

# Precision hand-held pressure indicator Model CPH6400

WIKA data sheet CT 14.01

## Applications

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

## Special features

- Digital indicator with easily interchangeable pressure sensors (plug and play)
- Measuring ranges from 0 ... 400 mbar up to 0 ... 6,000 bar (vacuum and absolute pressure ranges also available)
- Accuracy: 0.025 % (incl. calibration certificate)
- Simultaneous pressure and temperature measurement with external Pt100 resistance thermometer
- Min, max, pressure rate and data logger function



**Precision hand-held pressure indicator model CPH6400  
with optional model CPT6400 reference pressure sensor**

## Description

### Features

A wide variety of pressure sensors, offering various measuring ranges of up to 6,000 bar, are available to the operator, always ensuring a solution matched to the application. The individual sensors can be exchanged quickly and without tools (plug and play) and are automatically recognised by the digital indicator. Also, as an option, very accurate temperature measurement with a Pt100 resistance thermometer is possible. In addition, this instrument features a large, easily-read display with backlighting (on/off selectable), a durable housing and simple, clear operation.

### Functionality

In addition to mobile and high-precision pressure and temperature measurement, the CPH6400 also opens up other helpful applications e.g. recording of pressure and temperature curves (via the logging function), leak testing (via the pressure rate function) and peak value determination (via the Min/Max function). These useful functions can be easily activated or deactivated by pressing the respective keys.

### Software

Using WIKA's PrintCal software, the logged data, stored in the CPH6400, can be transferred to a PC via a USB connection, where it can be stored in an EXCEL<sup>®</sup> file for documentation and further evaluation. In addition to this, PrintCal offers the possibility of PC-supported calibration of pressure measuring instruments using the CPH6400.

### Complete test and service set

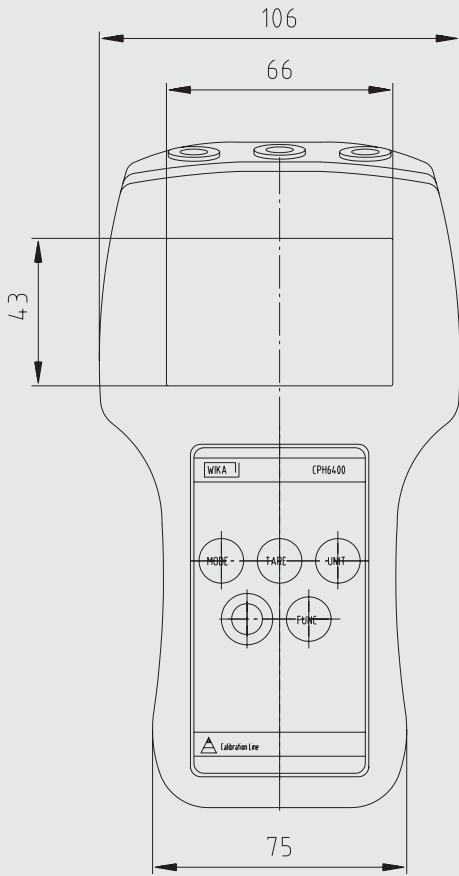
For maintenance and service applications, various service case systems are available. These include pressure service sets with or without pressure pump, charger, adapter, etc.

