WATER & SOIL

Mini Tensio-meters

Small design allows insertion into soil without damaging nearby plant roots

Ideal for irrigation management of glasshouse crops

Small design suitable for use in plant pots and grow bags

Suitable for soil, peat and other mediums

No correction factors for different soils or mediums

The Mini Tensiometer is a small version of Skye's successful field tensiometer range. Tensiometers measure the water availability to plant roots, and so can be used in irrigation scheduling and crop management.

The Mini Tensiometer version is suitable for installing in plant pots, containers or grow bag systems. Its small size minimises intrusion and root disturbance.

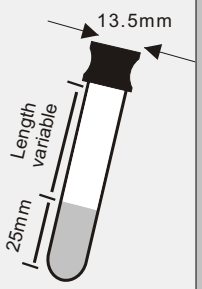
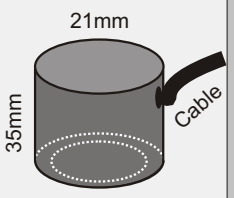
Tensiometers are designed to be permanently installed in the growing medium, which they equilibrate with and measure the 'soil suction'. Plant roots need to exert a suction to remove water from the soil, it is this suction which is measured by the tensiometers.

The tensiometer itself consists of a shaft of clear acrylic plastic (length variable depending on depth of measurement required), with a porous ceramic bulb at the lower end. The top is sealed with a rubber stopper, and fitted with an electronic pressure transducer.

This shaft is totally filled with water before installation into the growing medium to be measured. The water is able to flow in or out of the tensiometer via the ceramic bulb, as the suction inside the instrument equilibrates with the soil suction. The suction (or negative pressure) is measured by the electronic pressure transducer fitted into the top.

The tensiometer pressure reading can be displayed and monitored using the Hydr Sense logging meter, as shown above, or can be automatically recorded using a Skye DataHog datalogger. The DataHog system can also be used for switching on automatic irrigation systems if required.

SPECIFICATIONS

Shaft dimensions	Shaft construction	Electronics dimensions	Electronics construction	Weight
	Porous ceramic bulb. Clear acrylic shaft lengths 10cm to 50cm. Rubber septum stopper		Material Dupont 'Delrin'	20 to 50g
Cable length	**Excitation voltage (2)**	**Sensor excitation current**	**Typical output (1)**	**Linearity & hysterisis error**
Screened cable. 3m. standard. Longer if required	5 to 10 volts	1.25 mA at 5 volts	0-50mV D.C. at 5 volts excitation	Typ. < 0.1%
Thermal error of span	**Null offset shift**	**Long-term stability**	**Operating range**	**Measurement range**
Typ. < 0.4% 0 to 50°C	Typ. < 0.2mV 0 to 50°C	0.1% per year typ.	0 to +70°C (precautions required for operation in below zero conditions)	0 - 850 hPa (0-850mbar) (minus shaft length - i.e. for 30cm shaft length the range is 0-820 hPa)

NOTES ON SPECIFICATIONS

(1) The output is ratiometric for excitation voltage, but is usually calibrated at 5 volts. The transducer behaves as a 'bridge' type sensor and is suitable for connection to any meter or logger with differential inputs. DataHogs and the HydroSense are designed for these sensors
(2) Tensiometers require a stabilised power supply which is provided by the DataHog datalogger and HydroSense meter. Other dataloggers may not give a stabilised power supply. In this instance, an optional stabilised power supply can be built into the tensiometer.

ORDERING INFORMATION

Sensor

SKTM 600 series	Mini electronic tensiometer. Please state shaft length required
SKTM 690	Replacement ceramic bulb and shaft. Please state shaftlength required
/S	Stabilised power supply for electronic tensiometers

Meters & datalogger

SKT 660	HydroSense logging meter
SDL 5000 series	DataHog datalogger

Recommended Accessories

TEN/5	Syringe and filling tube - recommended for filling and installing all tensiometers

Skye Instruments Ltd
21, Ddole Enterprise Park
Llandrindod Wells
Powys LD1 6DF
United Kingdom

TEL +44 (0)1597 824811
FAX +44 (0)1597 824812

EMAIL skyemail@skyeinstruments.com
WEB http://www.skyeinstruments.com