



High Accuracy and Precision

Designed for long-term monitoring

Overview

The CS625 measures the volumetric water content from 0% to saturation. It is similar to our CS616 but is designed specifically for CR200(X) and CR300-series dataloggers. This

reflectometer has a 0 to 3.3 V square wave frequency output that our CR300 and CR200(X)-series dataloggers can measure.

Benefits and Features

- › High accuracy and high precision
- › Fast response time
- › Designed for long-term unattended water content monitoring
- › Probe rods can be inserted from the surface or buried at any orientation to the surface.

Technical Description

The CS625 consists of two 30-cm-long stainless steel rods connected to a printed circuit board. The circuit board is encapsulated in epoxy, and a shielded four-conductor cable is connected to the circuit board to supply power, enable probe, and monitor the output.

The CS625 measures the volumetric water content of porous media (such as soil) using the time-domain measurement method; a reflectometer (cable tester) such as the TDR100 is not required. This method consists of the CS625 generating an electromagnetic pulse. The elapsed travel time and pulse reflection are then measured and used to calculate soil volumetric water content.

Response Characteristics

The signal propagating along the parallel rods of the CS625 is attenuated by free ions in the soil solution and conductive constituents of the soil mineral fraction. In most applications, the attenuation is not enough to affect the CS625 response to changing water content, and the response is well described by the standard calibration. However, in soil with relatively high soil electrical conductivity levels, compacted soils, or soils with high clay content, the calibration should be adjusted for the specific medium. Guidance for making these adjustments is provided in the operating manual.

Specifications

Measurements Made	Volumetric water content of porous media (such as soil)	Water Content Accuracy	±2.5% WWC (using standard calibration with bulk EC of ≤ 0.5)
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	dS m ⁻¹ , bulk density of ≤ 1.55 g cm ⁻³ , and measurement range of 0% to 50% VWC)
Required Equipment	Measurement system
Soil Suitability	Long rods and lower frequency are well-suited for soft soil with low electrical conductivity (< 2 dS/m).
Rods	Not replaceable
Sensors	Not interchangeable
Operating Temperature Range	0° to 70°C
Probe-to-Probe Variability	±0.5% VWC in dry soil, ±1.5% VWC in typical saturated soil
Precision	0.1% VWC
Resolution	0.1% VWC
Output	0 to 3.3 V square wave (with frequency dependent on water content)

Current Drain	<ul style="list-style-type: none"> › 65 mA @ 12 Vdc (when enabled) › 45 µA (quiescent typical)
Power Supply Voltage	5 Vdc minimum; 18 Vdc maximum
Enable Voltage	4 Vdc minimum; 18 Vdc maximum
Electromagnetic	CE compliant (Meets EN61326 requirements for protection against electrostatic discharge.)
Rod Spacing	32 mm (1.3 in.)
Rod Diameter	3.2 mm (0.13 in.)
Rod Length	300 mm (11.8 in.)
Probe Head Dimensions	85 x 63 x 18 mm (3.3 x 2.5 x 0.7 in.)
Cable Weight	35 g per m (0.38 oz per ft)
Weight	280 g (9.9 oz) without cable

For comprehensive details, visit: www.campbellsci.eu/cs625 



80 Hathern Road, Shepshed, LE12 9GX UK | +(0)1509 828888 | sale@campbellsci.co.uk | www.campbellsci.eu
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