



ENCARDIO RITE

CRACK & JOINT METER

**MODEL EDJ-40P/EDJ-40V CRACK/JOINT METER,
EDJ-31/34V JOINT METER &
EDJ-40T TRIAXIAL JOINTMETER**

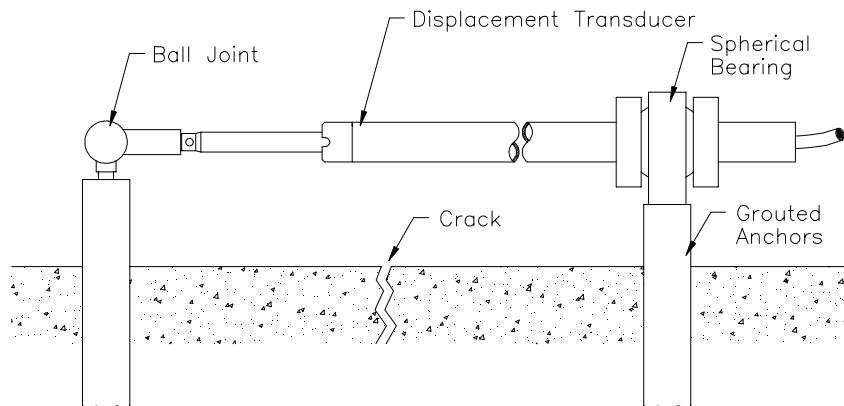
INTRODUCTION

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.

ELECTRONIC CRACK/JOINT METER

The crack/joint meter consists of a displacement transducer with a range of 50 mm, fixed between anchors on opposite side of the crack/joint as shown in the figure below. Two versions are available, the first (model EDJ-40P) with model EDE-P05 potentiometric displacement transducer (data sheet # 1084) and the second (model EDJ-40V) with model EDE-V05 vibrating wire displacement transducer (data sheet # 1110).

The displacement transducer converts the mechanical displacement to an electrical output. Model EDI-53P read-out unit (data sheet # 1100) is available to take readings from potentiometric sensor and model EDI-51V (data sheet # 1099) is available to take readings from the vibrating wire sensor. The sensors can also be connected to a multiplexer of model EDAS-10 data acquisition system (data sheet # 1081).



Electronic crack/joint meter with displacement transducer

FEATURES

- ◆ Rugged and robust construction.
- ◆ Corrosion proof.
- ◆ 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 structures.
- ◆ Rock, soil and masonry structures
- ◆ Buildings affected due to nearby construction or excavation activity.

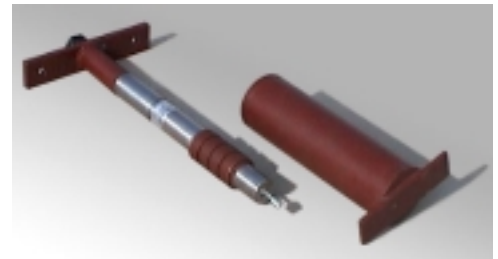
Joint meter: to measure mass movement in:

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

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.

MODEL EDJ-31/34V VIBRATING WIRE JOINT METER

The model EDJ-31/34V vibrating wire jointmeter is ideally suited for 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-31/34V jointmeter.

The model EDJ-31/34V vibrating wire jointmeter consists of a long cylindrical body. The central portion comprises of a metallic bellow that permits expansion or contraction. One end of the cylinder is provided with M12 threads which screw the meter through a flexible link into model EDJ-35V steel socket which is anchored and buried perpendicular to the contraction joint in a block of concrete. The steel socket is shown at the right in the picture on previous page. The flexible link reduces the possibility of damage to the jointmeter in case of a small lateral movement. The other end of the cylinder comprising of an end flange and cable joint housing is embedded in the concrete block on the other side. Thus the jointmeter is embedded across the joint, half on each side so as to be stretched when the joint opens and vice versa.

To prevent cement milk from filling up the pleats of the soft bellows, the extensible bellows portion of the meter is protected inside the steel socket. The space between the jointmeter and the steel socket is filled with grease and a rubber end cap is snapped over the steel socket. The rubber end cap has a central hole to slide over the straight portion of the jointmeter. The rubber end cap (not shown in the picture) forms a flexible seal.

The data of model EDJ-31/34V vibrating wire jointmeter can be read or logged by model EDI-51V digital indicator. In case automatic datalogging is required, jointmeter can be connected to Encardio-rite model EDAS-10 data acquisition system.

Specifications

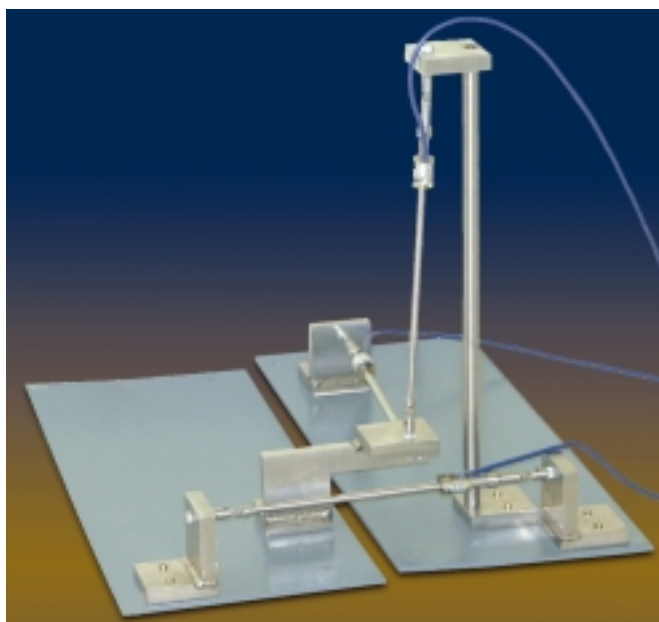
Model	EDJ-31, 32, 33, 34
Range (mm)	15, 30, 50, specify
Accuracy (non linearity + repeatability)	± 2 % fs (± 1 % fs available if specifically requested)

Specifications subject to change without prior notice.

Temperature limit	-20 to 70°C (operational).
Coil resistance	120 -140 Ohm.
Insulation resistance	> 500 m Ohm at 12 V.
Sensor material	Stainless steel with phosphor bronze bellow.
Sensor enclosure	Hermetically sealed by electron beam welding.

MODEL EDJ-40T TRIAXIAL JOINT METER

Electronic triaxial joint meters with optional model EDE-PXX, EDE-VXX or EDJ-31/34V sensors are available for different applications. A typical configuration using the model EDE-V05 is shown in the picture below.



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.

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