

**OBSOLETE**

## Precision hand-held pressure indicator Model CPH6400

WIKA data sheet CT 14.01



for further approvals  
see page 4

### Applications

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

### Special features

- Digital indicator with easily interchangeable reference pressure sensors (plug-and-play)
- Measuring ranges from -1 ... 6,000 bar (-15 ... 75,000 psi) (vacuum and absolute pressure ranges also available)
- Accuracy: 0.025 % (incl. calibration certificate)
- Simultaneous pressure and temperature measurement with external Pt100 temperature probe
- Min, max, pressure rate and data logger function



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

## Description

### Features

A wide variety of reference pressure sensors, offering various measuring ranges of up to 6,000 bar (75,000 psi), 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 temperature probe is possible. In addition, this instrument features a large, easily-read display with backlighting (on/off selectable), a durable case 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 logger function), leak testing (via the pressure rate function) and peak value determination (via the Min./Max. function).

### Software

The WIKA-Cal calibration software is available both for reading the logger data stored in the CPH6400 as well as for online calibrations in connection with a PC. Using this software, the calibration 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.

## Complete test and service cases

For maintenance and service applications, various case systems are available. These include service cases with/without pressure generation, power supply unit/charger, connection adapter, etc.

## Certified accuracy

For each reference pressure sensor and Pt100 temperature probe, the accuracy for the complete measuring chain is certified by a factory calibration certificate which accompanies the instrument. On request, a DKD/DAkkS calibration certificate will be provided for this instrument.

## Specifications Model CPH6400

| Precision hand-held pressure indicator model CPH6400 (complete measuring chain) |  |              |              |  |              |              |
|---|--|--------------|--------------|--|--------------|--------------|
| <b>Sensor technology</b>  | 1 reference pressure sensor (exchangeable without tools) <sup>1)</sup>   |              |              |  |              |              |
| <b>Measuring range</b>  |  |              |              |  |              |              |
| Gauge pressure  | bar  | -1 ... 0     | -1 ... +0.6  | -1 ... 1.5   | -1 ... 3     | -1 ... 5     |
|   |  | -1 ... 9     | -1 ... 15    | -1 ... 24  | -1 ... 39    | 0 ... 0.25   |
|   |  | 0 ... 0.4    | 0 ... 0.6    | 0 ... 1  | 0 ... 1.6    | 0 ... 2.5    |
|   |  | 0 ... 4      | 0 ... 6      | 0 ... 10   | 0 ... 16     | 0 ... 25     |
|   |  | 0 ... 40     | 0 ... 60     | 0 ... 100  | 0 ... 160    | 0 ... 250    |
|   |  | 0 ... 400    | 0 ... 600    | 0 ... 700  | 0 ... 1,000  |              |
|   | psi  | -15 ... 0    | -15 ... +15  | -15 ... 40   | -15 ... 70   | -15 ... 130  |
|   |  | 0 ... 5      | 0 ... 10     | 0 ... 15   | 0 ... 20     | 0 ... 25     |
|   |  | 0 ... 30     | 0 ... 50     | 0 ... 60   | 0 ... 75     | 0 ... 100    |
|   |  | 0 ... 150    | 0 ... 200    | 0 ... 250  | 0 ... 300    | 0 ... 350    |
|   |  | 0 ... 400    | 0 ... 500    | 0 ... 600  | 0 ... 700    | 0 ... 750    |
|   |  | 0 ... 1,000  | 0 ... 1,450  | 0 ... 1,500  | 0 ... 2,000  | 0 ... 3,000  |
|   |  | 0 ... 4,000  | 0 ... 5,000  | 0 ... 6,000  | 0 ... 7,500  | 0 ... 10,000 |
|   |  | 0 ... 14,500 |              |  |              |              |
| Accuracy of the measuring chain <sup>2)</sup>                                   | 0.025 % FS <sup>3)</sup>   |              |              |  |              |              |
| Gauge pressure  | bar  | 0 ... 1,600  | 0 ... 2,000  | 0 ... 2,500  | 0 ... 3,000  | 0 ... 4,000  |
|   |  | 0 ... 5,000  | 0 ... 6,000  |  |              |              |
|   | psi  | 0 ... 15,000 | 0 ... 20,000 | 0 ... 25,000   | 0 ... 30,000 | 0 ... 40,000 |
|   |  | 0 ... 50,000 | 0 ... 60,000 | 0 ... 75,000   |              |              |
| Accuracy of the measuring chain <sup>2)</sup>                                   | 0.1 % FS <sup>3)</sup>   |              |              |  |              |              |
| Absolute pressure   | bar abs.   | -0.8 ... 1.2 | 0 ... 0.25   | 0 ... 0.4  | 0 ... 0.6    | 0 ... 1      |
|   |  | 0 ... 1.6    | 0 ... 2.5    | 0 ... 4  | 0 ... 6      | 0 ... 10     |
|   |  | 0 ... 16     | 0 ... 25     |  |              |              |
|   | psi abs.   | 0 ... 5      | 0 ... 10     | 0 ... 15   | 0 ... 20     | 0 ... 30     |
|   |  | 0 ... 50     | 0 ... 60     | 0 ... 100  | 0 ... 150    | 0 ... 300    |
|   |  |              |              |  |              |              |
| Accuracy of the measuring chain <sup>2)</sup>                                   | 0.025 % FS <sup>3)</sup>   |              |              |  |              |              |
| <b>Overpressure limit</b><br>(depending on measuring range)                     | 3 times; < 25 bar<br>2 times; > 25 bar ... ≤ 600 bar<br>1.5 times; > 600 bar ... ≤ 2,500 bar<br>1.2 times; > 2,500 bar             |              |              | 3 times; < 360 psi<br>2 times; > 360 psi ... ≤ 8,700 psi<br>1.5 times; > 8,700 psi ... ≤ 36,260 psi<br>1.2 times; > 36,260 psi |              |              |
| <b>Pressure types</b>   | Gauge pressure, {absolute pressure from 0 ... 25 bar abs. (0 ... 360 psi abs.) and vacuum from -1 ... +39 bar (-14.5 ... 566 psi)} |              |              |  |              |              |
| <b>Sensor compatibility</b>   | Compatible with model CPT6400 reference pressure sensors   |              |              |  |              |              |

