



CRACK & JOINT METER

MODEL EDJ-40V CRACK/JOINT METER, EDJ-50V JOINT METER & EDJ-40T TRIAXIAL JOINTMETER



INTRODUCTION

The Encardio-rite crack & joint meters are ideally suited for measurement of movement. These measurements are important for monitoring the behavior of civil structures and buildings. The crack meter is used to measure change in width of a surface crack. It is used to monitor cracks in concrete structures, rocks, bridges, pavement slabs, etc. The joint meter is ideally suited for measurement of displacement/movement across joints such as joint opening between two concrete/masonry blocks in a dam.

FEATURES

- Corrosion proof, rugged, and robust construction.
- Easy to install.
- Reliable, accurate and simple to read.
- Adaptable to data loggers or data acquisition system.

APPLICATION

Crack meter: to monitor cracks in:

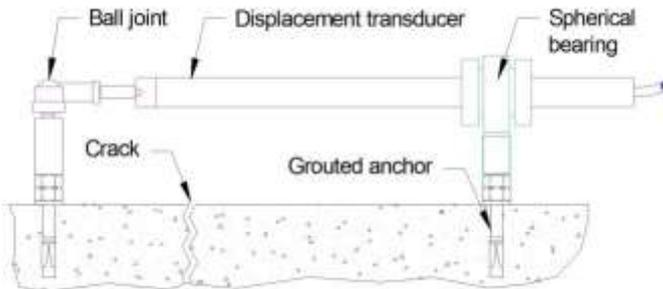
- Concrete and arch dams.
- Concrete, rock, soil and masonry structures.
- Buildings affected due to nearby construction or excavation activity.

Joint meter: to measure mass movement in:

- Construction and submerged joints in concrete dams, structures and bridges
- Tunnels and shaft linings
- Rock, soil and masonry structures

EDJ-40V VW CRACK/JOINT METER

The model EDJ-40V crack/joint meter consists of model EDE-VXX range of vibrating wire displacement sensor, fixed between anchors on opposite side of the crack/joint as shown in the figure below.



Vibrating wire crack/joint meter mounting

EDJ-50V VIBRATING WIRE JOINT METER

Model EDJ-50V vibrating wire joint meter is ideally suited for embedment purposes to measure displacement/movement across joints.

It is often important to measure the opening of contraction joints at some distance from an available surface in order to judge accurately when joints should be grouted, how much grout should be pumped into the joints and to explain unusual occurrences that accompany the building of a structure like a dam. These measurements at inaccessible points can be easily taken with model EDJ-50V joint meter.

EDJ-50V measures movement between adjacent blocks in concrete and is suitable for embedment applications. It consists of a plastic housing with a stainless steel flange at one end and a stainless steel socket on the other end. Before installation, the stainless steel socket which serves to simplify the installation procedure, is carefully removed from the joint meter as per instructions provided with the supply.

The vibrating wire displacement sensor inside the housing is connected to the stainless steel flange & socket with flexible joints to allow small lateral movements.

SPECIFICATION

Model	EDJ-40V, EDJ-50V, EDJ-40T
Range (mm)	15, 25, specify (EDJ-40V) 15, 25, 50, specify (EDJ-50V)
Accuracy	± 0.2 % fs normal ± 0.1 % fs optional
Sensitivity	± 0.02 % fs
Non linearity	<0.5 % fs (EDJ-40V, EDJ-40T) ± 1.0 % fs (EDJ-50V)
Temperature limit	- 10 to 80 °C (operational)
Thermistor	YSI 44005 or equivalent (3 kOhms at 25°C)
Flange diameter	62 mm (EDJ-50V)

MODEL EDJ-40T TRIAXIAL JOINT METER

Model EDJ-40T triaxial joint meter comprises of three EDE-VXX range of vibrating wire displacement sensors. Different mounting arrangements are available to suit various applications. Contact factory for advice on what to use for specific application giving following details:

- Surface mounted (as in gallery) or embedded (as between blocks in a concrete dam)
- Range of sensors in mm
- Degree of water protection.

READINGS

The displacement sensor used in EDJ-40V, EDJ-50V or EDJ-40T, converts the mechanical displacement to an electrical frequency output. The frequency output can be accurately measured by any vibrating wire readout unit. The data can also be automatically collected at a desired frequency, stored and transmitted to remote server by a suitable datalogger.

The initial reading of the sensor is taken as the base. Subsequent readings are then compared with the initial reading to determine the magnitude of change in displacement across the opening.