

Hand-Held Pressure Calibrator with integrated pump Model CPH6600

WIKA Data Sheet CT 16.01

Applications

- Calibration service companies and service industry
- Instrument and control workshops
- Quality assurance

Special Features

- Integrated pneumatic pump generates pressure to 20 bar and vacuum to -0.8 bar
- Accuracy to 0.025 % (incl. calibration certificate)
- Source/measure 4 ... 20 mA and 24 V loop power to power device under test
- Pt100 RTD input for temperature measurement, accurate to 0.1 °C (measurement only)
- Small, rugged compact design



Hand-Held Pressure Calibrator with integrated electric pump Model CPH6600

Description

WIKA introduces a revolution in pressure calibration technology for the process industries. With the release of its new CPH6600, technicians will have a small, lightweight hand-held calibrator that generates pressures up to 10 bar using a high-performance integral electric pump. With manual pump up to 20 bar is possible.

The CPH6600 has a form factor similar to WIKA's popular CPH6400 Precision Hand-Held Pressure Indicator and weighs less than 1 kg. The housing is contoured to easily fit a technician's hand with good balance top to bottom.

Performance doesn't stop with the pump. The CPH6600 provides ± 0.025 % FS accuracy on its internal, isolated pressure sensor. Temperature compensation on its internal sensor ensures accuracy in field applications.

An external pressure module connection supports all WIKA pressure modules, allowing even greater ranges. In combination with an external temperature probe, the CPH6600 enables a simultaneous temperature measurement. Additional functions, such as pressure switch testing and the indication of the test specimen deviation in percent, increase the user-friendliness of the CPH6600.

Specifications

Model CPH6600

Pressure ranges	bar	-0.8 ... +2 bar*	-0.8 ... +10 bar*	-0.8 ... +20 bar**	0 ... 20 bar abs.**
Overpressure safety	bar	4 bar	14 bar	40 bar	40 bar
Burst pressure	bar	34 bar	70 bar	135 bar	135 bar
Accuracy	% FS	0.025 (6 month) 0.035 (1 year)			
Pressure connection		1/8" NPT female			
Permissible media		clean, dry non-corrosive gases compatible with Silicon, Pyrex, RTV, Gold, Ceramic, Nickel and Aluminium			
Temperature compensation	°C	15 ... 35 Add 0.005 % FS/°C outside of 15 ... 35 °C			
Units		psi, bar, mbar, kPa, MPa, kgcm ² , mmH ₂ O @ 4 °C, mmH ₂ O @ 20 °C, cmH ₂ O @ 4 °C, cmH ₂ O @ 20 °C, inH ₂ O @ 4 °C, inH ₂ O @ 20 °C, inH ₂ O @ 60 °F, mmHg @ 0 °C, inHg @ 0 °C			
Current					
■ Measuring range	mA	0 ... 24 (max. load 1000 Ω)			
■ Resolution	μA	1			
■ Accuracy		0.015 % of reading ± 2 μA (simulation and measurement)			
Voltage					
■ Measuring range	DC	0 ... 30 V			
■ Resolution	mV	1			
■ Accuracy		0.015 % of reading ± 2 mV (measurement)			
Output loop power	DC	24 V			
Temperature					
■ Measuring range	°C	-50 ... +150			
■ Resolution	°C	0.01			
■ Accuracy		0.015 % of reading ± 20 mΩ, or 0.2 °C for complete measuring chain (Pt100 resistance thermometer and CPH6600)			
Permissible					
■ Operating temperature	°C	-10 ... +50			
■ Storage temperature	°C	-20 ... +60			
Power supply					
■ Battery		DC 12 V, Eight (8) standard AA batteries			
■ Battery life		300 pump cycles to 10 bar (minimum) 1000 pump cycles to 2 bar			
Housing		PolyCarbonate/ABS blend			
Ingress protection		IP56			
Dimensions	mm	see technical drawing on Page 2			
Weight	g	950			
CE-conformity					
■ EMC directive		2004/108/EC, EN 61 326 Emission (Group 1, Class B) and Immunity (portable measurement equipment)			
Calibration		Factory calibration certificate (optional: DKD calibration certificate)			

