## A few notes on assembly of the Weather Station

In random order:

Check out the Help and the Document section on <http://WunderWeatherstation.wordpress.com> for hookup and configuration procedures. You will have to download some PC tools to bootstrap the device onto your Wifi network.

The Air-Data sensor currently comes with a 2” ribbon cable and a 5 pin inline connector. If your installation requires a greater distance between the main PCB and the sensor you can extend the wire with a suitable cable up to 20 feet. The short connection is best used with a force aspirated enclosure where a fan constantly draws air through the enclosure. I will have a new version of sensor available soon which uses a modular connector and a FAX/Phone cable for more hookup options.

On the wind tree assembly it should be obvious how to put it together, but make sure that you glue the PVC parts together to make them water proof. Use a run of electrical tape to hold together and seal the joints between the black Inspeed housings and the white PVC parts .

For esthetics and protection from UV I usually paint the finished PVC parts .

If you don’t use the sun input on the round wind tree distribution pcb solder the holes shut.

The Distribution PCB in the bottom of the 1” coupling needs an O-ring to seal, make sure that when you glue this together that the PCB is held tight against the O-ring without it wiggling. You will need to hold the parts together for a minute or so while the glue sets.

Don’t glue the Wind tree to the 1” pipe, simply press on and use electrical tape to hold the joint together.

If you permanently mount the wind tree on a pipe longer than 3” drill one ½ hole near the top, so that air can circulate in the pipe to prevent condensation near the connector.

The calibration factor for the Inspeed anemometer cups is exactly 2.5. Make sure you re-enter this in the sensor configuration page after a reset. The Default 2.25 is for the Davis cups.

Use good CAT5 cable, soft and pliable. Outdoor quality is preferred. On the cheap stuff the outer shell can crack after only one year out in the sun. Then the rainwater can enter the cable and flood your base station PCB, and that’s ugly.

Make sure not to forget to set the station elevation in the Station Setup page even if you don’t report to weather underground. The elevation is needed to calculate the barometer reading. A reset is needed after the elevation has been changed.

Except for the solar sensor, the various gains and offsets should not need tweaking unless you have reliable data to justify it.

The solar sensor should be calibrated to read about 950 Watt/m2 facing directly at the sun. The current sensor while electrically linear is direction sensitive and needs some optical diffusion mechanism to be less affected by incidence angle.