Versatile Measurement
Connect an array of sensors through the versatile analog and digital channels, high-speed counter inputs, phase encoder inputs and programmable serial sensor channels.
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 DT85W flexibility.

Local Wireless Access
With wireless access, no need to have physical connection to the logger. Send the program, view and download the data or even modify your setting on nearby PC or Tablet wirelessly either as a Master (Access Point mode) or Slave (Client).

Automatic Data Delivery
On Client mode dataTaker can have access to local router and if the router has internet access it can utilise the DT85W’s automatic data delivery features to schedule your data to be automatically emailed to your inbox every day, week, month or other time interval.
More sophisticated systems can make use of the automatic data delivery features to send logged data to an FTP server.

Easy To Configure
The DT85W is configured directly in your web browser using dataTaker’s dEX graphical interface. dEX takes you through the configuration of your logger, showing you wiring diagrams and allowing you to decide — in as much or as little detail — how you want to the system to work, suiting both novice or advanced users.
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, USB and RS-232.

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.

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.

- 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

1 USB port equipped models 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, it 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.

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 RecordeMimic

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.

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2 DEX operates on all DT80 Series 2, Series 3 and Series 4 except Series 1.
Analog Channels
16 analog input channels (expandable to 320*)
Each channel is independent and supports: one isolated 3-wire or 4-wire input, or two isolated 2-wire inputs, or one common referenced 2-wire inputs.
The following maximums apply:
- 2-wire with common reference terminal: 48 (expandable to 960*)
- 2-wire isolated: 32 (expandable to 640*)
- 3- and 4-wire isolated: 16 (expandable to 320*)
- Expansion requires optional OEM20

