DT500 & DT600 Range

dataTaker®

Intelligent Data Logging Products

Specifications

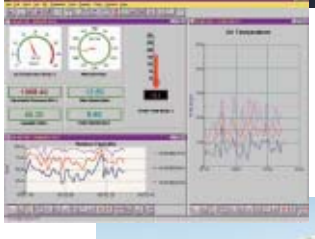
- **General Purpose Low Power Data Logger**
- **10-30 Sensor Channels, 7 Digital Channels**
- **Unique Universal Channels**
- **Up to 1,390,000 Data Points**
- **Stand Alone and Real Time Data Acquisition**
- **Remote Monitoring and Control**
- **Removable Screw Terminals**
- **Expandable**

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, DT505, DT600, DT605*.

The *DT500* and *DT600* models have Solid State Channel Selectors. (Low Voltage)
The *DT505* and *DT605* models have Relay Channel Selectors. (High Voltage)

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.



Applications include:

- Fault Finding
- Weather Stations
- Process Monitoring
- Building Monitoring
- Automotive Testing
- Flood Warnings
- Machine Down Time
- Strain Guages
- Temperature Profiling
- Research & Development
- Load Cells

FREE Software & Technical Support

dataTaker software and Resource CD

The *dataTaker* Resource CD is provided FREE with every new logger. It contains software to enable easy setup, fast download, real time viewing of data and direct export to excel spreadsheets. The Resource CD also contains helpful training videos, manuals, application and technical notes and other valuable utilities.

DeLogger™ 4 Pro is the enhanced graphical package including additional automation, reporting, database and remote *dataTaker* management features.

For your nearest local Datataker distributor visit www.datataker.com

Australasia
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

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

Americas
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@computeraidedsolutions.com

www.datataker.com

Analog Channels

Channel Number

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

Fundamental Input Ranges

Full Scale	Resolution	Full Scale	Resolution
±25.00 mVdc	2.00 µV	50 Ω	.25 mΩ
±250.0 mVdc	20.00 µV	500 Ω	2.50 mΩ
±2.50 Vdc	200.00 µV	5,000 Ω	25.00 mΩ
±100.0 Vdc*	500.00 µV	100 Hz	0.01 %
±0.25 mA	0.20 µA	10 kHz	0.01 %
±2.50 mA	1.00 µA		
±25.00 mA	10.00 µA		

*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 ±5V input range
DT505 and *DT605*: relay ±100V input
Input impedance: 1MΩ or >100MΩ, programmable
Common mode range:
DT500 and *DT600*: ±3.5V
DT505 and *DT605*: ±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, 250µA 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	2.5˚C	-20 to +60˚C
Accuracy	±1.0˚C	±1.5˚C

RTDs

Types: Pt, Ni, Cu
Resistance range: 10Ω to 2kΩ
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: <7kΩ,
<20kΩ with parallel resistor

Bridge Sensors

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

4-20mA Current Loops

Shunt value: 100Ω 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 5kΩ 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

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 (350µA from battery)
Typical low power operation: 20mW

Internal Main Battery

Chemistry: lead acid gel cell
Voltage (capacity): 6V (1.2AHr)
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
Resource CD which includes standard software
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.

dataTaker®

Your local distributor

CE

Warranty: Equipment manufactured by Datataker is warranted against faulty materials or workmanship for three years. For repairs carried out under warranty, no charge is made for labour, materials or return carriage. All non Datataker manufactured products are covered by original manufacturer's warranty.

Quality Statement: Datataker operates a Quality Management System complying with IS09001:2000. It is Datataker's policy to supply customers with products which are fit for their intended purpose, safe in use, perform reliably to published specification and are backed by a fast and efficient customer support service.

Manufactured and designed in Australia.

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