

MODEL GK-406



Model GK-406 Vibrating Wire Analyzer

APPLICATIONS

The GEOKON® Model GK-406 Vibrating Wire Analyzer can be used with all GEOKON vibrating wire sensors. The rugged and reliable, GK-406 provides the following...

- Handheld portability
- Large color (graphical) display
- USB communications port
- Internal real-time clock
- Temperature readout
- Battery-backed memory
- 5 × AA batteries (1.5 V)
- Cold weather operation

OPERATING PRINCIPLE

The Model GK-406 Vibrating Wire Analyzer is a portable, low-power, handheld unit that is capable of running for more than 20 hours continuously on five AA batteries. It is designed for the readout of all GEOKON vibrating wire gauges and transducers.

The Model GK-406 measures the resonant frequency of the vibrating wire between excitations using a patented vibrating-wire spectral analysis technology (VSPECT). VSPECT provides very fine measurement resolution and limits the influence of external noise by discriminating between signal and noise based on frequency content. Because of this technology, the signal can be carried, without loss, through long cables in electrically noisy environments, with excellent reliability.

INTRODUCTION

The GEOKON Model GK-406 Vibrating Wire Analyzer (VWA) is field ready and used to quickly measure a sensor, save the data, and communicate the results with custom PDF reports and spreadsheet output. The VWA uses spectral analysis technology (VSPECT™), which can be helpful for reading sensors in electrically noisy environments. The large color display

offers an easy-to view graphical presentation of the sensor output and operation, and a Project File maintains Site/Sensor information for 40 unique sites with up to 22 sensors per site. Site/Sensor locations are geolocated, allowing the internal GPS to guide a user directly to a sensor location.

VSPECT technology is protected under U.S. Patent No. 7,779,690.

ADVANTAGES & LIMITATIONS

The Model GK-406 Vibrating Wire Analyzer provides many new and innovative features, previously unavailable in portable vibrating wire readout devices. The large color display provides an easy to view graphical presentation of the sensor data and allows the user to see and understand how the sensor is functioning, help troubleshoot sensor installation in the field, and obtain real time results of system performance. A sensor library provides a suite of preset excitation and readout parameters for the most commonly used vibrating wire

sensors, and the built-in PDF document generator creates installation records. An integrated GPS geolocates sensor locations thus allowing the sensor locations to be verified and/or pin pointed. A nonvolatile memory stores data, reports, and project files. When the memory is full, new data overwrites the oldest, so users will need to delete/transfer files when memory is full to prevent any data loss. A USB Mini B connection allows for quick transfer of any stored PDF and CSV files.

TECHNICAL SPECIFICATIONS

Memory ¹	1,700 site/sensor measurements (most recent ²) 40 unique sites, 22 sensors per site 240 single measurement (most recent ²) 16,500 continuous measurements (most recent ²) 80 MB USB memory (PDF, CSV, VWA, and other files ³)
USB Mini B	Direct connect to PC (Supplies power to retrieve data)
GPS	±5 m (16.4 ft) typical; ±1 ms time sync (WGS 84 Datum)
Channel Count	1 channel (vibrating wire and thermistor reading)
Battery Type/Life ⁴	5 AA (1.5 V), 20 hours continuous use
Operating Temperature	-20 °C to +70 °C
Compliance	CE, RoHS
Enclosure	IP62
Dimensions	200 × 100 × 58 mm (7.9 × 3.9 × 2.3 in.)
Weight	0.34 kg (0.75 lb.)

¹Non-volatile memory stores data, reports and project files. ²When memory is full, new data will overwrite the oldest data. ³Memory managed by users, files will need to be deleted/transferred when full. ⁴Due to quiescent current draw in OFF mode, user is advised to remove batteries if the unit will sit idle for any length of time.

VIBRATING WIRE SPECIFICATIONS

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 second to 15 min. (continuous reading mode only)
Speed	1 second (fastest)

THERMISTOR SPECIFICATIONS

Resolution	0.01 Ω RMS
Accuracy	±0.15% of reading

ORDERING INFORMATION

GK-406: Model GK-406 Vibrating Wire Analyzer, with carrying case and patch cord.

COMPONENTS



Model GK-406 Vibrating Wire Analyzer, case, and accessories

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GEOKON
48 Spencer Street
Lebanon, NH 03766 · USA

www.geokon.com
e: info@geokon.com
p: +1-603-448-1562

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