



- General Purpose Low Cost, Low Power Data Logger
- 5-10 Sensor Channels, 8 Digital Channels
- Unique Universal Channels
- Up to 1,390,000 Data Points
- PC Card for Removable Data Storage
- Easily Configurable Windows Based Software
- Stand Alone & Real Time Data Acquisition
- Remote Monitoring & Control
- Removable Screw Terminals



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, petrochemical, research & development, public utilities and transportation.



The dataTaker DT50 General Purpose Low Cost Unit

The dataTaker DT50 is a general purpose low cost data logger. The DT50 features 5 to 10 analog channels depending on sensor type, five digital input channels, 3 high speed counters and sampling speed of 25 - 70 samples per second.

Data can be conveniently and securely stored in battery backed RAM and removable PC cards; the latter providing storage for up to 1,390,000 data points. Alarms may be set for all channels. The DT50's rugged steel construction makes the unit suitable for harsh environments.



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 DT50 include:

- | | |
|---------------------------|----------------------------------|
| • Fault Finding | • Monitoring Climatic Conditions |
| • Monitoring Water Levels | • Machine Down Time Monitoring |
| • Process Monitoring | • Product Testing |
| • Building Monitoring | • Research & Development |
| • Automotive Testing | • Flood Warnings |



For your unique application, contact your local Datatake office or your local dealer.



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Analog Channels

Channel Number

Number of input channels depends on sensor wiring configuration. Sensor configurations may be mixed:

- Two wire: 5
- Two wire with one shared terminal: 10
- Three wire: 5
- Four wire: 5
- 4-20mA current loop: 5 with shared common + with 10 external shunts

Fundamental Input Ranges

The DT50 hardware measures voltage, current, resistance and frequency. From these, all other measurements are derived.

Full Scale	Resolution	Full Scale	Resolution
±25.00 mVdc	2.00 μ V	50 Ω	.25 m Ω
±250.0 mVdc	20.00 μ V	500 Ω	2.50 m Ω
±2.50 Vdc	200.00 μ V	5,000 Ω	25.00 m Ω
±0.25 mA	0.20 μ A	100 Hz	0.01 %
±2.50 mA	1.00 μ A	10 kHz	0.01 %
±25.00 mA	10.00 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

Each channel: 4.5V (1k Ω source), 250 μ A or 2.5mA switched on when channels is selected

DC Voltage: 5V at 100mA (max.) switched

Multiplexer (Channel Selector)

Type: solid-state \pm 5V input ratings
Input impedance: 1M Ω or >100M Ω , programmable
Common mode range: \pm 3.5V

Internal Channels

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

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

Sensor Support

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

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	±1.0°C	±1.5°C

RTDs

Types: Pt, Ni, Cu

Resistance range: 10 Ω to 2k Ω

Measurement accuracy:

4 wire: 0.15% of resistance value

3 wire: 0.25% of resistance value

Thermistors

Types: YSI 400xx Series

Resistance range: <7k Ω ,

<20k Ω with parallel resistor

Monolithic Temperature Sensors

Types supported: LM335, LM34, LM35, AD590

Bridge Sensors

Configurations: 4-wire and 6-wire

Excitation: voltage or current

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 are provided including polynomials, expressions and functions

Digital Channels

Number of Channels

Bi-directional channels: 5

Dedicated counter channels: 3

Digital Input

Number: 5, shared with bi-directional channels

Input Type: logic level (protected with pull-up)

Counter Channels

Number: 5 low speed (10Hz) shared with bi-directional channels
3 high speed (1kHz, sleep mode) with switchable internal clocking options

Size: 16 bit (65535 counts)

Digital Output

Number: 5

Output type: open-collector npn transistor

Rating: +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 dataTaker commands. Alarms can be combined in a logical fashion

Data Storage

Internal

Type: battery backed SRAM

Capacity: 166,500 data points

PC Card

Types: SRAM to 4MBytes, 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: spreadsheets, word processors, graphing packages, statistical programs and SCADA software

Serial Interface (RS232)

The DT50 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

System

Processor type: Z180, 18 MHz

Program storage: FLASH

Data storage: SRAM, battery backed

Indicator LED: sampling

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

External battery input: 6V lead acid

Power Consumption

In normal mode: 1W (2W with ext. battery charging)

Sleeping: 2mW (350 μ A from 6V battery)

Typical low power operation: 20mW

External Battery (Optional Accessory)

An external battery can be connected for stand alone data logging. The battery can be re-charged by the DT50 when main supply is restored/applied.

(See power supply above)

Chemistry: lead acid gel cell

Voltage: 6V

Maximum charge current: 200mA

Temperature compensation charging: -10°C to +70°C

Operating time with 1.2AhR battery:

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

Dimensions: 260 x 110 x 55mm

(height 104mm with PC Card)

Weight: 1.5kg (2.5kg shipping)

Environment temperature range: -45°C to 70°C

Humidity: 85%, non-condensing

Accessories Included

Comms cable: for PC

Software: Software Suite CD which includes DeLogger,

DeTransfer, DePlot applications

Manuals: "Getting Started with dataTaker"

"User's Manual"

Optional Accessories

Portable Carrying Case (PE500)

Capacity: 1 DT50 unit + battery

Environmental protection: IP66

Battery

Line adaptor: 110/240Vac, 500mA

Capacity: 1.2AhR (GC-1.2) or 4AhR (GC-4) for

mounting external to the DT50

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 DT50, DT500 and DT800

range units connected via modem. Features include

comprehensive plotting, reporting, mimics, database,

web publishing and other powerful capabilities.

Warranty

The dataTaker DT50 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.

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Certified to ISO9001



TOTAL QUALITY COMMITMENT

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