Soil Moisture Products

Irrigation, Horticulture and Agriculture

Research grade sensors and systems for growers

- Monitor soil moisture
- Improve yields and quality
- Demonstrate water-use efficiency

Precise measurement of growing conditions is key to effective irrigation. Delta-T provides soil/substrate sensors that accurately measure water content, temperature and pore water conductivity. The sensors can be used with a hand-held meter for instant spot readings. Alternatively they can be buried and connected to a control system, or to one of our reliable (cloud-linked) data logger controllers.
WS-GP Weather Stations
- Powerful, rugged weather stations
- WS-GP2 for advanced control applications
- WS-GP1 for compact, highly portable system

SM150 Kit
- Affordable, portable kit for easy soil moisture measurements
- Comprises SM150T Sensor, meter and carry case

SM150T
- Cost effective soil moisture and temperature sensor
- Stable and accurate (±3% VWC)
- Ideal for substrate monitoring

The SM150T is the perfect sensor for a wide range of applications in horticulture and agriculture. It can be used in both soils and substrates - and is buriable. The SM150T is a reliable and cost-effective solution for system integrators, who appreciate its ease of installation and simple interface (0 – 1 V DC output).

Connect: HH2, GP1, DL6, GP2

HH2 Moisture Meter
- Hand-held meter for instantaneous readings and data storage
- Intuitive range of set up options
- Easy one handed operation

The HH2 is a versatile readout unit for use with Delta-T soil moisture sensors (it does not provide temperature readout from ML3 or SM150T sensors).

Connect: ML3, SM150T, PR2, WET

WET Sensor
- Measures Water Content, Electrical conductivity and Temperature
- Temperature sensor in metal rods for near instantaneous measurement
- Rapid monitoring for consistent growing conditions

In just 5 seconds the WET Sensor checks 3 crucial variables that influence plant growth.

Connect: HH2, GP2, GP1

Moisture sensors and controllers for effective water management
**GP1 Data Logger**
- Low cost data logger with monitoring and control options
- 2 analogue channels, plus temperature and counter inputs

The GP1 is a compact, weatherproof data logger. It can be used to enhance time-based irrigation systems to include moisture control.

Connect: ML3, SM150T, WET

**GP2 Advanced Logger & Controller**
- Powerful and rugged field data logger
- 12 differential channels
- Simple connection to Profile Probes (x2)
- Free use of DeltaLINK-Cloud data sharing service
- Huge additional capacity for SDI-12 Sensors

The GP2 is an advanced SDI-12 enabled data logger that is easy to use, rugged and reliable. It is compatible and with most sensor types - and is ideal for demanding research and monitoring projects / irrigation control, and advanced control applications.

Connect: ML3, SM150T, PR2, WET

**DL6 Data Logger**
- Reliable data logger with monitoring and control options
- Simple connection to Profile Probe (x1)
- 6 analogue channels, plus temperature and counter inputs

The DL6 is optimised for use with Profile Probes, but its versatility enables it to store readings from other moisture sensors, a rain gauge, and/or temperature input.

Connect: ML3, SM150T, PR2

**ML3 ThetaProbe**
- Outstandingly accurate soil moisture sensor
- Built-in temperature sensor

The ThetaProbe is respected worldwide for its accuracy, reliability and ease of use. It is exceptionally tough and can be used in all soil types - and substrates, including sand, clay, peat and saline soils.

Connect: HH2, GP1, DL6, GP2

**PR2 Profile Probe**
- Portable, simple and accurate soil moisture profiles
- Dual purpose - installed and portable
- PR2/4 - 4 readings, down to 0.4 m
- PR2/6 - 6 readings, down to 1 m
- Digital SDI-12 version available

With the Profile Probe you can easily record soil moisture changes over time, then create a water balance or optimise irrigation scheduling. Readings are taken in robust GRP access tubes.

Connect: HH2, DL6, GP2

**ML3 and SM150T Installation**

The ML3 and SM150T Sensors can be buried at depth by augering or trenching.
**Water content sensors**

<table>
<thead>
<tr>
<th></th>
<th>ML3</th>
<th>SM150T</th>
<th>WET Sensor</th>
<th>PR2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement</strong></td>
<td>Soil water content</td>
<td>Soil water content</td>
<td>Soil water content, EC, Temperature</td>
<td>Soil water profile (4 or 6 depths)</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>± 1%</td>
<td>± 3%</td>
<td>± 3%</td>
<td>± 4%</td>
</tr>
<tr>
<td><strong>Moisture range</strong></td>
<td>0 to 50%</td>
<td>0 to 70%</td>
<td>0 to 100%</td>
<td>0 to 40%</td>
</tr>
<tr>
<td><strong>Temperature range</strong></td>
<td>± 0.5°C, 0 to +40°C</td>
<td>± 0.5°C, 0 to +40°C</td>
<td>± 0.5°C, 0 to +40°C</td>
<td>± 0.75°C, -20 to +60°C</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>0-1 V</td>
<td>0-1 V</td>
<td>Serial TTL Data</td>
<td>0-1 V or SDI-12</td>
</tr>
<tr>
<td><strong>Typical applications</strong></td>
<td>Soil moisture research and temperature monitoring</td>
<td>Soil moisture and temperature monitoring and irrigation control</td>
<td>Portable monitoring of soil moisture, temperature and EC for protected crops</td>
<td>Monitoring soil moisture profiles for field crops to 1 m</td>
</tr>
</tbody>
</table>

1) % volumetric water content 2) ML3 and SM150T must be fully buried to accurately measure soil temperature

**Data loggers and meters**

<table>
<thead>
<tr>
<th>HH150 Meter</th>
<th>HH2 Meter</th>
<th>GP2</th>
<th>GP1</th>
<th>DL6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input connections</strong></td>
<td>1 water content sensor</td>
<td>1 water content sensor (HH2 does not provide temperature indication from the SM150T or ML3)</td>
<td>12 diff analogue inputs</td>
<td>2 analogue channels</td>
</tr>
<tr>
<td><strong>Readings stored</strong></td>
<td>Readout-only device</td>
<td>1,500</td>
<td>2.5 million (approx)</td>
<td>600,000</td>
</tr>
<tr>
<td><strong>Recording rate</strong></td>
<td>-</td>
<td>1 second to 24 hours</td>
<td>1 second to 24 hours</td>
<td>1 second to 24 hours</td>
</tr>
<tr>
<td><strong>Control options</strong></td>
<td>-</td>
<td>2 relay outputs - expandable to 6</td>
<td>1 relay output</td>
<td>1 relay output</td>
</tr>
<tr>
<td><strong>Typical applications</strong></td>
<td>Readout only device for SM150T Sensor (no PC connectivity)</td>
<td>Instantaneous reading of soil moisture / profiles / WET Sensor</td>
<td>Demanding research and monitoring projects, irrigation control, advanced control applications</td>
<td>Monitoring soil moisture and controlling irrigation</td>
</tr>
</tbody>
</table>

**Irrigation control**

The GP2 can be used to integrate soil moisture sensors into existing irrigation control systems.

**Representative:**

Delta-T Devices

**WET KIT**

For portable applications the WET Sensor is used with an HH2 Moisture Meter and is normally supplied as a complete kit.