



## Reliable Soil Water Measurements

No maintenance required

### Overview

The 257, manufactured by Watermark, is a solid-state, electrical-resistance sensing device with a granular matrix that estimates soil water potential from 0 to -200 kPa (typically

wetter or irrigated soils). It connects directly to your data logger.

### Benefits and Features

- › Survives freeze-thaw cycles
- › Compatible with most Campbell Scientific data loggers
- › Contains blocking capacitors in its cable that minimize galvanic degradation and measurement errors due to ground loops
- › Buffers salts in soil
- › Rugged, long-lasting sensor

### Detailed Description

When the amount of water in the soil surrounding the sensor changes, a difference in water potential between the soil and the sensor material is established. This gradient in potential causes a water flux between the two materials. For example, an irrigation or precipitation event results in movement of soil water into the 257 until equilibrium in water potential between the sensor and the soil occurs. An increase in the amount of water in the sensor reduces the electrical resistance between the sensor electrodes.

The data logger measures the resistance between electrodes, and then converts the resistance measurement to soil water potential by using calibration values supplied with the sensor.

The 257 consists of two concentric electrodes embedded in a reference matrix material. The matrix material is surrounded by a synthetic membrane for protection against deterioration. An internal gypsum tablet buffers against the salinity levels found in irrigated soils. The cable jacket is made of Santoprene rubber, which is resistant to temperature extremes, water, and UV degradation.

The 257's construction can allow the sensor (in some circumstances) to be left in the soil all year, eliminating the need to remove the sensor during fallow periods.

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## Specifications

Measurement Range	0 to -200 kPa	Length	8.26 cm (3.25 in.)
Diameter	1.91 cm (0.75 in.)	Weight	360 g (0.8 lb)

For comprehensive details, visit: [www.campbellsci.com/257-l](http://www.campbellsci.com/257-l) 



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