# Precision digital pressure gauge Model CPG1500

WIKA data sheet CT 10.51

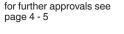


## Applications

- 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





Precision digital pressure gauge, model CPG1500

## 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.

### 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.

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#### 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 1)	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	025
		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	030
		050	0 60	0 100	0 150	0 160	0200
		0300	0 500	0 700	0 1,000	0 1,500	0 2,000
		03,000	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	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
	abs.	0 4	06	0 7	0 10	0 16	0 20
		025	0 40				
	psi	0 3.5 <sup>2)</sup>	0 5 <sup>2)</sup>	0 10 <sup>2)</sup>	0 15	0 20	0 30
	abs.	0 50	0 60	0 100	0 150	0 200	0 300
		0 500					
Vacuum and +/- measuring	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
ranges		-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	2 times 1.5 tim 1.3 tim	s; < 25 bar s; > 25 bar ≤ 600 es; > 600 bar ≤ 1 es; > 1,600 bar es; > 6,000 bar			psi ≤ 8,700 psi 00 psi ≤ 25,000 ,000 psi	) 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

Expanded accuracy of 0.15 % FS Not possible as flush version 2)

3)

4)́

5)

Expanded accuracy of 0.1 % FS, at reference conditions 23 °C ±3 °C Expanded accuracy of 0.25 % FS, at reference conditions 23 °C ±3 °C 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 6) 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

9) 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 1/2 B, G 1/4 B, 1/2 NPT, 1/4 NPT, G 1 B flush, G 1/2 B flush
High-pressure version > 1,000 bar (> 15,000 psi)	<ul> <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% 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 1/2 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	<ul> <li>≤ 1.000 bar: Stainless steel 316</li> <li>&gt; 1.000 bar: Stainless steel 1.4534</li> <li>-1 &lt; 40 bar: Stainless steel 316</li> <li>&gt; 40 1.000 bar: Stainless steel 316 + Elgiloy cells 2.4711</li> </ul>
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 upper defined units can only be get via the	a WIKA_Cal software. The CPG1500 must feature WIKA_Wireless

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						
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 °C (-4 +158 °F)					
Relative humidity	< 95 % r. h. (non-condensing)					
Communication (optional)						
Interface	WIKA-Wireless <sup>13)</sup>					
Case						
Dimensions	approx. 100 x 150 x 59 mm (3.9 x 5.9 x 2.3 in)					
Ingress protection	IP65					
Weight	<ul> <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)
Number of channels	
Classic	79
Low Energy	40
Channel spacing	
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

Requires a PC with Bluetooth<sup>®</sup> 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
CE	<ul> <li>EU declaration of conformity</li> <li>EMC directive</li> <li>Pressure equipment directive</li> <li>RoHS directive</li> </ul>		European Union
F©	max. transmission power 10 mW. The instr and also CH, NO and LI.	2,400 $\dots$ 2,500 MHz is used; Bluetooth <sup>®</sup> Classic, ument may be used without limitations in the EU	
    	<ul> <li>ATEX directive</li> <li>Ex i Zone 0 gas</li> <li>Zone 1 connection to zone 0 gas</li> <li>Zone 1 gas</li> </ul>	II 1G Ex ia IIC T4 Ga II 1/2G Ex ia IIC T4 Ga/Gb II 2G Ex ia IIC T4 Gb T4 at -10 +50 °C	
IEC.	IECEx Hazardous areas Ex i Zone 0 gas Zone 1 connection to zone 0 gas Zone 1 gas Zone 2 gas	Ex ia IIC T4 Ga Ex ia IIC T4 Ga/Gb Ex ia IIC T4 Gb Ex ia IIC T4 Gc T4 at -10 +50 °C	International

