

# Precision digital pressure gauge Model CPG1500

WIKA data sheet CT 10.51



for further approvals see  
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## Applications

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

## Special features

- Measuring ranges up to 0 ... 10,000 bar (0 ... 150,000 psi), vacuum and absolute pressure ranges also available
- Accuracy: up to 0.025 % (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 together 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 % FS (optional 0.05 % FS or 0.025 % FS) and is temperature-compensated in the range of -10 ... +50 °C (14 ... 122 °F). Readings can be displayed in one of 26 pressure and 5 level units or also in customer-specific units, so that intricate conversions are avoided.



**Precision digital pressure gauge, model CPG1500**

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

### Features

Through the new and innovative menu navigation, simple operation is ensured. 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.

## Software

WIKA-Cal calibration software is available for the CPG1500. WIKA-Cal also offers, over and above PC-supported calibration, the management of the calibration and instrument data in an SQL database. WIKA-Wireless is available for the data transfer.

## Certified accuracy

For each digital pressure gauge, 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 CPG1500

Sensor technology							
Measuring range							
Gauge pressure	bar	0 ... 0.1 <sup>1)</sup>	0 ... 0.25 <sup>2)</sup>	0 ... 0.4 <sup>2)</sup>	0 ... 0.6 <sup>2)</sup>	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 ... 200	0 ... 250
		0 ... 400	0 ... 600	0 ... 700 <sup>3)</sup>	0 ... 1,000 <sup>3)</sup>	0 ... 1,600 <sup>4)</sup>	0 ... 2,500 <sup>4)</sup>
		0 ... 4,000 <sup>5)</sup>	0 ... 6,000 <sup>5)</sup>	0 ... 7,000 <sup>5)</sup>	0 ... 8,000 <sup>5)</sup>	0 ... 10,000 <sup>5)</sup>	
	psi	0 ... 1.5 <sup>1)</sup>	0 ... 5 <sup>2)</sup>	0 ... 10 <sup>2)</sup>	0 ... 15	0 ... 20	0 ... 30
		0 ... 50	0 ... 60	0 ... 100	0 ... 150	0 ... 160	0 ... 200
		0 ... 300	0 ... 500	0 ... 700	0 ... 1,000	0 ... 1,500	0 ... 2,000
		0 ... 3,000	0 ... 5,000	0 ... 6,000	0 ... 8,000	0 ... 10,000 <sup>3)</sup>	0 ... 15,000 <sup>3)</sup>
		0 ... 20,000 <sup>4)</sup>	0 ... 30,000 <sup>4)</sup>	0 ... 50,000 <sup>5)</sup>	0 ... 100,000 <sup>5)</sup>	0 ... 150,000 <sup>5)</sup>	
Absolute pressure	bar abs.	0 ... 0.25 <sup>2)</sup>	0 ... 0.4 <sup>2)</sup>	0 ... 0.6 <sup>2)</sup>	0 ... 1	0 ... 1.6	0 ... 2.5
		0 ... 4	0 ... 6	0 ... 7	0 ... 10	0 ... 16	0 ... 20
		0 ... 25	0 ... 40				
	psi abs.	0 ... 3.5 <sup>2)</sup>	0 ... 5 <sup>2)</sup>	0 ... 10 <sup>2)</sup>	0 ... 15	0 ... 20	0 ... 30
		0 ... 50	0 ... 60	0 ... 100	0 ... 150	0 ... 200	0 ... 300
		0 ... 500					
Vacuum and +/- measuring ranges	bar	-0.25 ... +0.25 <sup>2)</sup>	-0.4 ... +0.4 <sup>2)</sup>	-0.6 ... +0.6	-1 ... 0	-1 ... +0.6	-1 ... 1.5
		-1 ... 2.5	-1 ... 3	-1 ... 5	-1 ... 7	-1 ... 9	-1 ... 10
		-1 ... 15	-1 ... 24	-1 ... 25	-1 ... 39	-1 ... 40	
	psi	-14.5 ... 0	-14.5 ... +15	-14.5 ... 40	-14.5 ... 70	-14.5 ... 100	-14.5 ... 130
		-14.5 ... 300	-3 ... +3 <sup>2)</sup>	-5 ... +5 <sup>2)</sup>	-8 ... +8	-3 ... 0 <sup>2)</sup>	-5 ... 0 <sup>2)</sup>
		-8 ... 0 <sup>2)</sup>					
Overpressure safety							
Sensor	3 times; < 25 bar 2 times; > 25 bar ... ≤ 600 bar 1.5 times; > 600 bar ... ≤ 1,600 bar 1.3 times; > 1,600 bar 1.1 times; > 6,000 bar			3 times; < 360 psi 2 times; > 360 psi ... ≤ 8,700 psi 1.5 times > 8,700 psi ... ≤ 25,000 psi 1.3 times; > 25,000 psi 1.1 times; > 85,000 psi			
Display	> 110 % FS or -10 % FS						
Accuracy <sup>6) 7)</sup>	Standard: 0.1 % FS Optional: 0.05 % FS <sup>8)</sup> oder 0.025 % FS <sup>8) 9)</sup>						

