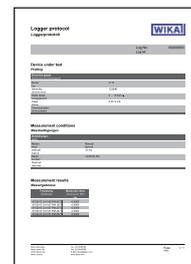
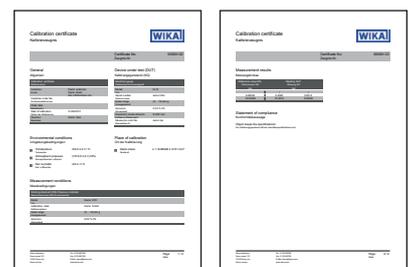
Log Demo

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

- Portable pressure calibrator model CPH7650
- Operating instructions
- Test cables
- Battery charger
- 3.1 calibration certificate per DIN EN 10204

Option

- DKD/DAkkS certified accuracy

Accessories

Connection adapters

- Various pressure adapters

Software

- WIKA-Cal calibration software

Ordering information

CPH7650 / Reference sensor / Unit / Pressure type / Measuring range / Accuracy / Type of certificate / Electrical module / Connection adapter / Further approvals / Additional ordering information

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