

Single-Channel Datalogger

Applications

The Model 8001 (LC-1) Single-Channel Datalogger is used to read all Geokon vibrating wire instruments. LogWare Software simplifies the task of configuration, monitoring, data collection, and data reduction when used with the Model 8001.

Sensors that can be read and monitored by the Model 8001 and LogWare combination include...

- Crackmeters
- Piezometers
- Precision water level sensors
- Pressure transducers
- Settlement systems
- Strain gages
- Thermistors



• The Model 8001 (LC-1) Single-Channel Datalogger.

Operating Principle

The Model LC-1 is designed to be a stand-alone single-channel datalogger, to be used with any of the Geokon line of vibrating wire sensors, reading both the vibrating wire element and the integral thermistor. It is particularly useful for the remote and continuous monitoring of isolated sensors.

The datalogger is housed inside a cast aluminum Nema 4X enclosure, and is thus very robust, weather-proof and particularly suited to operation in harsh environments. The exceptionally low power consumption provides long battery life and a self-checking function continuously monitors and reports the condition of the main batteries and the Lithium back-up battery.

Data memory consists of 128K bytes of battery-backed static RAM. This translates into a memory storage capacity of 8000 arrays, each array consisting of the day, (Julian or month/day format), the main battery voltage, the datalogger temperature, the vibrating wire sensor reading (in engineering units), and the sensor temperature.

The array transmission is in comma delineated ASCII text, for easy importation into popular spreadsheet programs. The measurement interval is programmable between

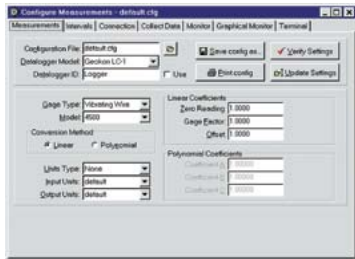
1 and 99,999 seconds (27.7 hours). Alternatively, up to 6 intervals may be specified from a logarithmic table, with a maximum of 255 iterations. The programmed intervals can be started or stopped at preset times of the day.

Power

The LC-1 datalogger is powered by two, easily accessible, alkaline D cells. Battery life can be as long as one year depending on the reading interval. For extended battery life a solar panel can be connected to rechargeable batteries. A lithium back-up battery protects against loss of data should the main battery become discharged.

Communications

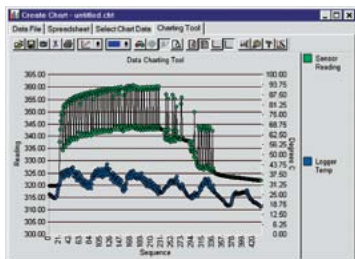
The standard interface is a direct RS-232 connection to a laptop computer, and a cable is provided with the LC-1 for this purpose. Battery powered modems are available, which allow the LC-1 to be programmed and interrogated remotely. An optional RS-485 system allows up to 32 single channel dataloggers to share a single 3-pair communications cable. An adapter is provided to interface the host computer or phone modem to the RS-485 network (a typical network is shown on the next page). Radio transmission systems are also available (please contact Geokon for details).



● LogWare screen: "Configure Measurements".



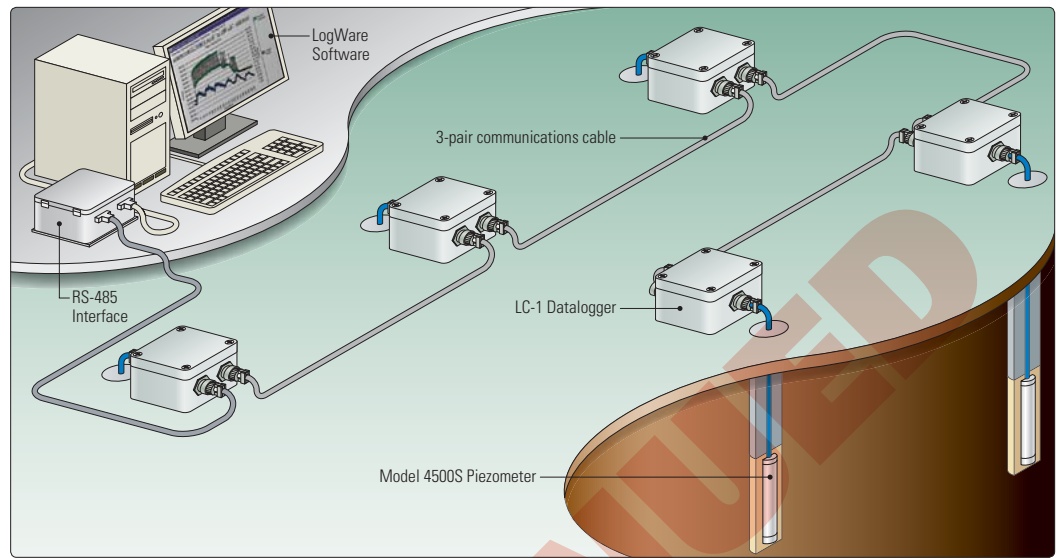
● LogWare screen: "Collect Data".



● LogWare screen: "Create Chart".



● LogWare screen: "Monitor Logger".



● Typical RS-485 datalogger network. Up to 32 Model 8001 Single-Channel Dataloggers can be daisy-chained to a distance of up to 3 km using the required number of single 3-pair communications cables.

Software

LogWare Software simplifies the task of configuration, communication, monitoring, data collection and data reduction using the Geokon Model 8001 (LC-1). The software is a multiple document interface (MDI) type application designed for Windows 95/98/NT.

The configuration, data collection and monitoring form includes a screen for measurements, intervals, connection and data collection configuration, a real-time text based monitor, a graphical monitor and terminal emulator. The data reduction form includes a data file editor, Excel compatible spreadsheet and charting component.

The spreadsheet can load and save Excel v4.0/5.0/95 files as well as create HTML tables for use on the Web. The charting component includes over 40 different types and varieties of charts.

A context sensitive help system answers most questions regarding the use of the software.

The charting and spreadsheet components are Windows OLE compliant allowing easy "cut-and-paste" operations between the screens of LogWare and other applications such as spreadsheet and word processing software.

Technical Specifications (Model 8001)

Measurement Accuracy	0.05% F.S. (450-4000 Hz)
Measurement Resolution	1 part in 20,000
Program Memory	32K ROM
Data Memory	128K SRAM
Temperature Range	-40°C to +60°C
Temperature Measurement	(accuracy) 2.0% F.S. (resolution) 0.1°C
Communication	(speed) 1200 or 9600 bps, auto-sense (parameters) 8 data bits, no parity, 1 stop bit
Power Supply	3 VDC (two Alkaline 'D' cells)
Current	(communication) 10-15 mA (measurement) 60-85 mA (quiescent) < 50 µA
Operating Time	10 days - 3 years
Backup Battery	(type) 3.6 V Lithium (life) > 5 years
L x W x H	115 x 115 x 80 mm

System Requirements (LogWare)

Processor Requirements	486 running at 25 MHz (minimum) Pentium®/Pentium Pro/Pentium II (or equivalent) or higher running at 166 MHz or better (recommended)
Memory Requirements	8 MB (minimum) 32 MB or more (recommended)
Hard Disk Requirements	12 MB (minimum) 20 MB or more (recommended)



The World Leader in Vibrating Wire Technology™

Geokon, Incorporated
48 Spencer Street
Lebanon, NH 03766
USA

Geokon maintains an ongoing policy of design review and reserves the right to amend products and specifications without notice.

1 • 603 • 448 • 1562
1 • 603 • 448 • 3216
geokon@geokon.com
www.geokon.com

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