



## DATASHEET

# VIBRATING WIRE PIEZOMETER LOW PRESSURE RANGE

## MODEL EPP-60V



### INTRODUCTION

The Encardio-rite model EPP-60V vibrating wire low range piezometer is specially designed to measure low water pressure and water levels in boreholes. It provides significant quantitative data on ground water level, ground water pressure & its variations with time. Proper evaluation of water level helps in monitoring the behavior 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, simple to read.
- Easy installation.
- Suitable for remote reading of ground water level, water pressure and settlement.
- Atmospheric pressure change does not affect reading.
- Very small time lag.
- Stainless steel construction.
- Thermistor provided for additional temperature measurement.
- Negative pressure measurement is possible.

### APPLICATION

- Monitoring of ground water level.
- Monitoring of water pressure in standpipes and bore holes.
- Consolidation under storage.
- Monitoring & control of de-watering & drainage.



## OVERVIEW

Mode EPP-60V low range piezometer incorporates the latest vibrating wire technology to provide remote digital readout of water level, water pressure in standpipes and boreholes.

## OPERATING PRINCIPLE

Model EPP-60V low range 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 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.

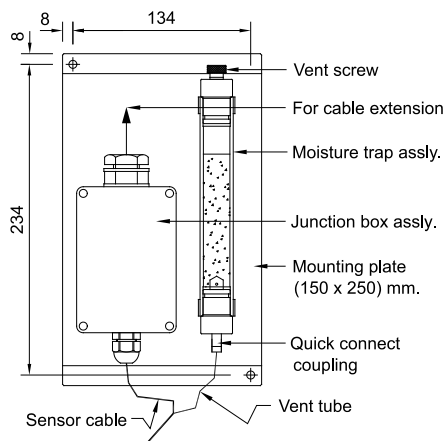
## DESCRIPTION

Two variants are available:

- Gage pressure sensor with vented cable, used for applications in which maximum hydrostatic head (height of water level above piezometer location) is less than 7 m over the sensor diaphragm.
- Absolute pressure sensor with 20 m range, which is electron beam welded and comes with non-vented cable.

### Gage pressure sensor (with vented cable)

The capsule and coil magnet assembly is housed in a stainless steel body with two small openings provided on the glass to metal seal. The sensor with range 7 m is supplied with the required length of vented tube cable attached. This shielded cable has two vent tubes running through it, which connect the inside of the sensor to the outside atmosphere, thus ensuring that sensor reading is unaffected by any change in barometric pressure.



The open end of the vent tubes in the cable terminate into a moisture trap assembly comprising of a terminal box and desiccant chamber at the top of the borehole thus preventing any moisture from migrating into the vent tube or the sensor.

### Absolute pressure sensor (with EBW)

The vibrating wire pressure sensing capsule is sealed under high vacuum. The capsule and coil magnet assembly is housed in a stainless steel body. Leads from the coil magnet are terminated on a glass to metal seal which is electron beam welded to the stainless steel body of the piezometer. 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.

Model EPP-60V piezometers are individually temperature compensated making the requirement of a thermistor for temperature correction redundant. However a thermistor is provided for monitoring temperature.

### Ceramic filter

Ceramic filter is provided for piezometric applications. Low air entry value ceramic filter of 40 micron porosity is provided. The filter can be taken out for saturation.

## SPECIFICATIONS

Type	Vibrating wire
Range (MPa)	0.07, 0.035 (gage pressure) 0.1, 0.2 (absolute pressure)
Accuracy	± 0.2 % fs normal ± 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	Over range limit
Thermistor	YSI 44005 or equivalent
Dimension (φ x L)	30 x 160 mm

## ORDERING INFORMATION

**Model: EPP-60V-0.07/0.035-1102-Cable length**  
**Model: EPP-60V-0.1/0.2-Type of cable-Cable length**  
(if factory attached is required)

\*All specifications are subject to change without prior notice