



Soil TDR Probes

For Campbell Scientific Time-Domain Reflectometry (TDR) Systems

*Rugged, Reliable, and Ready
for any Application*







TDR probes are the sensors of the TDR measurement system and are inserted or buried in the soil. The probes are a wave guide extension on the end of coaxial cable. Reflections of the applied signal along the waveguide will occur where there are impedance changes. The impedance value is related to the geometrical configuration of the probe (size and spacing of rods) and also is inversely related to the dielectric constant of the surrounding material. A change in volumetric water content of the medium surrounding the probe causes a change in the dielectric constant. This is seen as a change in probe

impedance which affects the shape of the reflection. The shape of the reflection contains information used to determine water content and soil bulk electrical conductivity.

Campbell Scientific offers six probes that have different rods and connector cables allowing them to be used in different soil types and with different cable lengths. The probes consist of three pointed rods and a rugged head. The CS605G insertion guide is available to aid the installation of the CS605 or CS610.

MAJOR SPECIFICATIONS

	Rod Dimensions		Probe Head Dimensions			Cable Type	Maximum Soil Bulk Electrical Conductivity	Maximum Cable Length (measured from the tips of the probe's rods to the reflectometer)
	Length	Diameter	Length	Width	Thickness			
CS605 3-rod TDR Probe For typical soils 	30 cm (12 in)	0.475 cm (0.187 in)	10.8 cm (4.3 in)	7.0 cm (2.8 in)	1.9 cm (0.7 in)	RG58	1.4 dS m ⁻¹	15 m (49 ft)
CS610 3-rod TDR Probe For typical soils 	30 cm (12 in)	0.475 cm (0.187 in)	10.8 cm (4.3 in)	7.0 cm (2.8 in)	1.9 cm (0.7 in)	RG8 low loss	1.4 dS m ⁻¹	25 m (82 ft)
CS630 3-rod TDR Probe For high conductivity soils 	15 cm (6 in)	0.318 cm (0.125 in)	5.75 cm (2.25 in)	4.0 cm (1.57 in)	1.25 cm (0.49 in)	RG58	3.5 dS m ⁻¹	15 m (49 ft)
CS635 3-rod TDR Probe For high conductivity soils 	15 cm (6 in)	0.318 cm (0.125 in)	5.75 cm (2.25 in)	4.0 cm (1.57 in)	1.25 cm (0.49 in)	LMR-200 low loss	3.5 dS m ⁻¹	25 m (82 ft)
CS640 3-rod TDR Probe For very high conductivity soils 	7.5 cm (3 in)	0.159 cm (0.063 in)	4.5 cm (1.77 in)	2.2 cm (0.87 in)	1.0 cm (0.39 in)	RG58	5 dS m ⁻¹	15 m (49 ft)
CS645 3-rod TDR Probe For very high conductivity soils 	7.5 cm (3 in)	0.159 cm (0.063 in)	4.5 cm (1.77 in)	2.2 cm (0.87 in)	1.0 cm (0.39 in)	LMR-200 low loss	5 dS m ⁻¹	25 m (82 ft)

