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Weather Reach System

Weather Station Maintenance Guide

The Weather Reach System accesses weather data from Campbell Scientific weather stations. Proper maintenance of weather station components is essential to obtain accurate data. Equipment must be in good operating condition, which requires a program of regular inspection and maintenance. The person in charge of the weather station can accomplish routine and simple maintenance. More difficult maintenance such as sensor calibration, sensor performance testing (i.e., bearing torque), and sensor component replacement, generally requires a skilled technician, or that the instrument be sent to Campbell Scientific or the manufacturer.

A station log should be maintained for each weather station that includes serial numbers, dates that the site was visited, and maintenance that was performed.

These guidelines apply to most Campbell Scientific weather stations. Weather station site selection can also affect the accuracy of the data. Refer to the Campbell Scientific weather station owner's manual for additional information on site selection and maintenance procedures.

General Maintenance

Check sensor leads and cables for cracking, deterioration, proper routing, and strain relief. Replace sensor cables if required.
Check the tripod or tower for structural damage, proper alignment, and for level/plumb.
Desiccant - Enclosure humidity is monitored in the enclosure by an RH chip incorporated into the connector board. Change the desiccant packs when the enclosure RH exceeds 35%.
Monitor data values collected by the Weather Reach Server. Abnormal or out of range sensor values may indicate problems with the station.
Weekly visual inspection of the station to observe any apparent problems.
An occasional cleaning of the glass on the solar panel will improve its efficiency, if applicable.

Sensor Maintenance

1 month

Check the Pyranometer for level and contamination. Gently clean, if needed.
Visually inspect the wind sensors and radiation shield.
Check the rain gage for debris and level.
Do a visual/audio inspection of the anemometer at low wind speeds.
Check the filter cap of the temperature/humidity sensor for contamination.

6 months

Clean the temperature/humidity sensor filter cap
Clean the Gill Radiation Shield.
Battery test.
Inspect the enclosure seal.

1 year

Replace anemometer bearings, in some areas the bearings may be good for 2 years.
Calibrate the rain gage.
Calibrate the HMP45C/HMP35C temperature / RH probe. Or check calibration of CS500 RH Probe; replace RH chip if necessary but at least every 2 years.
Check internal RH chip (MetData1 and ET101/106 only). Replace if >5% off or every 3 years.
Change the desiccant packs.

2 years

Calibrate the solar radiation sensor.
Calibrate the temperature sensor.
Replace the wind vane potentiometer and bearings.

4 - 5 years

Calibrate the datalogger; this must be done by Campbell Scientific.

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