



Description

VWlog8 GPRS is an eight channel data logger which reads most commercially available geotechnical and structural Vibrating Wire (VW) sensors and optional thermistor temperature sensors, communicating via GPRS.

Readings are stored internally in a ring memory and uploaded wirelessly to the users FTP site via the mobile internet network (GSM and GPRS).

The software included easily enables the user to setup the logger configuration file remotely via the users FTP site at the next FTP session, making the device completely adaptable to site specific changes. The VWlog8 GPRS will automatically use these settings when it performs its scheduled synchronisation.

Features

- **Wireless data retrieval via the mobile internet network to users own FTP site**
- **Fully configurable data logging schedule for each channel**
- **Ring memory capable of storing 10,000 records**
- **Firmware updated over the mobile internet connection**
- **Low power consumption**

Benefits

- **Optional 15V excitation ensures quality readings from sensors with long cables**
- **Internet enabled; data uploaded directly to users own FTP site**
- **Logger set up requires no programming skill and is carried wirelessly via the FTP site or locally using the SD card**
- **Logger initiated communication; no requirement for fixed IP address**



Comprehensive information about this product and our full range is available at www.soilinstruments.com
If you would like to speak with someone directly please call +44 (0)1825 765044 or email sales@soilinstruments.com

VIBRATING WIRE PRINCIPLE



A high carbon steel wire is held in tension between a fixed point and a movable point within the sensor.

The physical changes measured by the sensor result in small changes to the position of the movable point which results in changes to the tension of the wire.

The wire may be excited by either plucking or sweeping via a coil adjacent to the wire. The resulting resonant frequency (which is relative to the tension of the wire) is then recorded by the same coil. The reading can be displayed by instrument readout or recorded by data logging equipment.

Operation

VWlog8 GPRS is available as a complete package with enclosure and various power options, or as a basic logger module.

Before going to site, a SIM setup and logger configuration file are created and saved onto the SD card; the logger configuration file can be later updated via FTP.

The SIM and SD cards are then inserted into the VWlog8 GPRS. Finally the VWlog8 GPRS is combined with an 11 to 20V DC battery and a suitable antenna and installed within an enclosure.

On site, up to eight VW sensors and a power supply are connected to the VWlog8 GPRS and the mobile data plan signal checked to enable the logger to start taking and transmitting readings.

Communication is initiated by the logger, so there is no requirement for a fixed IP address. The readings are transmitted remotely to an FTP site which is then accessed off site to obtain the data.

The Firmware is easily updated over the mobile internet connection (GSM and GPRS) or locally via the SD card.

Applications

The VWlog8 GPRS can be used to read Vibrating Wire sensors for geotechnical and structural monitoring.

Typical monitoring applications include:

- Pore pressure
- Water level
- Strain
- Displacement
- Crack
- Load
- Pressure cell

Associated products

| For details on: | Catalogue code: |
|-------------------|-----------------|
| VW Piezometers | W4 & W9 |
| VW Strain Gauges | ST1 – ST5 |
| VW Pressure Cells | P6 & P9 |
| VW Jointmeters | J1 & J3 |
| VW Load Cells | L2 |
| VW Crackmeters | J2 |

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THE TECHNICAL RATING FOR THIS PRODUCT:

As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, Soil Instruments makes the following recommendations, for the skill level of the installation contractor.

ADDITIONAL SUPPORT

We offer installation and monitoring services to support this system. For more information please email : sales@soilinstruments.com or call : **+44 (0) 1825 765044**

BASIC

ADVANCED

INTERMEDIATE

BASIC

The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.

The installer already has previous experience and/or training in the installation of this instrument or system.

As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.

