

Submersible Pressure Transducer



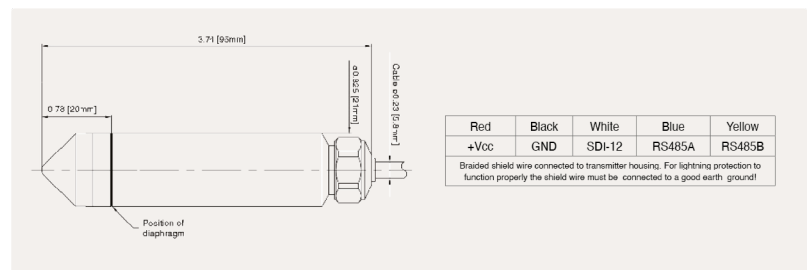
The Submersible Pressure Transducer (PT) provides outstanding Total Error Band (TEB)² accuracy for reliable, accurate measurements in real-world conditions.

The Submersible PT is ideally suited for environmental monitoring applications such as surface water, streams, and reservoirs using existing SDI-12 monitoring equipment.

The Submersible PT is ideal for remote applications where battery-powered operation with minimal current draw and networking multiple sensors to a data recorder are required. The included lightning protection makes it more robust for installation in areas prone to high current and voltage transients.

FEATURES

- Standard $\pm 0.1\%$ FS TEB or optional USGS OSW accuracies available
 - $\pm 0.1\%$ FS TEB on ranges up to 900 ft W.C.
 - Meets OSW spec on ranges up to 70 ft W.C. from 0...40°C
- 16-bit internal digital error correction for cost-effective low Total Error Band (TEB)²
- Selectable digital outputs (SDI-12 or RS485) for maximum versatility
- RS485 modified-MODBUS and SDI-12 V1.3 protocol compatibility
- 316L stainless construction standard
- Lightning protection included
- Built in the U.S.A. ARRA Section 1605 Compliant



Detailed specifications

PRESSURE RANGES¹

Relative

- Infinite between 0...3 thru 0...900 ft W.C.

Absolute

Available on request

ACCURACY^{2,3,4}

Pressure

- Standard $\pm 0.1\%$ FS TEB
- **Optional** ± 0.01 ft WC when reading ≤ 10 ft WC or $\pm 0.1\%$ of reading > 10 ft WC

Temperature

typ. $\pm 0.3^\circ\text{C}$

OUTPUT⁵

Digital

SDI-12 + RS485

Pressure Resolution

0.0005% FS

Temp. Resolution

 $< 0.01^\circ\text{C}$

Comm. Protocol

SDI-12 V1.3, MODBUS RTU

Baud Rate

1200 bits/s

CERTIFICATIONS

CE

EN50081-1, EN50082-2

ELECTRICAL⁶

Supply

6...32 VDC

Power Consumption

- $< 0.1\text{mA}$ (Sleep)
- $< 5.5\text{mA}$ (active)

Startup Time

 $< 5\text{ms}$ (interface ready)

Load Resistance (mA)

 $< (\text{Supply} - 6\text{V}) / 0.0055\text{A}$

Insulation GND-CASE

 $> 10\text{M}\Omega @ 300\text{V}$

ENVIRONMENTAL

Protection Rating

IP68

Storage Temp.

 $-20...80^\circ\text{C}$

Compensated Temp.

- Standard $-10...80^\circ\text{C}$
- **Optional** $0...40^\circ\text{C}$ ⁷

Wetted Materials

- 316 L Stainless Steel
- Titanium Optional
- Polyamide
- Fluorocarbon

Cable Options

- Polyethylene for general purpose
- Hytrel for hydrocarbon
- Tefzel for chemical interaction

¹ Level range may be specified in units of bar, mbar, mH₂O, psi, ftWC, or inWC

² Total Error Band (TEB) includes the combined effects of non-linearity, hysteresis, and non-repeatability as well as thermal dependencies, over the compensated temperature range.

³ Optional accuracy is written in compliance with USGS OSW specification mandates

⁴ Optional accuracy is written in compliance with USGS OSW specification mandates and limited to a compensated temperature range of $0...40^\circ\text{C}$.

⁶ Nominal values may be higher depending upon cable length. Cable resistance ($\sim 70\Omega/1000\text{ft}$) adds to the supply requirement. In order to insure proper system operation, calculate the minimum required supply voltage (at the source) as follows: $\text{MINIMUM SUPPLY VOLTAGE} = 6 + 0.022(\text{CABLE LENGTH} \times 0.07)\text{VDC}$

⁷ Optional compensated temperature range applies to transducers built to USGS OSW Certifications accuracy specification.