AT
DELTA-T DEVICES

Soil Moisture Kits

A choice of three portable kits for measuring combinations of

- Moisture content
- Temperature
- EC

● Rapid, accurate measurement of water content in soils and substrates

● Stainless steel rods for robust insertion and close soil contact

● Excellent temperature and salinity stability

● WET kit also measures pore water EC and temperature

Research quality kits

Each kit features a robust, research-proven sensor:

The **ThetaKit** is based on the **ML2x** which provides exceptionally high-accuracy soil moisture readings (± 1%) within a well-defined soil volume.

The **SM300 Kit** is based on the **SM300** which measures soil moisture to moderate accuracy (± 2.5%) at lower cost and is particularly easy to insert.

The **WET Sensor Kit** is based on the multi-parameter **WET Sensor** which calculates pore water EC (EC_p) directly within the growing media as well as measuring soil moisture and temperature.

All kits come with carrying case and HH2 meter as standard.

HH2

ML2x

SM300

WET Sensor

Horticultural production

These kits enable rapid monitoring of growing conditions within busy horticultural production. The sensors can be read quickly (~5s) and are robust enough to take 1000s of readings a day.

Applications

● Soil science research

● Horticulture

● Agriculture

● Turf management

Soil Moisture Kits – comparison and specifications

	ThetaKit	SM300 Kit	WET Sensor Kit
Sensor	**ML2**	**SM300**	**WET sensor**
Key advantage	**Highest accuracy, robust replaceable rods**	**Lower cost, easiest insertion**	**Multi-parameter sensor, horticultural calibrations**
Sample volume	**~60mm x 30mm diameter**	**~55mm x 70mm diameter**	**~500ml**
Soil Moisture Content	✓	✓	✓
Accuracy	± 1%vol (± 0.01$m^3.m^{-3}$)	± 2.5%vol	± 3%vol
Range	5 to 50%vol	0 to 50%vol	0 to 100%vol
Salinity range	50 to 400mS.m^{-1}	50 to 1000mS.m^{-1}	0 to 500mS.m^{-1} [1]
Salinity errors			
Electrical Conductivity (EC)	-	-	✓
Accuracy and range	-	-	*See graph below*
Soil Temperature	-	[2]	✓
Accuracy and range	-	-	± 1.5°C, 0 to 50°C
Meter	**HH2**	**HH2**	**HH2**
No. of readings stored	~1600 samples	~1600 samples	~800 samples
Soil calibrations available	2 (organic, mineral)	2 (organic, mineral)	4 (organic, mineral, clay, sand) + specialist horticultural set (optional extra)
Complete Kit			
Accessories	Standard [3] + insertion kit	Standard [3]	Standard [3]
Dimensions and weight	330 x 270 x 80mm, 2.3kg	330 x 270 x 80mm, 1.7kg	330 x 270 x 80mm, 1.7kg

[1] *Standard calibration (supplied) covers 0 to 300mS.m^{-1}, Extended calibration (also supplied) should be used for the range 300 to 500mS.m^{-1}.*

[2] *The SM300 provides a temperature output that can be logged, but its readings are not available from the HH2 meter.*

[3] *Standard accessories include carrying case, user guides, RS232 cable for data download, and spare battery.*

Ordering Information

ThetaKit type TK3-BASIC includes ThetaProbe type ML2x/d-02, pack of 4 spare rods, HH2 meter, RS232 cable, insertion kit, user manuals and case.

SM300 Kit type SM300-KIT includes SM300 soil moisture sensor, 1.5m cable type SMSC/d-HH2, HH2 meter, RS232 cable, user manuals and case.

WET Sensor Kit type WET-2-K1 includes WET Sensor type WET-2/d, HH2 meter, RS232 cable, user manuals and case.

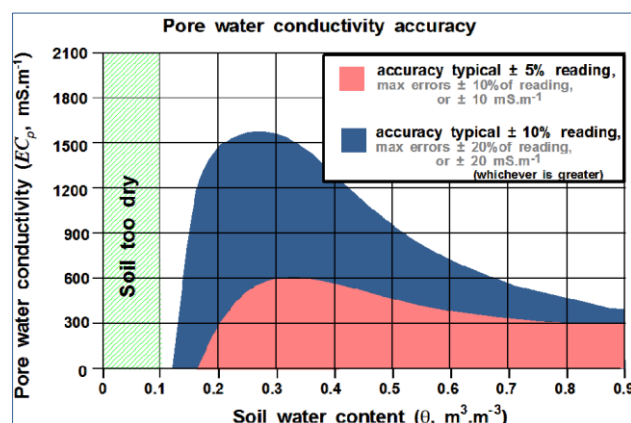*WET-2-K1 includes sensor calibrations suitable for a variety of standard soil types.*

WET Sensor Kit type WET-2-K4 as WET-2-K1 but HH1 is fitted with WET-GH-1 upgrade to include extra horticultural substrate calibrations.

WET-2-K4 includes sensor calibrations suitable for a variety of horticultural media including coir, peat-based potting mixes and greenhouse "mineral" soils.

WET Horticultural Calibrations Upgrade type WET-ST-1 upgrade for HH2 to include extra substrate calibrations for stonewool (vertical and horizontal measurement).

Pore water conductivity (EC$_p$)

The **WET Sensor** calculates the EC of the pore water from measurements of conductivity and water content taken in the same volume of soil at the same frequency (20MHz). Accuracy depends on both EC and water content:

Pore water conductivity accuracy

Delta-T Devices Ltd
130 Low Road, Burwell, Cambridge, CB25 0EJ, UK
Tel: +44 1638 742922   sales@delta-t.co.uk   www.delta-t.co.uk

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