

CTE / CTU / CTW8000...CS Series

OEM submersible pressure transducers



FEATURES

- 250 to 5000 mbar, 5 to 70 psi, 2.5 to 50 mH₂O (1 mH₂O ≈ 3 ft) gage¹ pressure
- For corrosive media
- 0...10 V or 4...20 mA output
- Field interchangeable
- EMC according to EN 61326-1¹¹

MEDIA COMPATIBILITY

Wetted materials:
 Stainless steel 1.4404 (316L), ceramic Al₂O₃,
 NBR (FKM), POM, PUR (PE/FEP), Loctite 603

Protection class:
 IP 68 (according to DIN EN 60529, NEMA 6P)¹



SPECIFICATIONS^{8,9}

Maximum ratings

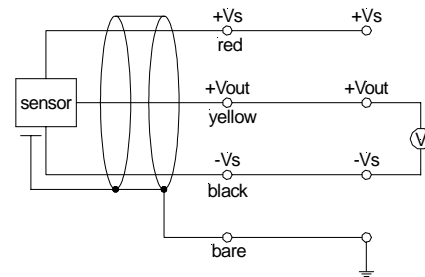
| | |
|--|--------------------|
| Supply voltage (reverse polarity protection) | |
| CT...0... | 13...32 V |
| CT...4... ² | 9...32 V |
| Load current | |
| CT...0... | 1 mA |
| Proof pressure ³ | 2 x rated pressure |

Environmental

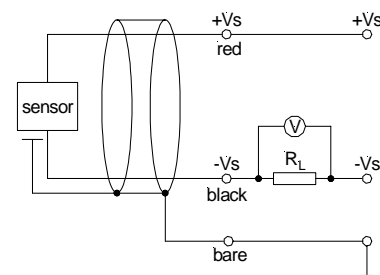
| | |
|-------------------------|---------------------|
| Temperature limits | |
| Storage | -25...70 °C |
| Operating | -10...70 °C |
| Compensated | 0...70 °C |
| Vibration (5 to 500 Hz) | 10 g _{RMS} |
| Mechanical shock | 50 g |

ELECTRICAL CONNECTION

Voltage output device



Current output device



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COMMON PERFORMANCE CHARACTERISTICS

($V_s=15\text{ V} \pm 0.1\text{ V}$, $T_A=25\text{ °C}$, RH=50 %)

| Characteristics | | Min. | Typ. | Max. | Unit |
|---|--------|--|-------|-------|---------|
| Thermal effects (0...70°C) ⁴ | Offset | | ±0.03 | ±0.06 | %FSO/°C |
| | | devices up to 1 bar/10 m H ₂ O/15 psi | | | |
| | | all others | ±0.02 | ±0.04 | |
| | Span | | ±0.02 | ±0.04 | |
| Thermal effects (-10...0 °C) ⁴ | Offset | | ±0.03 | | %FSO |
| | Span | | ±0.03 | | |
| Non-linearity (BSL) ⁵ , hysteresis and repeatability | | | ±0.1 | ±0.3 | %FSO |
| Long term stability ⁶ | | | ±0.1 | ±0.3 | |
| Output noise (0 < f < 1 kHz) | | | ±0.1 | | |
| Response time (10 to 90 %) | | | 35 | | ms |
| D/A resolution | | | | 11 | bit |
| Power supply rejection | Offset | | ±0.01 | | %FSO/V |
| | Span | | ±0.02 | | |

INDIVIDUAL PERFORMANCE CHARACTERISTICS

($V_s=15\text{ V} \pm 0.1\text{ V}$, $T_A=25\text{ °C}$, RH=50 %)

0...10 V output ($R_L > 100\text{ k}\Omega$)

| Characteristics | Min. | Typ. | Max. | Unit |
|-------------------------------|------|------|------|----------|
| Zero pressure offset | | 0 | 0.1 | V |
| Full scale span ⁷ | 9.9 | 10 | 10.1 | |
| Output impedance | | | 25 | Ω |
| Current consumption (no load) | | 4 | | mA |

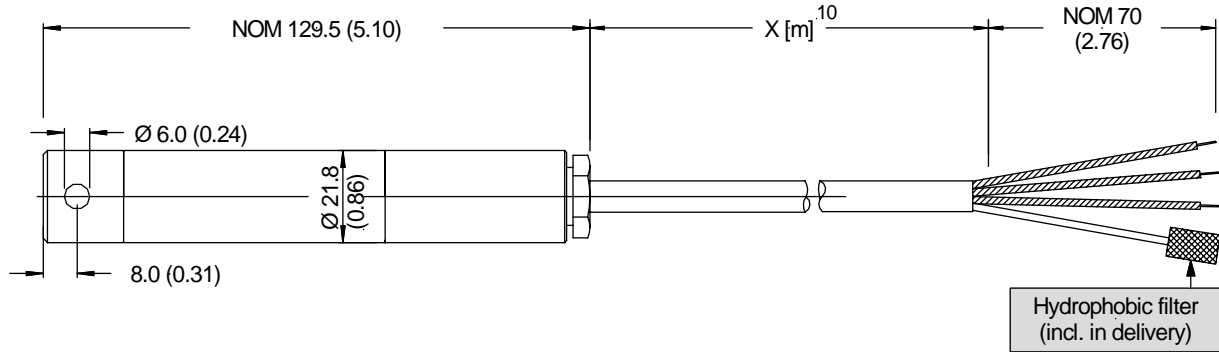
4...20 mA output ($R_L=100\ \Omega$)

| Characteristics | Min. | Typ. | Max. | Unit |
|--|------|------|------|------|
| Zero pressure offset | 3.9 | 4.0 | 4.1 | mA |
| Full scale span ⁷ | 15.9 | 16.0 | 16.1 | |
| Power consumption ($I_L = 20\text{ mA}$) | | 250 | | mW |

