Precision Digital Pressure Gauge
Model CPG1500

Applications

- Oil and gas industry
- Maintenance and service facilities
- Calibration service companies and service industry
- Simple calibrations directly on site

Special features

- Measuring ranges up to 0 ... 1,000 bar (0 ... 15,000 psi)
- Accuracy: Up to 0.05 % (incl. calibration certificate)
- Intrinsically safe version
- Logger function with up to 50 measured values per second
- Communication with WIKA-CAL software over WIKA-Wireless

Description

General information
The model CPG1500 precision digital pressure gauge takes the concept of an analogue gauge, and raises it to a level only matched by digital calibrators. The accuracy of digital measurement technology and the simplicity of an analogue gauge are combined to create the CPG1500, which in terms of performance, ease of use and instrument features is unmatched in the pressure measurement market.

Accuracy
The CPG1500 offers an accuracy of 0.1 % of span (optional 0.05 % of span) and is temperature compensated in the range of -10 ... +50 °C (14 ... 122 °F). Readings can be displayed in one of 21 standard units or also in customer specific units so that intricate conversions are avoided.

Sampling rate
The measuring rate can be user-defined to match the type of measurement required. Standard applications usually use three measured values per second. If required, this rate can also be set to 50 measured values per second.

An energy saving function automatically switches the CPG1500 into "sleep" mode; in this mode the battery life can be increased up to 2,500 hours.

Features
Simple operation is ensured through the new and innovative menu navigation. The clear display, with integral bar graph display and large text area, assists with the effective analysis of the widest variety of measuring points.

With the MIN/MAX function, the highest and lowest pressures can be accessed immediately and saved automatically.
### Specifications

#### Model CPG1500

**Sensor technology**

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>mbar</th>
<th>0 ... 100 1)</th>
<th>0 ... 250 1)</th>
<th>0 ... 400 1)</th>
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<tbody>
<tr>
<td>bar</td>
<td></td>
<td>0 ... 1</td>
<td>0 ... 1.6</td>
<td>0 ... 2.5</td>
</tr>
<tr>
<td></td>
<td>0 ... 10</td>
<td>0 ... 16</td>
<td>0 ... 25</td>
<td>0 ... 40</td>
</tr>
<tr>
<td></td>
<td>0 ... 100</td>
<td>0 ... 160</td>
<td>0 ... 250</td>
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<tr>
<td></td>
<td>0 ... 1,000 2)</td>
<td>0 ... 15</td>
<td>0 ... 20</td>
<td>0 ... 30</td>
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<table>
<thead>
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<th>psi</th>
<th>0 ... 1.5 1)</th>
<th>0 ... 3 1)</th>
<th>0 ... 5 1)</th>
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<tr>
<td></td>
<td>0 ... 15</td>
<td>0 ... 20</td>
<td>0 ... 30</td>
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<tr>
<td></td>
<td>0 ... 150</td>
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<tr>
<td></td>
<td>0 ... 15,000 2)</td>
<td>0 ... 15</td>
<td>0 ... 20</td>
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**Absolute pressure**

<table>
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<th>mbar</th>
<th>0 ... 100 1)</th>
<th>0 ... 250 1)</th>
<th>0 ... 400 1)</th>
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<tr>
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<td>0 ... 1.6</td>
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<td>0 ... 15</td>
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<th>0 ... 3 1)</th>
<th>0 ... 5 1)</th>
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<tr>
<td></td>
<td>0 ... 1,000</td>
<td>0 ... 1,500</td>
<td>0 ... 2,000</td>
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<tr>
<td></td>
<td>0 ... 15,000 2)</td>
<td>0 ... 15</td>
<td>0 ... 20</td>
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</table>

**Vacuum and +/- measuring ranges**

<table>
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<tr>
<th>Measuring range</th>
<th>bar</th>
<th>-1 ... 0</th>
<th>-1 ... +0.6</th>
<th>-1 ... +1.5</th>
<th>-1 ... 3</th>
<th>-1 ... 5</th>
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<tbody>
<tr>
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<td>-1 ... 15</td>
<td>-1 ... 25</td>
<td>-1 ... 40</td>
<td></td>
<td></td>
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</tbody>
</table>

| psi             | -14.5 ... 0 | -14.5 ... +15 | -14.5 ... 100 | -14.5 ... 300 |

