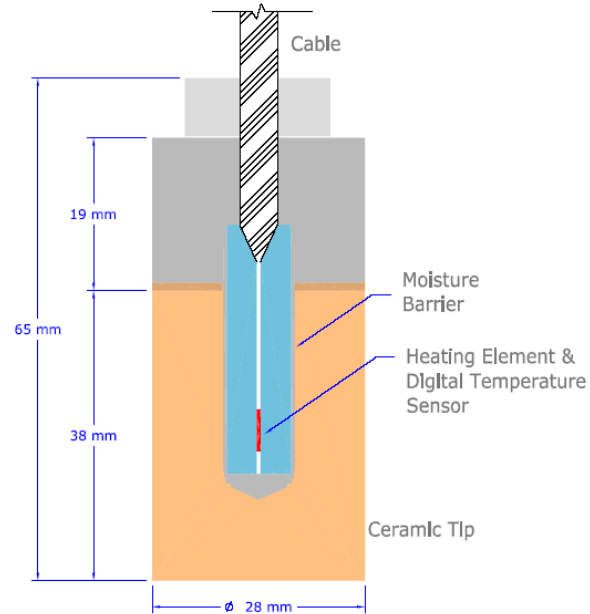


Fredlund Thermal Conductivity Sensor (FTC-100)



- Digital design
- Transmission of data over 100 m without affecting signal quality
- 1 to 1,000 kPa range
- 5% accuracy*
- Accurate for all soil types
- Measurements are unaffected by soil water salinity
- Moisture barrier protects electronics from unfavorable moisture infiltrations
- Special burial cable permits long-term installation in moist environments
- 16-channel multiplexer accepts four or more types of sensors including suction sensors
- 12V battery pack and a solar panel can be provided as power supply

DESCRIPTION

The Fredlund Thermal Conductivity Sensor is an unsaturated soil sensor for measuring soil suction and temperature in the field. The system consists of ceramic-tipped sensors, a suction sensor controller (datalogger), and a power supply. Typically, 16 sensors are included with 10 m (30 ft) of cable for each sensor. The datalogger consists of a 16-channel multiplexer that can be connected to a laptop or PC. Power is supplied with a 12-Volt battery pack and a solar panel.

* Sensors calibrated in wetting only and for 500 kPa range.

The sensor tip has a miniature heating element and a temperature sensor embedded in the center. The heating curve of the sensor is obtained by sending a controlled current to the heating element. The temperature rise (DT) in the sensor after heating depends on the water content of the sensor, which in turn is a function of the surrounding soil suction. Calibration curves developed in the laboratory are provided to obtain the suction corresponding to field measured DT.

SPECIFICATIONS

Range: 1 to 1,000 kPa
Accuracy: 5%*
Cable Length: up to 100 m
Controller: 16 Channels
Power: 12 VDC
Software: Windows based

SHIPPING (Full System w/ 16 Sensors)

Weight: 25 kg
Dimensions: 60 x 60 x 60 cm