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LEA_IT_CRC4001001

Electrical Crackmeters

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Instruments and Systems for Geotechnical and Structural Monitoring

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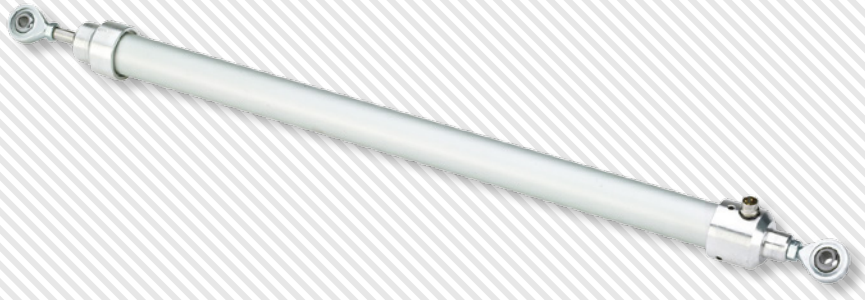

Description

Electrical crackmeters, for some applications, may be an alternative to vibrating wire crackmeters. Potentiometric and electromagnetic (LVDT) Electrical crackmeters are currently available .

The choice between the various types of transducer depends on specific application and can be suggested by our technicians according to information provided by clients or acquired on site.

They are generally used to control: surface cracks in buildings, civil works and historical works, openings in the ground and for monitoring of structural joints in dams, bridges or artifacts.

Vibrating wire crackmeters can be read manually with our portable units (DEC 3000 and handheld units) or automatically with our datalogger (CUM3000).

They can be integrated into automatic monitoring systems and manage phenomena and alarms locally and remotely in real time.

For specific needs and requests and needs, we are able to design and manufacture customized products different to standard.

Applications

These crackmeters find application in many situations, in particular in all cases where continuous data collection is needed such as monitoring:

- **Load tests on slabs**
- **Structural deformation due to very rapid load changes**
- **Cracks under dynamic conditions, etc.**
- **Bridges**
- **Tunnels**
- **Landslides; earth or rock**
- **Residential buildings**
- **Rods**
- **Monuments**
- **Various**

Features and benefits

- **High resolution and sensitivity**
- **High measurement speed**
- **Extremely robust**
- **Good resolution and linearity**
- **Simple and economical**
- **Simple measuring method**

Measuring principle

The potentiometric strain gauge/crackmeter is a simple linear or circular voltage divider, depending on the specific application. A resistive track is run by a slider which identifies the measuring points where the partition occurs. The cursor position locates the position of the measuring point. Properly powered the instrument releases an analog output signal proportional to the displacement.

The LVDT extensometer is made from a tube composed of three windings arranged with parallel axes, with inside a movable cylindrical ferromagnetic core, usually characterized by high magnetic permeability. The central winding is called primary and the other two secondary: the primary is connected to an AC voltage generator, while the heads of the secondary windings measure the output voltage which is proportional to the displacement.

Technical specifications

Model	Linear Potentiometric	LVDT Model
Sensor of temperature	No	No
Measuring Range	± 5 ÷ 150 mm	From 0 ÷ 2 mm a 0 ÷ 600mm
Linearity %	From 0,5 a 0,05 FS, according to f.s.	± 0,3% f.s. ÷ 0,5% f.s.
Output	Potentiometer; 4-20ma (upon request)	± 5V; 4-20 mA
Supply Voltage	From 15 to 60 V, per second del f.s.	± 9 - 36 Vdc
Anchoring type	Dowels, threaded bars, fixtures	Dowels, threaded bars, fixtures
Operation Temperature	-20 ÷ 80 °C	-40 ÷ 85 °C

Accessories and related products

S.N.	Triaxial Deformometer	Allows the mounting of the 3 crackmeters for the monitoring of a crack into the three directions x,y,z
S.N.	Fixing Kit Axis Y	Allows the monitoring of the crackmeter for the control of the axis Y
S.N.	Fixing Kit Axis Z	Allows the monitoring of the crackmeter for the control of the axis Z
S.N.	Junction Boxes	Different Models for the connection to the different instruments
S.N.	Multipolar cable	Different conductors for the connection of different sensors to one cable
S.N.	DEC 5	Portable Readout Unit
S.N.	DEC 3000	Portable Datalogger
S.N.	CUM 3000	Multichannel Datalogger
S.N.	MUX	Multiplexer for the connection of different sensors to the Datalogger

Technical assistance

If you have any requests or questions about our instruments or if you have special needs that require different solutions from the standard, please contact us. Our team will provide all the necessary information and will be very happy to work with you to study, develop and customize instruments and solutions suitable for your specific needs.