### Certified accuracy

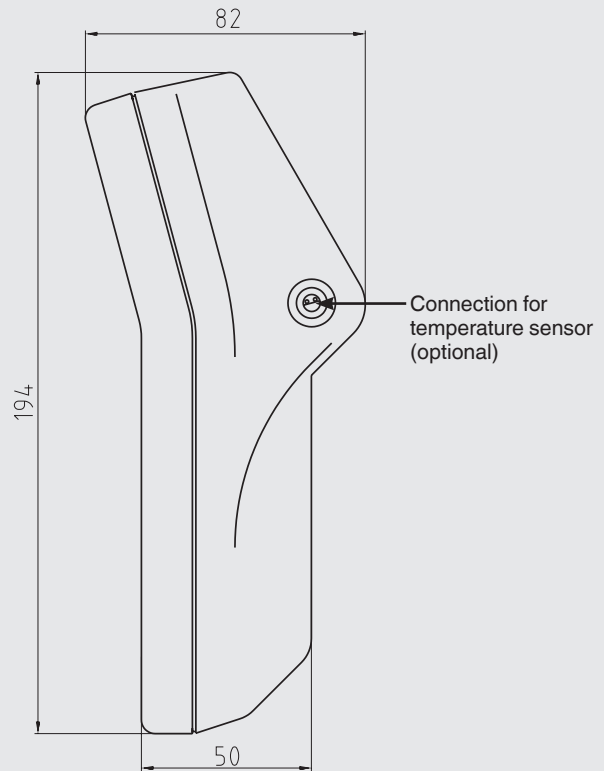
For each reference pressure transmitter and Pt100 resistance thermometer, the accuracy for the complete measuring chain is certified by a factory calibration certificate which accompanies the instrument. Alternatively, on request, a DKD/DaKkS calibration certificate can be supplied.

## Dimensions in mm

Digital indicator CPH6400  
Front view

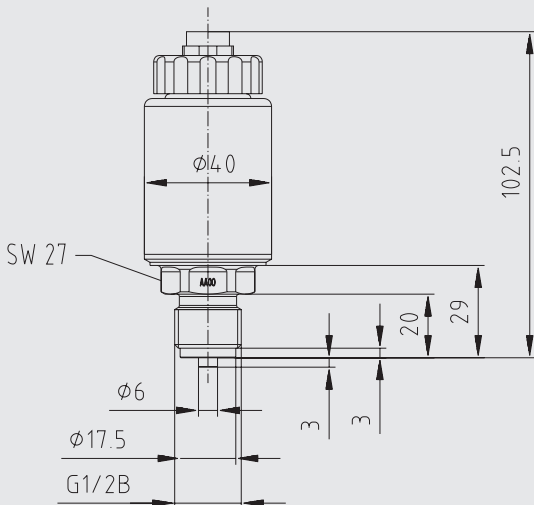


Side view



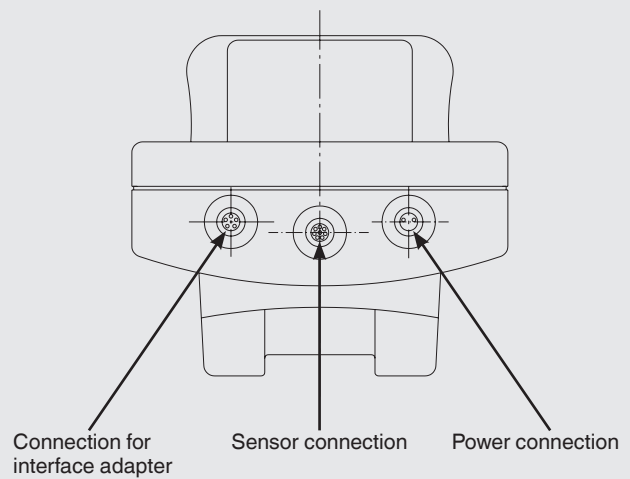
## Dimensions in mm

Reference pressure sensor CPT6400



## Electrical connections to the digital indicator

Top view



## Specifications Precision hand-held pressure indicator model CPH6400 (complete measuring chain)

Sensor technology		1 reference pressure sensor (interchangeable without tools) <sup>1)</sup>									
Measuring range	bar	0.4	1.6	6	16	40	100	250	600	1000	
Overpressure safety	bar	2	10	35	80	80	200	500	1200	1500	
Burst pressure	bar	2.4	12	42	96	400	800	1200	2400	3000	
Accuracy of the measuring chain		0.025 % FS <sup>2)</sup>									
Measuring range	bar	1600	2500	4000	5000	6000					
Overpressure safety	bar	2300	3500	5000	6000	7000					
Burst pressure	bar	4000	6000	8000	10000	11000					
Accuracy of the measuring chain		0.1 % FS <sup>2)</sup>									
Type of pressure		{In addition to the above-specified pressures; vacuum, bi-directional ranges and absolute pressures are available}									
Pressure units		bar, mbar, kPa, psi, mmHg, inHg and kg/cm <sup>2</sup> (depending on the measuring range, selectable)									
Active temperature compensation	°C	10 ... 40									
Temperature measurement		only for 2-channel version									
■ Sensor type		Pt100, 4-wire									
■ Measuring range	°C	-10 ... +50									
■ Resolution	°C	0.01									
■ Accuracy	°C	0.05									
Permissible ambient temperature	°C	0 ... 50									
Calibration <sup>2)</sup>		Factory calibration certificate (optional: DKD/DAkkS calibration certificate)									

