

# Installation of Temperature Sensors

## Field Guide

### Task

Install the soil temperature sensors of your soil moisture and temperature station.

**Note:** The following is written for an installation involving four temperature sensors, with one sensor used to measure air temperature and three sensors used to measure soil temperature at specified depths. If your soil moisture and temperature station is located at a site that has another instrument taking air temperature measurements, you may choose to omit the sensor for air temperature. If you choose not to take air temperature readings, it is important that the sensors for soil temperature are still plugged into channels 2-4 of the Soil Moisture and Temperature Station.

### What You Need

- Meter stick
- Digging tools
- Properly installed instrument shelter and 4th temperature sensor for air temperature (optional)
- String or wire ties
- Soil Moisture and Temperature Station with 3 temperature sensors
- One 120 cm x 2 cm PVC or other tube for protecting wires (may be same as for soil moisture sensor wires)
- Permanent marker

### In the Field

1. Choose a location where the soil moisture and temperature station will be protected. If you have an instrument shelter you may choose to mount the soil moisture and temperature station on the pole. If you are using a wireless soil moisture and temperature station, make sure that it can communicate with your weather station from the chosen location.
2. Plug the temperature sensors into the soil moisture and temperature station. Use a permanent marker to place marks on the end of each cable about 1 cm from the sensor. Use 1,2,3 or 4 lines drawn completely around each cable, corresponding to the channel of the soil moisture and temperature station into which the cable is plugged. Feed the sensors through the PVC or other tube to protect them.
3. If you are taking air temperature measurements, use string or a wire tie to secure the air temperature sensor (#1) inside the instrument shelter, taking care that it does not contact the sides of the shelter.
4. Sensors # 2-4 will be used to measure soil temperatures. Dig a 50 cm deep hole close enough to the location of your Soil Moisture/Temperature Station that the sensors will reach. If you are digging near any obstructions, make sure to locate the hole on the sunny (equatorward) side of the obstructions.
5. Push the soil temperature sensors horizontally into this hole at depths of 50 cm (#4), 10 cm (#3), and 5 cm (#2). Use a nail or pin to pilot these holes if the soil is firm or extra firm.
6. Refill the hole with the soil that you removed (last out, first in).

