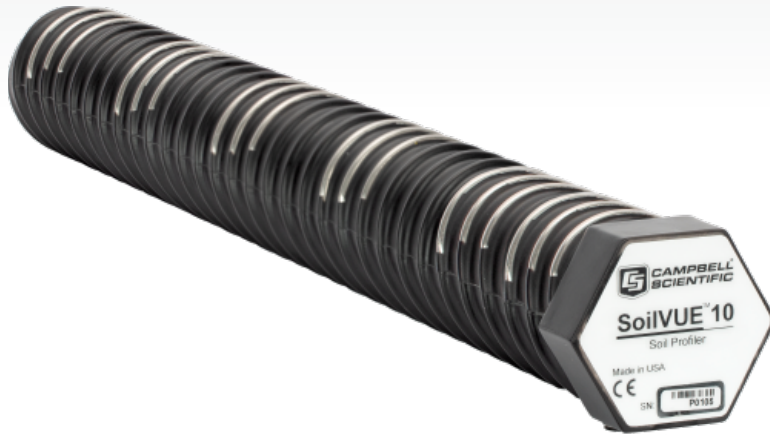


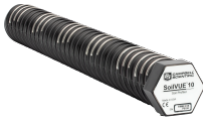








Soil Moisture, Temperature, and EC Sensors

Also known as soil volumetric water content sensors



Soil moisture sensors (sometimes referred to as volumetric water content sensors) measure the water content of soil. These sensors can be used to estimate the amount of stored water in a profile or how much irrigation is required to reach a desired amount of water in the soil. These sensors can be used for quick measurements or installed for long-term measurements.

	Measurements Made	Water Content Accuracy	Required Equipment	Soil Suitability
<p>SoilVue 10 TDR Soil Moisture and Temperature Profile Sensor</p> <p>Popular</p> 	<p>Volumetric water content (VWC), permittivity, electrical conductivity (EC), and temperature</p>	<p>Volumetric Water Content: $\pm 1.5\%$ typical with most soils</p> <p>Soils with high organic matter ($> 12\%$ soil organic carbon) or high clay content ($> 45\%$ clay) may need a soil-specific calibration due to the dispersive nature of these materials.</p>	<p>—</p>	<p>—</p>
<p>CS655 12 cm Soil Moisture and Temperature Sensor</p> <p>Popular</p> 	<p>Soil electrical conductivity (EC), relative dielectric permittivity, volumetric water content (VWC), soil temperature</p>	<ul style="list-style-type: none"> ▶ Volumetric Water Content: $\pm 1\%$ (with soil-specific calibration) where solution EC < 3 dS/m ▶ Volumetric Water Content: $\pm 3\%$ (typical with factory VWC model) where solution EC < 10 dS/m 	<p>Measurement system</p>	<p>Short rods are easy to install in hard soil. Suitable for soils with higher electrical conductivity.</p>

		<i>Measurements Made</i>	<i>Water Content Accuracy</i>	<i>Required Equipment</i>	<i>Soil Suitability</i>
CS650 30 cm Soil Moisture and Temperature Sensor 		Soil electrical conductivity (EC), relative dielectric permittivity, volumetric water content (VWC), soil temperature	<ul style="list-style-type: none"> ▶ Volumetric Water Content: $\pm 3\%$ (typical with factory VWC model) where solution EC < 3 dS/m ▶ Volumetric Water Content: $\pm 1\%$ (with soil-specific calibration) 	Measurement system	Long rods with large sensing volume (> 6 L) are suitable for soils with low to moderate electrical conductivity.
CS616 30 cm Water Content Reflectometer 		Volumetric water content (VWC) of porous media (such as soil)	$\pm 2.5\%$ VWC (using standard calibration with bulk EC of ≤ 0.5 dS m ⁻¹ , bulk density of ≤ 1.55 g cm ⁻³ , and measurement range of 0% to 50% VWC)	Measurement system	Long rods and lower frequency are well-suited for soft soil with low electrical conductivity (< 2 dS/m).
HS2 HydroSense II Handheld Soil Moisture Sensor 		Volumetric water content (VWC) of porous media (such as soil)	<ul style="list-style-type: none"> ▶ Probe Options: 3% typical (Accuracy assumes solution EC of < 6.5 dS/m when using the CS659 12-cm probe.) ▶ Probe Options: 3% typical (Accuracy assumes solution EC of < 4 dS/m when using the CS658 20-cm probe.) 	HS2 is a complete system.	Short rods are easy to install in hard soil. Suitable for soils with higher electrical conductivity.
HS2P HydroSense II Handheld Soil Moisture Sensor with Insertion Pole 		Volumetric water content (VWC) of porous media (such as soil)	<ul style="list-style-type: none"> ▶ Probe Options: 3% typical (Accuracy assumes solution EC of < 6.5 dS/m when using the CS659P 12-cm probe.) ▶ Probe Options: 3% typical (Accuracy assumes solution EC of < 4 dS/m when using the CS658P 20-cm probe.) 	HS2P is a complete system.	Short rods are easy to install in hard soil. Suitable for soils with higher electrical conductivity.
TDR200 Time-Domain Reflectometer 		Volumetric water content (VWC) of porous media (such as soil), soil electrical conductivity (EC), rock mass deformation	—	Measurement system	—

For comprehensive details, visit: www.campbellsci.com/soil-moisture-sensors 