Logo	Description		Country
	<ul> <li>CSA (only up to 6.000 bar (85.000 psi))</li> <li>Safety (e.g. electr. safety, overpressure,) Class - 3631 06 - Electrical measurement and Class - 3631 86 - Electrical equipment for mea</li> <li>Hazardous areas (only up to 6.000 bar (85.000 Class - 2258 04 - PROCESS CONTROL EQU hazardous locations</li> <li>Ex i Class I, Zone 0 Ex ia IIC T4 Ga Class I, Division 1, Groups A, B, C and I T4 at -10 +50 °C</li> </ul>	asurement use - Certified to U.S. Standards 0 psi)) IPMENT - Intrinsically safe, Entity - For	USA and Canada
	Class - 2258 84 - PROCESS CONTROL EQU Hazardous Locations - Certified to U.S. Standa AEx i Class I, Zone 0 AEx ia IIC T4 Ga Class I, Division 1, Groups A, B, C and I T4 at -10 +50 °C	ards	
EACEx	EAC EMC directive Hazardous areas Ex i Zone 0 gas Zone 1 connection to zone 0 gas Zone 1 gas	Ex ia IIC T4 Ga Ex ia IIC T4 Ga/Gb Ex ia IIC T4 Gb T4 at -10 +50 °C	Eurasian Economic Community
G	GOST Metrology, measurement technology		Russia
	DNOP (MakNII) Mining Hazardous areas		Ukraine
ß	KazInMetr Metrology, measurement technology		Kazakhstan
	Uzstandard Metrology, measurement technology		Uzbekistan
-	PESOHazardous areasEx iZone 1 connection to zone 0 gasEx	ia IIC T4 Ga/Gb	India

## Certificates

Certificate	
Calibration <sup>1)</sup>	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

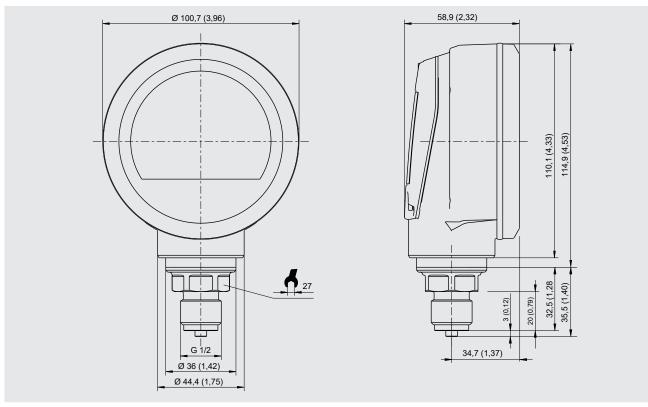
Approvals and certificates, see website

## Patents, property rights

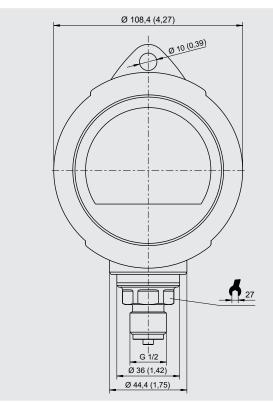
Patent registered under no. US D 803,082 S

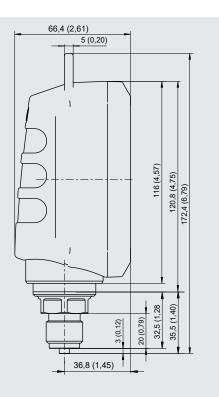
## Dimensions in mm (in)

### CPG1500 without protective rubber cap

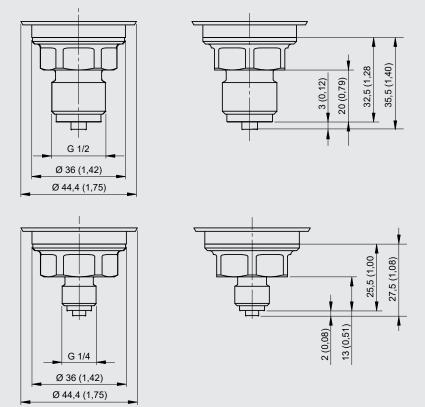


### CPG1500 with protective rubber cap

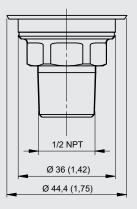


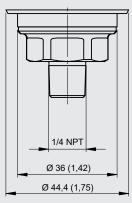


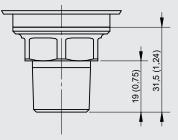
#### Threaded connections G $^{1\!\!/_2}$ and G $^{1\!\!/_2}$

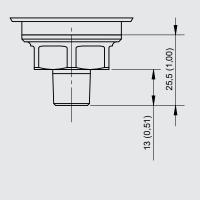


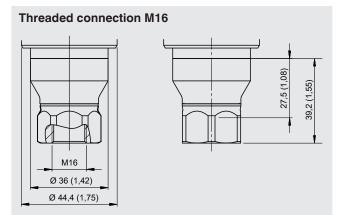
#### Threaded connections 1/2 NPT and 1/4 NPT



