

Data Sheet



ONLINE PLUMB LINE NORMAL & INVERTED

**MODEL EDS-50/51
WITH MODEL EPR-01S
READOUT**

INTRODUCTION

Encardio-rite normal and inverted plumb lines are simple and reliable systems that are widely used in civil engineering projects where highly accurate long-base rotation/tilt/relative displacement measurements are needed, like in high rise buildings, concrete and masonry dams, nuclear plants, etc.

FEATURES

- Provides online data at your desk
- Robust and easy to install
- Reliable, accurate and simple to read
- Proven technology and excellent design
- Regular frequent monitoring with ease
- Accuracy better than with theodolite survey



NORMAL PLUMB LINE

Model EDS-50 normal plumb line consists of a plumb line wire fixed through a collet arrangement centered on a rectangular collet bar at the top of the structure/dam. A heavy weight is clamped at the lower end of the wire, which is damped in a tank filled with oil, to prevent any to & fro oscillatory movement of the plumb due to vibration or shock.

A tilt in the structure (like building, dam, nuclear plant) brings about a shift in the weight which is measured by model EPR-01 automatic readout unit with remote real time monitoring facility.

INVERTED PLUMB LINE

Model EDS-51 inverted plumb line monitors displacement between the structure/dam base and rock foundation. The plumb wire is anchored between rock foundation (bottom of drilled hole) and float submerged in a water tank in the observation area. A tension is maintained in the plumb wire as the float is free to move. Water in tank acts as a damping medium. A tilt or displacement in the foundation brings about a shift in the float which is measured by readout systems mentioned above.

ELECTRONIC READOUT UNIT

Encardio-rite model EPR-01S, an automatic readout unit for plumb lines, is very precise providing an accuracy of 0.01 mm. It uses two contactless inductive sensors that give position of the pendulum wire in two directions. Pendulums already in situ can be measured by the readout unit without additional modification. It only requires a target to be added to the pendulum wire for the device to be effective.

The transducer output is a twin wire 4-20 mA allowing the signal to be transmitted over long distances without any adverse effect.

Model EPR-01S readout unit is equipped with a specific temperature gage that provides proper reference when temperature compensation is required. An additional transducer for automatic compensation of the wire rotation is mounted on one of the two axes.

The device is constructed from stainless steel and is maintenance free, designed to work in hostile environment. Installation is simple and quick.



Model EPR-01S automatic readout unit

SPECIFICATION

Model EPR-01S automatic readout systemsystem



Inside view of model EPR-01S automatic readout unit with targets and transducers

Measuring range	± 25 mm (direct or inverted)
Accuracy	0.01 mm
Repeatability	0.05% fs
Supply	24 Vdc
Output	4-20 mA
Operating temperature	-25 to+70°C
Protection	IP67
Installation	Wall or floor



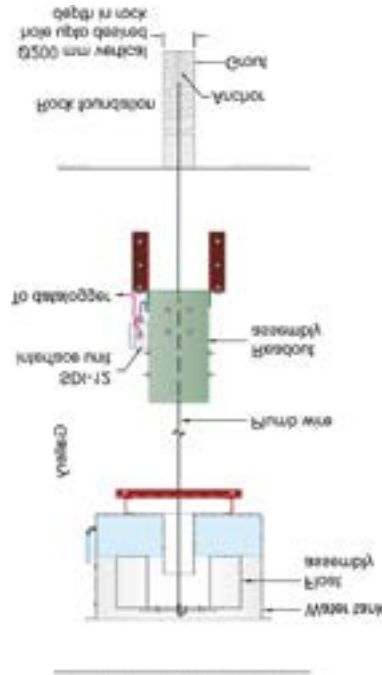
SPECIFICATION

Normal plumb line

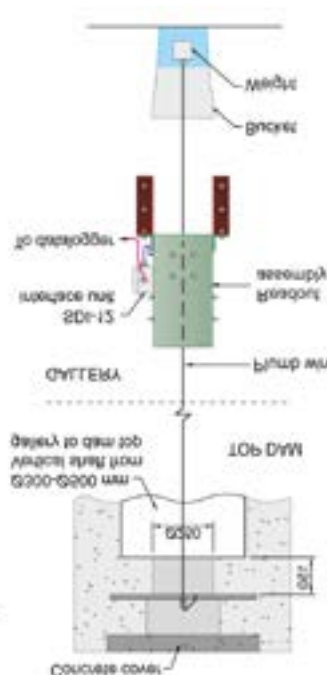
Table size	625 mm x 625 mm
Stainless steel wire	1 mm dia x 60 m long (other lengths available)
Wire suspension	Collet on a rectangular bar grouted at the top
Suspension wt.	10 kg
Tank (PVC)	40 litre capacity
Damping oil	S.A.E. 40

Inverted plumb line

Table size	625 mm x 625 mm
Stainless steel wire	1 mm dia x 60 m long (other lengths available)
Wire suspension	Collet on a rectangular bar grouted at the top
Suspension wt.	8 kgf
Tank (Fiber glass)	800 mmΦ x 500 mm long
Float material	PVC



Normal plumb line



Inverted plumb line

Typical mounting arrangement of normal and inverted plumb lines with model EPR-01S automatic readout unit.

*All specifications are subject to change without prior notice

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TUNNELS



HYDROELECTRIC



CONSTRUCTION



STRUCTURAL



METRO & RAIL



BRIDGES



MINING