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

1) Up to 10 reference pressure sensors can be supported on each instrument (up to 10 calibration data sets).

2) 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 adjustment.

3) Calibrated at 23 °C (74 °F) and in a vertical mounting position, pressure connection from below.

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

|                                |                                |
|--------------------------------|--------------------------------|
| <b>Temperature measurement</b> | only for 2-channel version     |
| Probe type                     | Pt100, 4-wire                  |
| Measuring range                | -10 ... +50 °C (14 ... 122 °F) |
| Resolution                     | 0.01 °C (0.02 °F)              |
| Accuracy                       | 0.05 K <sup>4)</sup>           |

**Digital indicator model CPH6400**

|                                       |   |
|---------------------------------------|---|
| <b>Display</b>                        |   |
| Display                               | Large graphic display, with backlighting (on/off selectable)  |
| Display resolution                    | up to 6 digits; selectable  |
| Pressure units                        | bar, mbar, kPa, mmHg, inHg and kg/cm <sup>2</sup> (depending on the measuring range, freely selectable)   |
| <b>Functions</b>                      |   |
| Measuring rate (pressure)             | 5 values/sec  |
| Memory                                | Min./Max., integrated data logger   |
| Functions via key press               | Tare, change units  |
| Menu functions                        | Min./Max. memory, pressure rate, zero adjustment for overpressure ranges, logger (start/pause/stop)   |
| Data logger                           | Cyclic logger: Automatic recording of up to 1,000 pressure values (with 2-channel version: 500 pressure values and 500 temperature values)<br>Cycle time: selectable from 1 ... 3,600 seconds |
| <b>Voltage supply</b>                 |   |
| Power supply                          | internal Lithium-Ion rechargeable battery (charging time: < 6 h)  |
| Battery life                          | approx. 25 hours of operation   |
| Battery status display                | Icon in display   |
| <b>Permissible ambient conditions</b> |   |
| Operating temperature                 | 0 ... 50 °C (32 ... 122 °F)   |
| Storage temperature                   | -20 ... +60 °C (-4 ... +140 °F)   |
| Relative humidity                     | 0 ... 85 % r.h. (non-condensing; at 50 °C / 122 °F)   |
| <b>Communication</b>                  |   |
| Interface                             | USB via interface cable   |
| <b>Case</b>                           |   |
| Material                              | Polyamide 12, membrane keypad, transparent panels   |
| Ingress protection                    | IP65  |
| Electrical connection                 | Sensor cable: bayonet connector, 7-pin<br>Interface connector: bayonet connector, 5-pin   |
| Dimensions                            | See technical drawing   |
| Weight                                | approx. 480 g (1.06 lbs)  |

