

V-Logger Series with Spread-Spectrum Radio



Advantages

Cost-effective: The four and eight channel options provide plenty of connections for many projects, and even multiple V-Loggers can be more cost effective than a single full size, multi-sensor type logger. The addition of the radio allows for easier installation and potentially lower costs, as cables are not required to be run to a central location for access.

Simple to Use: Learn how to use your V-Logger in minutes, not hours. There are no programs to write and no switches to set.

Increased Accuracy: The V-Logger Series is now "Best in industry for VW logging accuracy"¹ due to a revolutionary new measuring technique.

Reliable: The V-Logger series is rated for temperatures from -40° to 85°C and the product is IP 68 Rated. Readings are stored in secure, non-volatile memory.

Spreadsheet Friendly: The Logger Manager software retrieves readings and applies calibration factors, if present, to generate data files that contain both raw and processed readings. Thus data can be used immediately in your spreadsheet software.

Improved Noise Reduction: The proprietary new reading method greatly reduces, and in some cases eliminates, outside interference from telecom or electrical sources. This provides cleaner, more reliable data for your project.

Longer Battery Life: The V-Logger Series uses lithium batteries and a unique algorithm for maximizing battery life and has the ability to use almost 100% of the battery's capacity.

Longer Cable Lengths: The V-Logger Series has a unique mode of operation that allows for greatly increased cable lengths.

¹ Claims based on published datasheets. See www.slopeindicator.com for more information.

V-Logger Series with Radio

The V-Logger Series is Slope Indicator's vibrating wire data logger product line. The Radio series adds an integral spread-spectrum radio for wireless communication and data retrieval. The 4-Channel and 8-Channel versions are identical in optional capabilities, including:

- Extended Battery Pack

Application

Used in small and medium sized projects, the V-Logger series collects and monitors data from Slope Indicator vibrating wire sensors, including:

- Piezometers
- Crackmeters
- Settlement Cells
- Temperature Sensors
- Strain Gauges
- Total Pressure Cells

Overview of Operations

The V-Logger Series with Radio is simple to use and set up takes only a few minutes.

Connect the logger to your computer and use Logger Manager software (a free download available at www.slopeindicator.com) to specify a start time and reading schedule.

On site, connect sensor signal cables to the logger (you can view readings in real time if you have a PC with you). Then close the logger and walk away. Power options include a single lithium D-cell battery if you plan on regular site visits, four D-cell batteries for extended life or cold weather installations.

To retrieve readings, you will need connect the Hermes Wing base station to a PC via USB. Using the Logger Manager software, you will connect to the V-Logger wirelessly and both download data and make changes to the operation of the V-Logger. Logger Manager saves readings in a text file, ready for direct import into your spreadsheet software.

After importing the file into your data-sheet program, you have all the data needed for processing and plotting your data in a format that is easy to comprehend.

V-LOGGER W/ RADIO MODELS

USB interface cable and a sheet metal wrench (for gland and terminal screw tightening) are included with the logger. The V-Logger utilizes a D-cell lithium battery, which can be sourced locally or purchased with the V-Logger. Please note that air shipment of the battery domestically is considered a Hazardous Goods shipment and it may not be possible to some international locations. The manual and software are available for download from www.slopeindicator.com

- 4-Channel V-Logger with Radio,
North America (902 - 928 MHz)52615142
- 4-Channel V-Logger with Radio,
Europe (863 - 870 MHz)52615144
- 4-Channel V-Logger with Radio,
Australia (915 - 928 MHz)52615146

- 8-Channel V-Logger with Radio,
North America (902 - 928 MHz)52615182
- 8-Channel V-Logger with Radio,
Europe (863 - 870 MHz)52615284
- 8-Channel V-Logger with Radio,
Australia (915 - 928 MHz)52615186

- Hermes Wing (Base Station)
North America (902 - 928 MHz)59001100
- Europe (863 - 870 MHz)59001200
- Australia (918 - 926 MHz)59001300

- Lithium D-Cell Battery52615122
- Pole Attachment with 1" Pipe52615130
- Pole Attachment with 1.25" Pipe52615131
- Pole Attachment with 1.5" Pipe52615132
- Wall Mount52615135

V-LOGGER OPTIONS

The following option can be added to a V-Logger. Select the datalogger model as well as the option model when ordering.

Extra Capacity Battery:

- The Extra Cap Battery option adds capacity for 3 additional lithium batteries for at least 10 years of battery life (8 years with 8 channels) with readings every 15 minutes in moderate temperatures or approximately 7 years battery life (4 years with 8 channels) in extreme cold weather.
- For 4-Channel52615104
 - For 8-Channel52615108
 - Lithium D-Cell Battery52615122

V-LOGGER SPECIFICATIONS

Dimensions (default):

228.26 x 198.1 x 97.3mm (9.0 x 7.8 x 3.83 in.)

Measurement Range:

Reads vibrating wire sensors operating in the range of 450-6000 Hz. Reads thermistors or RTDs in the range of -20 to 120°C.

Logger Resolution:

0.001Hz for vibrating wire sensors
0.1°C for temperature sensors.

Logger Accuracy:

± (0.002% of Reading + 0.04Hz) for vibrating wire sensors
±0.5°C for temperature sensors

Data Storage:

Stores 63,648 records in secure, non-volatile memory. Each record includes a VW reading and temperature reading with time and date. When memory is full, recording either stops or continues by overwriting previous readings, starting with the oldest, depending on how the user set up the logger during installation.

Logger Settings:

Date, time, memory mode, and communication settings. Memory mode determines if logging stops when memory is full or if logging continues by overwriting earliest readings.

Logger Schedule:

Logger start time can be set to a specific date and time so that readings are synchronized with other loggers. Reading intervals can be specified by day, hour, minute, and second. Maximum interval is 1 year. Minimum interval is 20 seconds for the 4-channel logger and 30 seconds for the 8-channel logger.

Sensor settings:

Sensor ID, serial number, calibration factors, and sweep range for each sensor. Choice of thermistor or RTD for temperature channels.

Power (default):

One lithium D-cell battery provides power for 9 years for the 4-channel logger (over 6 years for the 8-channel logger) in moderate temperatures, assuming readings taken every hour on all channels.

Weatherproofing:

V-Logger is housed in an IP68 enclosure with cable glands for signal cable. Plugs are provided for unused cable glands.

HERMES RADIO SPECIFICATIONS

The Hermes radio is a small form factor, low-power, unlicensed ISM band radio transceiver that delivers up to a 500 kbps data rate for distances up to several miles.

Multi-Channel Selections:

The Hermes radio uses the ISM license free bands and has multiple channels within those bands:

North America: 902 - 928 MHz
10 Channels (Ch1 - Ch10)

Europe: 863 - 870 MHz
3 Channels (Ch11 - Ch13)

Australia: 915 - 928 MHz
4 Channels (Ch7 - Ch10)

Antennas:

The Hermes radio has been tested and approved for use with the following antennas.

Standard Articulating Dipole,
Mid-range (2.0 dBi)59001001

Straight Whip Dipole,
Mid-range (2.5 dBi)59001004

Right Angle Whip Dipole,
Mid-range (2.5 dBi)59001005

Manhole Lid Dome,
Short-range (2.5 dBi)59001020

Omni-Directional Collinear,
Long-range (5.15 dBi)56704838

Radio Specifications:

Transmit Power Output 10 - 100mW

Receiver Sensitivity -107 dBm

RF Data Rate 500kbps