

Reference pressure sensor Models CPT6200 and CPT6210

WIKA data sheet CT 11.03



For further approvals,
see page 5

Applications

- Calibration service companies and service industry
- Measurement and control laboratories
- Pressure tests

Special features

- Measuring ranges from 0 ... 25 mbar to 0 ... 1,000 bar [0 ... 0.4 psi to 0 ... 14,500 psi]
- Pressure type: positive and negative pressure, absolute pressure and differential pressure
- Accuracy: 0.2 % or 0.1 % (incl. calibration certificate)
- Fast connection to digital display instrument (plug-and-play)



Reference pressure sensor model CPT62x0

Description

Extensive application possibilities

For the hand-held pressure indicators model CPH6200 and CPH6300, external reference pressure sensors of model CPT6200 with measuring ranges of up to 1,000 bar [14,500 psi] are available. The CPT6210 reference pressure sensor is available for intrinsically safe use with the model CPH6210 hand-held pressure indicator.

Functionality

The sensors have been designed for measuring gauge and absolute pressure. Differential pressure measurement is possible with a 2-channel version CPH62x0-S2, and two connected model CPT62x0 reference pressure sensors.

Certified accuracy

For each reference pressure sensor, the accuracy for the complete measuring chain is certified by a factory calibration certificate. On request, a DAkkS calibration certificate will be provided for the reference pressure sensor.

Specifications

| Basic information | | |
|---|---|--|
| Case | | |
| Material | Stainless steel | |
| Dimensions | → See technical drawing | |
| Weight | Approx. 220 g [0.49 lb] | |
| Electrical connection | Bayonet connector, 7-pin | |
| Sensor compatibility per plug-and-play | | |
| CPT6200 | <ul style="list-style-type: none"> ■ To CPH6200 ■ To CPH6300 | <ul style="list-style-type: none"> ■ Via 1.1 m [3.3 ft] sensor connection cable ■ Extension cable for connection of sensors Length: approx. 3.8 m [12.5 ft] to approx. 5 m [16.4 ft] |
| CPT6210 | To CPH6210 | <ul style="list-style-type: none"> ■ Via 1.1 m [3.3 ft] sensor connection cable ■ Extension cable for connection of sensors Length: approx. 3.8 m [12.5 ft] to approx. 5 m [16.4 ft] |
| Ingress protection | <ul style="list-style-type: none"> ■ IP65 ■ IP67 when connected Both ingress protection types are met | |

| Accuracy specifications | |
|-------------------------------------|--|
| Accuracy ¹⁾ | <ul style="list-style-type: none"> ■ ≤ 0.2 % of span at reference conditions ■ 0.1 % recommended, only in combination with a calibration of sensor and hand-held |
| Reference conditions | |
| Ambient temperature | 15 ... 25 °C [59 ... 77 °F] |
| Mounting position | Vertical mounting position, process connection facing downwards |
| Compensated range | 0 ... 80 °C [0 ... 176 °F] |
| Mean temperature coefficient | ≤ 0.2 % of span/10 K (outside the reference conditions) |

1) 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.

Pressure ranges, gauge pressure

| mbar | |
|-----------|-----------|
| 0 ... 25 | 0 ... 160 |
| 0 ... 40 | 0 ... 250 |
| 0 ... 60 | 0 ... 400 |
| 0 ... 100 | 0 ... 600 |

| bar | |
|-----------|-------------|
| 0 ... 1 | 0 ... 60 |
| 0 ... 1.6 | 0 ... 70 |
| 0 ... 2.5 | 0 ... 100 |
| 0 ... 4 | 0 ... 160 |
| 0 ... 6 | 0 ... 250 |
| 0 ... 10 | 0 ... 400 |
| 0 ... 16 | 0 ... 600 |
| 0 ... 25 | 0 ... 1,000 |
| 0 ... 40 | - |

| psi | |
|-----------|--------------|
| 0 ... 5 | 0 ... 300 |
| 0 ... 10 | 0 ... 500 |
| 0 ... 15 | 0 ... 1,000 |
| 0 ... 20 | 0 ... 1,500 |
| 0 ... 30 | 0 ... 2,000 |
| 0 ... 50 | 0 ... 3,000 |
| 0 ... 100 | 0 ... 6,000 |
| 0 ... 150 | 0 ... 8,000 |
| 0 ... 200 | 0 ... 14,500 |