1) Expanded accuracy of 0.2 % FS

2) Expanded accuracy of 0.15 % FS

3) Not possible as flush version

4) Expanded accuracy of 0.1 % FS, at reference conditions 23 °C ±3 °C

5) Expanded accuracy of 0.25 % FS, at reference conditions 23 °C ±3 °C

6) 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.

7) FS = Full span = end of measuring range - start of measuring range

8) At a measuring rate of ≤ 3 measured values per second

9) Only for ≥ 0 ... 1 bar up to ≤ 0 ... 1,000 bar (≥ 0 ... 15 psi up to ≤ 0 ... 14,500 psi), at reference conditions 23 °C ±3 °C

Sensor technology	
Compensated temperature range	-10 ... +50 °C (14 ... 122 °F)
Type of pressure	Gauge pressure, absolute pressure (up to 20 bar abs. (290 psi abs.)) and vacuum measuring ranges
Process connection	
Standard ≤ 1,000 bar (≤ 15,000 psi)	G ½ B, G ¼ B, ½ NPT, ¼ NPT, G 1 B flush, G ½ B flush
High-pressure version > 1,000 bar (> 15,000 psi)	<ul style="list-style-type: none"> <li>■ M16 x 1.5 female with sealing cone</li> <li>■ M20 x 1.5 female with sealing cone</li> <li>■ 9/16 - 18 UNF female F 250-C</li> </ul>
Pressure medium	All liquids and gases which are compatible with 316 stainless steel
Adjustment	Offset and span factor adjustable

Base instrument	
Display	
Display	5 ½ digit 7-segment display including a large matrix area for auxiliary information Bar graph, 0 ... 100 % Selectable backlighting
Rotatable case	The case is rotatable by 330°.
Resolution	4 ... 5 ½ digit; adjustable; dependent on the selected pressure unit
Pressure units	Standard: psi, bar Selectable to: mbar, kg/cm <sup>2</sup> , Pa, hPa, kPa, Mpa, mmH <sub>2</sub> O, mH <sub>2</sub> O, inH <sub>2</sub> O, inH <sub>2</sub> O (4 °C), inH <sub>2</sub> O (20 °C), inH <sub>2</sub> O (60 °F), ftH <sub>2</sub> O, mmHg, cmHg, inHg, inHg (0 °C), inHg (60 °F), kp/cm <sup>2</sup> , lbf/ft <sup>2</sup> , kN/m <sup>2</sup> , atm, Torr, micron as well as user-defined units <sup>10)</sup>
Functions	
Measuring rate	max. 50/s
Menu languages	Standard: English Selectable: German, Italian, French, Spanish, Russian and Polish
Memory	Standard: Min./Max. Optional: integrated data logger
Menu functions	Min./Max. alarm (visual), power-off function, measuring rate, mean value filter, pressure rate, mean value (via adjustable interval), level indicator, Tare offset, display damping
Mean value interval	1 ... 300 seconds, adjustable
Data logger <sup>11)</sup>	Cyclic logger: Automatic recording of up to 1,000,000 values; Cycle time: selectable from 1 ... 3,600 s. in steps of 1 second or by measuring rate in the following steps: 1/s, 3/s, 10/s and 50/s
Material	
Wetted parts	≤ 1.000 bar: Stainless steel 316 > 1.000 bar: Stainless steel 1.4534 -1 ... < 40 bar: Stainless steel 316 > 40 ... 1.000 bar: Stainless steel 316 + Elgiloy cells 2.4711
Case	Aluminium die-casting, nickel-plated
Voltage supply	
Power supply	3 x 1.5 V AA alkaline batteries <sup>12)</sup>
Maximum voltage	DC 4.95 V (spark ignition)
Battery life	typical 2,000 ... 2,500 h (without backlighting and WIKA-Wireless not active)
Battery status indication	Symbol display, with 4 bars displaying the battery status in segments of 25 %

10) The user-defined units can only be set via the WIKA-Cal software. The CPG1500 must feature WIKA-Wireless.

