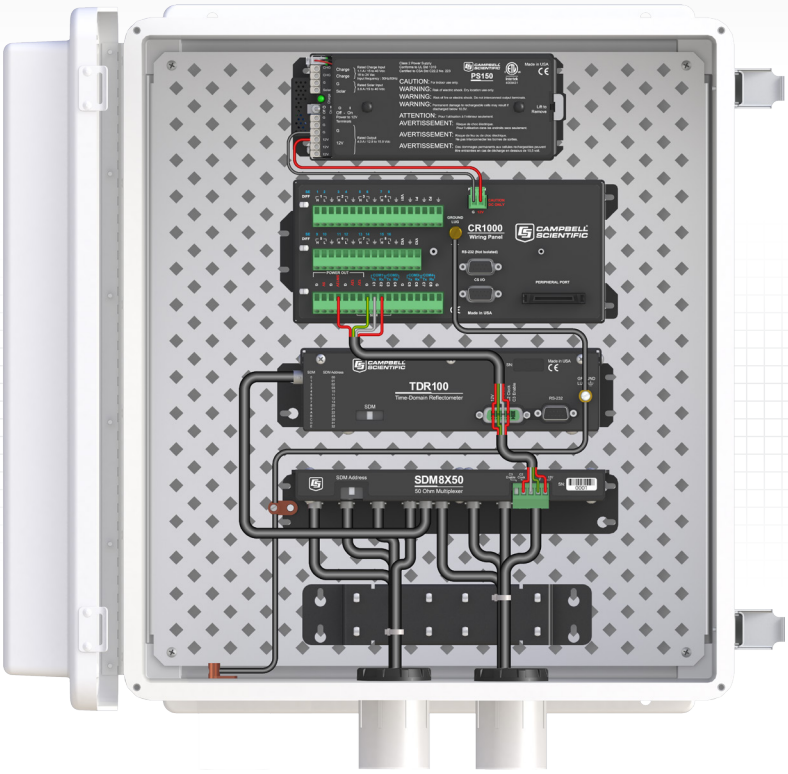
CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

Time-Domain Reflectometry System

TDR100 Reflectometer, SDM8X50 Coax Mulitplexer, CS600-Series Soil TDR Probes



Non-destructive measurements

Excellent accuracy and precision

Measurements

- *Soil water content*
- *Soil bulk electrical conductivity*
- *Rock mass deformation*
- *Solution electrical conductivity*
- *Cable integrity*
- *Water level detection*

Overview

Campbell Scientific time-domain reflectometry system is used to accurately determine soil volumetric water content, soil bulk electrical conductivity, rock mass deformation, or user-specific time-domain measurement. The system consists of the TDR100 Time-Domain Reflectometer, a Campbell Scientific datalogger, SDM8X50 coaxial multiplexers, TDR probes, and PC-TDR software. The system is often powered by a datalogger's sealed rechargeable battery recharged by a 10 W solar panel.*

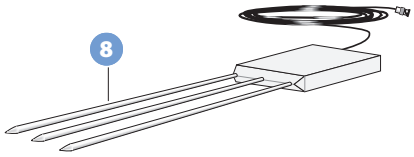
Benefits and Features

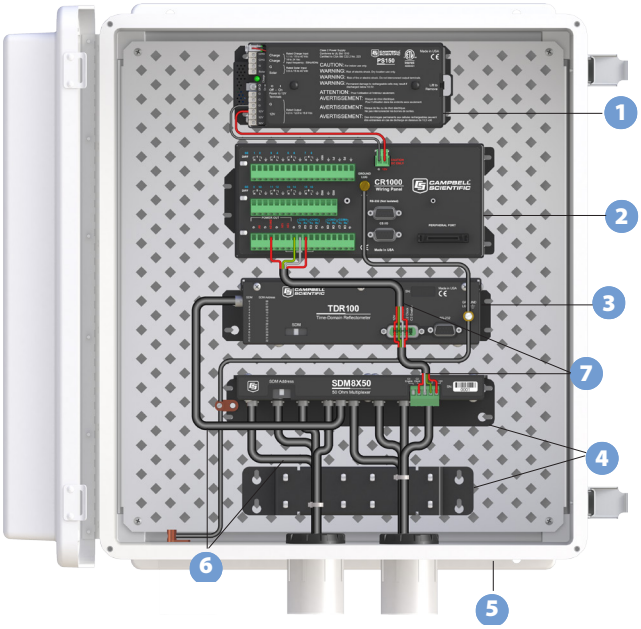
- Uses compact, low-cost TDR100 Reflectometer with performance features that match or exceed other available TDR reflectometers
- Compatible with CR6, CR800, CR850, CR1000, and CR3000 loggers
- Makes non-destructive, long-term, in-situ soil measurements
- Provides measurement time of 2 s for water content, electrical conductivity or reflection waveform collection (250 data points)
- Measures up to 512 TDR probes
- Up to 16 TDR100s can be controlled using a single Campbell Scientific datalogger
- Uses PC-TDR software to facilitate system setup
- Supports operating temperature range of -40° to 55°C

