



DataTaker DT80 Series4 Data Loggers  
Measurement and Control Instrumentation

# Stand alone intelligent data loggers

Robust, universal, intelligent data logger for supporting a wide range of applications

***dataTaker***

# Overview

The DataTaker DT80 series are intelligent data loggers capable of connecting to most arrays of sensors through versatile and analog and digital channels, high-speed counter inputs, phase encoder inputs and programmable serial sensor channels. It features feedback control functions, alarm triggers, automatic data transfer and is compatible with various communication devices making it perfect for stand-alone and remote applications.

The rugged design and wide operating temperature range of the DT80 series provides reliable operations and the dEX software assists with logger configuration, viewing real-time data in charts, and retrieval of historical data for analysis.



## Data Logging

Data readout via USB or remote data transmission via mobile network/ Wi-Fi/ Ethernet.



## Connect Any Sensor

**Analog:** Voltage, Current, RTD, Thermocouple, Strain Gauge and Vibrating wire  
**Digital:** SDI12, MODBUS, pulses



## Notifications

Automatic alarms via SMS



## Technical Support

Supporting you all the way from choosing a logger to your solution



## Cloud Enabled

Access your data anywhere, anytime via DataTaker Live



## Warranty

3 Years of extended warranty on all the loggers



**Environmental** – Monitor surface and ground water conditions, changes in atmospheric conditions to forecast weather and the presence of air pollutants.



**Industrial** – Monitor and control process parameters from temperature profiling to design validation.



**Structural & Geotechnical** – Monitor and control process parameters from design validation to dam wall monitoring.

# DT80 DataTaker

## Key Benefits

- **Ease of deployment:** On-site connectivity via USB makes it easy to configure and test the deployed monitoring module
- **Universal:** Connects to any sensor. This universal logger can integrate with any type of sensor. Temperature, voltage, current, 4-20 mA 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
- **Robust:** With its solid aluminium case this logger is suitable for harsh environments
- **Cost effective:** Low maintenance product. Minimal attention needed after setup



## DT80W

An integrated Wi-Fi module features a wireless connection to the logger, for connecting the logger to an existing Wi-Fi network. Programming and controlling can be done wirelessly.

## DT80G

An integrated vibrating wire module feature vibrating wire channels which is suitable for land slide prevention, dam wall monitoring, mining exploration, tunnel excavation, concrete curing or any geotechnical application.

## DT80M

The DT80M has an integrated modem that provides access to the 3G network of the logger making it perfect for remote applications. DT80M's automatic data delivery features will schedule your data to be automatically emailed to your inbox every day, week, month or any other time interval as set.

## DT80GW

DT80GW has both DT80G and DT80W features combined, which will allow geotechnical applications to use wireless connection on Wi-Fi network.

## General Specifications

- **Analog input :** Isolated programmable, 15 single-ended, 10 differentials, 5 (3-wire/4-wire)
- **Effective resolution :** 18-bit
- **Analog sensors :** Voltage, Current, Thermocouples, RTD's, Thermistors, Monolithic temp. Sensors, Strain Gauges, Bridge Sensors
- **Analog output :** Isolated programmable 16-bit DAC, 0-10 V or 0-20 mA
- **Maximum sampling :** 40 Hz
- **Excitation output :** 12 V/5 V selectable max. 150 mA
- **Switching :** Latching Relay at max. 30 VDC, 1 A
- **Digital sensors :** Digital I/O, Counters (32 bit, maximum 100 kHz)
- **Communication ports :** RJ45, USB, RS232 (Host), (RS232/RS485/RS422)
- **Communication protocol :** MODBUS RTU (Master/Slave), SDI12, MODBUS TCP/ IP, ASCII
- **Internet protocol :** HTTP, FTP, SMTP
- **Power requirement :** 10...30 VDC
- **RTC accuracy :** 1 min/year (0...40°C), 4 min/year (-40...+70°C)

- **Operating temperature :** -40...+70°C, 85% RH, non-condensing

- **Storage :** 128 MB CF (upgradeable to 4GB), 8GB USB flash drive (optional)

### Standard logger (DT80)

- **Internal battery :** 6V @ 1.2 Ah

### Geo logger (DT80G, DT80GW)

- **Internal battery :** 6V @ 1.2 Ah
- **Freq. range :** 500 to 5 kHz
- **Coil resistance :** 50 to 200 Ω
- **Stimulation :** Single pulse pack (36 V @ 200 us)

