EXTERNAL TEMPERATURE SENSOR & STAINLESS STEEL TEMPERATURE PROBE

STANDARD & INDUSTRIAL INSTALLATION MANUAL

The external temperature sensor and the stainless steel temperature probe may be used with any of Davis' weather stations (except the Perception II®). With the exception of the GroWeather, the sensor may be used to measure outside temperature, though you may bury the sensor or immerse it in water to measure soil or water temperature instead of air temperature. The GroWeather™ allows you to display two separate external temperature readings (or a single temperature reading and leaf wetness). You may use this sensor for either temperature reading. The standard version of each sensor comes with a 40' (12 m) cable. The industrial version comes with a 16' (5 m) cable.

TOOLS AND MATERIALS NEEDED

You may need some of the following tools and materials in order to complete your installation. Please be sure you have everything you need before beginning.

- **Shovel, spade, or hoe to dig hole for sensor when using as soil temperature**
- **Metal or plastic conduit to protect cable from rodents**
- **Cable clips or weather-resistant cable ties with screw holes or other means for mounting to secure cable**

TESTING THE SENSOR

Test the sensor before installing it.

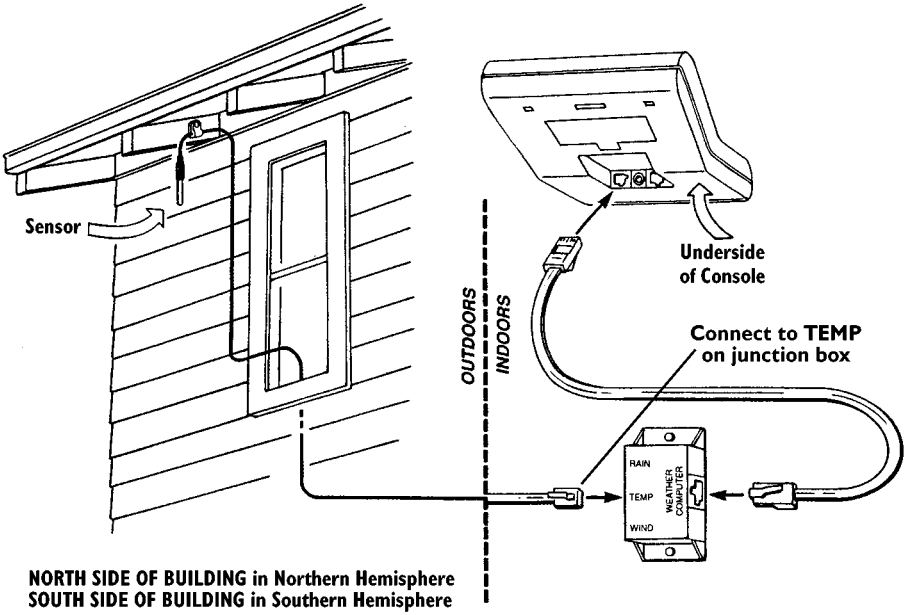
1. **Attach the sensor cable to the appropriate connector on the junction box/sensor interface module (SIM).**
   Consult your station manual or installation manual.
2. **Press the appropriate key on your console as necessary to make sure you are getting an outside, air, or soil temperature reading on the console.**

INSTALLING THE SENSOR

Follow the instructions in this section to install your sensor. Make sure you read "Choosing a Location for the Sensor" on page 5 as it contains important information concerning placement of the sensor.

Typical Weather Wizard II-S, Weather Wizard III, or Weather Monitor II Installation

The illustration below shows a typical installation for the Weather Wizard II-S, Weather Wizard III, or Weather Monitor II.

