

CTL

Pressure sensor for general air and gas applications - brass

CTL-#.##.###.#

Overview

- Relative pressure measurement from -1 to 40 bar
- Robust ceramic measuring cell
- Brass housing
- Compact design
- Relative pressure and vacuum measurement



Picture similar

Technical data

Performance characteristics

| | |
|--------------------------------------|---|
| Pressure type | Relative (gauged) |
| Compensated temperature range | -10 ... 55 °C |
| Long term stability | ≤ 0.3 % FSR/a |
| Max. measuring error | ± 2.5 % FSR 0 0 Including zero-point and span error, nonlinearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2) |
| Max. measuring span | 40 bar |
| Measuring range | -1 ... 40 bar |
| Standard error of measurement (BFSL) | ± 0.5 % FSR Including non-linearity, hysteresis and non-repeatability according BFSL |
| Min. measuring span | 1 bar |
| Rise time (10 ... 90 %) | ≤ 3 ms |
| Temperature coefficient | ≤ 0.15 % FSR/10 K , measuring span ≤ 0.25 % FSR/10 K , zero point |

Process conditions

| | |
|---------------------|---|
| Process temperature | -40 ... 100 °C |
| Process pressure | Refer to section "Operating conditions" |

Process connection

| | |
|---|--|
| Connection variants | Refer to section "Dimensional drawings" |
| Wetted parts material, process connection | Brass |
| Wetted parts material, membrane | Ceramic, 96% AL2O3 |
| Wetted parts material, gasket | FKM, optional, gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C NBR, optional EPDM, optional |

Ambient conditions

| | |
|-----------------------------|---------------|
| Operating temperature range | -40 ... 85 °C |
|-----------------------------|---------------|

Ambient conditions

| | |
|---|---|
| Storage temperature range | -40 ... 85 °C |
| Degree of protection (EN 60529) | IP 65 , with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin |
| Bump (EN 60068-2-27) | 100 g / 2 ms, 4000 impulses per axis and direction |
| Shock (EN 60068-2-27) | 50 g / 11 ms, 100 g / 6 ms, 3 impulses per axis and direction |
| Shock and vibration tests (EN 61373:1999, 2010) | Category 1, class B |
| Vibration (sinusoidal) (EN 60068-2-6) | 1.5 mm p-p (10 ... 55 Hz), 10 g (55 Hz ... 2 kHz), 10 cycles (2.5 h) per axis |
| Vibration, broad-band random (EN 60068-2-64) | 0.1 g ² / Hz, > 10 gRMS (20 Hz ... 1 kHz), 30 min. per axis |

Output signal

| | |
|--------------------------|---|
| Current output | 4 ... 20 mA , 2-wire |
| Voltage output | 0 ... 10 V 0.5 ... 4.5 V DC ratiometric 1 ... 5 V |
| Load resistance | > 5 kΩ, with voltage output R = (U _{ver} - 11 V)/20 mA, with current output |
| Insulation resistance | > 100 MΩ , 250 V DC |
| Short circuit protection | Yes |

Housing

| | |
|--------------|---|
| Style | Compact transmitter |
| Overall size | Refer to section "Dimensional drawings" |
| Material | Brass |

Electrical connection

| | |
|--------------|---|
| Cable outlet | 1 m, 3-wire 2 m, 3-wire 5 m, 3-wire |
|--------------|---|

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Technical data

Power supply

Voltage supply range 11 ... 30 V DC , with 4 ... 20 mA output signal
 15 ... 30 V DC , with 0 ... 10 V output signal
 11 ... 30 V DC , with 1 ... 5 V output signal
 5 V DC ratiometric , with 0.5 ... 4.5 V output signal

Compliance and approvals

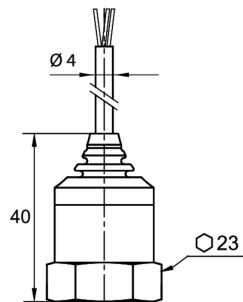
EMC EN 61000-6-2
 EN 61000-6-3
 EN 61326-1

