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WHEN MEASUREMENTS MATTER

VWAnalyzer
Vibrating-Wire Analyzer

Ultimate Vibrating-Wire Field Reader

For installations, system maintenance, and manual measurements

Overview

The Vibrating-Wire Analyzer is the most innovative vibrating-wire field reader available. The VWAnalyzer is field ready to quickly measure your sensor, save your data, and communicate the results with custom PDF reports and spreadsheet output. VWAnalyzer measurements are geo-located with an integrated GPS, allowing the device to verify locations and direct you to your sensors. The VWAnalyzer uses spectral-analysis technology (VSPECT®) to provide the best vibrating-wire measurement possible while filtering out environmental and electrical noise. The large color display offers you an easy-to-view graphical presentation of the data.

Learn about our patented VSPECT® spectral-analysis technology at our VSPECT® Essentials web resource.

The dynamic vibrating-wire measurement technique is protected under U.S. Patent No. 8,671,758, and the vibrating-wire spectral-analysis technology (VSPECT®) is protected under U.S. Patent No. 7,779,690.

Benefits and Features

- Create custom PDF reports
- Measurement confidence with graphical display and VSPECT® technology
- Full-color screen and easy-to-use menus
- Integrated GPS to record sensor location
- Able to read any vibrating-wire sensor
- Sensor library containing common vibrating-wire sensors
- Quick transfer of PDF and CSV files with a USB connection

Detailed Description

The Vibrating-Wire Analyzer (VWAnalyzer) uses patented VSPECT® technology for the most reliable vibrating-wire measurements available. The VWAnalyzer converts measurements to engineering units, generates a printable PDF report, and saves a CSV summary file. The graphical display allows confirmation of sensor output and operation. VSPECT® technology eliminates disruptive noise interference and provides sensor diagnostics for the best measurement possible. VSPECT® noise immunity allows gages that are otherwise unreadable to be evaluated with confidence.

A Project File maintains Site/Sensor information for 40 unique sites with 22 sensors per site. Site/Sensor locations are geolocated, allowing the internal GPS to guide a user directly

to a sensor location. Site/Sensor and user information can be created or edited on the device or with a computer using the free VwProjects software.

Note: The VWAnalyzer can be connected to a computer and is treated like an external memory device (flash memory drive) to transfer data.

What is a VSPECT® measurement?

VSPECT® provides the best vibrating-wire measurement available. A sensor frequency is easily identified while filtering out environmental and electrical noise that affects the quality of other vibrating-wire readers. VSPECT® provides measurement diagnostics to understand sensor response, installation quality, and identify incorrect wiring or damaged sensors.

Output and Diagnostics

Sensor Frequency (Hz)

Frequency is a measured value.

Basic measurement from a vibrating-wire sensor. The frequency can be converted into engineering units (for example, pressure, displacement) and is the largest measured amplitude signal within the frequency sweep.

Sensor Amplitude (mV RMS)

Diagnostic values describe the quality of the frequency measurement.

Signal strength from the vibrating-wire sensor. Amplitude varies and is affected by the sensor type, excitation strength (adjustable), and sensor cable length.

Signal-to-Noise Ratio (unitless)

Diagnostic values describe the quality of the frequency measurement.

Sensor signal amplitude divided by the largest noise amplitude within the sweep frequency. A low signal-to-noise ratio indicates a weak sensor signal or a noisy environment.

Noise Frequency (Hz)

Diagnostic values describe the quality of the frequency measurement.

Largest amplitude noise signal within the frequency sweep.

Decay Ratio

Diagnostic values describe the quality of the frequency measurement.

Signal attenuation (how quickly the signal strength decreases).

Thermistor/RTD Resistance (Ω)

Resistance is a measured value.

Measurement used to calculate sensor temperature and correct for thermal effects. The VWAnalyzer measures the vibrating-wire sensor temperature (when present); thermal and barometric corrections require post processing.

Specifications

Memory	❱ *NOTE: Non-volatile memory stores data, reports, and project files. When memory is full, new data overwrites the oldest data. Users need to delete/transfer files when memory is full.* ❱ 1,700 site/sensor measurements (most recent) ❱ 40 unique sites, 22 sensors per site ❱ 240 single measurements (most recent) ❱ 16,500 continuous measurements (most recent) ❱ 80 MB USB memory (PDF, CSV, VWA, and other files)
GPS	±5 m (16.4 ft) typical (±1 ms time sync)

Channel Count	1 channel (vibrating wire and thermistor reading)
Enclosure	IP62
Battery Type/Life	5 AA (1.5 V) 20 hours continuous use
Operating Temperature Range	-20° to +70°C
Compliance	CE, RoHS
USB Mini B	Direct connect to PC (Supplies power to retrieve data.)
Warranty	One year against defects in materials and workmanship
Dimensions	200 x 100 x 58 mm (7.9 x 3.9 x 2.3 in.)
Weight	0.34 kg (0.75 lb)

Measurements - Vibrating-Wire

Vibrating-Wire Frequency Range	300 to 6500 Hz
Resolution	0.001 Hz RMS
Accuracy	±0.005% of reading
Excitation	2 V, 5 V, 12 V (user-selectable)
Method	VSPECT® (Vibrating-Wire Spectral Analysis), U.S. Patent No. 7,779,690
Measurement Interval Range	1 s to 15 min (continuous reading mode only)
Speed	1 s (fastest)

Measurements - Thermistor

Resolution	0.01 Ω RMS
Accuracy	±0.15% of reading

For comprehensive details, visit: www.campbellsci.com/vwanalyzer

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