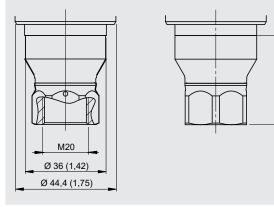




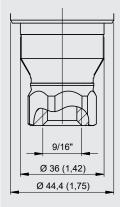


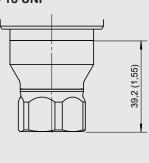


### **Threaded connection M20**



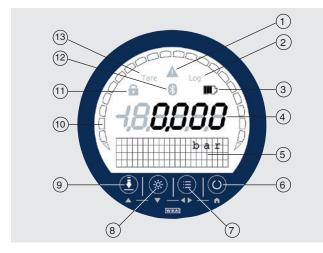
### Threaded connection 9/16 - 18 UNF





39,2 (1,55)

### Front foil



#### (1) Warning notice when:

- Exceeding or dropping below the pressure range
- Exceeding or dropping below the temperature range
- Logger memory is more than 90 % full
- Instrument error or battery status < 10 %</p>

- (2) Log: Logger function active/inactive
- (3) Battery status
- (4) Pressure indication
- (5) Matrix field serves as menu and secondary display
- (6) On/Off button
- 7 MENU button
- Access the menu (8) LIGHT button
- Turning the backlighting on and off
- (9) ZERO button The current pressure value will be set to "0" (rel.) or reference pressure (abs.)
- (10) Bar graph indicates the current pressure graphically
- (1) Lock symbol: Menu button or ZERO button locked/ unlocked
- (12) WIKA-Wireless: WIKA-Wireless active/inactive
- (13) Tara: TARE active/inactive

## App "myWIKA device"



Via the app "myWIKA device" and the WIKA-Wireless connection, the CPG1500 can be configured for calibration and log routines in a comfortable way through a mobile phone. During the pressure measurement, the value is displayed in the required unit directly on the phone. Moreover, further parameters like temperature and pressure change rate can be checked. It is also possible to retrieve more detailed device

information directly from the WIKA website. In addition, the app allows configuration, control and saving of log procedures.

Logs that were saved on the mobile phone can be transferred to a PC and be read by WIKA-Cal.

With that they can be further processed and the app fills the gap to provide a thorough solution of dealing with data on the CPG1500.

Under the basic settings of the CPG1500, a distinction can be made between the communication type WIKA-Wireless Classic or WIKA-Wireless Classic and WIKA-Wireless Low Energy (= LE).

WIKA-Wireless Low Energy (= LE) is required to communicate with an IOS-enabled mobile phone via the myWIKA-device smartphone app.

It is recommended to select WIKA-Wireless Classic for a connection with PC and/or an Android-enabled instrument.



For iOS-based mobile phones, the app is available in the Apple Store under below link.

#### Download here





For mobile phones with an Android operating system, the app is available in the Play Store under below link.

Download here



## 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 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.

Ca	
D	emo

#### 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.

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### 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

### **Recommended pressure generation**

### Model CPP30 pneumatic hand test pump

Pressure range: -0.95 ... +35 bar (-28 inHg ... +500 psi)

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





Basic version incl. hydraulic pressure generation

## Accessories

Special features		Order code
		CPG-A-15-
	Alkaline batteries 3 x 1.5 V AA	-C-
Ô	Protective rubber cap for case	-G-
	Sealing set Consisting of 4 x G $^{1\!\!/}_{2}$ USIT seals, 2 x G $^{1\!\!/}_{4}$ USIT seals and plastic box	-D-
	Instrument mounting bracket 90°	-1-
	Plastic case for 1 x digital pressure gauge, 1 x hydraulic hand test pump CPP700-H Plastic case is not permitted to be used in hazardous areas!	-N-
C. C.	for 1 x digital pressure gauge, 1 x pneumatic hand test pump CPP7-H or CPP30 Plastic case is not permitted to be used in hazardous areas!	-L-
	for 1 x CPG1500 for storage and transport Plastic case is not permitted to be used in hazardous areas!	-5-
	for 3 x CPG1500 for storage and transport Plastic case is not permitted to be used in hazardous areas!	-6-
N.	WIKA-Wireless USB stick	-2-
	Ordering information for your request	
	1. Order code: CPP-A-15 2. Option:	↓ []

		Order code
	Service kit Pneumatic	CPG-KITP
- AND	Hydraulic	CPG-KITH

## 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

# Options

DKD/DAkkS calibration certificate



Precision digital pressure gauge with protective rubber cap, model CPG1500

### 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 / Software / Carrying case / Additional approvals / Additional ordering information

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