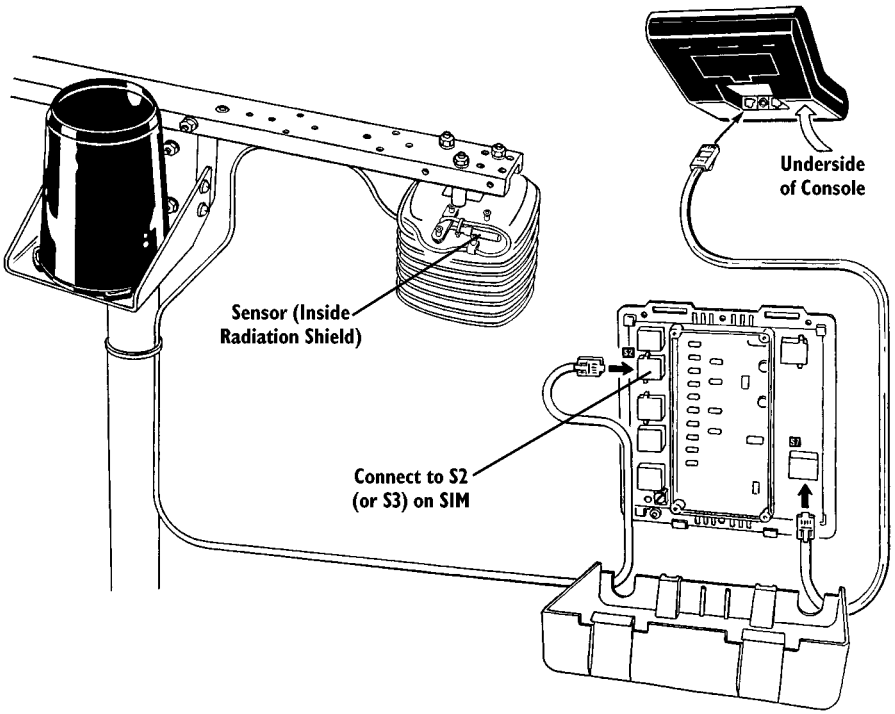


TYPICAL INSTALLATION

Note: *You may also use the Radiation Shield and Sensor Mounting Arm (pictured below) if desired.*

Typical Standard GroWeather/EnviroMonitor Installation

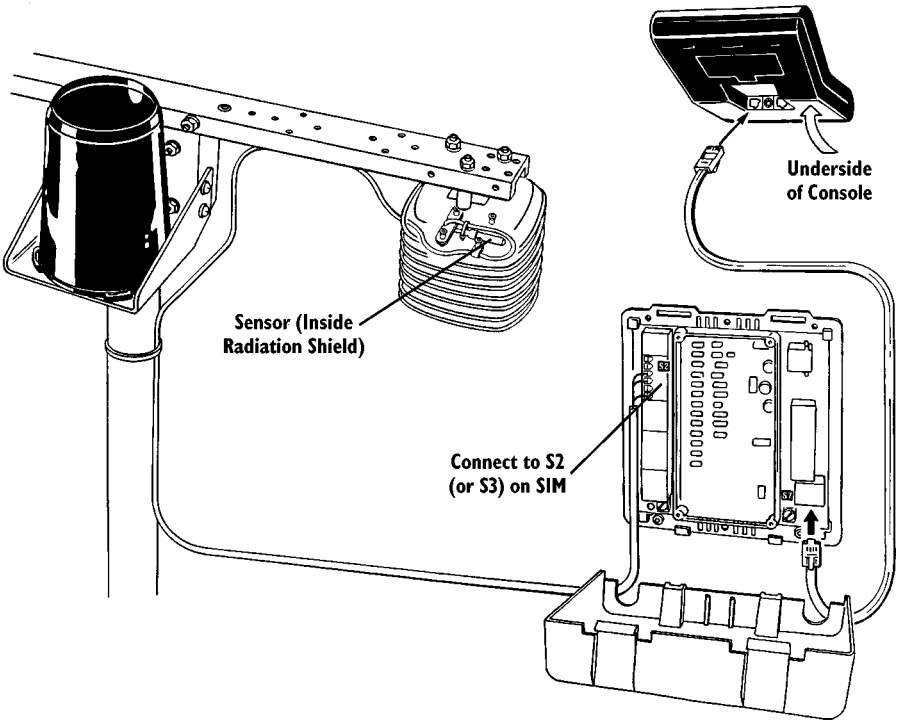
The illustration below shows a typical standard installation for the GroWeather (used to measure air temperature), Energy EnviroMonitor, or the Health EnviroMonitor. The sensor cable attaches to connector S2 on the sensor interface module (SIM). On GroWeather systems, the sensor can also attach to connector S3 to measure a second temperature (such as soil temperature).



TYPICAL STANDARD GROWEATHER/ENVIROMONITOR INSTALLATION

Typical Industrial GroWeather/EnviroMonitor Installation

The illustration below shows a typical industrial installation for the GroWeather (used to measure air temperature), Energy EnviroMonitor, or the Health EnviroMonitor. The sensor cable attaches to connector S2 on the sensor interface module (SIM). On GroWeather systems, the sensor can also attach to connector S3 to measure a second temperature (such as soil temperature).



TYPICAL INDUSTRIAL GROWEATHER/ENVIROMONITOR INSTALLATION

Choosing a Location for the Sensor

Use the suggestions below to find a suitable location in which to mount the sensor. Care taken in choosing a location improves the accuracy, reliability, and durability of the sensor. The ideal location would be on the NORTH SIDE of the building (south side in the Southern Hemisphere).