Operating conditions

| Measuring range (bar) | Proof pressure (bar) | Burst Pressure (bar) |
|-----------------------|----------------------|----------------------|
| -1 ... 0 | 0 ... 1 | 2 |
| -1 ... 1,5 | 0 ... 2,5 | 4 |
| -1 ... 3 | 0 ... 4 | 8 |
| -1 ... 5 | 0 ... 6 | 12 |
| -1 ... 9 | 0 ... 10 | 20 |
| -1 ... 15 | 0 ... 16 | 32 |
| -1 ... 24 | 0 ... 25 | 50 |
| -1 ... 39 | 0 ... 40 | 80 |

Dimensional drawings (mm)

Housing



Housing with cable outlet, 3-wire

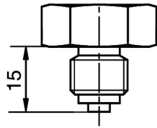
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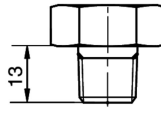
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Dimensional drawings (mm)

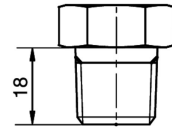
Process connection



G30-02
G 1/4 B EN 837-1 (BCID: G30)



N01-5
1/4-18 NPT (BCID: N01)



N02-6
1/2-14 NPT (BCID: N02)

Electrical connection

| Output signal | Equivalent circuit | Electrical connection | Function | Pin assignment |
|----------------------|--------------------|-----------------------|--------------------------|----------------|
| 4 ... 20 mA (2-wire) | | | +Vs lout n.c. | RD BK WH |
| 0 ... 10 V (3-wire) | | | +Vs Uout GND (0 V) | RD WH BK |

Ordering information

Ordering key - Configuration possibilities see website

| | CTL | - | # | . | # | . | # | . | ### | . | # | #### |
|---------------------------|-----|---|---|---|---|---|---|---|-----|---|---|------|
| Product | CTL | | | | | | | | | | | |
| Output signal | | | | | | | | | | | | |
| 4 ... 20 mA | | | | | | | | | | | | 3 |
| 0 ... 10 V | | | | | | | | | | | | 2 |
| 1 ... 5 V | | | | | | | | | | | | 4 |
| 0,5 ... 4,5 V ratiometric | | | | | | | | | | | | 7 |
| Process connection | | | | | | | | | | | | |
| G 1/4 B EN 837-1 (G30) | | | | | | | | | | | | 2 |
| 1/4-18 NPT (N01) | | | | | | | | | | | | 5 |
| Sealing | | | | | | | | | | | | |
| NBR | | | | | | | | | | | | 3 |
| EPDM | | | | | | | | | | | | 5 |
| FKM | | | | | | | | | | | | 9 |
| Measuring range | | | | | | | | | | | | |
| 0...1 bar (EN) | | | | | | | | | | | | B15 |
| 0 ... 2.5 bar (EN) | | | | | | | | | | | | B18 |
| 0 ... 4 bar (EN) | | | | | | | | | | | | B19 |
| -1...39 bar (EN) | | | | | | | | | | | | B1L |
| 0 ... 6 bar (EN) | | | | | | | | | | | | B20 |
| 0 ... 10 bar (EN) | | | | | | | | | | | | B22 |