## Specifications Digital indicator model CPH6400

Display		Large graphic display, with backlighting (On/Off selectable)									
Display resolution		up to 6 digits; selectable									
Measuring rate (pressure)		5 values/sec									
Functions		Min, Max memory, pressure rate, tare, offset-correction for gauge pressure ranges, data logger function									
Data logger		- Cyclic data logger: automatic recording of up to 1000 values (500 pressure values and 500 temperature values) - Cycle time: adjustable from 1 ... 3600 seconds									
Interface		USB									
Permissible											
■ Relative humidity	% r. H.	0 ... 85 (non-condensing; at 50 °C)									
■ Storage temperature	°C	-20 ... +60									
Power supply											
■ Current supply		Internal Lithium-Ion rechargeable battery (charging time: < 6 h)									
■ Battery operation	h	approx. 25									
Case		Polyamide 12, membrane keyboard, transparent panels									
Ingress protection		IP 65									
Weight	g	approx. 480									
CE conformity											
■ EMC directive		2004/108/EC, EN 61326 Emission (Group 1, Class B) and Immunity (industrial locations)									

## Specifications Reference pressure sensor model CPT6400

Pressure connection		≤ 1000 bar: G ½ B; {various connection adapters on request} > 1000 bar: M16 x 1.5 female, with sealing cone									
Material		Stainless steel for wetted parts (measuring range > 25 bar additional Elgiloy <sup>®</sup> )									
Internal transmission fluid		Synthetic oil (only for measuring ranges up to 25 bar)									
Permissible temperature ranges											
■ Medium	°C	-20 ... +80									
■ Storage	°C	-40 ... +85									
Case		Stainless steel									
Electrical connection		Circular connector, 8-pin									
Ingress protection		IP 65 (with cable connected)									
Weight	g	approx. 220									
CE conformity											
■ Pressure equipment directive		97/23/EC, PS > 200 bar; module A, pressure accessory									
■ EMC directive		2004/108/EC, EN 61326 Emission (Group 1, Class B) and Immunity (industrial locations)									

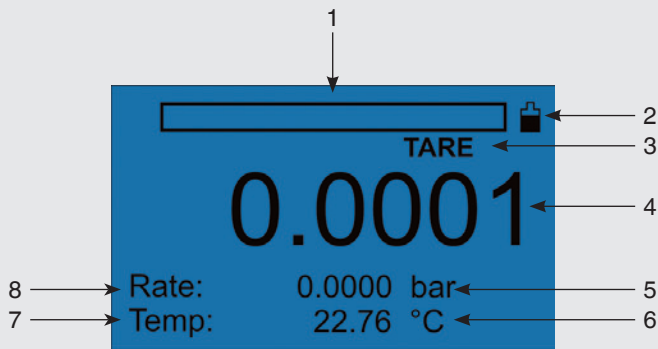
1) Calibration data sets for up to 10 transmitters can be stored in each instrument (up to 10 calibration data sets)

2) Calibrated at 23 °C and in vertical mounting position with pressure connection facing downwards.

{ } Items in curved brackets are optional extras for an additional price.

