DT80 Series 3 Data Logger

Intelligent Data Logging Products

Applications include:

- Research & Development
- Agricultural Research
- Weather Stations
- Total Energy Monitoring
- Environmental Monitoring
- Temperature Profiling
- Thermistor Arrays
- Aquaculture
- Structural Monitoring
- Strain Gauges
- Process Monitoring
- Fault Identification
- Machine Down Time
- Pressure
- Load Cells
- Vehicle Testing
- GPS
- CANgate (optional)
- CAN bus
- J1939
- OBDII

The Smarter Solution

The dataTaker DT80 smart data logger provides an extensive array of features that allow it to be used across a wide variety of applications. The DT80 is a robust, stand alone, low power data logger featuring USB memory stick support, 18 bit resolution, extensive communications capabilities and built-in display. The dataTaker DT80’s Dual Channel concept allows up to 10 isolated or 15 common referenced analog inputs to be used in many combinations. With support for multiple SDI-12 sensor networks, Modbus for SCADA systems, FTP and Web interface, 12V regulated output to power sensors, the DT80 is a totally self contained solution.

Versatile Measurement

Connect an array of sensors through the versatile Analog and digital channels, high-speed counter inputs, phase encoder inputs, programmable serial sensor channels and the optional CANgate interface available for CAN bus applications. Temperature, voltage, current, 4-20mA loops, resistance, bridges, strain gauges, frequency, digital, serial and calculated measurements can all be scaled, logged and returned in engineering units or within statistical reporting. Set up sampling, logging, alarm and control tasks to suit your own requirements while interfaces for smart sensors, GPS and other intelligent devices expand the DT80 flexibility.

Superior Data Storage & Communications

With the standard unit able to store up to 10 million data points (expandable) you can log as much or as little as you need. Overwrite or stop logging once allocated memory is full, archive data on alarm event, copy to USB memory or transfer via FTP, the choice is yours. Communications features include RS232, USB and Ethernet, connect to the DT80 locally, remotely through a modem or over the Internet. The web interface allows users to configure the DT80, access logged data and see current measurements as mimics or in a list using a web browser. FTP provides data to your office over the internet or mobile phone network, without the need for polling or specific host software.

Dual Channel Isolation Technology

- 2 Serial ‘Smart Sensor’ ports
- FTP for automatic data transfer
- Up to 15 Analog (± 30V) sensor inputs
- Expandable to 300 analog inputs
- Modbus for SCADA connection
- SDI-12 (multiple networks)
- USB memory for easy data and program transfer

Warranty:
All dataTaker Data Loggers are 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 distributor.

Quality Statement:
dataTaker operates a Quality Management System complying with ISO9001:2008. It is dataTaker’s policy to supply customers with products which are fit for their intended purpose, safe in use, perform reliably in published specification and are backed by a fast and efficient customer support service.

Trademarks:
dataTaker is a registered trademark.

Specifications:
dataTaker reserves the right to change product specifications at any time without notice. Designed and Manufactured in Australia.

*Our ability to provide free software and support is dependent on applicable export control laws (including those of the United States) and the export policy from time to time of Thermo Fisher Scientific Inc.

www.datataker.com
dEX Logger Software

» Built-in software - no application to install
» Runs directly from your web browser
» Accessible by Ethernet or USB1 connection
» Intuitive graphical interface
» Easy-to-use configuration editor
» Access live and historical data
» View data as charts, mimics and tables

Easy configuration
The dEX configuration editor allows you to view, edit and save logger configurations in an easy-to-use Windows Explorer style user interface.

What is dEX?
dEX is an intuitive graphical interface that allows you to configure your data logger, view real-time data in mimics, trend charts or tables and retrieve your historical data for analysis.

dEX runs directly from your web browser and can be accessed either locally or remotely, anywhere that a TCP/IP connection is available including worldwide over the Internet. You can use any of the logger’s built-in communications ports to view dEX including Ethernet, USB1 and RS-232.

Real-time monitoring
dEX displays real-time sensor measurements, calculations and diagnostic information using mimics, tables and trend charts.

Data retrieval
dEX allows you to retrieve your data at the click of a mouse button. Just select either All, Range or New Data Only.
Browser-based solution
dEX comes pre-installed on every logger in the DT80 range. The software loads in your web browser so there is no need to install cumbersome applications on your computer. Being browser-based, dEX is cross-platform and will work on all major operating systems including Windows, Mac and Linux. To simplify it even further, dEX starts automatically in your default web browser when you connect to your logger using a USB cable.

Data that is compatible with your applications
Logged data is ready to import into common spreadsheet and data processing applications such as Excel for further analysis and reporting. Data can be saved to your computer in comma separated (.CSV) format or our proprietary binary (.DBD) format.

Command window
The command window provides a terminal interface which allows the built-in command language of the logger to be used. Macro buttons allow common commands to be sent on a button press.

Configuration editor
The configuration editor allows you to view, edit and save logger configurations in an easy-to-use Windows Explorer style user interface. Tree view of configuration allows definition of measurement schedules and measurements.

Wiring diagrams show available wiring configurations for each sensor type. Configuration can be stored and retrieved on either the logger or a local computer.

| Channel list |

Displays name, value, units, alarm state, time stamp and logging state for each measurement.

