PAVICA

Aeolian Vibration Recorder

Pavica is a novel transmission line vibration recorder and analyzer, and is among the market leaders in its class due to its versatility and performance. The compact, lightweight instrument measures and records frequency and amplitude at each vibration cycle. The data collected is used to assess the following:

- Vibration severity, based on the fatigue endurance limit (EPRI method)
- Life expectancy of conductors and ground wires, based on CIGRE and IEEE recommended tests

Meeting the most stringent requirements

- Measures aeolian vibrations on conductors, optical ground wires (OPGWs) and other transmission line wires, depending on their type, tension and associated anti-vibration device
- Evaluates vibration severity
- Estimates the life expectancy of conductors, OPGWs or other wires subject to fatigue
- Rapidly identifies lines with potential vibration fatigue problems
- Assists in selecting the most appropriate anti-vibration devices
- Helps in developing maintenance and refurbishment programs

Closer assessment of overhead line fatigue

Aeolian vibrations are a fatigue factor for overhead wires, especially in extreme cold. In the late 1980s, Hydro-Québec's research institute IREQ developed an easily installed instrument to accurately measure vibratory phenomena on transmission lines. Hydro-Québec's extensive expertise went into the device's advanced electronics and interface.

Combining sophisticated analysis with ease of installation

Strain gauges produce a signal proportional to the dynamic bending amplitude of the conductor or ground wire. Pavica measures the signal frequency and amplitude of each vibration cycle and records the data at the desired rate in a counter matrix.

Pavica is easily installed on any live or de energized conductor, OPGW or other ground wire. It can be placed near a conventional metal-to-metal suspension clamp, cushioned supporting units, or damper or spacer ties.

Specifications

Measuring principle	IEEE bending amplitude standard
Evaluation method	Fatigue endurance limit (EPRI) or estimated life expectancy (CIGRÉ)
Software	Windows interface for updating internal flash memory
Port	RS-232
Sensor type	Cantilever blade equipped with strain gauges
Amplitude range	Four programmable scale patterns
Pattern	Peak-to-peak bending amplitude (in micrometres)
1	**0-11, 12-23, 24-35** … **756** or more
2	**0-7, 8-15, 16-23** … **504** or more
3	**0-3, 4-7, 8-11** … **252** or more
4	**0-1, 2-3, 4-5** … **16** or more
Frequency range	Two programmable scale patterns
Pattern	Frequency (Hz)
1	**0-1, 2-3, 4-5, 6-7** …**126-127**
2	**0, 1, 2, 3,** …**63** (…**127**)
Counter matrix size	**4 096 cells** = **64** frequency **intervals** x **64** amplitude **intervals**
Matrix memory capacity	**100 million** counts per cell
Active monitoring period	**1** to **12 seconds** (programmable)
Total period (active and standby)	**1** to **60 minutes** (programmable)
Operating temperature	**-40 °C** to **85 °C**
Battery life	Up to **3 months**
Batteries	**3** x **3.6 V** (lithium AA)
Outside dimensions	**18 cm** x **13 cm** x **7 cm**
Weight	Approx. **0.5 kg**
Additional services on request	Annual calibration, upgrades, repairs

For information:

Roctest ltée
665, avenue Pine
Saint-Lambert (Québec) J4P 2P4
Canada
Toll-free Number: 1 877 762-8378
Telephone: 450 465-1113
Fax: 450 465-1938
E-mail: info@roctest.com
www.roctest.com

Telemac S.A.
10, avenue Eiffel
77220 Gretz-Armainvilliers
France
Telephone: 33 1 64-06-40-80
Fax: 33 1 64-06-40-26
E-mail: telemac@wanadoo.fr
www.telemac.fr

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