Delta-T Devices

Soil Moisture, Data Logging, **Meteorology and Plant Science**

Product Summary

Cloud-based data sharing 🛜



DeltaLINK-Cloud is a sophisticated and secure online data viewing and management platform for Delta-T data loggers. View and share your sensor data with ease – anywhere, anytime.

- Remote data monitoring on mobile devices
- Animated live data dashboard graphics
- Easy data sharing for collaborative projects
- Powerful charting and reporting features
- Smart SIM card provided for easy set up
- Secure and encrypted
- Remote management of multiple sites
- Multi-language (En, Fr, De, Es, 中文)

Visit the DeltaLINK-Cloud Information page at:



www.delta-t.co.uk/deltalink-cloud/

DeltaLINK-Cloud www.deltalink-cloud.com



Delta-T has over 40 years experience in the design and

manufacture of research equipment - we can provide expert help with your measurement and monitoring challenges - whatever your specialisation.

soil and crop science

- agro-meteorology
- environmental research
- global climate change



Data Logging and Environmental Sensors

Data Logger & Controller - GP2

- Powerful and rugged 12 channel data logger
- Up to 6 relay outputs
- Free use of DeltaLINK-Cloud data sharing service
- Huge additional input capacity for SDI-12 sensors

The GP2 is an advanced data logger that is easy to use, versatile, rugged and reliable. It is compatible with most sensor types and is ideal for demanding field work. The GP2 has 12 differential channels, powerful controller functionality and has SDI-12



capability. Sophisticated programs can be easily created via a simple scripting editor.

Data Logger - GP1

- High accuracy 7 channel data logger
- Free use of DeltaLINK-Cloud data sharing service

The GP1 is ideal for logging Delta-T soil moisture sensors: up to 2 ThetaProbes

or 4 SM150Ts. The GP1 can also log readings from the WET Sensor, and is compatible with most other analoa environmental sensors. The GP1 provides versatile



Soil Moisture Logger - DL6

- Ideal for Profile Probes and ThetaProbes
- High accuracy 8 channel data logger
- Free use of DeltaLINK-Cloud data sharing service

The DL6 is optimised for use with Delta-T soil moisture sensors.

It can log Profile Probes or single point soil moisture sensors (ML3, SM150T). The DL6 can also accept a rainaauae and soil temperature



Weather Station - WS-GP2

- Ideal for remote and exposed sites
- Calculates full Penman-Monteith ET equation
- Free use of DeltaLINK-Cloud data sharing service

The advanced WS-GP2 Weather Station is based on the powerful GP2 Data Logger. It is an ideal solution for research and environmental monitorina applications.



The GP2 Data

Logger has the flexibility to handle almost any environmental sensor. Users can select the optimal combination of sensors, logger, power and communications. The WS-GP2 (DeltaLINK Software 3.7 and later) enables the full ASCE/FAO-56 Penman-Monteith equation for calculating reference evapotranspiration.

Weather Station - WS-GP1

- Highly portable
- Pre-wired for rapid set-up
- Free use of DeltaLINK-Cloud data sharing service

The WS-GP1 is an affordable weather station supplied as a ready-to-use package. The high grade sensors make the WS-GP1 a good choice for research, agricultural and environmental applications. The system includes sensors to measure rain, solar radiation, wind speed, wind direction, relative humidity and air temperature, all



mounted on a 2m tripod mast. All Delta-T weather stations can be supplied with a GPRS modem for remote communications. For details of the DeltaLINK-Cloud data sharing service please see below.

DeltaLINK-Cloud w.deltalink-cloud.c

probe input.

DeltaLINK-Cloud (info at: www.delta-t.co.uk/deltalink-cloud/) is a powerful online platform for use with Delta-T data loggers and weather stations. It offers secure cloud-based connectivity, data management, and automatic data retrieval. Users can easily store, view, and share their data online.



DeltaLINK-Cloud features animated dashboards and customisable widgets. These enable users to remotely view critical live data in a highly visual and instantly understandable format on mobile devices.



Environmental and Solar Radiation Sensors

- agronomy
- meteorology
- hydrology
- irrigation
- horticulture
- alobal climate change plant water relations
- evapotranspiration
- phyto-remediation
- water use efficiency

Solar Radiation

- alobal and diffuse
- DNI
- sunshine duration
- UVA&B net radiation
- albedo
- crop radiation interception

Atmosphere

- temperature
- relative humidity
- barometric pressure
- wind strength, direction precipitation & rainfall
- evaporation

Soil

- temperature
- soil moisture
- soil water profile
- matric potential

Temperature – specialist

- leaf
- precision & fast response

control relay options.

Profile Probe - PR2

- Monitor soil moisture profiles to 1 m
- Portable, simple and accurate
- Digital SDI-12 version available

No other system enables you to monitor your soil water status with such ease and flexibility. Install an access tube into the soil, insert the PR2 and press the HH2 read button to display an instantaneous reading. Or, alternatively, connect the PR2 to a data logger (GP2 or DL6) and leave the system to record moisture changes over time.