11) To evaluate the logger data, WIKA-Cal software is needed.

The logger data can be downloaded with the WIKA-Cal demo version as a CSV file. The live logger, an accurate data analysis or a direct certificate creation can be used with the logger template WIKA-Cal.

12) For hazardous areas, only the following types are allowed:





- Duracell, Simply by Duracell MN1500
- Duracell, Duralock Plus Power MN1500
- Varta, RAYOVAC Maximum Plus 4006

Base instrument	
<b>Permissible ambient conditions</b>	
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 °C (-4 ... +158 °F)
Relative humidity	< 95 % r. h. (non-condensing)
<b>Communication (optional)</b>	
Interface	WIKA-Wireless <sup>13)</sup>
<b>Case</b>	
Dimensions	approx. 100 x 150 x 59 mm (3.9 x 5.9 x 2.3 in)
Ingress protection	IP65
Weight	<ul style="list-style-type: none"> <li>■ incl. batteries approx. 680 g ( 1.5 lbs)</li> <li>■ with protective rubber cap: approx. 820 g (1.81 lbs)</li> </ul>

WIKA-Wireless <sup>13)</sup>	
Frequency range	2,400 ... 2,500 MHz
HF output power	max. 2 dBm (+ 2 dBi)
<b>Number of channels</b>	
Classic	79
Low Energy	40
<b>Channel spacing</b>	
Classic	1 MHz
Low Energy	2 MHz
Bandwidth	1 or 2 MHz
Output power	4 dBm / 10 mW Maximum output power under fault conditions for Ex ia: 490 mW

<sup>13)</sup> Requires a PC with Bluetooth® 2.1 interface  
WIKA-Wireless Low Energy (= LE) is required to communicate with an IOS-enabled mobile phone via the myWIKA-device smartphone app.

## Approvals

Logo	Description	Country								
    	<b>EU declaration of conformity</b> <ul style="list-style-type: none"> <li>■ EMC directive</li> <li>■ Pressure equipment directive</li> <li>■ RoHS directive</li> <li>■ R&amp;TTE directive</li> </ul> EN 300 328 harmonised 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 and also CH, NO and LI. <ul style="list-style-type: none"> <li>■ ATEX directive</li> </ul> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Ex i Zone 0 gas</td> <td style="width: 33%;">II 1G Ex ia IIC T4 Ga</td> </tr> <tr> <td>Zone 1 connection to zone 0 gas</td> <td>II 1/2G Ex ia IIC T4 Ga/Gb</td> </tr> <tr> <td>Zone 1 gas</td> <td>II 2G Ex ia IIC T4 Gb</td> </tr> <tr> <td></td> <td>T4 at -10 ... +50 °C</td> </tr> </table>	Ex i Zone 0 gas	II 1G Ex ia IIC T4 Ga	Zone 1 connection to zone 0 gas	II 1/2G Ex ia IIC T4 Ga/Gb	Zone 1 gas	II 2G Ex ia IIC T4 Gb		T4 at -10 ... +50 °C	European Union
Ex i Zone 0 gas	II 1G Ex ia IIC T4 Ga									
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	<b>IECEX</b> Hazardous areas <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Ex i Zone 0 gas</td> <td style="width: 33%;">Ex ia IIC T4 Ga</td> </tr> <tr> <td>Zone 1 connection to zone 0 gas</td> <td>Ex ia IIC T4 Ga/Gb</td> </tr> <tr> <td>Zone 1 gas</td> <td>Ex ia IIC T4 Gb</td> </tr> <tr> <td>Zone 2 gas</td> <td>Ex ia IIC T4 Gc</td> </tr> </table>	Ex i Zone 0 gas	Ex ia IIC T4 Ga	Zone 1 connection to zone 0 gas	Ex ia IIC T4 Ga/Gb	Zone 1 gas	Ex ia IIC T4 Gb	Zone 2 gas	Ex ia IIC T4 Gc	International
Ex i Zone 0 gas	Ex ia IIC T4 Ga									
Zone 1 connection to zone 0 gas	Ex ia IIC T4 Ga/Gb									
Zone 1 gas	Ex ia IIC T4 Gb									
Zone 2 gas	Ex ia IIC T4 Gc									

Clean Rooms | Pharma | Hospital | HVAC | BulkDrugs | Chemicals | Heavy Machinery | Hydraulics | Vacuum Industry  
Green House | Server Room | Confined Space | Cold Storage

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