### Modem logger (DT80M)

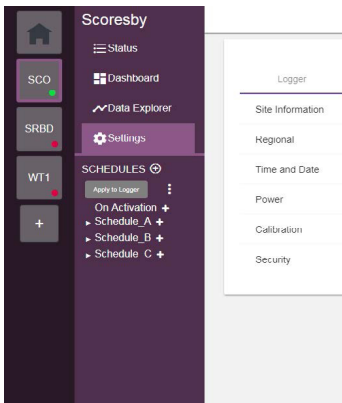
- **SIM interface :** SIM Socket (1.8 V/3 V)
- **Data transfer :** Email or FTP

### Wi-Fi logger (DT80W, DT80GW)

- **Mode :** Access point or Client
- **Security :** OPEN, PSK\_WEP, PSK\_WPA, PSK\_WPA2

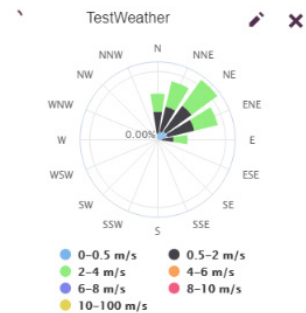
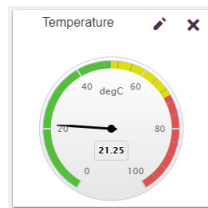
# dEX 2.0 (Logger Software)

A software with intuitive graphical interface for programming DataTaker that allows you to configure, view real-time data in widgets or charts and retrieve your historical data for analysis.



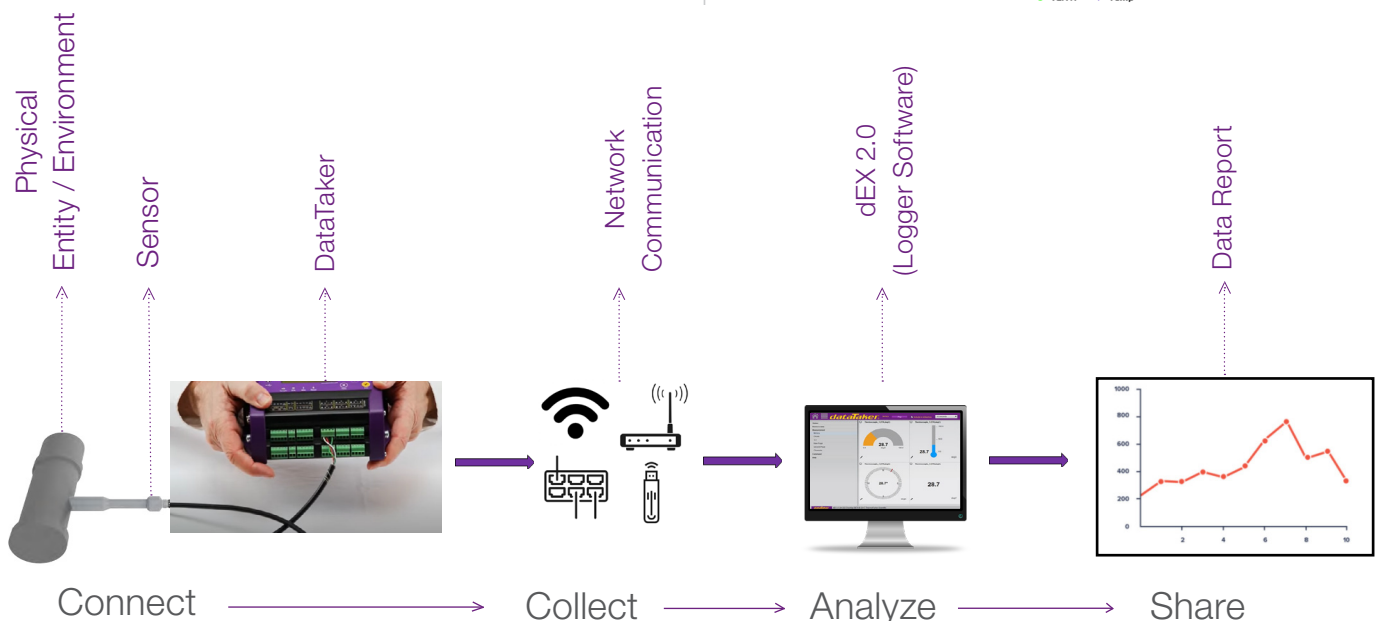
After installation you can run dEX 2.0 and establish connection with your logger through TCP/IP connection either using Ethernet or USB ports. The software is available cross platform and will work on major operating system such as Windows, iOS and Linux.

