



Description

The VWlog2 is a simple, rugged, low-power, 2 channel Datalogger which reads most commercially available geotechnical and structural Vibrating Wire (VW) sensors and optional thermistor temperature sensors.

VWlog2 contains a large internal memory of 4MB, enabling storage of up to 50,000 readings per channel. The internal memory operates as a USB mass storage device which is accessible through a mini USB interface, allowing data to be easily transferred to a PC or mobile device via drag-and-drop.

The included VWlog2 software, enables the user to easily setup the logger parameters, such as date and time, sweep frequency range and excitation voltage.

VWlog2 is housed in a rugged enclosure, providing a rating of IP66 and all electronics are encased in an impervious sealing compound to avoid damage.

Features

- Reads two Vibrating Wire (VW) sensors and combined thermistor temperature sensors
- 4MB internal memory; reads up to 50,000 readings per channel, equating to 5 years of data sampling at hourly intervals
- IP66 rated, rugged, die-cast aluminium enclosure
- Low power requirement; 2 x D Cell batteries last up to two years
- Easy configuration and firmware upgrade via mini-USB to USB cable
- True USB interface; data downloaded via drag-and-drop
- Reads with user definable frequency range (1700 to 6000 Hz)

Benefits

- Reads most types of commercially available Vibrating Wire (VW) sensors
- Optional 15V excitation ensures quality readings from sensors with long cables
- Ideal for long-term monitoring in harsh environments
- Allows data collection immediately after sensor installation
- Fast setup and download time
- Versatile and economical
- All electronics sealed to protect from static and water damage



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

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 a change 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

Before going to site, a configuration file is created using the VWlog2 software provided by Soil Instruments.

The included VWlog2 software allows the user to easily create the configuration file, setting up the logger parameters such as date and time, sweep frequency range and excitation voltage.

On site, two Vibrating Wire sensors with optional thermistor temperature sensors are connected to VWlog2. As soon as the batteries are fitted, VWlog2 will start reading and storing data according to the previously specified settings in the configuration file.

The data is saved onto the VWlog2 internal memory in CSV format and is easily retrieved via a mini-USB to USB cable.

Once connected, VWlog2 appears as an external USB drive allowing data to be easily transferred from VWlog2 to a PC or mobile device via drag-and-drop, using the same action as a file on the PC's hard drive.

The VWlog2 reads the Vibrating Wire sensors using 'Zero Crossing' which is a signal processing method that calculates the frequency of a waveform by detecting and counting the number of times the signal crosses zero, or changes sign.

Applications

VWlog2 can be used to read Vibrating Wire (VW) sensors for geotechnical and structural monitoring.

Typical monitoring applications include:

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

Associated products

For details on:

Catalogue code:

VW Piezometers	W4 & W9
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:

BASIC



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@soil.co.uk or call : **+44 (0) 1825 765044**

ADVANCED



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.

INTERMEDIATE



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

BASIC



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	1700 - 6000 Hz
Reading algorithm	Zero crossing method
Resolution	0.1 Hz
Accuracy	± 0.02 % of full scale
Output (excitation) voltage	5 V and 15 V square wave (user selectable)

Temperature Inputs

Thermistor type	3 k ohm thermistor
Measurement range	50 to +150 °C
Resolution	0.01 °C
Accuracy	± 0.2 °C

Power

Power Supply	3 V DC using two D Cell alkaline batteries
Low Battery Voltage	2.6 V DC
Current Consumption ¹	50 mA during sleep mode, up to 700 mA pulsed current during Vibrating Wire sensor reading
Battery Life	2 years (reading 2 channels every hour)

Data Storage

Memory Size	4 MB – sufficient for 50,000 readings per channel
Interface	USB to mini-USB
Format of reading Set	Date/Time stamp, device serial number, logger battery voltage reading, logger internal temperature reading, sensor reading 1 (Hz), sensor reading 1 temp (°C), sensor reading 2 (Hz), sensor reading 2 temp (°C), Flag
Method of Data Transfer	Drag-and-drop (as USB drive)

Physical Properties

Enclosure Only

Size	120 mm x 120 mm x 82 mm	
	Enclosure only - without batteries	Enclosure only - with batteries
Weight	1.0 kg	1.3 kg
Operating Temperature	-20 to +60 °C	
IP Rating	IP66	

¹ Actual value depends on the Vibrating Wire sensor type and the excitation voltage

Ordering Information

VWlog2

Vibrating Wire 2 channel Datalogger

D1-VW-LOG2	Vibrating Wire 2 channel Datalogger module. Includes Datalogger, 2 x D Cell batteries
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Optional Accessories

RO-10-VW-1.4	Mini-USB to USB communication cable 3 metres
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Manual

MAN-235	VWlog2
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INSTRUMENTS



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