Vented VW Pressure Transducer

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Applications

The vented pressure transducer is designed specifically for monitoring changes in water level. Typical applications include:

- Monitoring water levels in wells and standpipes.
- Monitoring water levels in stilling basins installed in reservoirs and streams.

Operation Overview

The VW pressure transducer converts water pressure to a frequency signal via a patented* arrangement of diaphragm, a tensioned steel wire, and an electromagnetic coil.

The pressure transducer is designed so that a change in pressure on the diaphragm causes a change in tension of the wire. An electromagnetic coil is used to excite the wire, which then vibrates at its natural frequency. The vibration of the wire in the proximity of the coil generates a frequency signal that is transmitted to the readout device.

The readout or data logger stores the reading in Hz. Calibration factors are then applied to the reading to arrive at a pressure in engineering units.

Advantages

Designed for Wells & Standpipes: Pressure transducers placed in wells and standpipes sense barometric pressure as well as water pressure. This leads to measurement uncertainty (error) since barometric pressure changes independently of water pressure. The vented design of this pressure transducer eliminates the barometric component, which results in more reliable readings.

Special Vent Tube: The extra large diameter vent tube provides quick response to changes in atmospheric pressure and cannot be blocked by condensation.

Oversize Desiccant Chamber: The large capacity, low maintenance desiccant chamber keeps vent tube dry for 3 to 6 months.

US Patent #4,938,068

VENTED PRESSURE TRANSDUCER

22 PSI Vented Transducer 52612402
50 PSI Vented Transducer 52612405

Sensor Type: Pluck-type vibrating wire sensor with built-in thermistor. Transducer includes dessicant chamber. Vented signal cable ordered separately.

Range: 1.5 bar (22 psi) or 3.45 bar (50 psi).

Resolution: 0.025%FS with VW Data Recorder.

Calibration Accuracy: ±0.1% FS.

Maximum Pressure: 2 x rated range.

Filter: 50-micron sintered stainless steel.

Calibration: Eleven-point calibration.

Temperature Coefficient: < 0.02% FS per °C).

Materials: Stainless steel.

Dimensions: 29 x 191 mm (1.125 x 7.5").

Weight: 0.45 kg (1 lb).

VENTED SIGNAL CABLE

Vented Cable 50614410

Shielded cable with four 22-gauge tinned- copper conductors, 0.25" vent tube, and polyurethane jacket. For use between transducer and desiccant chamber. Specify feet or meters.

Splice Kit for Vented Cable 50614415

Contains components required to splice five conductors and vent tube.

Non-Vented Signal Cable 50613524

Shielded cable with four 22-gauge tinned- copper conductors for use between dessicant chamber and readout station or data logger. Specify feet or meters.

REPLACEMENT ITEMS

Desiccant Chamber 52612495

Prevents moisture from entering cable and vent tubing. Desiccant can be renewed in an oven. Protects one transducer. 108 x 108 x 64 mm deep (4.25 x 4.25 x 2.5").

Extra Desiccant Pack 02540003

Anhydrous calcium sulfate in moisture proof container. Sufficient to replace desiccant in one chamber.

READOUTS

VW Data Recorder. 52613500

This easy to use readout displays and records VW sensor data in Hz or Hz^2, and thermistor or RTD data in degrees C. See separate data sheet.

DATA LOGGERS

VW MiniLogger 52613310

The VW MiniLogger is a reliable, low-cost data logger designed to monitor a single vibrating wire sensor. See separate dataset for details.

4-Channel V-Logger 52615140

8-Channel V-Logger 52615180

Campbell Scientific Data Loggers

Compatible data loggers include the Campbell Scientific CR800 or CR1000 with VW interface or the CR6. AM16/32 multiplexer can accommodate 16 pressure transducers with temperature readings or 32 pressure transducers without temperature readings. See separate datasheet for details.