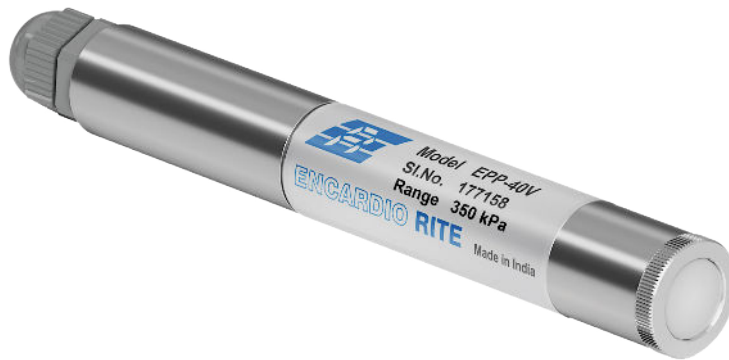


## DATA SHEET



## PIEZOMETER (VIBRATING WIRE)

MODEL EPP-40V

### INTRODUCTION

The Encardio-rite model EPP-40V is a vibrating wire piezometer, slim in size, specially designed to measure water level in small diameter boreholes & standpipes. The piezometer provides significant quantitative data on the magnitude and distribution of groundwater level & its variations with time. It also helps in evaluating the pattern of seepage, zones of potential piping & the effectiveness of seepage control measures undertaken.

The piezometer can also be used to monitor pore pressure. Proper evaluation of pore pressure helps in monitoring the behavior during and after construction & indicates potentially dangerous conditions that may adversely affect the stability of the structure and its foundation. It also provides basic data for design improvement that will promote safer and more economical design and construction.

### FEATURES

- Reliable, accurate, low cost and simple to read.
- Easy installation in small diameter standpipes/ boreholes.
- Very small time lag.
- Hermetically sealed under a vacuum of 0.001 Torr; with stainless steel construction.
- Thermistor provided for additional temperature measurement.
- Negative pressure measurement possible.
- Transmission of signal as a frequency over long cable lengths.
- Protected against lightning spikes.

### APPLICATION

- Measuring the elevation of ground water in stand pipes, boreholes and wells.
- Monitoring & control of de-watering & drainage.



## OPERATING PRINCIPLE

The piezometer basically consists of a magnetic, high tensile strength stretched wire, one end of which is anchored and the other end fixed to a diaphragm which deflects in some proportion to the applied pressure. Any deflection of the diaphragm changes the tension in the wire, thus affecting the resonant frequency of the vibrating wire.

The resonant frequency with which the wire vibrates can be accurately measured by our model EDI-54V indicator or any vibrating wire readout unit.

The data can also be automatically collected at desired frequency, stored and transmitted to remote server by a suitable datalogger. It can be connected to our model ESDL-30 digital datalogger using a vibrating wire - SDI12 interface card, for remote and continuous readings. The datalogger can transmit the collected data to central/cloud server via cellular network.

## DESCRIPTION

The Encardio-rite model EPP-40V piezometer is well known for its long term stability. This is achieved by:

- Ageing pressure and thermal cycling
- Unique method of wire clamping
- By generating a vacuum of around 1/1000 Torr inside the sensor by electron beam welding. This results in effect of oxidation, moisture, environmental conditions and any ingress of water being completely eliminated.

The piezometer is individually temperature compensated making the requirement of a thermistor for temperature correction redundant. However, a thermistor is provided for monitoring temperature.

### Stainless steel/Titanium enclosure

The vibrating wire and coil magnet assembly is enclosed in corrosion resistant stainless steel body which is electron beam welded to the diaphragm.

When specifically required, titanium enclosure is also available for saline water applications. In this, the stainless steel diaphragm is protected with a thin layer (around 1 mm) of silicone compound.

## Filter

A low air entry value ceramic filter of 40 micron porosity is provided. A filter assembly holds the filter in position. The filter assembly can be taken out for saturation.

## Cable joint housing

Leads from the coil magnet are terminated on a glass to metal seal which is electron beam welded to the piezometer body. A cable joint housing and suitable cable gland is provided for the cable connection.

The sensor can also be supplied with the required length of cable attached.

## SPECIFICATION

Type	Vibrating wire
Range (MPa)	0.35, 0.5, 0.7, 1.0, 2.0 specify
Accuracy	± 0.25 % fs normal; ± 0.1 % fs optional
Non linearity	± 0.5 % fs
Resolution	0.025% fs
Temperature limit Operational	-20 to 80°C
Insulation resistance	Better than 500 MOhm at 12 V
Over range limit	150 % of range
Thermistor	YSI 44005 or equivalent (3 kOhms at 25°C)
Enclosure	Stainless steel - standard, Saline protected - optional
Dimension (dia. x L)	19 x 155 mm Stainless steel (std.) 32 x 160 mm Titanium (optional)

## ORDERING INFORMATION

**Model: EPP-40V - Range - Cable length** (if factory attached cable required) - Stainless steel/Titanium enclosure

\*All specifications are subject to change without prior notice

DATASHEET | 1182-12 R4



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