Pressure ranges, absolute pressure

| bar abs. | |
|------------|-------------|
| 0 ... 0.25 | 0 ... 4 |
| 0 ... 0.4 | 0 ... 6 |
| 0 ... 0.6 | 0 ... 10 |
| 0 ... 1 | 0 ... 16 |
| 0 ... 1.2 | 0 ... 25 |
| 0 ... 1.6 | 0.8 ... 1.2 |
| 0 ... 2.5 | - |

| psi abs. | |
|----------|-----------|
| 0 ... 5 | 0 ... 50 |
| 0 ... 10 | 0 ... 100 |
| 0 ... 15 | 0 ... 150 |
| 0 ... 20 | 0 ... 200 |
| 0 ... 30 | - |

Pressure ranges, vacuum and +/- measuring range

| mbar | |
|----------------|----------------|
| -600 ... +600 | -19.99 ... +40 |
| -400 ... +400 | -19.99 ... +60 |
| -250 ... +250 | -600 ... 0 |
| -100 ... +100 | -400 ... 0 |
| -19.99 ... +25 | -250 ... 0 |

| psi | |
|-------------|--------------|
| -3 ... +3 | -8 ... 0 |
| -5 ... +5 | -15 ... 0 |
| -8 ... +8 | -15 ... +40 |
| -15 ... +15 | -15 ... +70 |
| -3 ... 0 | -15 ... +130 |
| -5 ... 0 | - |

| bar | |
|------------|-----------|
| -1 ... 0 | -1 ... 9 |
| -1 ... 1.5 | -1 ... 15 |
| -1 ... 3 | -1 ... 24 |
| -1 ... 5 | -1 ... 39 |

→ Other measuring ranges on request.

Further details on: measuring range

Overpressure limit

| | | |
|-----------|-----------------------|--------------------------|
| 3 times | < 25 bar | < 360 psi |
| 2 times | > 25 ... ≤ 600 bar | > 360 ... ≤ 8,700 psi |
| 1.5 times | > 600 ... ≤ 1,000 bar | > 8,700 ... ≤ 14,500 psi |

Process connection

| Standard | Thread sizes | Possible measuring ranges |
|----------------------|----------------------------------|---|
| EN 837 | ■ G ½ B | ≤ 1,000 bar [≤ 14,500 psi] |
| | ■ G ¼ B | |
| | ■ G ½ B flush with O-ring (NBR) | 1.6 ... 1,000 bar or bar abs. [20 ... 14,500 psi or psi abs.] |
| | ■ G ½ B flush with O-ring (EPDM) | |
| ANSI/ASME B1.20.1 | ■ G 1 B flush with O-ring (NBR) | > 0.1 ... ≤ 1.6 bar or bar abs. [> 5 ... ≤ 20 psi or psi abs.] |
| | ■ G 1 B flush with O-ring (EPDM) | |
| ANSI/ASME B1.20.1 | ■ ½ NPT | ≤ 1,000 bar [≤ 14,500 psi] |
| | ■ ¼ NPT | |