**Overpressure limit**

- ≤ 25 bar (300 psi); 3-fold
- > 25 bar (300 psi); 2-fold

**Accuracy 3)**

- 0.1 % FS
- 0.05 % FS (optional)

**Compensated temperature range**

- -10 ... +60 °C (14 ... 122 °F)

**Type of pressure**

Gauge pressure, absolute pressure (to 20 bar abs.) and vacuum measuring ranges

**Process connection**

G ½ B, G ¼ B, ½ NPT, ¼ NPT, G 1 B flush, G ½ B flush

**Pressure medium**

All liquids and gases which are compatible with 316 stainless steel

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1) Expanded accuracy of 0.15 % FS
2) Not possible as flush version
3) 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.
# Base instrument

## Display
- **Display:** 5 ½ digit 7-segment display including a large matrix area for auxiliary information
- **Bar graph:** 0 ... 100 %
- **Backlight adjustable**

## Resolution
- 4 ... 5 ½ digit; adjustable

## Pressure units
- psi, bar, mbar, Kg/cm², inH2O (4 °C, 20 °C or 60 °F), ftH2O (4 °C, 20 °C or 60 °F), cmH2O (4 °C and 20 °C), mH2O (4 °C and 20 °C), kPa, MPa, inHg, mmHg, TORR, mSW, ft SW, user-defined unit

## Functions
- **Measuring rate:** max. 50/s
- **Menu languages:** English, German, Spanish, French, Italian (selectable)
- **Memory:** Standard: MIN/MAX
  - Optional: integrated data logger
- **Menu functions:** Min/Max alarm (visual), power-off function, measuring rate, average value filter
- **Average value filter:** 1 ... 300 seconds, adjustable
- **Data logger 4)**: Cyclic logger: Automatic recording of up to 1,000,000 values; Cycle time: Selectable from 1 ... 3,600 s. in the following steps
  - 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 30 min and 1 h

## Material
- **Wetted parts:** Stainless steel 316
- **Case:** Aluminium die-casting, nickel-plated

## Voltage supply
- **Power supply:** 3 x 1.5 V AA alkaline batteries
- **Battery life:** Typical 2,000 ... 2,500 h (without backlighting and WIKA-Wireless not active)
- **Battery status indication:** Icon in display for low battery level

## Permissible ambient conditions
- **Operating temperature:** -10 ... +50 °C (14 ... 122 °F)
- **Medium temperature:** -10 ... +50 °C (14 ... 122 °F) (lower temperature limit above the freezing point of the medium)
- **Storage temperature:** -20 ... +70 (-4 ... +158 °F)
- **Relative humidity:** < 95 % r. h. (non-condensing)

## Communication (optional)
- **Interface:** WIKA-Wireless 5)
- **Frequency range:** 2,400 ... 2,500 MHz
- **HF output power:** max. 2 dBm (+ 2 dBi)
- **Number of channels:** 79
- **Channel spacing:** 1/2 MHz
- **Bandwidth:** 80 MHz
- **Output power:** 4 dBm

## Case
- **Dimensions:** Approx. 100 x 150 x 59 mm (3.9 x 5.9 x 2.3 in)
- **Ingress protection:** IP65
- **Weight:** Standard: incl. batteries approx. 680 g (1.5 lbs)
  - with protective rubber cap: approx. 820 g (1.81 lbs)

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4) To use the logger function, WIKA-CAL software is needed.
5) Requires a PC with Bluetooth® 2.1 interface
## Approvals