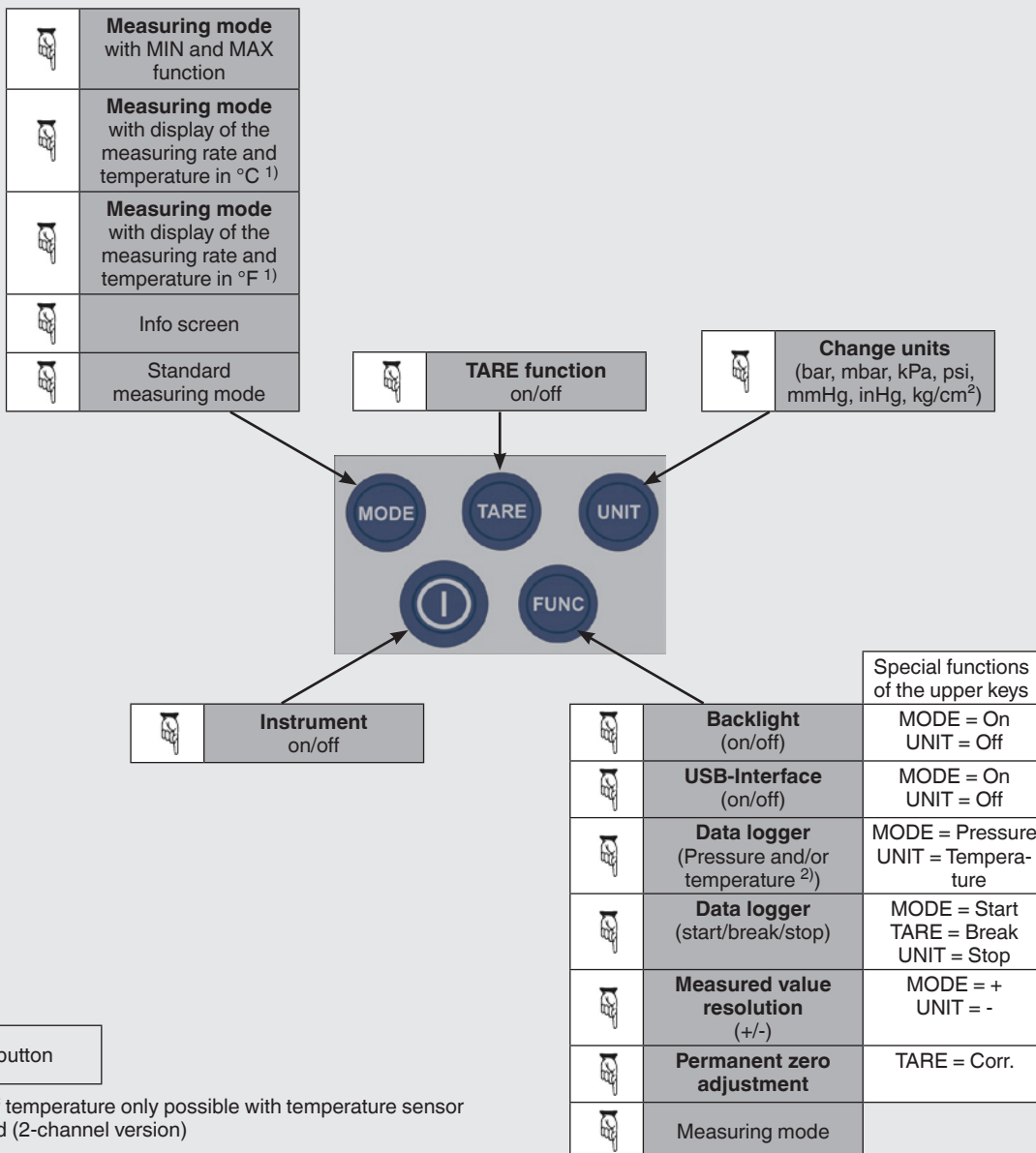
# Operation of the model CPH6400 hand-held pressure indicator

## Display



- 1 Bar graph
- 2 Battery status display
- 3 TARE function (if activated)
- 4 Current measured pressure value
- 5 Pressure unit
- 6 Temperature unit (2-channel version)
- 7 Current measured temperature via the external temperature sensor (2-channel version)
- 8 Display of the measuring rate

## Keyboard



= press button

- 1) Display of temperature only possible with temperature sensor connected (2-channel version)
- 2) Storage of temperature values only possible with temperature sensor connected (2-channel version)

## Complete test and service cases



**Basic version**

### Calibration case with model CPH6400 precision hand-held pressure indicator for pressure, consisting of:

- Plastic service case with foam insert
- Precision hand-held pressure indicator model CPH6400
- Sensor cable for external operation of sensor
- Charger
- Spaces for several CPT6400 reference pressure sensors

Available pressure ranges: see specifications on page 3.