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| | CTL | - | # | . | # | . | # | . | ### | . | # | #### |
|----------------------|-----|---|---|---|---|---|---|---|-----|---|---|------|
| 0 ... 16 bar (EN) | | | | | | | | | | | | B24 |
| 0...25 bar (EN) | | | | | | | | | | | | B26 |
| 0 ... 40 bar (EN) | | | | | | | | | | | | B27 |
| -1...0 bar (EN) | | | | | | | | | | | | B59 |
| -1...0,6 bar (EN) | | | | | | | | | | | | B72 |
| -1 ... 1,5 bar (EN) | | | | | | | | | | | | B74 |
| -1...3 bar (EN) | | | | | | | | | | | | B76 |
| -1...5 bar (EN) | | | | | | | | | | | | B77 |
| -1...9 bar (EN) | | | | | | | | | | | | B79 |
| -1...15 bar (EN) | | | | | | | | | | | | B81 |
| -1...24 bar (EN) | | | | | | | | | | | | B82 |
| 0...100 kPa (EN) | | | | | | | | | | | | D15 |
| 0...250 kPa (EN) | | | | | | | | | | | | D18 |
| 0...400 kPa (EN) | | | | | | | | | | | | D19 |
| -100...3900 kPa (EN) | | | | | | | | | | | | D1L |
| 0...600 kPa (EN) | | | | | | | | | | | | D20 |
| 0...1000 kPa (EN) | | | | | | | | | | | | D22 |
| 0...1600 kPa (EN) | | | | | | | | | | | | D24 |
| 0...2500 kPa (EN) | | | | | | | | | | | | D26 |
| 0...4000 kPa (EN) | | | | | | | | | | | | D27 |
| -100...0 kPa (EN) | | | | | | | | | | | | D59 |
| -100...60 kPa (EN) | | | | | | | | | | | | D72 |
| -100...150 kPa (EN) | | | | | | | | | | | | D74 |
| -100...300 kPa (EN) | | | | | | | | | | | | D76 |
| -100...500 kPa (EN) | | | | | | | | | | | | D77 |
| -100...900 kPa (EN) | | | | | | | | | | | | D79 |
| -100...1500 kPa (EN) | | | | | | | | | | | | D81 |
| -100...2400 kPa (EN) | | | | | | | | | | | | D82 |
| 0...1 kg/cm2 (EN) | | | | | | | | | | | | F15 |
| 0...2,5 kg/cm2 (EN) | | | | | | | | | | | | F18 |
| 0...4 kg/cm2 (EN) | | | | | | | | | | | | F19 |
| -1...39 kg/cm2 | | | | | | | | | | | | F1L |
| 0...6 kg/cm2 (EN) | | | | | | | | | | | | F20 |
| 0...10 kg/cm2 (EN) | | | | | | | | | | | | F22 |
| 0...16 kg/cm2 (EN) | | | | | | | | | | | | F24 |
| 0...20 kg/cm2 (EN) | | | | | | | | | | | | F25 |
| 0...25 kg/cm2 (EN) | | | | | | | | | | | | F26 |
| 0...40 kg/cm2 (EN) | | | | | | | | | | | | F27 |
| -1...0 kg/cm2 (EN) | | | | | | | | | | | | F59 |
| -1...0,6 kg/cm2 (EN) | | | | | | | | | | | | F72 |
| -1...1,5 kg/cm2 (EN) | | | | | | | | | | | | F74 |
| -1...3 kg/cm2 (EN) | | | | | | | | | | | | F76 |
| -1...5 kg/cm2 (EN) | | | | | | | | | | | | F77 |
| -1...9 kg/cm2 (EN) | | | | | | | | | | | | F79 |
| -1...15 kg/cm2 (EN) | | | | | | | | | | | | F81 |
| -1...24 kg/cm2 (EN) | | | | | | | | | | | | F82 |
| 0...15 psi (ANSI) | | | | | | | | | | | | H15 |
| 0...30 psi (ANSI) | | | | | | | | | | | | H17 |
| 0...35 psi (ANSI) | | | | | | | | | | | | H18 |
| 0...60 psi (ANSI) | | | | | | | | | | | | H19 |
| 0...20 psi (ANSI) | | | | | | | | | | | | H1C |

2024-04-29 The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change.

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| | CTL | - | # | . | # | . | # | . | ### | . | # | #### |
|---|-----|---|---|---|---|---|---|---|-----|---|---|------|
| 0...100 psi (ANSI) | | | | | | | | | H21 | | | |
| 0...160 psi (ANSI) | | | | | | | | | H22 | | | |
| 0...200 psi (ANSI) | | | | | | | | | H23 | | | |
| 0...250 psi (ANSI) | | | | | | | | | H24 | | | |
| 0...300 psi (ANSI) | | | | | | | | | H25 | | | |
| 0...400 psi (ANSI) | | | | | | | | | H26 | | | |
| 0...600 psi (ANSI) | | | | | | | | | H27 | | | |
| Output Connection | | | | | | | | | | | | |
| Cable outlet 1 m, 3-wire | | | | | | | | | | | | 1 |
| Cable outlet 2 m, 3-wire | | | | | | | | | | | | 2 |
| Cable outlet 5 m, 3-wire | | | | | | | | | | | | 5 |
| Signal inversion | | | | | | | | | | | | |
| Signal inversion (only for 0 ... -1 bar, CTX-2 => 0 bar = 10V -1 bar = 0V CTX-3 => 0 bar = 4mA -1 bar = 20mA) | | | | | | | | | | | | 4780 |
| not selected | | | | | | | | | | | | & |