# Submersible Pressure Transducers Models C\$400, C\$405, and C\$408

These submersible pressure transducers, manufactured by Pressure Systems, measure surface water, ground water, or hostile fluid levels. They are piezoresistive sensors that incorporate an isolated stainless steel diaphragm into a stainless steel package. The sensor assembly is housed in welded 316 SS or titanium case that includes a diaphragm shield for protection against debris.



Each transducer is shipped with a calibration sheet. The sheet specifies I/O conditions, as well as actual data reflecting the unit's static accuracy and thermal characteristics. Each vented transducer is also shipped with a desiccant tube to extract water vapor from air entering the vent tube.

These units are designed for installation in a Class 1, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; and Class III Division 1 hazardous location when connected to an approved electrical barrier.

## **Features**

- High static accuracy and repeatability
- Small, rugged package
- User-specified pressure ranges available
- Welded 316 stainless steel construction
- Computer tested, calibrated and serialized

- Unique cable seal system
- Fully temperature compensated
- Compatible with Campbell Scientific's CR510, CR10(X), CR23X, CR7, CR5000 and CR9000 dataloggers

## **Ordering Information**

When ordering a transducer, specify the desired psi range, choose either a polyurethane-jacketed or Tefzel-jacketed cable and specify the lead length, in feet, after the L.

- CS400\_L Four-wire pressure transducer with an accuracy of ±0.25% FSO. Compatible with the PST3/8 system and connects directly to a multiplexer. Requires a 7977 resistor assembly to connect with a datalogger.
- CS405\_L Four-wire pressure transducer with an accuracy of ±0.1% FSO. Compatible with the PST3/8 system and connects directly to a multiplexer. Requires a 7977 resistor assembly to connect to a datalogger.
- CS408\_L SDI-12 pressure transducer with an accuracy of ±0.05% FSO.
- 7977 100 Ohm Shunt Resistor Assembly for the CS400 or CS405
- Optional titanium housing for the CS400 or CS405
- 13462 Optional ¼" NPT Pressure Cap
- 7421 Optional Split Mesh Grip

## Manufacturer's Specifications (Pressure Systems)

#### Performance

0-5, 15, 30, 50 100 psig (CS408) User Specified Pressure Ranges:

0-2 through 0-300 psig (CS400, CS405)

±0.25% FSO BFSL (CS400) Static Accuracy:\*

±0.1% FSO BFSL (CS405) ±0.05% FSO BFSL (CS408)

Thermal Error:\*\* 0.022% FSO °C-1 worst case

**Proof Pressure:** 1.5 x rated pressure **Burst Pressure:** 2.0 x rated pressure

Resolution: Infinitesimal

## **Environmental**

Compensated temperature range: 0° to 27°C Operating temperature range: -20° to 60°C

## **Physical**

Weight: 4 oz., 113 g (not including cable)

Cable: Polyurethane-jacketed or Tefzel-jacketed, shielded cable with

> polyethylene vent tube and Kevlar tension members. Pull strength is 200 lbs. Conductors are 22 awg. Approximate weight is 0.04 lb, (18 g) per foot. Polyurethane-jacketed cables contain water-block tape to

> prevent moisture intrusion through small cuts in the cable from reaching

the transducer.

**Dimensions:** 

Transducer: 4.5" (11.4 cm) length, 1.0" (2.5 cm) diameter

Cable: 0.28" (0.71 cm) diameter

30 to 65 mV full scale at 0.5 mA excitation, ratiometric Output:

(CS400, CS405); SDI-12 digital interface standard (CS408)

<sup>\*</sup> Static accuracy includes the combined errors due to nonlinearity, hysteresis and nonrepeatability on a Best Fit Straight Line (BFSL) basis, at 25°C, per ISA S51.1.

<sup>\*\*</sup>Thermal error is the maximum allowable deviation from the Best Fit Straight Line due to a change in temperature, per ISA S51.1.