

- Geotechnical Low Power Data Logger
- 10-30 Sensor Channels, 7 Digital Channels
- Vibrating Wire Sensor Support
- Unique Universal Channels
- Up to 1,390,000 Data Points
- PC Card for Data Storage
- Easily Configurable Windows Based Software
- Stand Alone and Real Time Data Acquisition
- Remote Monitoring and Control
- Removable Screw Terminals
- Expandable

Datataker's Extensive Range

Datataker's extensive range of data acquisition and data logging systems are real time and stand alone, able to acquire, process and log data without direct computer control. The powerful yet easy-to-use hardware and software enables you to log a wide range of measurements and events. *dataTakers* are in use in over 50 countries - *dataTakers* are used in many applications including science, aerospace, mining, manufacturing, meteorology, agriforestry, hydrography, research & development, public utilities, petrochemical and transportation.

The Geotechnical Data Loggers

There are two versions of the GeoLogger, the *dataTaker DT515* and *DT615*. Both units feature easy set up, 10 to 30 analog channels, 7 digital and counter channels, Vibrating Wire Sensor Support with 500Hz to 5 kHz frequency range and unique phase lock loop filtering.

Data can be conveniently and securely stored in battery backed RAM and removable PC cards storing up to 1,390,000 data points respectively. Alarms may also be set for all channels.

The *DT515* and *DT615* are of a rugged steel construction making the units suitable for harsh environments. In addition, the *DT615* also features a display and keypad for viewing channel data, alarm status and system information. Programmable function keys allow keypad control over the unit's operation.

The *dataTaker* Windows Based Software

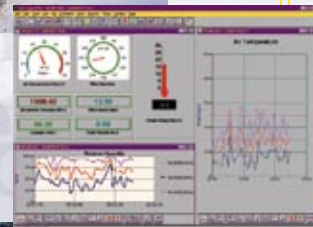
Datataker produces a number of software packages for interfacing with the *dataTaker* data logger range. DeTransfer provides a text-based interface for programming and management, with simple plotting provided by the DePlot utility. DeLogger4 is our standard GUI (Graphical User Interface) for 'drag and drop' programming, spreadsheet presentation of data, plotting of charts and simple mimics. DeLogger4 Pro is the enhanced graphical package including additional automation, reporting, database and remote *dataTaker* management features.

Applications

Applications for the *dataTaker* GeoLogger range include:

- Concrete Structural Testing
- Dam Wall Stability Monitoring
- Subway Construction Site Monitoring
- Machinery Condition Monitoring
- Tunnel Monitoring
- Soil Slope Stability Monitoring

For your application contact your local *dataTaker* office or your local dealer.



Head Office

Australia
Datataker Pty Ltd
7 Seismic Court
Rowville Melbourne
Victoria 3178
Tel: +61 3 9764 8600
Fax: +61 3 9764 8997
Email: sales@datataker.com.au



United Kingdom
Grant Instruments (Cambridge) Ltd
Shepreth
Cambridgeshire
SG8 6GB
Tel: +44 (0) 1763 264780
Fax: +44 (0) 1763 262410
Email: sales@datataker.co.uk



United States of America
Computer Aided Solutions
8588 Mayfield Rd, Suite One
Chesterland, OH 44026
Tel: +1 800 9 LOGGER
Tel: +1 440 729 2570
Fax: +1 413 375 6137
Email: sales@datataker.com



Analog Channels

Channel Number

Number of input channels depends on sensor wiring configuration. Sensor configurations may be mixed:
 Two wire: 10
 Two wire with one shared terminal: 30
 Three wire: 10
 Four wire: 10
 Expansion: by external CEM modules

Fundamental Input Ranges

Full Scale	Resolution	Full Scale	Resolution
±25 mVdc	2 μ V	50 Ω	.25 m Ω
±250 mVdc	20 μ V	500 Ω	2.5 m Ω
±2.5 Vdc	200 μ V	5,000 Ω	25 m Ω
±100 Vdc	500 μ V	100 Hz	0.01 %
±0.25 mA	0.2 μ A	10 kHz	0.01 %
±2.5 mA	1 μ A		
±25 mA	10 μ A		

Accuracy

Measurement at	25°C	-45°C to 60°C
DC Voltage	0.15%	0.25%
DC Current	0.25%	0.35%
DC Resistance	0.20%	0.30%

Sensor Excitation

Per channel: 4.5V, 250 μ A or 2.5mA
 DC voltage: 5V at 100mA switched

Multiplexer (Channel Selector)

Type: relay \pm 100V input
 Common mode range: \pm 100V (100V range only)
 \pm 3.5V on other ranges

Input impedance: 1M Ω or >100M Ω , programmable

Sampling

Sampling for accuracy and noise rejection by integrating over 50/60Hz line period
 Maximum sample speed: 25Hz
 Effective resolution: 15 bits
 Linearity: 0.01%
 Common mode rejection 25mV range: >90dB
 Line (50/60Hz) series mode rejection: >35dB

Internal Channels

Temperature (thermocouple reference junction): 1
 Reference voltage channels: 1
 Internal battery voltage: 1

Sensor Support

Supports a wide range of sensor types including, but not limited to the following:

Vibrating Wire

Frequency range: 500 to 5kHz
 Coil resistance: 50 to 200 Ω
 Stimulation method: single pulse pluck

Thermocouples

Types: B, C, D, E, G, J, K, N, R, S, T
 Reference junction compensation accuracy:

Case temperature	25°C	-20 to +60°C
Accuracy	\pm 1.0°C	\pm 1.5°C

RTDs

Types: Pt, Ni, Cu
 Resistance range: 10 Ω to 2k Ω
 Measurement accuracy:
 4 wire: 0.15% of resistance
 3 wire: 0.25% of resistance