**The power supply requirements depend on the number of sensors measured, how frequently the data's retrieved, data retrieval method used, and location of the site. Systems that measure more sensors, use a high current drain telecommunications method such as satellite transmitters, or retrieve data more frequently may require a user-supplied, deep-cycle rechargeable battery recharged with a 20 W solar panel.*

Components

1. PS150 12 Vdc Power Supply
2. CR1000 Measurement and Control Datalogger
3. TDR100 Time Domain Reflectometer
4. SDM8X50 8-Channel Solid State 50 Ω Coaxial Multiplexer
5. ENCTDR100 Environmental Enclosure
6. COAXTDR-L TDR Multiplexer Cable
7. CABLE5CBL-L 5-conductor Cable for multiplexer control
8. Up to 512 three-rod TDR probes (CS605 shown)





Customizations

The TDR100 -based system is completely customizable, allowing you to configure the station to your projects specification. The following are the components that are available:

Soil TDR Probes

- CS605—recommended for typical soils (soil bulk conductivity ≤1.4 dS/m) and cable lengths ≤15 m.
- CS610—recommended for typical soils (soil bulk conductivity ≤1.4 dS/m) and cable lengths ≤25 m.
- CS630—recommended for high conductivity soils (soil bulk conductivity ≤3.5 dS/m) and cable lengths ≤15 m.
- CS635—recommended for high conductivity soils (soil bulk conductivity ≤3.5 dS/m) and cable lengths ≤25 m
- CS640—recommended for very high conductivity soils (soil bulk conductivity ≤5 dS/m) and cable lengths ≤15 m.
- CS645—recommended for very high conductivity soils (soil bulk conductivity ≤5 dS/m) and cable lengths ≤25 m

Multiplexers

The system can use three multiplexer levels allowing up to 512 probes to be measured. The first level includes the TDR100 and one multiplexer. Up to eight coaxial cables connect to each multiplexer. The coaxial cables can be connected to TDR probes or the next level's multiplexers.

- SDM8X50 50 Ω, coaxial, 8:1 multiplexer—consists of a multiplexer circuit board enclosed in a metal housing and a separate strain-relief bracket for the coaxial cables. It mounts to a wall or an enclosure backplate. When purchased with the –E option, it includes a 10 in. by 12 in. environmental enclosure.

Environmental Enclosures

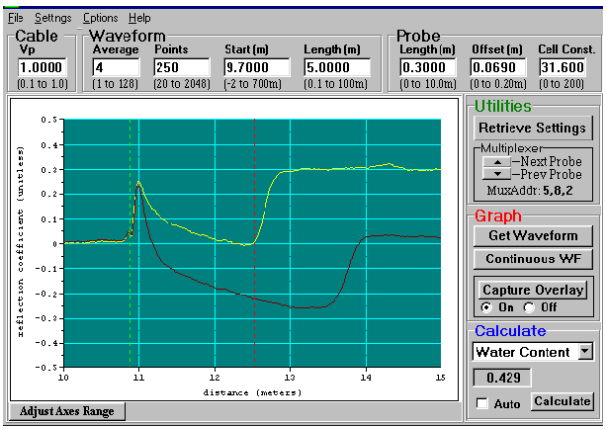
- ENCTDR100 16 in. by 18 in. enclosure—houses the datalogger, datalogger's power supply, TDR100, and SDM8X50. Interconnecting SDM and coaxial cables are included.

Communications

Communication options include Ethernet, cellular, fiber, RS-485, satellite, and telephone.

Software

- PC-TDR—used for setup and troubleshooting
- LoggerNet—supports telecommunications, datalogger programming, data transfer, and data processing functions
- TDRSDK—allows software developers to customize and simplify the user-interface for the TDR100-based system.



PCTDR displays waveforms for system setup and troubleshooting.