| Further details on: process connection | | |
|--|---|--|
| Process connection adapter 1) | <ul style="list-style-type: none"> ■ Without ■ G ½ to ¼ NPT ■ G ½ to ½ NPT | |
| Seal | <ul style="list-style-type: none"> ■ NBR ■ EPDM ■ FKM/FPM | |
| Other versions | | |
| Oil- and grease-free | Per G93:2019 level D (< 220 mg/m ²) | |
| Thread (only for CTP6210) | M4 in pressure port, 5 mm deep | |
| | → Others on request | |
| Material | | |
| Wetted parts | -1 ... 1,000 bar [-14.5 ... 14,500 psi] | <ul style="list-style-type: none"> ■ Stainless steel 1.4404 (316L) ■ Elgiloy® 2.4711 |
| | 0 ... 25 mbar to 0 ... 60 mbar [0 ... 0.4 psi to 0 ... 0.9 psi] | <ul style="list-style-type: none"> ■ Stainless steel ■ Silicon ■ Aluminium ■ Gold ■ Silicone |
| | > 40 bar ... ≤ 1,000 bar [> 500 ... ≤ 15,000 psi] | <ul style="list-style-type: none"> ■ Process connection: stainless steel 1.4404 (316L) ■ Sensor: Elgiloy® 2.4711 |
| | -1 ... 10,000 bar [-14.5 ... 150,000 psi] | <ul style="list-style-type: none"> ■ Stainless steel 1.4435 (316L) ■ Hastelloy® 2.4819 (HC276) ■ Gold-plated |
| | > 25 bar [360 psi] | <ul style="list-style-type: none"> ■ Stainless steel with O-ring from NBR ■ Elgiloy® with O-ring from NBR |
| Flush design | <ul style="list-style-type: none"> ■ Stainless steel with O-ring from NBR ■ Stainless steel with O-ring from FKM/FPM ■ Stainless steel with O-ring from EPDM ■ Hastelloy C4 with O-ring from NBR ■ Hastelloy C4 with O-ring from FKM/FPM ■ Hastelloy C4 with O-ring from EPDM | |
| Internal pressure transmission medium | Synthetic oil | <ul style="list-style-type: none"> ■ For measuring ranges to ≤ 16 bar [≤ 300 psi] ■ Flush diaphragm ■ Listed by FDA for food industry |

1) Only possible for thread size G ½ B.




| Operating conditions | |
|--|--|
| Medium temperature range | |
| CPT6200 | -30 ... +100 °C [-22 ... +212 °F] -30 ... +80 °C [-22 ... +176 °F] For pressure measuring ranges 0 ... 25 mbar, 0 ... 40 mbar and 0 ... 60 mbar [0 ... 0.4 psi, 0 ... 0.6 psi and 0 ... 0.9 psi] |
| CPT6210 | -20 ... +50 °C [-4 ... +122 °F] |
| Operating temperature | |
| CPT6200 | -20 ... +80 °C [-4 ... +176 °F] |
| CPT6210 | -20 ... +50 °C [-4 ... +122 °F] |
| Storage temperature range | |
| CPT6200 | -40 ... +100 °C [-40 ... +212 °F] -40 ... +80 °C [-40 ... +176 °F] For pressure measuring ranges 0 ... 25 mbar, 0 ... 40 mbar and 0 ... 60 mbar [0 ... 0.4 psi, 0 ... 0.6 psi and 0 ... 0.9 psi] |
| CPT6210 | -40 ... +80 °C [-40 ... +176 °F] |
| Relative humidity, condensation | 0 ... 95 % relative humidity (non-condensing) |

| Operating conditions | |
|------------------------------|---|
| Ingress protection | <ul style="list-style-type: none"> ■ IP65 ■ IP67 when connected Both ingress protection types are met |
| Permissible pollution degree | 3 per EN 61010-1 |
| EMC (HF field) | EN 61326 emission (group 1, class B) and immunity (portable equipment) |

Safety-related characteristic values for reference pressure sensor CPT6210

| Parameters | Power supply circuit CPT6210 |
|---------------------------|------------------------------|
| Max. input voltage | $U_i = DC\ 10.4\ V$ |
| Max. input current | $I_i = 100\ mA$ |
| Max. input power | $P_i = 500\ mW$ |
| Max. internal capacitance | $C_i = 600\ nF$ |
| Max. internal inductance | L_i negligible |

Approvals

| Logo | Description | Region |
|---|---|----------------|
|  | EU declaration of conformity for CPT6200 | European Union |
| | EMC directive EN 61326 emission (group 1, class B) and immunity (portable equipment) | |
| | Pressure Equipment Directive PS > 200 bar; module A, pressure accessory | |
| | RoHS directive | |
|  | EU declaration of conformity for CPT6210 | European Union |
| | EMC directive EN 61326 emission (group 1, class B) and immunity (portable equipment) | |
| | Pressure Equipment Directive PS > 200 bar; module A, pressure accessory | |
| | RoHS directive | |
|  | ATEX directive Hazardous areas - Ex i Zone 1 gas $II\ 2G\ Ex\ ib\ IIC\ T4\ Gb$ $II\ 2G\ Ex\ ib\ IIC\ T4$ | |