Thermistors

Types: YSI 400xx Series
 Resistance range: <7k Ω ,
 <20k Ω with parallel resistor

Monolithic Temperature Sensors

Types supported: LM34, LM35, AD590

Bridge Sensors

Configurations: 4-wire and 6-wire
 Bridge completion: external or internal half bridge

4-20mA Current Loops

Shunt value: 100 Ω to a shared common
 Accuracy: 0.25% at 25°C

Sensors - Comments

A wide range of sensor scaling and linearising facilities is provided including polynomials, expressions and functions

Digital Channels

Number of channels: Bi-directional channels: 4
 Dedicated counter channels: 3
 Analog channels may also be used for digital input

Digital Input

Number: 4, shared with output channels
 Input Type: logic level (protected with pull-up)

Counter Channels

Number: 4 low-speed (10Hz) shared with input channels
 3 high-speed (1kHz in sleep mode) with switchable internal clocking options
 Size: 16 bit (65535 counts)

Digital Output

Number: 4 shared with input channels
 Output type: open-collector npn transistor, +30V, 100mA

Calculation Channels

Any expression involving variables and functions including:
 sin(), cos(), tan(), asin(), acos(), atan(), abs(), sqrt(),
 average, maximum, minimum, time of max., time of min., variance, integral, histogram

Scheduling of Data Acquisition

Number of schedules: 4 acquisition schedules,
 1 immediate schedule
 1 alarm schedule
 Scan triggers: time base or digital event
 Conditional scanning: while digital input high
 Time based scheduling: from seconds to months in increments of 1 second, 1 minute, 1 hour and 1 day
 Maximum scheduled rate: 1 second or as fast as possible, typically 25 samples per second
 Dynamic scan time base change: yes
 Maximum number of channel entries: 110

Alarms

Condition: high, low, within range and outside range
 Delay: optional time period for alarm response
 Actions: set digital outputs, execute any commands.
 Alarms can be combined in logical fashion

Data Storage

Internal

Type: battery backed SRAM
 Capacity: 166,530 data points

PC Card

Types: SRAM up to 4 MByte, Type 1
 Card voltage: 5V types
 Capacity: up to 1,390,000 data points
 Data format: proprietary

Download Data Format

Format: ASCII floating point, fixed point or exponential formats
 Compatibility: spread sheets, word processors, graphing packages, statistical programs and SCADA software

Serial Interface (RS232)

The GeoLogger is programmed and data extracted via the RS232 serial interface
 Speed: 300 to 9600 baud (9600 default)
 Handshake: XON and XOFF
 Wake from sleep: yes
 Isolation: 500V
 Compatibility: computers, modems, satellite-modems, radio-modems and printers

Network Interface

(Multiple dataTaker only)

Standard: RS485
 Protocol: proprietary with error correction
 Speed: 1200 Baud
 Distance: 1000 meter maximum

System

Display and Keypad

Models: DT615 only
 Type: LCD, 2 lines by 16 characters, back light
 Display functions: channel data, alarms, battery status, data capacity
 Keypad: 5 keys for scrolling, function execution
 Beeper: for alarms, etc
 Indicator LED's: 3 programmable

Real Time Clock

For time stamping of data, scheduling and timers
 Normal resolution: 1 second
 Accuracy: 2 seconds per day (25°C)

Power Supply

Voltage range: 11 to 24Vdc or 9 to 18Vac

Power Consumption

In normal mode: 1W (2W with battery charging)
 Sleeping: 2mW (350 μ A from battery)
 Typical low power operation: 20mW

Internal Main Battery

Chemistry: lead acid gel cell
 Voltage (capacity): 6V (1.2 AHR)
 Temperature compensation: -10°C to +70°C
 Operating time: Normal: approx. 10 hours
 Low power: approx. 4 months

Internal Backup Battery

For real time clock and internal data storage backup
 Type: 3V 1/2AA Lithium

Physical and Environment

Construction: Powder coated fabricated steel
 Physical dimensions: 260 x 110 x 85mm
 Weight: 2.2kg (4kg shipping)
 Environment Temperature range: -45°C to 70°C
 Humidity: 85%, non-condensing

Accessories Included

Line adaptor: 110/240Vac, 500mA
 Comms Cable: for PC, with 9 to 25 pin adaptor
 Software: Software Suite CD which includes DeLogger4, DeTransfer, DePlot applications
 Manuals: "Getting Started with dataTaker"
 "User's Manual"

Optional Accessories

Channel Expansion Module (CEMS3)

Multiplexer: relay
 Number: 4 per GeoLogger
 Channel number:
 10 two wire
 30 two wire shared terminals
 20 digital inputs
 10 digital outputs, 5 with relay contacts

Portable Carrying Case (PE500)

Capacity: 1 DT500 range unit + 1 x CEMS3
 (Requires AS1072)

Environmental protection: IP66

SRAM PC Card (MC1024P, MC4096P)

Capacity: 1MByte, approximately 340,000 data points
 4MByte, approximately 1,390,000 data points

DeLogger™ 4 Pro

Graphical programming and supervision software.
 Supports a large network of GeoLoggers connected via modem. Features include comprehensive plotting, reporting, mimics, database, web publishing and other powerful capabilities.

Warranty

The dataTaker DT515 and DT615 is covered by a 3 year warranty on workmanship and parts. For further information on the dataTaker range, or for useful downloads, visit the dataTaker web site at www.datataker.com or contact your nearest Datataker office or dealer.

dataTaker®

Your local dealer



dataTaker

Certified to ISO9001



TOTAL QUALITY COMMITMENT

Australia Only

dataTaker, DeLogger are either registered trademarks or trademarks of Datataker Pty Ltd.