ENCARDIO RITE

UPLIFT PRESSURE METER

MODEL EPU-20/23V / EPU-20/23G

INTRODUCTION

The uplift pressure meter is used for monitoring uplift pressure of water in the foundation of dams and concrete structures and the stability of foundations of embankments in dams, tunnels and other underground works. It provides significant quantitative data on the magnitude and distribution of uplift pressure of water and its variations with time. It also provides the pattern of seepage, zones of potential piping and the effectiveness of seepage control measures undertaken.

DESCRIPTION OF UPLIFT PRESSURE MEASUREMENT SYSTEM

The uplift pressure measuring device consists of a perforated/non-perforated pipe of 50 mm ϕ of adequate strength. The pipe is inserted in a drilled hole in the foundation from the instrumentation gallery to the required depth. To the other end of the pipe in the gallery is connected the uplift pressure meter or a Bourden pressure gage.

The uplift pressure measuring system incorporating Bourden pressure gage is economical and easy to install. However for taking readings, one has to go into the gallery. Remote measurement of uplift pressure is possible with model EPU-20/23V vibrating wire uplift pressure meter. The uplift measurement system incorporating model EPU-20/23 V sensor is shown in figure 2. The system enables reliable and fast measurement of uplift pressure. It also enables data storing in case the output is connected to the data acquisition system.

MODEL EPU-20/23V UPLIFT PRESSURE METER

Model EPU-20/23V sensor incorporates the latest vibrating wire technology to provide remote digital readout of fluid and/or water pressure in standpipes, bore holes and embankments. It is similar to the model EPP-30/36V piezometer except that instead of the special filter, a 25 mm BSP adaptor is provided for the pipe connection.

FEATURES

- Reliable, accurate, low cost and simple to read.
- Protected against lightning spikes.
- Easy installation in standpipes, pressure vessels. Ideal for underground work.
- Hermetically sealed under a vacuum of 0.001 torr. Stainless steel construction.
- Thermistor provided for temperature measurementand compensation.
- Not limited to depth of water being within 5 m from the observation station as is in the case of twin tube piezometers.
- Transmission of signal as a frequency over long wire lengths.
- Bourden gage option available.

APPLICATIONS

- To determine the magnitude of any hydraulic pressure that may be present at the base of a dam due to percolation or seepage of water along underlying foundation seams or joint systems after the reservoir is filled.
- To monitor seepage water from the reservoir area into the dam foundation in respect to the safety of dam structure.
- To monitor effectiveness of the drainage system below the dam.
- To study effectiveness of foundation grouting.

The water oozing through internal pores or seams in rock formations of dam foundations, mass concrete/ foundation soil of structures, reclaimed land soil etc. percolates upward through the pipe to the sensor.

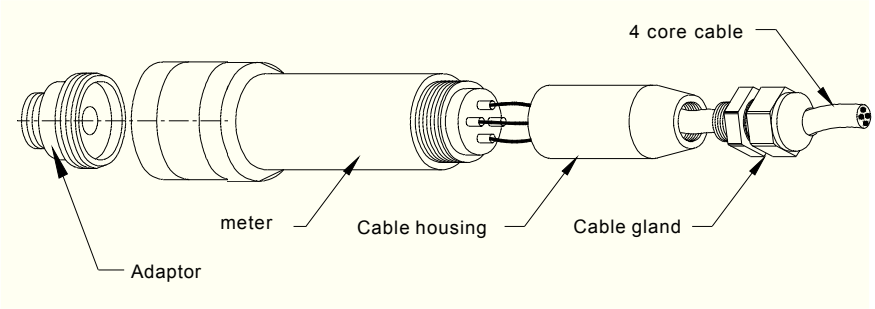

Figure 1 Model EPU-20/23V uplift pressure meter

SPECIFICATIONS

Model EPU-20, 21, 22, 23V (with vibrating wire sensor)

Range (kg/cm²) 3, 5, 10, specify

For other specifications please refer to data sheet # 1089 of model EPP-30/36V piezometer.

Optional:

Model EPU-20, 21, 22, 23G (with Bourden gage)

Range (kg/cm²) 3, 5, 10, specify

Sl.#	Description	Qty (no.)
1	Reducer (50 mm x 25 mm)	1
2	25 mm GI pipe (350 mm)	1
3	Reducer (25 mm x 15 mm)	1
4	15 mm Tee	1
5	15 mm male nipple (50 mm)	2
6	15 mm male nipple (150 mm)	1
7	15 mm wheel valve-10 kg/cm² (Zalota/Hawa)	1
8	15 mm socket (GI)	1
9	Adaptor	1
10	Model EPU-20/23V VW sensor	1
11	Cable joint holder	1
12	Cable gland PG 9	1

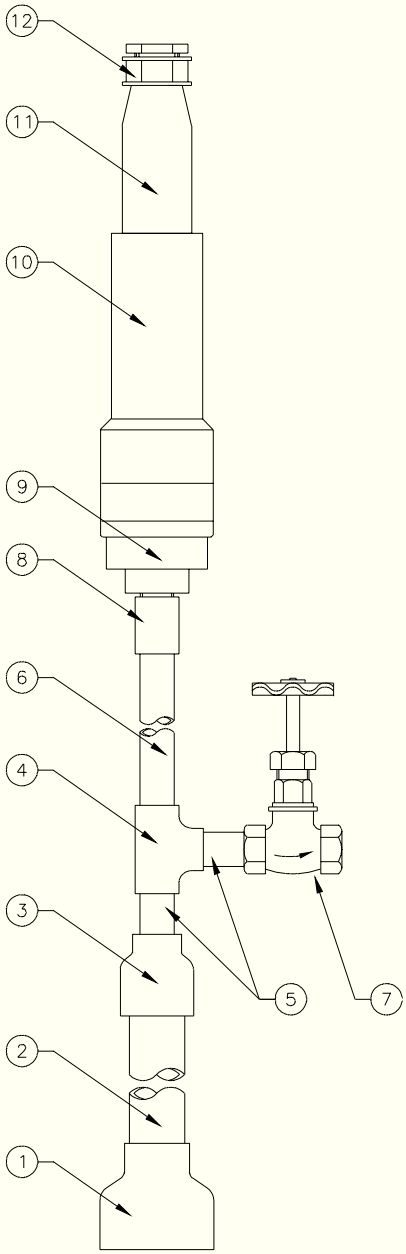

Figure 2 Uplift measurement system incorporating EPU-20/23V sensor

ENCARDIO-RITE ELECTRONICS PVT. LTD.

A-7 Industrial Estate, Talkatora Road, Lucknow, UP 226011, India

Tel +91 (522) 661044, 661040 Fax +91 (522) 661043 E-mail sales@encardio.com

Visit us at: www.encardio.com