**Basic version incl. pneumatic pressure generation**

### Calibration case with model CPH6400 precision hand-held pressure indicator and model CPP30 hand test pump for pressures of -0.95 up to +35 bar, consisting of:

- Service case with foam insert
- Precision hand-held pressure indicator model CPH6400
- Pneumatic hand test pump model CPP30, -0.95 ... +35 bar
- Sensor cable for external operation of sensor
- Charger
- Spaces for several CPT6400 reference pressure sensors

Available pressure ranges: see specifications on page 3.



**Basic version incl. hydraulic pressure generation**

### Calibration case with model CPH6400 precision hand-held pressure indicator and model CPP700-H/ CPP1000-H hand test pump for pressures of 0 ... 700 bar/0 ... 1000 bar, consisting of:

- Service case with foam insert
- Precision hand-held pressure indicator model CPH6400
- Hydraulic hand test pump, model CPP700-H/ CPP1000-H, 0 ... 700 bar/0 ... 1000 bar
- Sensor cable for external operation of sensor
- Charger
- Spaces for several CPT6400 reference pressure sensors

For further specifications, see data sheet CT 91.07.

## Temperature measurement with model CPH6400 precision hand-held pressure indicator

In addition to the external CPT6400 reference pressure sensor, an external Pt100 temperature sensor can now be connected in parallel. An accuracy of 0.05 °C can be achieved with this. The additional temperature extension is available as an option - as a basic unit, the CPH6400 remains a precision hand-held pressure indicator. With the integrated data logger, pressure or temperature can be recorded, as well both measurement parameters simultaneously. The evaluation from the data logger is carried out using Microsoft Excel. The simultaneous measurement and logging of pressure and temperature opens a wide range of possible applications for the CPH6400. For example, the instrument is thus ideally suited to leak testing, since now the influence of temperature can also be recorded for any pressure increase or pressure drop.



Precision hand-held pressure indicator model CPH6400 with model CPT6400 reference pressure sensor and temperature sensor

## PrintCal calibration software

The WIKA PrintCal calibration software is used for the calibration (inspection equipment monitoring) of mechanical and electronic pressure measuring instruments.

- Simple step-by-step calibration
- user-friendly interface
- Customer-specific input of the calibration steps
- Generation of 3.1 certificates in accordance with DIN EN 10204
- Customer-specific test report possible (Excel-based)
- Languages: German/English/Spanish/French

The screenshot shows the PrintCal software interface. On the left, the 'CPH-Online' window displays 'Display CPH' with a 'Reference' value of 5.01 and a 'DUT' value of 5. Below this, there are buttons for 'Create Certificate' and 'Datalogger'. The 'Datalogger' section shows 'Mode' set to 'Auto-Intervall' with a value of 5. On the right, a generated certificate is shown, titled 'WIKAL Alexander Wiegand SE & Co. KG'. The certificate includes the following information:

Reference	Prüfung	Fehler	Fehler
reference	test	deviation	deviation
bar	bar	bar	%
0.000	0.000	0.000	0.000
1.000	2.000	-0.940	-0.470
4.000	4.000	-0.340	-0.350
6.040	6.000	-0.340	-0.400
7.000	6.000	-0.810	-0.120
8.630	10.000	0.870	0.120
9.800	10.000	-0.070	-0.700
7.870	8.000	0.030	0.300
6.910	6.000	-0.910	-0.300
4.600	4.000	-0.600	-0.300
1.900	2.000	-0.000	0.300
0.000	0.000	0.000	0.000

The certificate also includes a table for 'Ergebnis: Ableser' with columns for 'Prüfung', 'Fehler', and 'Fehler'.