<table>
<thead>
<tr>
<th>Logo</th>
<th>Description</th>
<th>Country</th>
</tr>
</thead>
</table>
| ![EC declaration of conformity](image) | EC declaration of conformity  
- R&TTE directive  
  EN 300 228, harmonized frequency range 2,400 … 2,500 MHz is used; Bluetooth® Classic, max. transmission power 10 mW. The instrument may be used without limitations in the EU, CH, NO and LI.  
- ATEX directive  
  - Ex i  
    - 1G Ex ia IIC T4 Ga  
    - II 1/2G Ex ia IIC T4 Ga/Gb  
    - II 3G Ex ic IIC T4 Gc  
  - T4 at -10 °C … +50 °C | European Community |
| ![IECEx](image) | IECEx  
Hazardous areas  
- Ex i  
  - Ex ia IIC T4 Ga  
  - Ex ia IIC T4 Ga/Gb  
  - Ex ic IIC T4 Gc  
  - T4 at -10 °C … +50 °C | IECEx member states |

## Certificates

<table>
<thead>
<tr>
<th>Certificate</th>
<th></th>
</tr>
</thead>
</table>
| Calibration ¹ | Standard: 3.1 calibration certificate per EN 10204  
Option: DKD/DAkkS calibration certificate |
| Recommended recalibration interval | 1 year (dependent on conditions of use) |

¹) Calibrated in vertical mounting position with process connection facing downwards

Approvals and certificates, see website

## Front foil

1. **Warning notice when:**  
   - Falling below or exceeding the pressure range  
   - Falling below or exceeding the temperature range  
   - Logger memory is over 90 %

2. **Log:** Logger function active/inactive

3. Battery status

4. Pressure indication

5. Matrix field for menu and secondary display

6. **On/Off button**  
Access the menu

7. **Light button**  
Turning the backlighting on and off

8. **ZERO button**  
Actual pressure value will be set to "0"

9. **Lock symbol:** Menu button or ZERO button locked/unlocked

10. **WIKA-Wireless:** WIKA-Wireless active/inactive

11. **Tare:** TARE active/inactive
Dimensions in mm (in)

CPG1500 without protective rubber cap

CPG1500 with protective rubber cap
Complete test and service cases

Calibration case with model CPG1500 precision digital pressure gauge and model CPP30 hand test pump, for pressures -0.95 ... +35 bar (-28 inHg ... +500 psi), consisting of:

- Plastic service case with foam insert
- Precision digital pressure gauge model CPG1500
- Pneumatic hand test pump model CPP30; -0.95 ... +35 bar (-28 inHg ... +500 psi)

Available measuring ranges see specifications

For further specifications see data sheet CT 91.06

Basic version incl. pneumatic pressure generation

Calibration case with model CPG1500 precision digital pressure gauge and model CPP700-H hand test pump, for pressures 0 ... 700 bar (0 ... 10.000 psi), consisting of:

- Plastic service case with foam insert
- Precision digital pressure gauge model CPG1500
- Model CPP700-H hydraulic hand test pump; 0 … 700 bar (0 ... 10.000 psi)

Available measuring ranges see specifications

Further specifications see data sheet CT 91.07

Basic version incl. hydraulic pressure generation

Recommended pressure generation

Model CPP30 pneumatic hand test pump
Pressure range: -0.95 ... +35 bar (-28 inHg ... +500 psi)

For further specifications see data sheet CT 91.06

Hydraulic hand test pump model CPP700-H
Pressure range: 0 ... 700 bar (0 ... 10.000 psi)

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 has to be purchased.

The pre-installed demo version automatically changes to the selected full version when the USB stick is inserted and is 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 with software updates

For further information see data sheet CT 95.10

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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
- Precision digital pressure gauge model CPG1500
- Operating instructions
- 3.1 calibration certificate per DIN EN 10204
- 3 x 1.5 V AA alkaline batteries

Accessories
Connection adapters
- Various process connection adapters

Pressure generation
- Pneumatic test pumps
- Hydraulic test pumps

Test case
- Various calibration cases incl. pressure generation

Software
- WIKA-CAL calibration software

Installation
- Mounting flange (only with back mount process connection)

Options
- NIST certification
- A2LA accredited certification
- DKD/DAkkS certified accuracy
- Protective rubber cap for case

Ordering information
Model / Version / Explosion protection / Instrument variant / Unit / Type of pressure / Measuring range / Process connection / Wetted parts / Specialities due to medium / Accuracy / Type of certificate / Communication / Data logger / Case protection cover / Carrying case / Certificates / Additional ordering information

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