Fundamental Input Ranges
The fundamental inputs that the DT85W can measure are voltage, current, resistance and frequency. All other measurements are derived from these.
Sampling
Integrates over 50/60Hz line period for accuracy and noise rejection
Maximum sample speed: 40Hz
Effective resolution: 18 bits
Linearity: ±0.01%
Common mode rejection: >90dB
Line series mode rejection: >35dB
Inputs
Inter-Channel Isolation: 100V (relay switching)
Analog Section Isolation: 100V (opto-isolated)
Input impedance: 160KΩ, >100MΩ
Common mode range: ±3.5V or ±55V (attenuator on/off)
Sensor Excitation (Supply)
Analog channels:
- selectable 2mA, 213μA or 2.5mA precision current source
- 4.5V voltage source
- switched external supply
General Purpose: Switchable 12V/5V regulated supply for powering sensors and accessories (max 300mA).
Analog Output
Isolated programmable 16-bit DAC: voltage 0-10V or current 0-24mA
Analog Sensors
Supports a wide range of sensors including, but not limited to, those listed below: A wide range of sensor scaling and linearising facilities including polarimetry, expressions and functions.
Thermocouples
RTDs
Materials supported: Pt, Ni, Cu
Resistance range: 10Ω to 1MΩ
Thermistors
Types: YSI 400xx Series, other types*
Resistance range: up to 1MΩ
* Other thermistor types are supported by thermistor scaling and calculated channels.
Monolithic Temperature Sensors
Types supported: LM34 - 60, AD590, 592, TMPxx, LM135, 235, 335
Strain Gauge and Bridge Sensors
Configurations: ½, ¼, & full bridge
Excitation: voltage or current
4-20mA Current Loop
Internal 1000 Ohm or external shunt resistor
Digital Channels
Digital Input/Outputs
8 bi-directional channels:
Input Type: 8 logic level (max ±30V)
Output Type: 4 with open drain, 4 with 5mA sinking, 4 with 25mA sourcing
Relay Outputs
1 latching relay, contacts (max: 30Vdc; 1A)
Counter Channels
Low Speed Counters
8 counters shared with digital inputs.
Low speed counters do not function in sleep mode.
Size: 32 bit Max Count rate: 10 Hz
Dedicated Counter Inputs
7 high speed or 3 phase encoder (quadrature) inputs
Size: 32 bit Max Count rate: 100 kHz
Input type:
- 5 logic level inputs (max ±30V),
- 2 sensitive inputs (100mV) for magnetic pickups (max ±100 mV)
Serial Channels
SDI-12
4 SDI-12 inputs, shared with digital channels.
Each input can support multiple SDI-12 sensors.
Generic Serial Sensor
Flexible options to allow data to be logged from a wide range of smart sensors and data streams.
Available ports: Serial Sensor Port (RS232, RS422, RS485)
Host RS232 Port*
Baud rate: 300 to 115,200
* if used as a Serial Sensor channel then the Host Port is not available for other communications.
Calculated Channels
Combine values from analog, digital and serial sensors using expressions involving variables and functions.
Functions: An extensive range of Arithmetic, Trigonometric, Relational, Logical and Statistical functions are available.
Alarms
Condition: high, low, within range and outside range
Delay: optional time period for alarm response
Actions: set digital outputs, transmit message, execute any datataker command.
Scheduling of Data Acquisition
Number of schedules: 11
Schedule rates: 10ms to days
Data Storage
Internal Store
Capacity: 128MB (approx 10,000,000 data points)
Larger storage available refer to technical support.
Removable USB store device (optional accessory)
Types: compatible with USB 1.1 or USB 2.0 drives, e.g. Flash drive.
Capacity: approx. 90,000 data points per megabyte.
Communication Interfaces
Ethernet Port
Interface: 10BaseT (10Mbps)
Protocol: TCP/IP, Modbus (Master & Slave)
USB Port
Interface: USB 1.1 (virtual COM port)
Protocol: ASCII command
Host RS232 Port
Speed: 300 to 115,200 baud (57,600 default)
Flow Control: Hardware (RTS/CTS), Software (XON/XOFF), None
Handshake lines: DCD, DSR, DTR, RTS, CTS
Modem support: auto-answer and dial out
Protocols: ASCII Command, TCP/IP (PPP), Modbus (Master & Slave), Serial Sensor
Serial Sensor Port
Interface: RS232, RS422, RS485
Speed: 300 to 57,600 baud
Flow Control: Hardware (RTS/CTS), Software (XON/XOFF), None
Protocols: Modbus (Master & Slave), Serial Sensor
Network (TCP/IP) Services
Uses Ethernet and/or Host RS232 (PPP) ports and/or integrated WiFi Command Interface
Access the ASCII command interface of the DT85W via TCP/IP
Web Server
Access current data and status from any web browser.
Custom pages can be defined.
Download data in CSV format. Define mimic displays.
Modbus Server (slave)
Access current data and status from any Modbus client (e.g. SCADA system)
Modbus Client (master)
Read/write data from modbus sensors and devices including PLC’s, datataker loggers, modbus displays etc.
FTP Server
Access logged data from any FTP client or web browser
FTP Client
Automatically upload logged data direct to an FTP server
System
Display and Keypad
Type: LCD, 2 line by 16 characters, backlight.
Displays: function data, alarms, system status.
Keypad: 6 keys for scrolling and function execution.
Status LED: 4 for sample, disk, attention and power.
Firmware Upgrade
Via: RS232, Ethernet, USB or USB disk.
Real Time Clock
Normal resolution: ±0.001 sec
Accuracy: ±1 min/year (0°C to 40°C), ±4 min/year (-40°C to 70°C)
Power Supply
External voltage range: 10 to 30Vdc
Internal battery: 6Vdc: 4Ah lead acid
Peak Power: 12V (12Vdc: 1Ah)
Average power Consumption
Using 12Vdc: external power source
Sampling Speed: 10 seconds: 1300 mW
5 seconds: 500 mW
1 second: 250 mW
5 minutes: 70 mW
1 minute: 50 mW
15 minutes: 30 mW
Typical Operating Time
From internal 60Wdc, 4Ah battery
Sampling Speed: 10 seconds: 1 hour
5 seconds: 3 hours
1 second: 1 month
1 second: 8.5 months
Integrated WiFi
Mode: Client or Access Point
Security: OPEN, PSK, WEP, WPA, WPA2
Consumption: 150 mW (AP modes, 726 mW (full throughput)
Physical and Environment
Construction: Powder coated zinc and anodized aluminum.
Dimensions: 300 x 157 x 65mm
Weight: 2.3kg (5kg shipping)
Temperature range: 0°C to 70°C
Humidity: 85% RH, non-condensing
*reduced battery life and LED operation outside range –15°C to 50°C
Accessories Included
Resource CD: includes software, video training and user manual.
Comm 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