

PIEZOMETER (SLIM SIZE)

MODEL EPP-40V

DATASHEET



OVERVIEW

The Encardio Rite model EPP-40V Vibrating Wire Piezometer is a high-precision sensor designed for the accurate measurement of water levels across various large scale civil engineering and hydrology applications. It provides essential data on groundwater levels and their variations over time, which is crucial for various hydrological studies and stability assessments.

The EPP-40V features a slim design, making it particularly well-suited for installations in narrow boreholes and open standpipes. It incorporates a high-tensile strength wire anchored between a fixed point and a sensitive diaphragm. Variations in water level apply pressure to the diaphragm, causing it to deflect and alter the tension of the wire, which in turn changes its resonant frequency. This frequency shift is directly proportional to the applied pressure, ensuring reliable and precise measurements.

EPP-40V is widely used in an array of geotechnical and hydrological monitoring applications, including:

- **Ground water level/table monitoring:** Ideal for tracking groundwater table variations over time in boreholes, open standpipes, and wells. The data is essential for hydrological studies, ground stability investigations, and construction control across various projects.
- **Water level monitoring:** Used in reservoirs and other hydraulic structures, ensuring effective water management and safety.
- **Ground stability assessments:** Critical for monitoring stability in dams, mines, slopes, embankments, retaining structures, excavations, foundations, tunneling, underground works and de-watering processes.

FEATURES

- **Reliable & accurate:** Offer long-term stability, high sensitivity, and a broad pressure range for dependable measurements in various scenarios.
- **Fast Response Time:** Minimal time lag ensures prompt and accurate readings.
- **Temperature compensation:** Each pressure sensor is individually temperature compensated to 0.03%/°C to minimize measurement errors.
- **Hermetically sealed:** Hermetically sealed under a vacuum of 0.001 Torr ensures protection against severe environmental factors as effect of oxidation, moisture, and ingress of water is completely eliminated.
- **Integrated temperature monitoring:** Enhances measurement accuracy by accounting for temperature variations.
- **Robust construction:** The stainless steel construction ensures durability and reliability in harsh environments.
- **Long-distance signal transmission:** Maintains signal integrity over long distances, ensuring accurate data collection.
- **Versatile datalogging:** Compatible with various readout units for manual data collection. For continuous monitoring, it can be connected to a suitable datalogger, allowing for data acquisition at desired frequencies. Encardio Rite offers a range of NexaWave dataloggers equipped with GSM/GPRS or RF communication capabilities, ensuring reliable and efficient data transmission.
- **Infrastructure data intelligence platform:** Integrates with Proqio software to facilitate data processing, analysis, and real-time visualization, and generates instant alarms for critical events to keep all stakeholders informed.
- **Cross-compatibility:** The sensor can work with any manufacturer's Dataloggers and Data Management Systems.

PRODUCT OFFERINGS

Each EPP-40V piezometer undergoes rigorous pressure and thermal cycling tests to ensure long-term stability. To further enhance its longevity and performance, the piezometer is hermetically sealed under a vacuum of 0.001 Torr using electron beam welding technology and is constructed from high-grade stainless steel.

The piezometer is individually temperature compensated, eliminating the need for additional temperature correction. However, an in-built thermistor is provided for monitoring temperature.

A low-air entry filter value ceramic filter of 40 micron porosity is provided as standard.

The cable connection is secured with a glass-to-metal seal connector, along with a cable joint housing and a suitable cable gland, ensuring reliable and robust connections. The sensor can also be supplied with the required length of cable pre-attached, when specifically ordered.

For use in saline environments, a version of the piezometer with a titanium enclosure is available upon request, offering enhanced resistance to corrosion.

Engineered for durability, accuracy, and ease of use, the EPP-40V piezometer is a vital tool for professionals engaged in hydrological studies or managing water-related risks, optimizing the safety and performance of infrastructure projects.



SPECIFICATIONS

Sensor type	Vibrating wire
Range (MPa)	0.35, 0.5, 0.7, 1.0, 2.0, 2.5, specify
Accuracy of pressure sensor	± 0.25 % fs standard ± 0.1 % fs optional
Non linearity	± 0.5 % fs
Temperature limit	
Operational	-20 to 80°C
Compensated	0 to 80°C
Insulation resistance	Better than 500 M Ohm at 12 V
Over range limit	150 % of range
Long term stability	0.1 % fs
Thermistor	YSI 44005 or equivalent (3 kOhms at 25°C)
Enclosure	Stainless steel
Dimension (Ø x L)	19 x 155 mm
Cable connection	Glass to metal seal cable connector



ORDERING INFORMATION

Model EPP-40V-X (Range) - Cable length (if factory attached cable required)

*All specifications are subject to change without prior notice

DATASHEET | 1182-12 R4



Dams



Mining



Tunnels



Transportation



Construction



Bridges



Landslides



Energy



Environmental Monitoring



Pipelines



Structural Health Monitoring



Smart Cities