Optional approvals

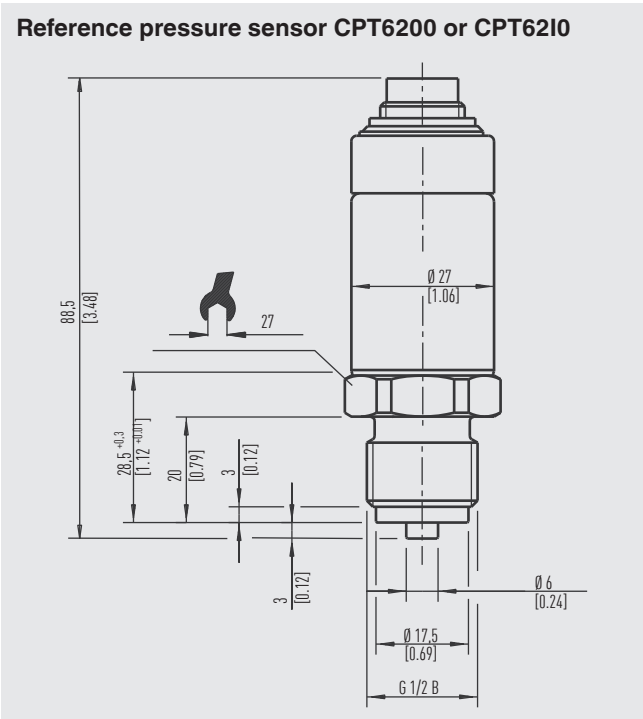
| Logo | Description | Region |
|------|---|------------|
| - | MChS Permission for commissioning | Kazakhstan |
| - | CRN (for CPT6200) Safety (e.g. electr. safety, overpressure, ...) | Canada |

Certificates

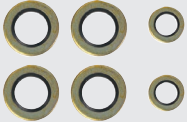


| Certificates | |
|---|--|
| Calibration | <ul style="list-style-type: none"> ■ 3.1 inspection certificate per EN 10204 ■ DAkkS calibration certificate (traceable and accredited in accordance with ISO/IEC 17025) |
| Recommended calibration interval | 1 year (dependent on conditions of use) |

→ For approvals and certificates, see website

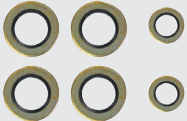




Dimensions in mm [in]



Accessories and spare parts

| For model CPT6200 to CPH6200 or CPH6300 | | Order code |
|---|---|------------------------|
| Description ¹⁾ | | CPH-A-62- CPH-A-63- |
|  | Seal set Consisting of: <ul style="list-style-type: none"> ■ 4 x G 1/2 USIT seals ■ 2 x G 1/4 USIT seals ■ Plastic box | -D- |
|  | Cable Sensor connection cable Length: approx. 1.1 m [3.3 ft] | -S- |
|  | Extension cable for connection of sensors Length: approx. 3.8 m [12.5 ft] to approx. 5 m [16.4 ft] | -V- |
| Ordering information for your enquiry: | | |
| 1. Order code: CPH-A-62- 2. Option: | | ↓ [] |

1) The figures are an example and may change depending on the state of the art in design, material composition and representation.

| For model CPT6210 to CPH6210 | | Order code |
|---|--|------------|
| Description ¹⁾ | | CPH-A-6I- |
|  | Seal set Consisting of: <ul style="list-style-type: none"> ■ 4 x G 1/2 USIT seals ■ 2 x G 1/4 USIT seals ■ Plastic box | -D- |
|  | Cable Sensor connection cable Length: approx. 1.1 m [3.3 ft] <p> Ex version! Marked with blue ring.</p> | -S- |
|  | Extension cable for connection of sensors Length: approx. 3.8 m [12.5 ft] to approx. 5 m [16.4 ft] <p> Ex version! Marked with blue ring.</p> | -V- |
| Ordering information for your enquiry: | | |
| 1. Order code: CPH-A-6I- 2. Option: | | ↓ [] |

1) The figures are an example and may change depending on the state of the art in design, material composition and representation.

Scope of delivery

- Reference pressure sensor model CPT6200 or model CPT6210
- Operating instructions
- Calibration certificate

Ordering information

Model / Unit / Measuring range / Accuracy / Process connection / Wetted parts / Special design features / Type of certificate / Pressure adapter / Further approvals / Additional ordering information

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