WatchDog®

External Temperature Sensors

Item #s 3667, 3667-20, 3667s

Spectrum® Technologies, Inc.

Thank you for purchasing an external temperature sensor for use with your WatchDog Data Logger or Weather Station. This manual will aid you in placement and mounting of the External Temperature Sensor. Read it thoroughly to insure proper and effective use of the sensor.

There are three versions of the External Temperature Sensor:

- 3667   External Sensor with 6 ft (1.8 m) cable.
- 3667-20   External sensor with 20 ft (6.1 m) cable.
- 3667s   Micro Sensor with exposed sensor element and 6 ft (1.8 m) cable.

The sensor cable is designed to connect to an external port on a WatchDog Data Logger or Weather Station. The connections to all three sensors can be extended by using item 3664 Extension Cable 20 ft (6.1 m). Once the sensor is in a representative "micro-climate," insert the cable plug into the WatchDog external channel port to record temperature data. If multiple external ports are available on the logger or station, then multiple sensors can be used to monitor temperature at different locations or soil depths.

The epoxy coating on the External Temperature Sensors will absorb water over time, leading to eventual sensor failure. Use the following guidelines for continuous water immersion:

72°F (22°C)   up to 9 months
100°F (38°C)   up to 3 months
150°F (66°C)   up to 1 month
Over 150°F (66°C)   do not immerse
212°F (100°C)   maximum temperature

The Micro Sensor exposes the sensor element, allowing it to react quickly to temperature changes, and measure surface temperatures such as on a leaf.

Use **SpecWare** software to program the WatchDog Data Logger or Weather Station to log the external temperature. Refer to the **SpecWare User Guide** for detailed launch and/or readout instructions.

Installing Sensors

- To monitor soil temperature, bury the sensor at a determined depth.
- To monitor water temperature, drop the sensor into the water to the desired depth.
- If the cable runs along the ground, use metal or plastic conduits to protect the cable from rodents.
- Attach the cable to the mounting mast below the WatchDog Logger using the wire tie supplied. This will ensure that the sensor cable does not become unplugged due to pests or strong winds.

If you have questions on sensor placement for your particular purpose and/or geological area, contact your cooperative extension agricultural agent for further suggestions on field placement.

Inspect the sensors frequently to make certain that the sensors have not been damaged and are clear of obstructions.

Suggestions for protecting sensor cables from rodents

- For vertical installations, run sensor cables through PVC pipe.
- For sensor cable that will be running parallel to the ground, either above or below the soil surface, the sensor cable can be fed through flexible conduit or drip irrigation tubing. If using drip irrigation tubing, consider using used tubing, as the tubing will have the curl taken out of it and will be easier to keep straight. A slit should be cut into the tubing with a box cutter and the cable stuffed inside. If the cable and protective cover are not buried, they can be secured to the ground with wire hooks or turf staples.

Warranty

This product is warranted to be free from defects in material or workmanship for one year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty does not cover damage due to improper installation or use, lightning, negligence, accident, or unauthorized modifications, or to incidental or consequential damages beyond the Spectrum product. Before returning a failed unit, you must obtain a Returned Materials Authorization (RMA) from Spectrum. Spectrum is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company.

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