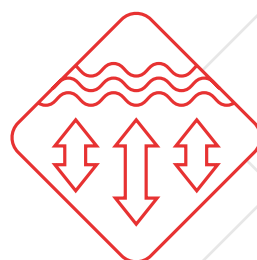




High precision Digital Quartz Level meter



www.pizzi-instruments.it

Instruments and Systems for Geotechnical and Structural Monitoring

High precision Digital Quartz Level meter



Description

The proposed instrument is nothing more than a pressure transducer using a quartz with digital interface (Paroscientific) as the sensor element, all integrated in a single housing. The programming commands and the measured data are provided via RS232 and RS485 serial interfaces. The measured data is delivered directly in engineering units with accuracy of 0.01% of full scale, over a wide temperature range.

The measurement provided is fully compensated using a quartz-sensed temperature datum. All these transmitters are pre-programmed with suitable calibration coefficients for complete interchangeability.

These transmitters provide absolute type measurement. They are available with different full scales, ranging from 0.10 mH₂O to 140 mH₂O for direct hydrostatic measurement; the maximum value is almost halved for measurement by the pneumatic method.

The serial output allows remote configuration and control of all operating parameters, including resolution, sampling rate, sampling choice, measurement unit and integration time.

The achievable accuracy in measuring water column height is 0.01% of f.s. while the resolution is 1mmH₂O.

Applications

We propose this instrument for high-precision level measurements; we can state that it is the only sensor that equals, in precision, the old hydrostatic scale, a classic electromechanical instrument capable of achieving similar results, installed on many dams in the past and still functioning correctly in many cases.

The traditional scale, given the complexity of its mechanics and the need for periodic maintenance, is now outdated and has been replaced, at least in its active measuring part, by the quartz sensor. It is a high quality and precision sensor that guarantees high stability with excellent resolution and repeatability. We adapt the sensor to specific applications.

The instrument is a pressure meter that uses the resonance of a quartz that varies according to the pressure applied.

The instrument, available in an indoor or immersion version, is applied in particular for level measurement in dams, reservoirs, canals, tanks, various.

The quartz sensor instruments we offer are customised for different types of application.

These include:

1 immersion installation

2 external installation with pressure tapping; this is differentiated into:

2.1- direct hydrostatic pressure tapping

2.2- pneumatic pressure tapping

In the first case, the instrument is installed at the minimum altitude of the level to be measured while; in the second case, the instrument is installed at a higher altitude than the maximum level to be measured but combined with a compressor that counteracts and compensates for the hydrostatic thrust of the level. In both cases, specific pressure tapping units are required.

Features and benefits

- RS485 digital output with MODBUS protocol
- Typical accuracy 0.01%f.s.
- Resolution <1mmH₂O
- Low power consumption
- High stability and reliability
- On-board storage capacity
- Memory for on-board applications
- Fully calibrated and characterised
- NIST traceable calibration
- Miniaturised internal electronics
- CE compliant



Measuring principle

The sensor element is a precision quartz crystal resonator whose oscillation frequency varies with the stress induced by pressure. Temperature measurement is provided by the sensor to compensate for the measured measurement and provide high accuracy over a wide range.

The superior performance of “resonant quartz” technology instruments is achieved through the use of a precision quartz crystal resonator whose oscillation frequency varies with pressure-induced stress. Quartz crystals were chosen as sensor elements for their remarkable repeatability, low hysteresis and excellent stability. The resonance frequency outputs are maintained and detected with oscillating electronics similar to those used in precision clocks and counters.

The two RS-232 and RS-485 interfaces allow complete remote configuration and control of all operating parameters, including resolution, sampling rate, choice of engineering units, integration time and sampling requirements.

Field instruments

± 2 psig (±0.015 MPa)
0-15 psig (0.10 MPa)
0-22 psig (0.15 MPa)
0-30 psig (0.21 MPa)

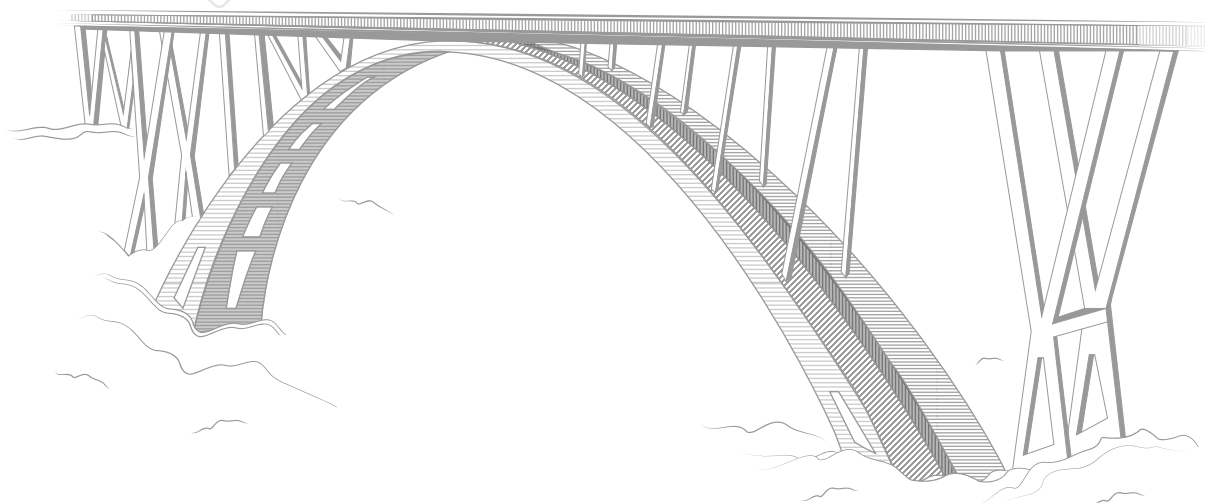
0-100 psig (0.69 MPa)
0-150 psig (1.03 MPa)
0-200 psig (1.38 MPa)

Our quartz gauges are adapted for various types of application

The Company

For over 40 years we have been producing precision and large facility monitoring instruments sold throughout the world.

Accuracy in design, efficiency in construction, reliability in management; these are the prerogatives that every major work must have and that Structural Monitoring Systems must guarantee.



Technical assistance

If you have any requests or questions about our instruments or if you have special needs that require different solutions from the standard, please contact us. Our team will provide all the necessary information and will be very happy to work with you to study, develop and customize instruments and solutions suitable for your specific needs.

All data present in the sheets could change without notice.

Please check the release carefully and for more details contact Pizzi Instruments.

Pizzi Instruments S.r.l.
Via del Fornaccio, 46
50012 - Vallina - FI - Italia

Phone/Fax : +39 055 6810722
info@pizzi-instruments.it
www.pizzi-instruments.it