**Reference pressure sensor model CPT6400**

|                              |  |
|------------------------------|--|
| <b>Process connection</b>    | ≤ 1,000 bar (≤ 14,500 psi): G ½ B; {various connection adapters on request}<br>> 1,000 bar (> 14,500 psi): M16 x 1.5 female, with sealing cone |
| <b>Sensor data</b>           |  |
| Accuracy per year            | ≤ 0.025 % of span (only with CPH6400)  |
| Compensated range            | 0 ... 50 °C (32 ... 122 °F)  |
| <b>Material</b>              |  |
| Wetted parts                 | Stainless steel (with measuring ranges > 25 bar ... ≤ 1,000 bar (> 360 ... ≤ 14,500 psi) Elgiloy® in addition)                                 |
| Internal transmission medium | Synthetic oil (only for measuring ranges up to 25 bar (360 psi)) {halocarbon oil for oxygen versions} <sup>5)</sup>                            |

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

4) Deviation between the set value and the actual value

5) For oxygen versions, the medium temperature must not exceed 60 °C (140 °F).

## Reference pressure sensor model CPT6400

### Permissible ambient conditions









|                       |  |
|-----------------------|--|
| Medium temperature    | -20 ... +80 °C (-4 ... +176 °F) <sup>5)</sup>  |
| Operating temperature | -20 ... +80 °C (-4 ... +176 °F) <sup>5)</sup>  |
| Storage temperature   | -40 ... +85 °C (-40 ... +185 °F) <sup>5)</sup> |
| Relative humidity     | 0 ... 95 % r. h. (non-condensing)              |

### Case

|                           |   |
|---------------------------|---|
| Material                  | Stainless steel   |
| Connection to the CPH6400 | Circular connector, 8-pin<br>Option: External operation via 1.2 m (4 ft) connection cable (plug-and-play) |
| Ingress protection        | IP65 (with cable connected)   |
| Dimensions                | See technical drawing   |
| Weight                    | approx. 220 g (0,49 lbs.)   |

5) For oxygen versions, the medium temperature must not exceed 60 °C (140 °F).

## Approvals

| Logo   | Description  | Country                     |
|--|--|-----------------------------|
|    | <b>EU declaration of conformity for model CPH6400</b><br><ul style="list-style-type: none"> <li>■ EMC directive<br/>EN 61326 emission (group 1, class B) and interference immunity (portable measuring equipment)</li> <li>■ RoHS directive</li> </ul>   | European Union              |
|   | <b>EU declaration of conformity for model CPT6400</b><br><ul style="list-style-type: none"> <li>■ EMC directive<br/>EN 61326 emission (group 1, class B) and interference immunity (industrial application)</li> <li>■ Pressure equipment directive<br/>PS &gt; 200 bar, module A, pressure accessory</li> <li>■ RoHS directive</li> </ul> | European Union              |
|  | <b>EAC</b><br><ul style="list-style-type: none"> <li>■ EMC directive</li> <li>■ Pressure equipment directive</li> <li>■ Low voltage directive</li> </ul>   | Eurasian Economic Community |
|  | <b>GOST</b><br>Metrology, measurement technology   | Russia                      |
|  | <b>KazInMetr</b><br>Metrology, measurement technology  | Kazakhstan                  |
| -  | <b>MTSCHS</b><br>Permission for commissioning  | Kazakhstan                  |
|  | <b>BelGIM</b><br>Metrology, measurement technology   | Belarus                     |
|  | <b>UkrSEPRO</b><br>Metrology, measurement technology   | Ukraine                     |
|  | <b>Uzstandard</b><br>Metrology, measurement technology   | Uzbekistan                  |
| -  | <b>CPA</b><br>Metrology, measurement technology  | China                       |