Utilising Angular JS which allows one page application for simplicity, this dEX 2.0 draws a new approach on programming and viewing data like never been before.



## Features:

- Compatible to previous dEX program
- Improved UI design with single centralise page which is easier to move between functions.
- Offline configuration (program template creation)
- Improved programming approach on schedule / channel creation
- Re-defining alarm declaration
- Re-defining MODBUS and SDI12 channels creation
- Home functions that target multiple loggers



# Technical Specifications

**Table 1 Technical specifications**

Comparison Table for Dataloggers					
Feature	DT80	DT80W	DT80M	DT80G	DT80GW
Analog input channels	5	5	5	5	5
Analog output channels	✓	✓	✓	✓	✓
Vibrating wire strain gauge support	–	–	–	✓	✓
CEM20 modules supported	5	5	5	5	5
Digital I/O channels (open-drain outputs)	4	4	4	4	4
Digital I/O channels (logic outputs / SDI-12)	4	4	4	4	4
Relay output-1 latching relay	✓	✓	✓	✓	✓
High speed counter inputs	4	4	4	4	4
Phase encoder inputs	2	2	2	2	2
RS232/422/485 communications port	✓	✓	✓	✓	✓
RS232 host port	✓	✓	–	✓	✓
USB communications port	✓	✓	✓	✓	✓
Ethernet port	✓	✓	✓	✓	✓
USB memory device port	✓	✓	✓	✓	✓
Intergrated Wi-Fi	–	✓	–	–	✓
Switched isolated 5/12 V power output	✓	✓	✓	✓	✓
Battery charger for internal/external battery	✓	✓	–	✓	✓
Internal battery (capacity in Ah)	1.2	1.2	–	–	–
Modbus master function	✓	✓	✓	✓	✓
Modbus slave (TCP/IP)	✓	✓	✓	✓	✓
LCD display & keypad	✓	✓	✓	✓	✓
Status LEDs	4	4	4	4	4
Integrated modem	–	–	✓	–	–

**Quality Statement:** DataTaker operates a quality management system complying with ISO 9001:2008. 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.

**Trademarks:** DataTaker is a registered trademark.

**Specifications:** DataTaker reserves the right to change product specifications at any time without notice.



# Optional Accessories

Increasing the channel capacity of the DataTaker DT80 range is made very easy by adding DataTaker channel expansion modules (CEM20). Each CEM20 adds 20 universal data logging terminals to the DataTaker data logger.

DT80 series can have up to 5 CEM20 which expands the number of channel to 300 single-ended inputs, 200 differential inputs or 100 3 (4)-wire inputs.

## Specifications - CEM20

Analog inputs	<ul style="list-style-type: none"><li>• 60 single-ended</li><li>• 40 differential</li><li>• 20 3-wire/4-wire</li></ul>
Max. sampling	<ul style="list-style-type: none"><li>• 20 Hz</li></ul>
Addressing	<ul style="list-style-type: none"><li>• 4-way DIP switches</li></ul>



DataTaker DT80 Series 4 Range		
Dataloggers	Channels	Product Code
DataTaker DT80 Series 4	5-15 Analog, 12 digital channels	DT4DT80, *DT4DT80-AL
DataTaker DT80W Series 4	5-15 Analog, 12 digital channels, Wi-Fi built-in	DT4DT80W
DataTaker DT80M Series 4	5-15 Analog, 12 digital channels, internal modem	DT4DT80M
DataTaker DT80G Series 4	5-15 Analog (+ vibrating wire), 12 digital channels	DT4DT80G, *DT4DT80G-AL
DataTaker DT80GW Series 4	5-15 Analog (+ vibrating wire), 12 digital channels, Wi-Fi built-in	DT4DT80GW
DataTaker Channel Expansion Module		
CEM20 channel expansion module for series 4 DataTaker	20-60 Analog channels	DT4CEM20

**Accessories included in data logger:** DataTaker resource thump drive, AC adaptor, screwdriver & USB cable

**DataTaker channel expansion module includes:** Analog and control cables for connection to the DataTaker data logger.

\*DT4DT80-AL, \*DT4DT80G-AL products are excluded from the above stated standard accessories.

### In Australia:

For customer service, call 1300-735-292  
To fax an order, use 1800-067-639  
To email an order, [ordersau@thermofisher.com](mailto:ordersau@thermofisher.com)

### In New Zealand:

For customer service, call 0800-933-966  
To fax an order, use 0800-329-246  
To email an order, [ordersnz@thermofisher.com](mailto:ordersnz@thermofisher.com)

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