* electric pump

** manual pump

Features

Temperature, Current and Voltage

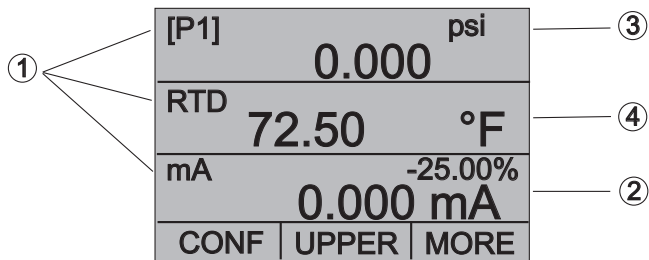
A Pt100 resistance thermometer (RTD) input is provided for temperature measurements, accurate to ± 0.1 °C. In addition, the CPH6600 measures and simulates 4 ... 20 mA loop current signals. It can measure up to 30 V DC. An internal 24 V DC instrument power supply supplies power to a transmitter under test.

Display

The CPH6600 displays up to 3 calibration values at one time from the choice of internal pressure sensor, external pressure sensor, temperature from the optional RTD probe or electrical (mA or V DC). The display is a large backlit graphics-style LCD that is easy to read under any lighting conditions.

Pressure ranges

The CPH6600 can be delivered in 4 different ranges of 2 bar, 10 bar and 20 bar. Also an absolute range of 0 ... 20 bar abs is available. The 20 bar versions use a manually-operated hand pump.



Functions

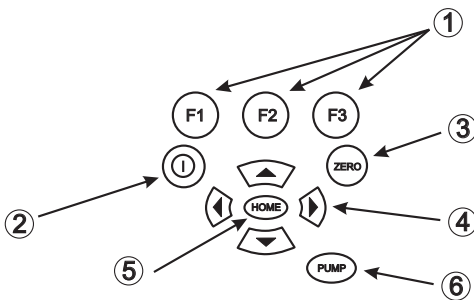
The new CPH6600 Pressure Calibrator provides a number of convenient functions. Switch tests can be performed on the internal or external pressure input. Percentage (%) Error and damping functions are provided. Up to five frequently-used setups can be stored and retrieved with one-button recall.

Compact and rugged

The compact, rugged design operates on eight (8) standard AA Alkaline batteries. Due to the power saving designs incorporated in the CPH6600, it can perform approximately 300 calibration cycles to 10 bar on one set of batteries.

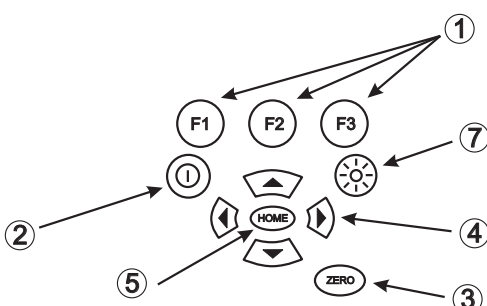
- 1) Primary Parameters
Indicate what is being measured
- 2) Span Indicator
Indicates the percentage of the 4 to 20 mA span (For mA and mA Loop functions only)
- 3) Pressure Units
Indicates one of 15 pressure units available for display
- 4) Units
Indicates the unit of measure for the display

Keypad (Electric pump versions)



- 1) Function Keys
These are soft keys used to configure the calibrator
- 2) ON/OFF Key
This key is used to turn the calibrator on and off
- 3) ZERO Key
This key is used to zero pressure measurements
- 4) Arrow Keys
Used to control mA source/simulation and to set pump and % error limits
- 5) Home Key
Return to main menu screen
- 6) Pump Key
Push to run pump (electric pump version)

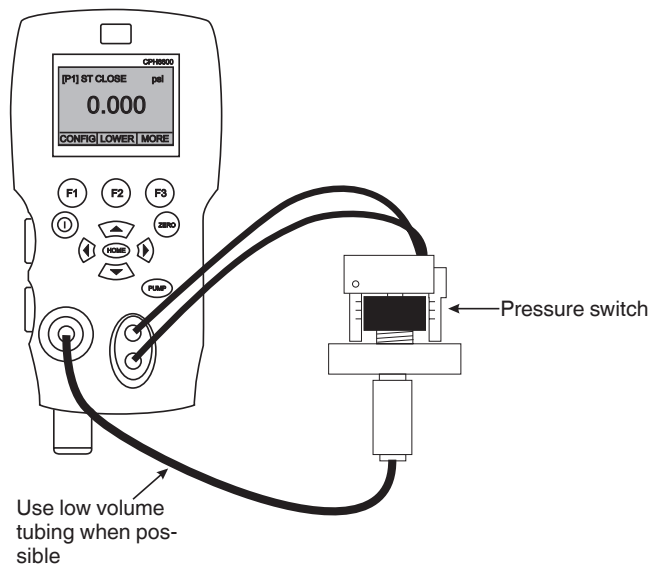
Keypad (Manual pump version)



