NRG S1 Anemometer Testing Instructions

Introduction

The NRG S1 Anemometer is a digital sensor that outputs a square wave signal with an amplitude equal to the supply voltage (5-15 V). Functional testing can be performed with a SymphoniePRO data logger and a voltage meter to measure the average voltage while spinning or a resistance test while idle. Testing can be performed on or off tower depending on the scenario and test performed.

Tools Required

- Digital Voltmeter
- SymphoniePRO Data Logger
- Small flat head screwdriver

Logger Display Test (on or off tower)

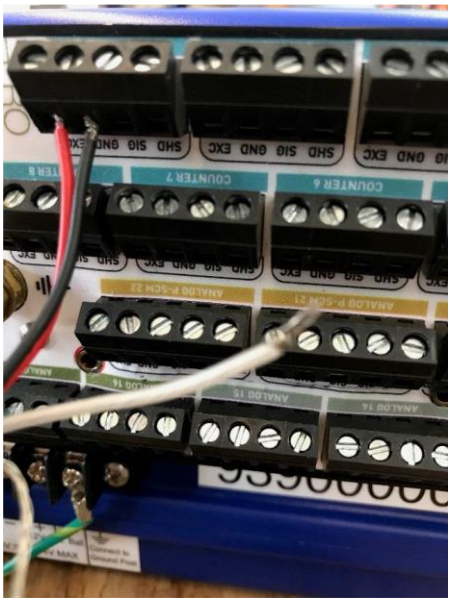
If NRG S1 Anemometer has been connected to a programmed SymphoniePRO Data Logger channel, the logger can display the current sensor reading:

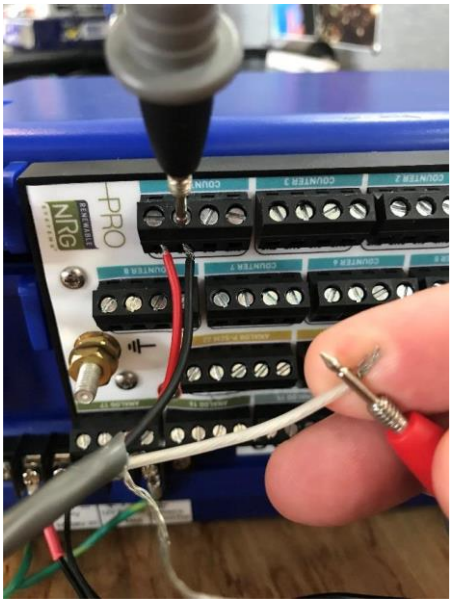
- Press [HOME] -> 1 -> 1 and scroll to the channel the NRG S1 Anemometer is currently connected to.
- While NRG S1 Anemometer head is spinning, the display of the logger will show the current sensor reading in meters / second.

Average Voltage Test (on or off tower)

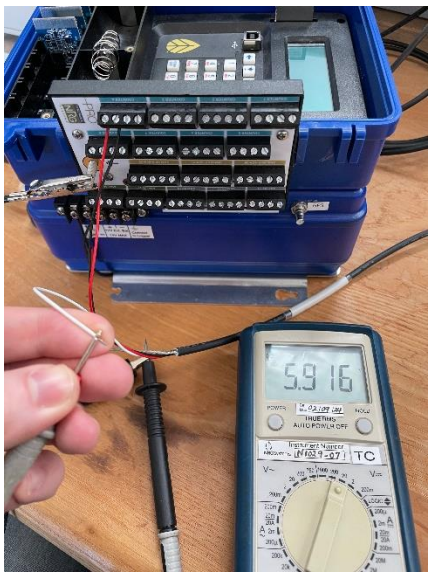
The following instructions assume you are using a SymphoniePRO Data Logger as the 12 v DC power supply.

- Connect the Excitation (Red) and Ground (Black) wires from the NRG S1 Anemometer to a Counter Channel on the SymphoniePRO logger:





- Set the Digital Voltmeter to the 20 v DC scale.
- Connect the ground probe from the Voltmeter to the screw on the Ground (GND) terminal and the positive probe to the Signal (white) sensor wire.
- While the head is spinning, the voltmeter should read approximately 6 V.



Resistance Test (off tower)

If the sensor is off tower and the head is still, a quick resistance test can check for shorted protection diodes.

- With the DVM set to 200 kΩ scale, connect the ground probe to the (black) ground wire from the NRG S1 Anemometer.
- Attach the positive probe to the (red) excitation wire to measure ground to excitation resistance. The reading should be approximately 50 kΩ.
- Attach the positive probe to the (white) signal wire to measure ground to signal resistance. The reading should be approximately 50 KΩ.
- If either test results in a very low or zero resistance reading, then the protection diode has been shorted. This is likely the result of an electrostatic discharge (ESD) event and the sensor will require factory repair or replacement.