

dataTaker®

Data Acquisition and Data Logging Systems

dataTaker DT500 & DT600 Series 3 Range

Specifications

- General Purpose Low Power Data Logger
- 10-30 Sensor Channels, 7 Digital Channels
- 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, petrochemical, public utilities and transportation.

The dataTaker DT500 & DT600 Range

The dataTaker DT500 range of general purpose, battery powered data acquisition and data logging systems measure inputs from most sensor types. Data can be conveniently and securely stored in battery backed RAM and removable memory cards.

The dataTaker DT500 range consists of four models:

- DT500 Basic Unit with Solid State Channel Selector
- DT600 Solid State Channel Selector & LCD Display and Keypad
- DT505 Basic Unit with Relay Channel Selector
- DT605 Relay Channel Selector & LCD Display and Keypad

The DT600 and DT605 both have an integral display and keypad that allows users to view channel data, alarm status, and system information including time, battery status and amount of data stored. 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.

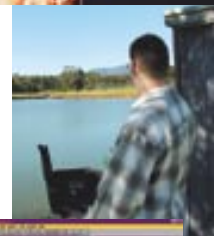
DeTransfer provides a text-based interface for programming and management, with simple plotting provided by the DePlot utility. DeLogger4 is our standard GUI (Graphical User Interface) for 'drag and drop' programming, spreadsheet presentation of data, plotting of charts and simple mimics. DeLogger4 Pro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

Applications

Applications for the dataTaker DT500 range include:

- Fault Finding
- Monitoring Water Levels and Flood Warnings
- Product Testing
- Research & Development
- Monitoring Climatic Conditions
- Process Monitoring
- Building Monitoring
- Automotive Testing

For your unique application, contact your local datataker dealer.





Analog Channels

Channel Number

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

- Two wire: 10
- Three wire: 10
- Four wire: 10
- Expansion: by Channel Expansion Modules (CEM)

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		

*100 Vdc range of DT505 and DT605 only

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%

Multiplexer (Channel Selector)

DT500 and DT600: solid-state \pm 5V input range
 DT505 and DT605: relay \pm 100V input
 Input impedance: 1M Ω or >100M Ω , programmable
 Common mode range:
 DT500 and DT600: \pm 3.5V
 DT505 and DT605: \pm 100V on 100V range

Sampling

Sampling for accuracy and noise rejection by integrating over 50/60Hz line period
 Maximum sample speed: 25Hz (up to 70Hz without noise rejection)
 Effective resolution: 15 bits
 Linearity: 0.01%
 Common mode rejection 25mV range: >90dB
 Line (50/60Hz) series mode rejection: >35dB

Sensor Excitation

Each channel: 4.5V, 250 μ A or 2.5mA
 DC voltage: 5V at 100mA (max.) switched

Internal Channels

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

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

Monolithic Temperature Sensors

Types supported: LM34, LM35, AD590

Thermistors

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

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

Digital Input

Number: 4, shared with output channels
 Input Type: logic level (protected and 5k Ω pull-up to 5V)

Counter Channels

Number: 4 low speed (10Hz) shared with input channels
 3 high speed (1kHz, sleep mode) with switchable internal clocking options
 Size: 16 bit (65,535 counts)

Digital Output

Number: 4, shared with input channels
 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: 166,530 data points

PC Card

Types: SRAM up to 4MByte, 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 DT500 range are 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



Certified to ISO9002
 TOTAL QUALITY COMMITMENT

dataTaker, DeLogger are either registered trademarks or trademarks

System

Display and Keypad

Models: on DT600 and DT605 only
 Type: LCD, 2 lines by 16 characters, back light
 Display functions: channels data, alarms, battery status, data capacity
 Key pad: 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 (1.2Ah)
 Temperature compensation: -10°C to +70°C
 Operating time: Normal: approximately 10 hours
 Low power: approximately 3 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
 (height 104mm with PC Card)
 Weight: 2.2kg (4kg shipping)
 Environment temperature range: -45°C to 70°C
 Humidity: 85%RH, 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"

Options & Accessories

Channel Expansion Module (CEMS3)

Multiplexer: relay
 Number: 2 per DT500 Series unit
 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 DT500 range units connected via modem. Features include comprehensive plotting, reporting, mimics, database, web publishing and other powerful capabilities.

Warranty

The dataTaker DT500 and DT600 range 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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