The PR2 is built around patented sensing technology which provides good performance in most soil types. The PR2/4 model measures at 4 depths down to 40 cm or the PR2/6 model measures at 6 depths down to 100 cm.

A **digital SDI-12 version** of the PR2 is available as an alternative to the standard analogue version.

ThetaProbe - ML3

± 1% soil moisture accuracy
Temperature measurement

The ThetaProbe is known worldwide for its accuracy, reliability and ease of use.

For continuous monitoring (including temperature measurement) the ML3 can be left buried in the ground, connected to a data logger such as the Delta-T GP2 or GP1.

The probe can also be used with the HH2 Meter to make rapid spot readings of soil moisture.

Soil Moisture and Temperature Sensor – SM150T

Soil moisture and temperature Robust and buriable

The SM150T measures soil moisture and temperature with research-grade accuracy. It offers precision, and reliability at a great price. The SM150T has exceptional salinity & temperature stability - and can withstand long-term burial (IP68). It provides moisture accuracy of ± 3% (after soil specific calibration) and temperature accuracy of ± 0.5 °C.

For portable use the SM150T is available in the form of the SM150 Kit, complete with readout meter and carry case.

WET Sensor - WET-2

Measures pore water conductivity in situ Precision horticulture and soil science

The WET Sensor measures three vital properties of substrates: water content, EC and temperature. Readout and data storage are handled by the HH2 Moisture Meter.

Alternatively, the WET Sensor can be connected to a GP2 or GP1 data logger. The compact sensor can be inserted directly into the growing medium with minimal disturbance to roots or shoots.

The WET Sensor provides essential data for fertigation control, the management of container-grown shrubs, or soil salinity studies.



Moisture Meter - HH2

Readout and data storage for Delta-T soil moisture sensors

The HH2 is a versatile readout unit for use with Profile Probes, ThetaProbes, SM150T soil moisture sensors and the multiparameter WET Sensor.

Readings are displayed on the LCD and can be stored for later download to a PC.



Equitensiometer - EQ3

Maintenance-free and wide range, with built-in temperature sensor

Probe





Plant Science and Canopy Analysis

Porometer - AP4

- Direct readout of conductance or resistance
- Simple and rapid calibration in the field

The AP4 measures the stomatal conductance of plant leaves quickly and easily. It is a highly practical instrument for field work, being based on the cycling diffusion principle, which makes it possible to have a lightweight sensor head (130g) and to run quick calibration checks in the field.



WinDIAS - WD3



Automated measurement of diseased, healthy and pest-damaged leaf areas Conveyor option for high speed leaf processing

WinDIAS 3 provides high speed measurement and analysis of leaf area and leaf features. The system comprises USB video camera, a light box and overhead LED lighting, and enables accurate measurement of total leaf area and percentage diseased/healthy leaf area, as well as perimeter, length, width and object (e.g. seeds) count. Scanner based systems are also available.



New for 2019: LED lighting - improved seed counting - Enhanced Area of Interest drawing tool

Non-destructive estimates of Leaf Area Index (LAI) in crop and forest

Crop management Ground truthing of satellite LAI data Climate change and carbon balance Biomass data

SunScan System - SS1

- Field instrument for PAR light measurement in canopies
- **Computes instant LAI readout**

SunScan is optimised for low regular canopies such as most agricultural crops. The 1 metre probe permits rapid spatial averaging of large areas, and PAR mapping for non-uniform crops such as vineyards and orchards. With the unique BF5 reference PAR sensor, SunScan is usable in most weather conditions.

HemiView System - HMV1

- Hemispherical image analyis system with digital camera and fisheye lens
- Ideal for tall canopies e.g. trees and forest

The powerful HemiView Image analysis software estimates LAI, gap fraction, solar tracks and 30 other site factors and parameters. A Self Levelling Mount assists with exact horizontal camera orientation.



Sunshine Sensor - BF5



Representative:

No moving parts, no shade rings

The BF5 provides outputs of total and diffuse radiation, and sunshine duration. No routine daily adjustments are required. Outputs can be logged as energy (W.m⁻²), PAR (µmol.m⁻².s⁻¹) or illuminance (klux).

The BF5 is a more affordable alternative to the high performance SPN1.

130 Low Road, Burwell

www.delta-t.co.uk

T:	+44 (0)1638 742922
F:	+44 (0)1638 743155
E:	sales@delta-t.co.uk

Co-operatively owned and managed

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Maranata-Madrid S.L.

Fresno 1, 28110 Algete – Madrid – Spain/Portugal Phone: +34 91-6292106 info@alphaomega-electronics.com www.alphaomega-electronics.com





Sunshine Pyranometer -SPN1

- Measures solar radiation and sunshine duration
- Global and diffuse irradiance in W.m⁻²
- **DNI** calculations
- Sunshine status

The innovative SPN1 Sunshine Pyranometer measures global (total) and diffuse radiation, and sunshine state – all in one instrument. It is easy to use, having no moving parts. Output from an SPN1 enables calculation of DNI (Direct-Normal Irradiance).

The SPN1 is a meteorological class instrument and is an affordable alternative to traditional shade-ring pyranometers.

> Delta-T Devices Ltd. Cambridge, CB25 0EJ, UK