

Fast and Portable

Soil Water Content Measurements



Overview

The Hydrosense II is a portable, handheld device for easily obtaining soil measurements. It is the next generation of the Hydrosense soil-water measurement system. Improvements over its predecessor

include a more rugged probe design, additional navigation buttons for the display, expanded memory, an internal GPS receiver, Bluetooth communications, and more powerful PC software.

Benefits and Features

- Large LCD and four navigation button that simplifies operation
- Splash-proof housing
- Onboard data storage of more than 1000 points
- Integrated GPS receiver for tagging measurements
- Bluetooth for wireless connection to PC
- Data exportable to Google Earth, GPX and CSV
- Rugged probe design that allows insertion into harder soils

Soil Moisture Sensors

Two sensor options are offered. The CS658 has 20-cm rods and the CS659 (shown above) has 12-cm rods. These probes use the same accurate measurement technique as the old probes, but their housing has been redesigned to aid insertion into and removal from hard soils.

Their rods are secured to the probe housing with ferrule nuts to provide extra stability during insertion. A molded plastic grip connects their cable to the housing, which provides better grip.

Handheld Display

The display consists of a three-inch LCD and four navigation buttons that make changing settings and taking measurements as easy as possible. The integrated GPS allows a latitude and longitude to be

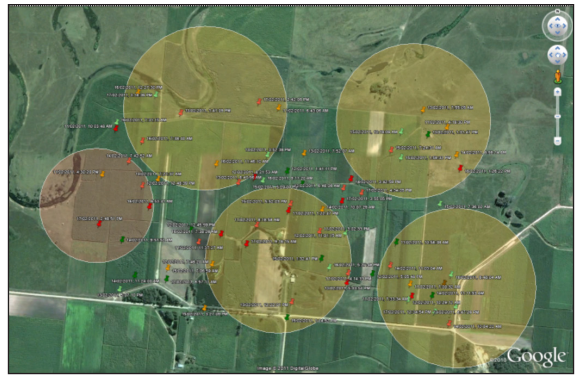
associated with each measurement. Zones can be created on the unit which group measurements together so that average soil moisture can be calculated for an area.

Software

New PC software has been developed to make the most of the data storage capability of the HS2. The software connects to the HS2 via Bluetooth to avoid the need for extra cables.

The software allows the user to:

- View data in table and chart views
- Edit zone positions and sizes
- Change device settings
- Export data to CSV to interface with third party software
- View zones and measurements in Google Earth



The HydroSense II software allows you to view zones and measurements using Google Earth.

Specifications

Handheld Display

- Display: 128 x 64 pixel graphic LC
- Backlight: Blue and White LED, brightness adjustable
- GPS Accuracy: ± 5 m (16.4 ft) typical; ± 1 ms time with GPS sync
- Bluetooth Range: ~ 10 m (~ 30 ft)
- Data Storage: >1000 records (ring memory)
- Zone Storage: >100 records
- Power Supply: 6 Vdc, 4 AA batteries
- Battery Life: 6 to 12 months typical usage
- Height: 200 mm (7.9 in)
- Width: 100 mm (3.9 in)
- Depth: 58 mm (2.3 in)
- Weight: 340 g (12 oz)

Typical Power Consumption

- Sleep: 20 μ A
- Backlight Off: 2 mA
- Backlight at 60%: 18 mA
- Backlight at 100%: 30 mA
- GPS Active: 35 mA
- Bluetooth Active: 30 mA



CS658 Water Content Probe¹

- Volumetric Water Content Accuracy: 3% typical (solution electrical conductivity < 4 dS/m)
- Volumetric Water Content Resolution: < 0.05%
- Volumetric Water Content Range: 0% to 50% VWC
- Cable: Spiral, 250 cm (98 in) extended
- Weight: 450 g (15.9 oz)

Body Dimensions

- Height: 100 mm (3.9 in)
- Width: 92 mm (3.6 in)
- Depth: 40 mm (1.6 in)

Rod Dimensions

- Diameter: 5 mm (0.14 in)
- Length: 200 mm (7.9 in)

CS659 Water Content Probe¹

- Volumetric Water Content Accuracy: 3% typical (solution electrical conductivity < 6.5 dS/m)
- Volumetric Water Content Resolution: < 0.05%
- Volumetric Water Content Range: 0% to 50% VWC
- Cable: Spiral, 250 cm (98 in) extended
- Weight: 450 g (15.9 oz)

Body Dimensions

- Height: 100 mm (3.9 in)
- Width: 92 mm (3.6 in)
- Depth: 40 mm (1.6 in)

Rod Dimensions

- Diameter: 5 mm (0.14 in)
- Length: 120 mm (4.7 in)

¹ The CS659 and CS658 cannot share rods (i.e., 12-cm rods cannot be used with the CS658, and 20-cm rods cannot be used with the CS659).