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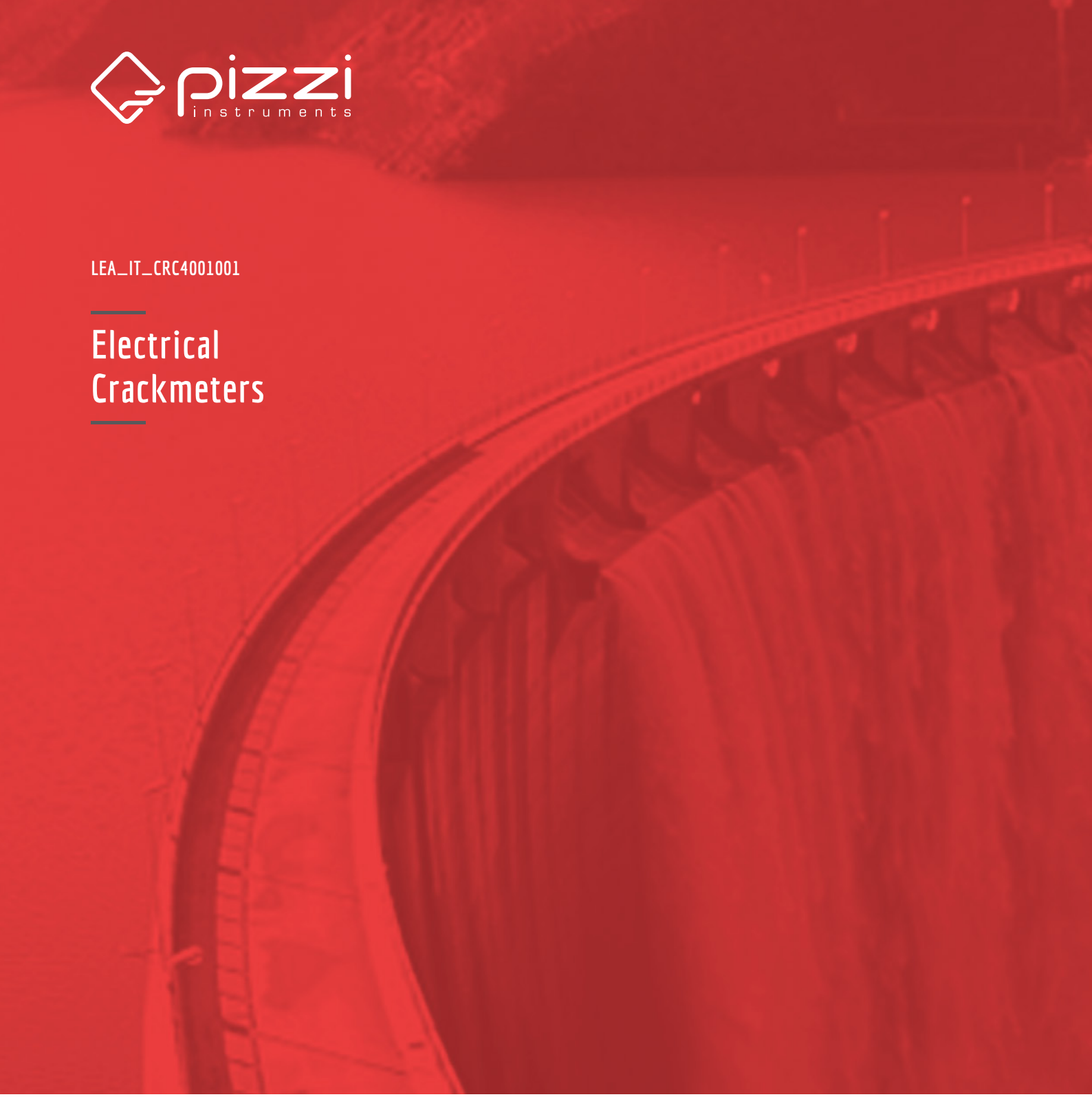

The product information may be subject to variations at any time.
Please carefully check the release and contact Pizzi Instruments for further details.

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