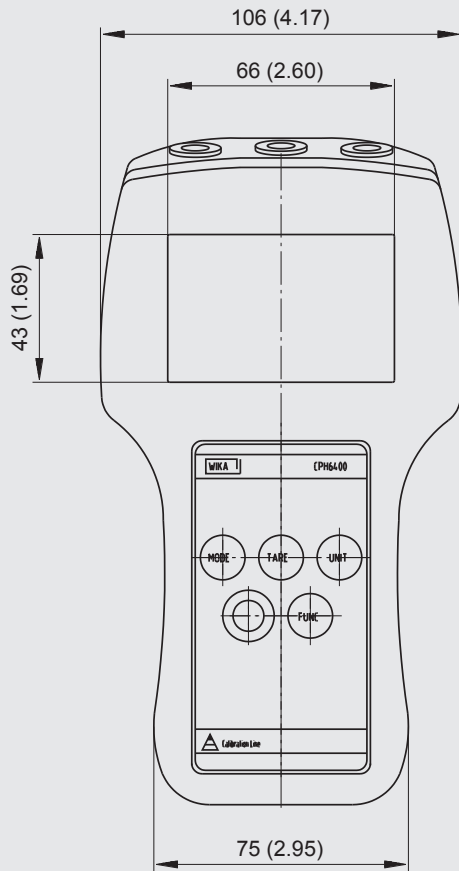
## Certificates

| Certificate                               |   |
|---|---|
| <b>Calibration</b>                        | Standard: 3.1 calibration certificate per EN 10204<br>Option: DKD/DakKS calibration certificate |
| <b>Recommended recalibration interval</b> | 1 year (dependent on conditions of use)   |

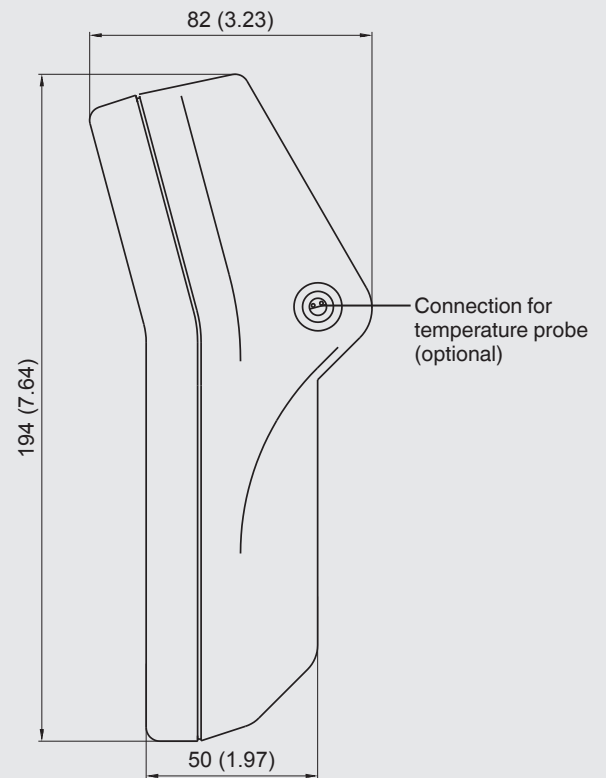
Approvals and certificates, see website

## Dimensions in mm (in)

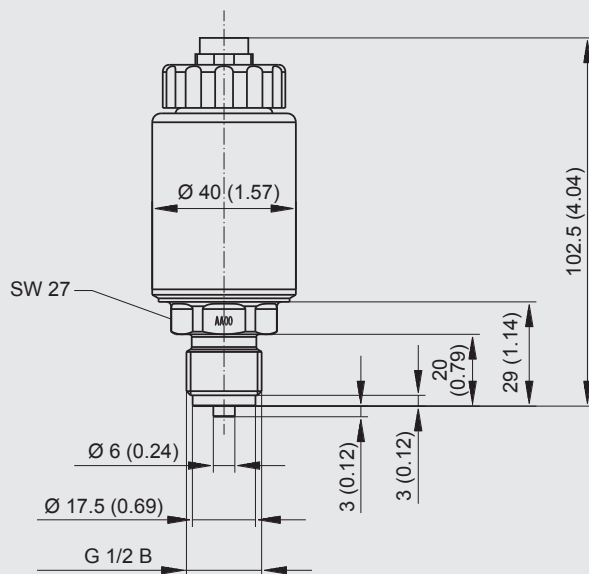
**Digital indicator CPH6400**  
Front view