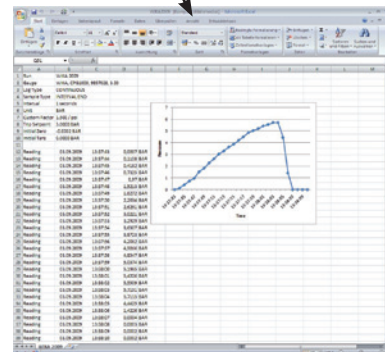
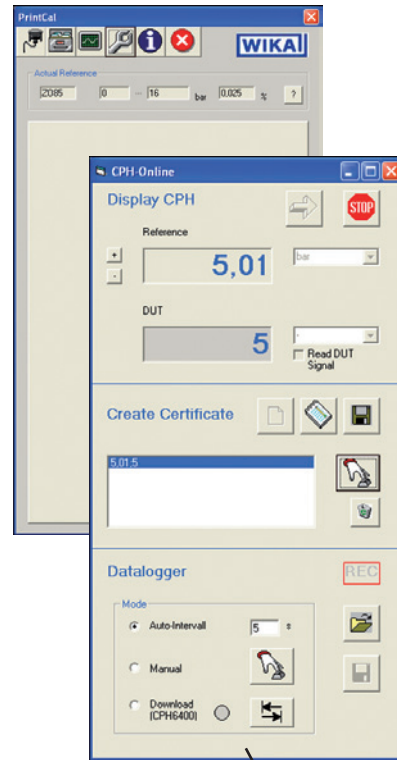
## PrintCal data-logger evaluation software

The PrintCal data-logger evaluation software is used to display the logger data from the model CPH6400 precision hand-held pressure indicator on a PC. The stored data is recorded in tabular form in an EXCEL® file and can easily be displayed in a chart.

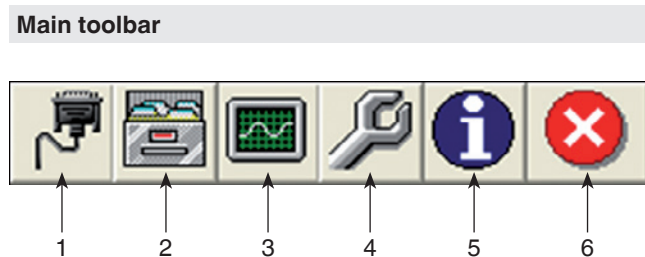
- Easy operation with self-explanatory toolbars
- From the data recorded on the hand-held, a table can be displayed (for the 2-channel version, pressure and temperature can be simultaneously recorded)
- Simple creation of charts via Microsoft EXCEL®
- Operation of the data-logger function possible via PC (remote control)
- Languages: German/English/French/Spanish

### System requirements

- IBM compatible PC (Pentium®)
- At least 20 MB free hard disc space
- CD-ROM drive
- At least 32 MB RAM
- Windows® operating system 2000, XP
- Microsoft Excel® 2000, XP, 2003, 2007
- Mouse
- A USB connection to the PC (via interface cable)



## Easy operation with self-explanatory icon buttons



- 1 Setting the interface
- 2 Reading the calibration values from the CPH6000 (not relevant for CPH6400)
- 3 Online calibration with CPH6400
- 4 Calibration settings for CPH6400
- 5 Software information
- 6 Exiting the program

## Scope of delivery

- Precision hand-held pressure indicator model CPH6400
- Battery charger
- 3.1 calibration certificate per DIN EN 10204
- Choice of sensors

## Options

- 2-channel version (pressure and temperature measurement in a single instrument)
- DKD/DAkkS certified accuracy

## Accessories

### Connection adapters

- Various pressure adapters
- "Minimes" quick-connect process connection system

### Connection cable

- USB interface cable

### Pressure generation

- Pneumatic test pumps
- Hydraulic test pumps

### Calibration case

- Service cases
- Various test and service cases incl. pressure generation

### Software

- PrintCal data-logger/calibration software

### Current supply

- Battery charger

### Temperature sensor

- Pt100 resistance thermometer

## Products and services within our calibration technology programme

- DKD/DAkkS 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/DAkkS 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

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