- 6) Pump Key
Push to run pump (electric pump version)
- 7) Backlight
Turn on backlight (manual pump version)

Special operating modes

Operating mode: Pressure switch test



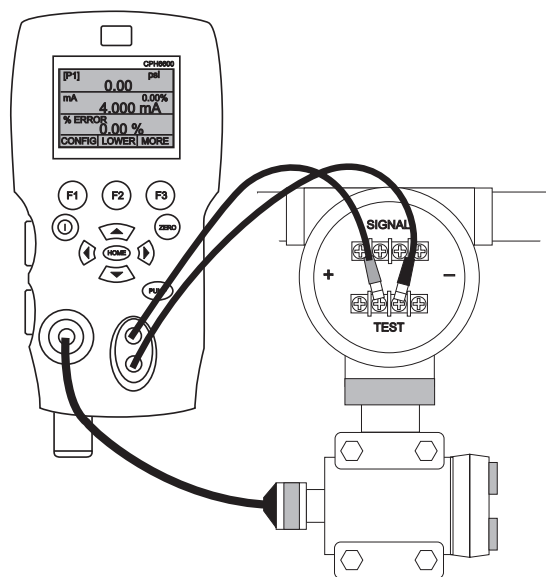
Pressure switch test:

The pressure switch function allows the CPH6600 to display the pressures when the switch closes and opens. In addition the hysteresis can be displayed.

In the switch test mode the display update rate is increased to help capture changing pressure inputs.

If necessary, it is possible to measure the ambient or media temperature with an external Pt100 resistance thermometer

Operating mode: Calibrating Transmitters & Percentage error function



Calibrating Transmitters:

The mA input function allows the 4 ... 20 mA output from the device being calibrated to be read back. This can be done in one of two ways.

- 1) **Passively** – Where the device under test generates 4 ... 20 mA directly and can be read by the calibrator.
- 2) **Actively** – Where the calibrator supplies 24 V DC loop power to the device under test to power the device while reading the resulting 4 ... 20 mA signal.

The calibrator features a unique function which can calculate pressure versus milliamp error as a percentage of the 4 ... 20 mA loop span. The percent error mode uses all 3 screens and has a unique menu structure. It simultaneously displays pressure, mA and percentage error.

Example:

Suppose a pressure transmitter under test has a measuring range of 2 bar and outputs a corresponding 4 ... 20 mA signal. The user can programme a 0 to 2 bar pressure span into the calibrator and the calibrator will calculate and display the deviation or % Error from the expected 4 ... 20 mA output. This eliminates the need for manual calculations and also helps if it becomes difficult to set an exact pressure with an external pump.

Scope of Supply

- CPH6600 Hand-Held Pressure Calibrator with integrated pump
- Operating instructions
- Test leads
- Calibration hose kit with fittings 1/8 NPT male
- Adapter set 1/8 NPT female on 1/4 NPT female, 1/8 NPT female on 1/4 BSP female, 1/8 NPT female on G 1/2 female
- PTFE thread seal tape
- 8 batteries type AA
- 3.1 Calibration Certificate per DIN EN 10 204



Hand-Held Pressure Calibrator with integrated manual pump

Accessories

- Pt100 resistance thermometer
- Battery set, 4 NiMH batteries
- Battery charger set, incl. 4 batteries, quick charger, power lead, adapters
- Service case

Option

- DKD calibration



Hand-Held Pressure Calibrator with service case

Products and Services within our Calibration Technology Program

- DKD calibration services for pressure
- Repair of calibration units of all makes
- Portable pressure measuring devices for test and calibration tasks
- Precision pressure measuring units and pressure controllers
- Primary standards for pressure
- Testing technology system solutions
- DKD calibration services for temperature
- Portable measuring devices and calibrators
- Dry well temperature calibrators
- Calibration baths and furnaces
- Precision thermometers
- Primary standards for temperature
- Consulting and seminars

The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