**Side view (right)**

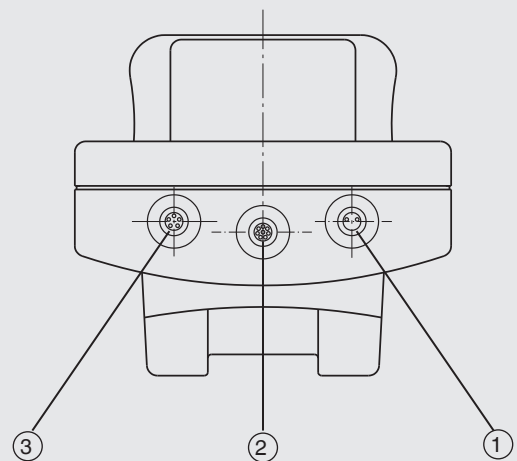


**Reference pressure sensor CPT6400**



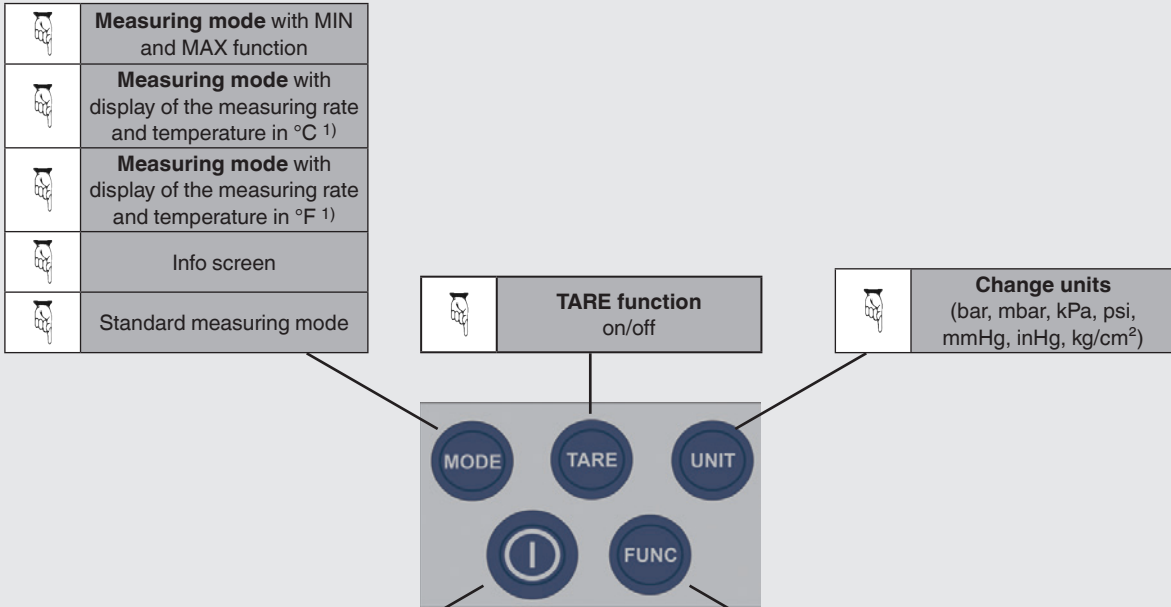
## Electrical connections

**Top view**



- ① Connection for power supply unit/charger
- ② Sensor connection
- ③ Interface connector

# Keypad



= Press button

**Instrument**  
on/off

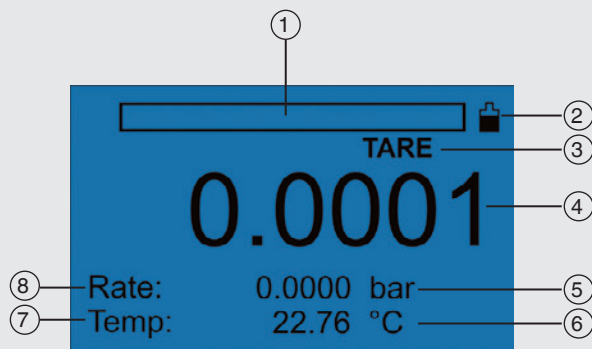
|  |  | Special functions of the upper keys         |
|--|--|---|
|  | <b>Backlighting</b><br>(on/off)                        | MODE = on<br>UNIT = off                     |
|  | <b>USB interface</b><br>(on/off)                       | MODE = on<br>UNIT = off                     |
|  | <b>Data logger</b><br>(Pressure and/or temperature 2)) | MODE = pressure<br>UNIT = temperature       |
|  | <b>Data logger</b><br>(start/break/stop)               | MODE = start<br>TARE = pause<br>UNIT = stop |
|  | <b>Measured value resolution</b><br>(+/-)              | MODE = +<br>UNIT = -                        |
|  | <b>Permanent zero adjustment</b>                       | TARE = Corr.                                |
|  | Measuring mode   |   |

= Press button

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

## 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 probe (2-channel version)
- ⑧ Display of the measuring rate

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

In addition to the proven external CPT6400 reference pressure sensor, an external Pt100 temperature probe can 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 measurands 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.



