

## 10HS Sensor



The 10HS Soil Moisture Sensor is the newest member of the Decagon Soil Moisture Sensor Family. The large sphere of influence meets the needs of those customers who would like to measure the volumetric water content of a large soil sample volume. The 10HS obtains volumetric water content by measuring the dielectric constant of the media through the utilization of capacitance/frequency domain technology. In addition, the 10HS sensors incorporate a high frequency oscillation, which allows the sensor to accurately measure soil moisture in any soil or soilless media with minimal salinity and textural effects.

An on-board voltage regulator allows Decagon factory calibrations to be used with any excitation voltage above 3V. In addition, the list of factory calibrations for the 10HS includes a dielectric calibration for use with the Topp Equation or other applicable dielectric to volumetric water content conversion equations.

### 10HS Soil Moisture Sensor Applications:

- Irrigation scheduling
- Vadose zone monitoring
- Plant-soil-water interaction studies

Specifications	
<b>Range:</b> 0-100% VWC	<b>Power:</b> 3 to 15 VDC 12 mA @3V, 15 mA @ 15V
<b>Output:</b> Voltage, correlated linearly with VWC, independent of excitation voltage	<b>Resolution:</b> 0.1 Dielectric
<b>Measurement Time:</b> 10 ms	<b>Cable Length:</b> 5 m
<b>Temperature:</b> -40°C to +50°C	<b>Dimensions:</b> 14.5 cm x 3.3 cm x 0.7 cm
<b>Connector Types:</b> 3.5 mm "stereo" plug or stripped and tinned lead wires (3)	
<b>Accuracy:</b> <i>Mineral Soil:</i> ±2.5 up to 50 dielectric permittivity ±2% VWC soil specific calibration, up to 8 dS/m <i>Rockwool:</i> ±3% VWC, 0.5 to 8 dS/m <i>Potting Soil:</i> ±3% VWC, 3 to 14 dS/m	<b>Datalogger Compatibility (not exclusive):</b> <i>Decagon:</i> Em50, EM50R, ProCheck, ECH <sub>2</sub> O Check <i>Campbell Scientific:</i> CR10X, 21X, 23X, CR1000, CR3000, etc. <i>Other:</i> Any data acquisition system capable of 3-15 VDC excitation and single ended voltage measurement at 12 bit or better resolution.