

ENCARDIO RITE



CRACK & JOINT METER

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

INTRODUCTION

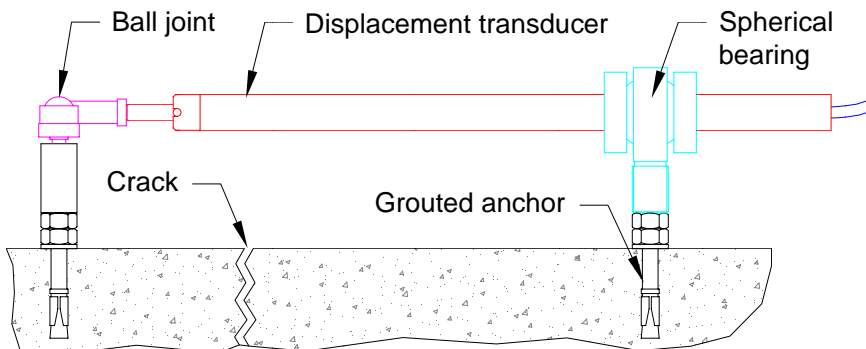
The Encardio-rite crack & joint meters are ideally suited for measurement of movement. These measurements are important for monitoring the behaviour of civil structures and buildings. The crack meter is used to measure change in width of a surface crack. It is used to monitor cracks in concrete structures, rock, 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.

EDJ-40V ELECTRONIC CRACK/JOINT METER

The crack/joint meter consists of a displacement transducer with a normal range of 15 or 25 mm, fixed between anchors on opposite side of the crack/joint as shown in the figure below. Other ranges are available on request. The crack/joint meter model EDJ-40V is available with model EDE-VXX range of vibrating wire displacement transducer.



The displacement transducer converts the mechanical displacement to an electrical output. Model EDI-51V is available to take readings from the vibrating wire sensors. The sensors can also be connected to a multiplexer of model EDAS-10 data acquisition system. 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.



Electronic crack/joint meter with displacement transducer

FEATURES

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

APPLICATIONS

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.

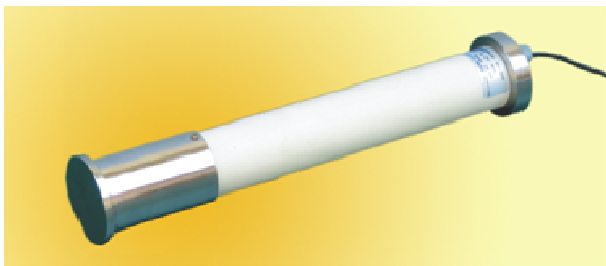
Joint meter: to measure mass movement in:

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

EDJ-50V VIBRATING WIRE JOINT METER

The model EDJ-50V vibrating wire joint meter is ideally suited for embedment purposes to measurement of 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 in the Method Statement MS0701. A vibrating wire displacement transducer inside the housing is connected to the stainless steel flange & socket with flexible joints to allow small lateral movements.



SPECIFICATIONS

Model:	EDJ-50V
Range (mm)	15, 25, 50, specify
Accuracy	± 0.2 % fs normal ± 0.1 % fs optional
Sensitivity	0.02 % fs
Non linearity	1.0 % fs
Temperature limit	- 20 to 80°C (operational)
Thermistor	YSI 44005 or equivalent
Flange diameter	62 mm

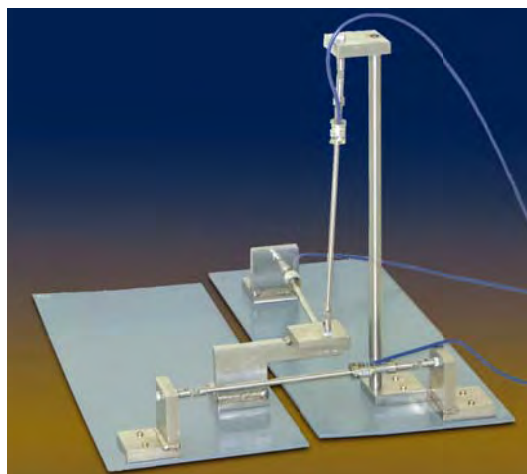
MODEL EDJ-40T TRIAXIAL JOINT METER

Electronic tri-axial joint meter with displacement sensors model EDE-VXX is available for different applications. A typical configuration using the model EDE-V05 is shown in the picture below.

INSTALLATION

The embedment procedure of the joint meter is completed in two stages. During the first stage, the stainless steel socket is embedded in one block of concrete (high block). The joint meter is not embedded at this stage. In the second stage, the joint meter is carefully screwed into the steel socket and elongated to the desired opening and fixed in position using a PVC tape. The outside end of the joint meter is then anchored in concrete by raising the level of the second block of concrete (low block). The cables are carefully laid and guided to the observation room.

The data of model EDJ-50V vibrating wire joint meter can be read or logged by model EDI-51V digital indicator. In case automatic data logging is required, joint meter can be connected to Encardio-rite model EDAS-10 data acquisition system.



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.
- ✦ Accuracy.
- ✦ Degree of water protection.

**All specifications are subject to change without prior notice.*

ENCARDIO-RITE ELECTRONICS PVT. LTD.

A-7 Industrial Estate, Talkatora Road, Lucknow, UP-226011, India
 p +91 522 2661040, f +91 522 2662403, email: geotech@encardio.com
 International: p +91 522 2661044
 www.encardio.com

DATA SHEET 1114-12 R02