**Model CPH6400 precision hand-held pressure indicator with model CPT6400 reference pressure sensor and temperature probe**

## Complete test and service cases



**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
- Recesses for several CPT6400 reference pressure sensors

**Basic version**

Available measuring ranges see specifications



**Calibration case with model CPH6400 precision hand-held pressure indicator and model CPP30 hand test pump for pressures of -0.95 ... +35 bar (28 inHg ... 500 psi), consisting of:**

- Service case with foam insert
- Precision hand-held pressure indicator model CPH6400
- Pneumatic hand test pump model CPP30; -0.95 ... +35 bar (-28 inHg ... +500 psi)
- Sensor cable for external operation of sensor
- Charger
- Recesses for several CPT6400 reference pressure sensors

**Basic version incl. pneumatic pressure generation**

Available measuring ranges see specifications



**Calibration case with model CPH6400 precision hand-held pressure indicator and model CPP700-H or CPP1000-H hand test pump for pressures of 0 ... 700 bar (0 ... 10,000 psi) or 0 ... 1,000 bar (0 ... 14,500 psi), consisting of:**

- Service case with foam insert
- Precision hand-held pressure indicator model CPH6400
- Hydraulic hand test pump
  - Model CPP700-H 0 ... 700 bar (0 ... 10,000 psi) or
  - Model CPP1000-H 0 ... 1,000 bar (0 ... 14,500 psi)
- Sensor cable for external operation of sensor
- Charger
- Recesses for several CPT6400 reference pressure sensors

**Basic version incl. hydraulic pressure generation**

Further specifications see data sheet CT 91.07.



## 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 so 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.



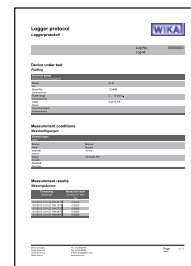
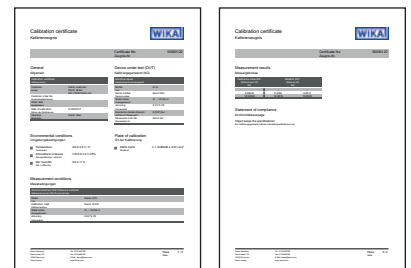
#### Log Demo

Creation of data logger test reports, limited to 5 measured values.



#### Log

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



| Accessories   | Order code            |
|---|-----------------------|
| Battery charger (Euro standard, UK standard, US standard)   | CPH-A-64-ZZZ4ZZZZZZ-Z |
| Sealing set, consisting of 4 x G ½ USIT seals, 2 x G ¼ USIT seals and plastic box   | CPH-A-64-ZZZDZZZZZZ-Z |
| Sensor connection cable, approx. 1.1 m (3.3 ft)   | CPH-A-64-ZZZSZZZZZZ-Z |
| Sensor connection cable, approx. 3.0 m (10 ft)  | CPH-A-64-ZZZVZZZZZZ-Z |
| Hook set with magnet  | CPH-A-64-ZZZBZZZZZZ-Z |
| Hand strap  | CPH-A-64-ZZZCZZZZZZ-Z |
| USB interface cable   | CPH-A-64-ZZZUZZZZZZ-Z |
| Plastic case for 1 x hand-held, 4 x pressure sensors, accessories   | CPH-A-64-ZZZKZZZZZZ-Z |
| Transport case made of aluminium for 1 x hand-held, 5 x pressure sensors, 1 x pneumatic hand test pump CPP7-H or CPP30, accessories     | CPH-A-64-ZZZLZZZZZZ-Z |
| Transport case made of aluminium for 1 x hand-held, 5 x pressure sensors, 1 x hydraulic hand test pump CPP700-H/ CPP1000-H, accessories | CPH-A-64-ZZZNZZZZZZ-Z |
| Transport case made of aluminium for 1 x hand-held, 5 x pressure sensors, 1 x hydraulic spindle pump CPP1000-L, accessories             | CPH-A-64-ZZZMZZZZZZ-Z |
| WIKA-Cal calibration software   | WIKA-CAL-ZZ-L-Z       |

## Scope of delivery

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

## Options

- 2-channel version (pressure and temperature measurement in a single instrument)
- Sensors for oxygen applications
- DKD/DAkkS calibration certificate

## Ordering information

CPH6400 / Instrument version / Temperature probe / Temperature calibration / Holding fixture / Software / Interface cable / Test pump / Transport case / Further approvals / Additional ordering information

CPT6400 / Unit / Measuring range / Process connection / Special design features / Type of certificate / Further approvals / Additional ordering information

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