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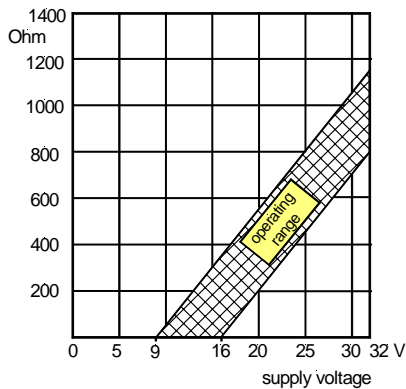
OUTLINE DRAWING¹



mass: typ. 210 g (without cable)

dimensions in mm (inches)

LOAD LIMITATION (4...20 mA output version)



ELECTRICAL CONNECTION (cont.)

| WIRE CONNECTION | | |
|-----------------|------------------------|------------------------|
| Colour | 0...10 V | 4...20 mA |
| red | +Vs | +Vs |
| black | -Vs | -Vs |
| yellow | Vout | - |
| bare | case / shield | case / shield |
| transparent | vent tube ¹ | vent tube ¹ |

RECOMMENDED ACCESSORY (not included in delivery)

ZA000850: Cable hanger

ZA004151: Desiccant filter box

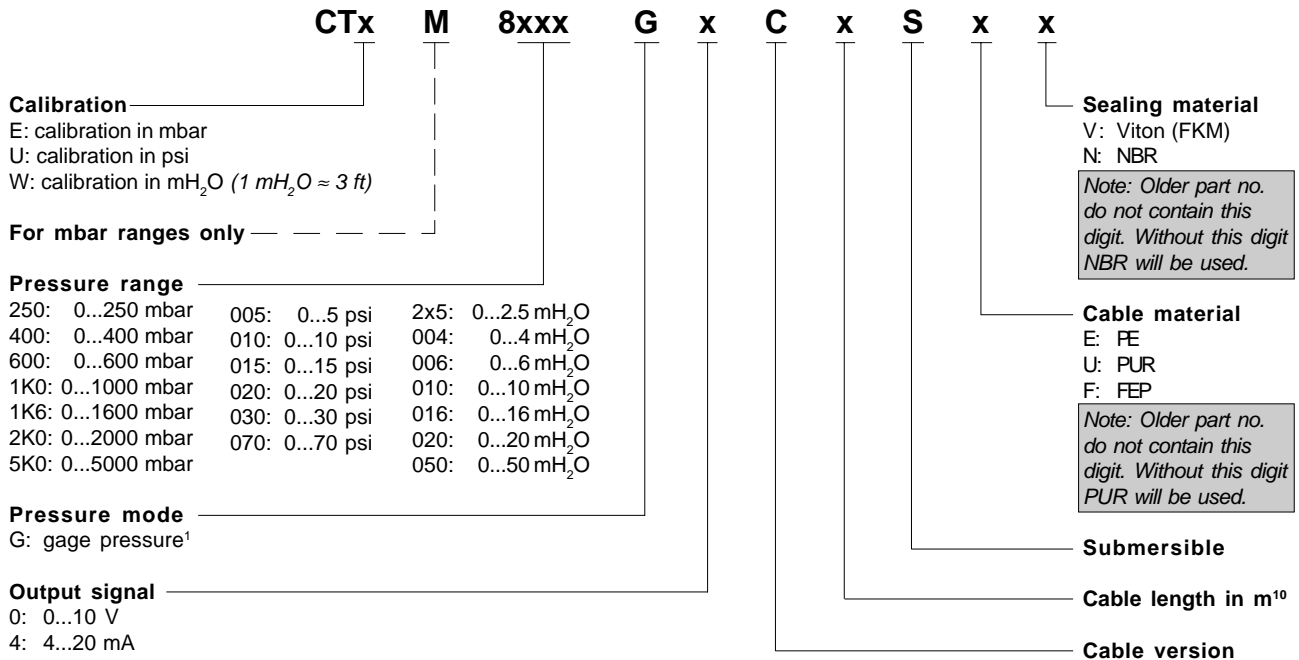
Specification notes:

1. The package is an all-sealed housing. For proper function the gage port is vented to the atmosphere through the connecting cable. Thus the vent tube of the cable end must have access to the ambient pressure.
2. The minimum supply voltage is directly proportional to the load resistance seen by the transmitter. For more details see the load limitation diagram.
3. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
4. Thermal effects are relative to 25 °C. Signal is clamped at 0 V.
5. Non-linearity refers to **Best Straight Line** fit. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
6. Long term stability is the change in output after one year.
7. Span is the arithmetic difference in transmitter output signal measured at zero pressure and the maximum operating pressure.
8. CE-labelling is in accordance with 2004/108/EC.
9. The pressure transmitters must not be used as safety accessories according to article 1, 2.1.3 of the directive 97/23/EC.
10. Cable length for 0...10 V versions is max. 10 m.
11. Surge immunity according to EN 61000-4-5 for current output devices with cable lengths longer than 10 m. For shorter cable lengths please contact First Sensor.

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ORDERING INFORMATION



Other pressure ranges and options are widely available. Please contact First Sensor.

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