Specifications

Vibrating Wire Inputs

| | |
|-----------------------------|--|
| Sweep frequency range | 450 - 6000 Hz |
| Resolution | 0.1 Hz |
| Accuracy | ±0.2 Hz |
| Output (excitation) voltage | 5V and 15V square wave (user selectable) |

Temperature Inputs

| | |
|-----------------------|---------------------------------|
| Thermistor type | 3k ohm thermistor |
| Measurement range | -50 to +150 °C (-58 to +302 °F) |
| Resolution | 0.01 °C |
| Accuracy ¹ | ±0.2 °C |

Power

| | | | |
|--|---|--|--|
| Input voltage | 12 to 20V DC | | |
| Current consumption @12V DC - sleep mode | 3.8 mA - GPRS inactive | | |
| Current consumption @12V DC - reading | 30 - 50 mA (peak) - during VW excitation (5V) | | |
| Current consumption @12V DC - transmitting | Typical 150 mA | Less than 250 mA - during GPRS data transferring | 450 mA (peak) - during GPRS network registration |

GSM/GPRS

| | |
|----------------|--|
| Frequency band | Quad band 850, 900, 1800, 1900 |
| Module | 2G GPRS |
| Antenna | Stubby Antenna, SMA connector ² |
| SIM card | Onboard connector |

Data Logger

| | |
|-------------------------|----------------------|
| Logging frequency range | 5 minutes to 1 hour |
| Upload frequency range | 5 minutes to 1 month |

Data Storage

| | |
|-------------------------|---|
| Memory size | 10,000 sets of readings, ring memory |
| Format of reading set | Time stamp, readings in raw and engineering units, sensor temperature and VWlog8 GPRS information including battery voltage and ambient temperature |
| Method of data transfer | Via GPRS/FTP and stored locally on the SD card |

Physical Properties

| | Module | Solar | Battery | Mains |
|-----------------------|---|---|---|---|
| Size | 255mm L x 100mm W x 50mm D (10" x 4" x 2") | 415mm L x 315mm W x 170mm D (16 ¹¹ / ₃₂ " x 12 ¹³ / ₃₂ " x 6 ¹¹ / ₁₆ ") | 415mm L x 315mm W x 170mm D (16 ¹¹ / ₃₂ " x 12 ¹³ / ₃₂ " x 6 ¹¹ / ₁₆ ") | 415mm L x 315mm W x 170mm D (16 ¹¹ / ₃₂ " x 12 ¹³ / ₃₂ " x 6 ¹¹ / ₁₆ ") |
| Weight | 450g (16oz) | 11kg (24lb 4oz) | 10kg (22lb) | 10kg (22lb) |
| Operating temperature | -20 to + 60 °C (-4 to + 140 °F) | | | |

¹Accuracy is over calibrated range of -20 to + 80 °C (-4 to +176 °F)

²Other antennae available

Ordering Information

VWlog8 GPRS Data Logger Module

Excludes data SIM card, enclosure & power supply

D1-VW-LOG8 Vibrating Wire 8 channel GPRS Data Logger module. Excludes data SIM card, enclosure & power supply

VWlog8 GPRS Data Logger Battery Powered

Excludes data SIM card

D1-VW-LOG8-B Vibrating Wire 8 channel GPRS Data Logger module in GRP enclosure with sealed lead acid power supply. Excludes data SIM card

VWlog8 GPRS Data Logger Solar Powered

Excludes data SIM card and mounting pole

D1-VW-LOG8-S Vibrating Wire 8 channel GPRS Data Logger module in GRP enclosure. Sealed lead acid power supply with charging regulator, 10 Watt Solar panel, includes mounting fixings for 50mm diameter mounting pole. Excludes data SIM card and mounting pole

VWlog8 GPRS Data Logger 110-260Vac Powered

Excludes data SIM card

D1-VW-LOG8-M Vibrating Wire 8 channel GPRS Data Logger module in GRP enclosure. Power supply with back up battery, Excludes data SIM card

GSM/GPRS Radio Signal Analyser

DI-SIG-TEST Radio signal analyser for GSM and GPRS radio networks

Manual

MAN-232 VWlog8 GPRS Manual

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