

CTE / CTU / CTW9000...CS Series

OEM stainless steel submersible pressure transducers



FEATURES

- 100 to 5000 mbar, 1.5 to 70 psi, 1 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), NBR (FKM), PUR (PE/FEP), POM, 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... 12...32 V

CT...4...² 9...32 V

Load current

CT...0... 1 mA

Proof pressure³

2 x rated pressure

Environmental

Temperature limits

Storage -25...70 °C

Operating -10...70 °C

Compensated 0...50 °C

Vibration (5 to 500 Hz)

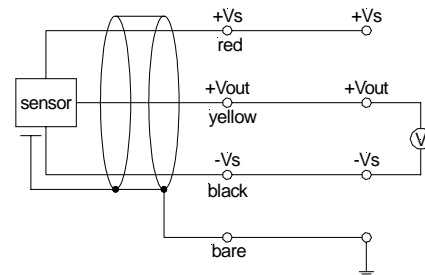
10 g_{RMS}

Mechanical shock

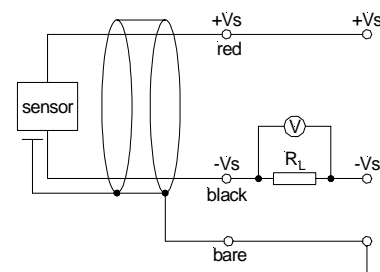
50 g

ELECTRICAL CONNECTION

Voltage output device



Current output device



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COMMON PERFORMANCE CHARACTERISTICS

($V_S = 15 \text{ V} \pm 0.1 \text{ V}$, $T_A = 25 \text{ }^\circ\text{C}$, RH=50 %)

Characteristics			Min.	Typ.	Max.	Unit
Thermal effects (0...50 °C) ⁴	Offset	100 mbar, 1.5 psi, 1 mH ₂ O		±0.04	±0.08	%FSO/ °C
		all others		±0.02	±0.05	
	Span	100 mbar, 1.5 psi, 1 mH ₂ O		±0.04	±0.08	
		all others		±0.02	±0.05	
Thermal effects (-10...0 °C, 50...70 °C) ⁴	Offset	100 mbar, 1.5 psi, 1 mH ₂ O		±0.04		
		all others		±0.02		
	Span	100 mbar, 1.5 psi, 1 mH ₂ O		±0.04		
		all others		±0.02		
Non-linearity (BSL) and hysteresis ⁵				±0.1	±0.3	%FSO
Repeatability				±0.1		
Long term stability ⁶				±0.1		
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

($V_S = 15 \text{ V} \pm 0.1 \text{ V}$, $T_A = 25 \text{ }^\circ\text{C}$, 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

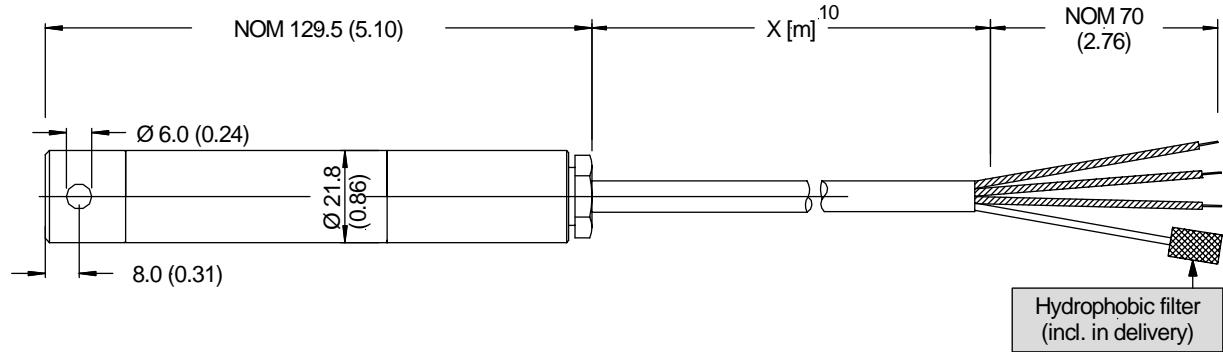
4...20 mA output ($R_L = 100 \Omega$)

Characteristics	Min.	Typ.	Max.	Unit
Zero pressure offset	3.8	4.0	4.2	mA
Full scale span ⁷	15.8	16.0	16.2	
Power consumption ($I_L = 20 \text{ mA}$)		250		mW

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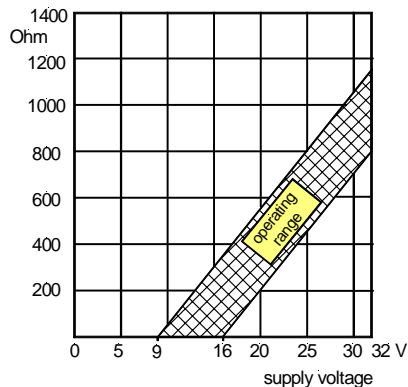
OUTLINE DRAWING¹



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

CTx	M	9xxx	G	x	C	x	S	x	x
Calibration E: calibration in mbar U: calibration in psi W: calibration in mH ₂ O (1 mH ₂ O ≈ 3 ft)									Sealing material V: Viton (FKM) N: NBR <i>Note: Older part no. do not contain this digit. Without this digit NBR will be used.</i>
For mbar ranges only									
Pressure range									Cable material E: PE U: PUR F: FEP <i>Note: Older part no. do not contain this digit. Without this digit PUR will be used.</i>
100: 0...100 mbar	001: 0...1.5 psi	001: 0...1 mH ₂ O							
200: 0...200 mbar	003: 0...3 psi	002: 0...2 mH ₂ O							
400: 0...400 mbar	005: 0...5 psi	004: 0...4 mH ₂ O							
600: 0...600 mbar	010: 0...10 psi	006: 0...6 mH ₂ O							
1K0: 0...1000 mbar	015: 0...15 psi	010: 0...10 mH ₂ O							
1K6: 0...1600 mbar	020: 0...20 psi	016: 0...16 mH ₂ O							
2K0: 0...2000 mbar	030: 0...30 psi	020: 0...20 mH ₂ O							
5K0: 0...5000 mbar	070: 0...70 psi	050: 0...50 mH ₂ O							
Pressure mode G: gage pressure ¹									Submersible
Output signal 0: 0...10 V 4: 4...20 mA									Cable length in m¹⁰
									Cable version

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

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