



## EasyAG®

### 50 cm probe for water content profiles

### Overview

The SEN12512 is an EasyAG probe with an SDI-12 interface and a 50-cm length. This probe provides water content profiles for cultivated soils of good tilth—commonly found in vegetable produc-

tion areas. It is unsuitable for stony soils where the average stone size is greater than 10 mm. Campbell Scientific offers another probe, EnviroSCAN, that can be used for those applications.

### Benefits and Features

- › Multiple sensors at fixed depths
- › Built-in probe orientation and depth settings to increase sensor repeatability
- › Customized access tube increases sensor accuracy
- › Specially sealed to guarantee long-term operation
- › Probe and sensors are readily accessible and serviceable without destroying the sites

### Technical Description

The SEN12512 includes five water content sensors that measure soil water at multiple depths. Around each sensor, the probe creates a high frequency electrical field that extends through the access tube into the soil. Electrical capacitance is then measured and soil water content is determined from those measurements.

Each water content sensor outputs an SDI-12 signal that our CR200(X)-series, CR800, CR850, CR1000, and CR3000 dataloggers can measure. This allows the probes to be integrated with a Campbell Scientific datalogger or weather station. Integrating the probes into our data acquisition systems allows the data to be telemetered back to a field station or remote computer.



Specialized tools and techniques offered by Campbell Scientific simplify probe installation while minimizing soil disturbance.



## Installation Tools and Software

The following tools and software are offered by Campbell Scientific to install and setup the SEN12512 EasyAG probe\*.

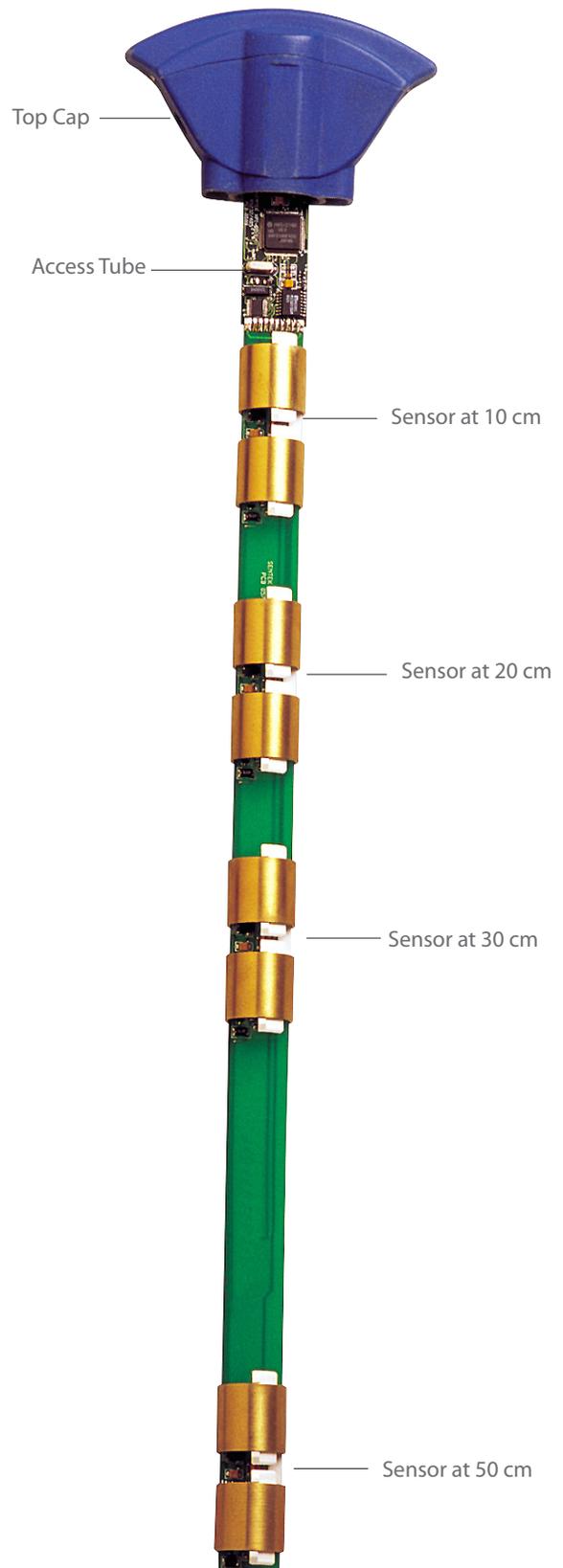
- › **SEN70508 EasyAg Installation Kit\*** includes a stabilization plate that helps to stabilize the auger so that it bores a hole perpendicular to the plane of the soil surface.
- › **SEN70518 EasyAG Installation Auger\*** bores a pilot hole for the installation of the EasyAG probe.
- › **SEN70060 Installation Normalization Container\*** includes a PVC sleeve that transects a container that can be filled with water. The EasyAG is then inserted into the sleeve, allowing normalization at saturation. Once removed, the probe can be normalized in air.
- › **SEN06021 Programming Cable\*** is required to connect the probe to a PC. The EasyAG probe needs to be connected to a PC for normalization and setup.
- › **SEN06025 Utility Software\*** is required for the normalization and setup of an EasyAG probe.
- › **SEN80127 Ferrite Bead\*** is a hollow cylinder that reduces electromagnetic noise when looped into probe cables. One per probe is recommended.

## Specifications

- › Sensor Measuring Principle: high frequency capacitance
- › Output: SDI-12 version 1.2
- › Interface Measuring Principle: 16 bit pulse count
- › Output Resolution: 16 bit
- › Water Content Reading Range: 0 to ~65%
- › Temperature Effects:  $\pm 3\%$  (5° to 35°C)
- › Time to Read One Sensor: 1.1 s
- › Sphere of Influence: 99% of the reading is taken within a 10 cm radius from the outside of the access tube
- › Sensors per Standard Probe: 5
- › Sensor Diameter: 2.65 cm (1.0 in)
- › Access Tube Diameter: 3.2 cm (1.3 in)
- › Probe Length: 50 cm (20 in)
- › Operating Temperature Range: 0° to 75°C

## Current Consumption

- › Sleep: 250  $\mu$ A
- › Standby: 66 mA
- › Sampling: 100 mA



\*The SEN12512, SEN70508, SEN70518, SEN70060, SEN06021, SEN06025, and SEN80127 are manufactured by Sentek Technologies.



Campbell Scientific, Inc. | 815 W 1800 N | Logan, UT 84321-1784 | (435) 227-9000 | [www.campbellsci.com](http://www.campbellsci.com)  
USA | AUSTRALIA | BRAZIL | CANADA | CHINA | COSTA RICA | ENGLAND | FRANCE | GERMANY | SOUTH AFRICA | SPAIN

© 2013  
Campbell Scientific, Inc.  
August 13, 2013