<table>
<thead>
<tr>
<th>Run</th>
<th>Name</th>
<th>Value</th>
<th>Units</th>
<th>Alarm</th>
<th>Time stamp</th>
<th>Log</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1hr_Humidity</td>
<td>51</td>
<td>%RH</td>
<td></td>
<td>2010-02-02, 12:00:00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1hr_Mean Wind</td>
<td>0</td>
<td>m/s</td>
<td></td>
<td>2010-02-02, 12:00:00</td>
<td></td>
</tr>
<tr>
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<td>0</td>
<td>m/s</td>
<td></td>
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</tr>
<tr>
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<td>1hr_Pressure</td>
<td>1006</td>
<td>hPa</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>1hr_Temperature</td>
<td>23.6</td>
<td>Deg C</td>
<td></td>
<td>2010-02-02, 12:00:00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1min_Humidity</td>
<td>48</td>
<td>%RH</td>
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<tr>
<td>7</td>
<td>1min_Mean Wind</td>
<td>8</td>
<td>m/s</td>
<td></td>
<td>2010-02-02, 12:32:00</td>
<td></td>
</tr>
</tbody>
</table>

Customisation of the application
The menu options, mimics panels and mimics can be added or removed to suit novice or advanced users. The color and brand name images within dEX can be customised to match corporate requirements or for personal preference.

Mimics are organised into panels which can be modified to highlight custom alarm conditions or data grouping. Mimics include dials, bar graphs, thermometers etc. Real-time chart recorder mimic allows you to view trends and historical data over a custom time/date range. Up to 16 mimics can be displayed on up to 5 mimic pages (default is 1 page of 6 mimics).

Minimum system requirements
- Web Browser (tested with): Internet Explorer V7 and above, Firefox, Safari & Google Chrome
- TCP/IP connection
- Adobe flash player 10 or higher
- Screen resolution of 1024 x 768

Chart recorder mimic
Real-time trending for sensors, calculations or other data. Supports up to 5 traces per chart and up to 2 Y-axes. Backfills with historical data stored in logger.

The difference is dEX!
Configurations: ¼, ½ & full bridge

Strain Gauge and Bridge Sensors

Types supported: LM34 - 60, AD590, 592, TMPxx, Monolithic Temperature

Resistance range: <10kΩ*

Types: YSI 400xx Series, other types*

Thermistors


Thermocouples

Linearising facilities including polynomials, expressions

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

Analog Sensors

Switchable 5V regulated supply for powering analog

powering sensors & accessories (max 150mA)

General Purpose: Switchable 12V regulated supply for

supply

Analog Channels

Measurement at...   5°C to 40°C   – 45°C to 70°C

±0.3 mA   2.5 nA   10 kHz   0.0002 %

±30 Vdc   250 μV   100 Hz   0.0002 %

±3 Vdc   25 μV   10,000 Ω   150.00 mΩ

±30 mVdc   0.25 μV   100 Ω   1.5 mΩ

DC Current   0.15%   0.45%

±30 mA

25 nA

250 nA

Protocols: Modbus (Master & Slave), Serial Sensor

Software (XON/XOFF), None

Flow Control: Hardware (RTS/CTS),

modbus (Master & Slave), Serial Sensor

Handshake lines: DCD, DSR, DTR, RTS, CTS

Software (XON/XOFF), None

Host RS232 Port

Protocol: ASCII command

Interface: USB 1.1 (virtual COM port)

USB Port

Protocol: TCP/IP , Modbus (Master & Slave)

Communication Interfaces

System

Display and Keypad

Type: LCD, 2 line by 16 characters, backlight.

Display Functions: channel data, alarms, system status.

Keypad: 6 keys for scrolling and function execution.

Status LED’s: 4 for sample, disk, attention and power.

Firmware Upgrade

Via: RS232, Ethernet, USB or USB disk.

Real Time Clock

Normal resolution: 200ps

Accuracy: ±0.1 min/year (0°C to 40°C),

±0.6 min/year (-40°C to 70°C)

Power Supply

External voltage range: 10 to 30Vdc

Internal battery: 6Vdc, 1.2Ah lead acid

Peak Power: 12W (12Vdc 1A)

Average power Consumption

Using 12Vdc external power source

 Sampling Speed   Average Power

1 second   1350 mW

5 second   500 mW

30 second   135 mW

5 minutes   70 mW

1 hour   60 mW

Typical Operating Time

From internal 6Vdc, 1.2Ah battery

Sampling Speed   Operating Time

1 second   6.5 hours

5 second   1 day

1 minute   10 days

1 hour   3.5 months

Physical and Environment

Construction: Powder coated zinc and
anodized aluminum.

Dimensions: 180 x 137 x 68mm

Weight: 1.5kg (4kg shipping)

Temperature range: –45°C to 70°C

Humidity: 85% RH, non-condensing

*reduced battery life and LCD operation outside range –15°C to 50°C

Accessories Included

Resource CD: includes software, video training

and user manual.

Comms cable: USB cable

Line adaptor: 110/240Vac to 15Vdc, 800mA

For full technical specifications download the

user’s manual from our website www.datataker.com.

Your local distributor

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