Note: *You should always take into consideration, when choosing a location for the sensor, the objects nearby. Objects which heat up in direct sunlight or produce radiative cooling effects may affect the temperature readings by changing the surrounding air temperature.*

Look for a location which satisfies the following requirements (Davis' Radiation Shield provides additional protection for the sensor):

- **Place the sensor in a location where it will not be in direct sunlight and where it will have limited exposure to reflected sunlight.**
  If possible, place the sensor at least 5 feet from any surface which is exposed to direct sunlight because the heat from this surface may affect air temperature readings in the vicinity.
- **Limit the exposure of the sensor to the open night sky.**
  If you are unsure about a location's exposure to the night sky, check for dew at that location on a light dewy morning. If the area is dry, the location should work well.
- **Place the sensor in a location at least 10 feet away from any lights or lamps.**
- **Place the sensor at least 5 feet from man-made sources of heat, such as vents.**
- **Keep the sensor away from AC power lines.**
  Keep the sensor and most of the cable at least 10 feet from 110 Vac, 60Hz utility power. Do not run the sensor cable parallel to house wiring. Mount the sensor at least 30 feet from high-voltage power lines and transformers.
- **When running the sensor cable, try not to run it across large metal objects (e.g., aluminum siding).**

Using Shielded Extension Cables

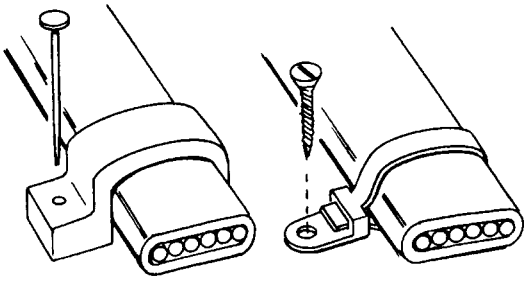
With the industrial version of the temperature probe, you may use Shielded 2-Twisted Pair extension cables (Product #7884) to extend the sensor cable length. When using Shielded 2-Twisted Pair extension cables, ***cut off the RED wire at both ends of the cable***. Do not splice the red wire to the sensor cable or connect it to the SIM.

Mounting the Sensor

Depending on your use for this sensor, you may install it following the suggestions below:

- **For air temperature, use a cable tie, cable clip, or electrical tape to attach the cable to a building, post, antenna mast, or other surface (make sure the sensor itself is not in contact with the building's surface). Consult the Radiation Shield manual for instructions on installing the sensor in the Radiation Shield.**
- **For soil temperature, bury the sensor at a depth suitable for your purposes. Where the cable runs along the ground, use metal or plastic conduits to protect the cable from rodents.**
- **For water temperature, drop the sensor into the water at a depth suitable for your purposes. If the cable runs along the ground at any point, use metal or plastic conduits to protect the cable from rodents.**

In any case, to prevent fraying or cutting of the sensor cable where it is exposed to weather, it is important that you secure it so it doesn't whip about in the wind. For example, you might want to use cable clips or weather resistant cable ties to secure the cable. Place clips or ties approximately every 3 to 5 feet (1 to 1.6 m). Do not use metal staples or a staple gun to secure cables. Metal staples—especially when installed with a staple gun—have a tendency to cut the cables.



SECURING CABLE (STANDARD CABLE SHOWN)

Note: *When running the sensor cable, try not to tug on the cable in such a way as to loosen the connections between cables. Also, make sure the sensor cable is not so taut that connections loosen or pull free due to the strain. Many sensor problems occur because cable connections come loose. If you need to check you cable connection to the sensor itself, see the section below.*

TECHNICAL SUPPORT

Before calling Technical Support (1-510-732-7814), carefully check all cable connections from the sensor to the console. Cable connections account for a large portion of the potential problems. Connections should be firmly seated in the jacks and plugged in straight. If you think a connection may be faulty, try jiggling the cable while looking at the display. If a reading appears intermittently on the display as you jiggle the cable, the connection is faulty.

Product Numbers: 7817, 7818, 7819

Davis Instruments Part Number: 7395-112
External Temperature Sensor, Stainless Steel Steel Temperature Probe, Standard and Industrial
Rev. C Manual (7/8/99)

This product complies with the essential protection requirements of the EC EMC Directive 89/336/EC.

Davis Instruments
3465 Diablo Avenue, Hayward, CA 94545 U.S.A.