



Multi-depth Soil Moisture and Temperature Probe SMAC-24u™

Sub-surface Soil Moisture and Temperature Probe

*Preliminary * DATA SHEET

FEATURE SUMMARY

- 6 Measurement Points
- Temperature and soil water content
- Long-term stability
- IP68 waterproof
- Fully potted
- Permanent installation
- No periodic drying or saturation required.
- Modbus RTU

DESCRIPTION

SMAC-24u™ is a valuable tool for soil and irrigation management and grower research. The effects of rain and irrigation intensity can be observed as the moisture percolates through the soil profile.

SMAC-24u can be used to evaluate soil moisture conservation techniques, fertilizer application conditions, and minimize over-irrigation for crop yield optimization.

SMAC-24u connects directly to Dyacon weather stations, combining the soil moisture data with real-time weather conditions, including precipitation, solar measurements, wind, and humidity.

KEY FEATURES

Construction: **SMAC-24u** is a non-metallic probe.

All electronics are fully potted, to ensure a long field life and year-round installation.

Measurement: Temperature and relative water content is measured at six positions.

Measurement data is available through DyaconLive and on the LCD of Dyacon CM-1 weather station control module.

Installation: **SMAC-24u** is typically installed in a vertical hole so that the top cap is at or below the surface of the soil.

Once **SMAC-24u** is connected to Dyacon CM-1 weather station controller, the user can simply enable the probe through the menu, and the probe measurements will be included in the log file and on DyaconLive™.



SENSOR SPECIFICATIONS*

Sensor Count	6 each, water content and temp.
Water Content Range	0 (zero) air to 100 (submerged in water) @ 25°C
Water Content Aging Drift	Max 3% drift over warranty period.
Water Content Repeatability	+/- 1
Water Content Temp. Variability	<0.1%/C° from 5°C to 40°C
Soil Temperature Range	-20°C to +50°C (-4°F to 122°F)
Temperature Resolution	0.1 C°
Temperature Repeatability	0.2 C°
Sensor Spacing	100 mm



Image 1: Sensor Positions

MECHANICAL SPECIFICATIONS

Overall Length	70 cm (27.5 inches)
Probe Length	65 cm (28 inches) from bottom of cap to tip. (25.6 inch nominal probe length.)
Cable Length	Approximately 5 m (16.4 ft)
Cable Type	4-conductor, 14 AWG, PVC jacket and insulation

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	
Storage Temperature	
Liquid Sealed	Submersible in saturated soil.

ELECTRICAL SPECIFICATIONS

Power	3.3 VDC to 14 VDC 8 mA max, <0.1 mA idle, 0.5 mA Avg (when when connect to Dyacon CM-1)
Communication	Modbus RTU (RS-485) 19200 bps

*Dyacon SMAC-24u is manufactured by AquaCheck Pty Ltd. All specifications are provided by the manufacturer.



Image 2: Wiring