

<b>ARCS PROCEDURE:</b>	<b>WIND MONITOR INSTALLATION PROCEDURE</b>	<b>PRO(WND)-005.003</b>
<b>Author: J. Zirzow</b>		<b>July 20, 1998</b> <b>Page 1 of 3</b>

## **Wind Monitor Installation Procedure**

### **I. Purpose:**

This procedure describes the steps necessary to install the wind monitors.

### **II. Cautions and Hazards:**

None.

### **III. Requirements:**

- Wind Monitor.
- Orientation ring.
- Wind Monitor Calibration Report.
- Notebook PC with RS232/EIA422/Impulse adapter cable.
- Anemometer Motor Drive.
- Vane Angle Fixture.

### **I. Procedure:**

#### **A. Steps:**

1. Place the orientation ring on the mounting post.
2. Place the Wind Monitor on the mounting post.
3. Connect the Wind Monitor to the datalogger. Refer to the SMET Sensor Configuration Table for the proper connection (Attachment 1).
4. Connect a notebook PC to the SMET datalogger using the RS232/EIA422/Impulse adapter.
5. While monitoring the Scaled Sensor Data from the Test Menu, point the nose cone of the Wind Monitor towards a known direction relative to true North, not magnetic North.
6. While holding vane in position, slowly turn the base until the wind direction reported by the ZENO reads the proper value.
7. Engage the orientation ring indexing pin in the notch at the instrument base.
8. Tighten the orientation ring-band clamp.

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9. Remove the Wind Monitor and place the Vane Angle Fixture on the orientation ring.
10. Place the Wind Monitor on the Vane Angle Fixture.
11. Engage the indexing pins in the notches and tighten the clamps.
12. Use the Vane Angle Fixture to position the vane at 30 degree increments.
13. The ZENO should report wind directions within  $\pm 5$  degrees of the Vane Angle Fixture settings.
14. Remove the Wind Monitor and Vane Angle Fixture.
15. Place the Wind Monitor on the orientation ring and engage the orientation ring indexing pin in the notch at the instrument base.
16. Tighten the mounting post band clamp.
17. Connect the Anemometer Motor Drive to the propeller shaft.
18. Turn ON the Motor Drive and set the speed to 100 RPM. The ZENO Test Menu Raw Sensor Data should report a 5 Hz signal.
19. Set the speed to 400 RPM; the ZENO reports a 20 Hz signal.
20. Set the speed to 800 RPM; the ZENO reports a 40 Hz signal.
21. Set the speed to 1600 RPM; the ZENO reports a 80 Hz signal.
22. Set the speed to 3200 RPM; the ZENO reports a 160 Hz signal.
23. Enter the calibration values (for conversion from Hz to meters/sec) for Wind Monitor #1 (Input connector 3) into record 1 of the Sensor Menu.
24. Enter the calibration values (for conversion from Hz to meters/sec) for Wind Monitor #2 (Input connector 4) into record 3 of the Sensor Menu.
25. Change the Configuration Version Number in the Data Output Menu to include the current date.
26. Save the changes to EEPROM.
27. If any changes were made to the software configuration, download the new configuration to the notebook computer using the naming convention SMETsss.txt, where "sss" is the datalogger serial number and "n" is an alphabetic version number.
28. Terminate the connection by selecting "Quit."
29. Disconnect the notebook computer and connect the logger to ADaM.
30. Download the new SMET ZENO configuration to ADaM.

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31. Record the date, start-time, end-time, and any comments in the Site Data Log.
32. Send the sensor serial number and a copy or a listing of the SMET configuration file to the SMET mentor.

**V. References:**

1. Hart, Dick.

**VI. Attachments:**

1. SMET Sensor Configuration Table

**Attachment 1**

**SMET SENSOR CONFIGURATION TABLE**

When installing or changing the following sensors or instruments, write the calibration coefficients into the appropriate ZENO Sensor Menu. The calibration coefficient for the air temperature sensor is in the ZENO Process Menu. Details on determining and changing this coefficient is discussed separately.

<b>Sensor or Instrument</b>	<b>Designation No.</b>	<b>Sensor No.</b>	<b>Connector</b>
Wind Speed 1	WSPD1	1	3
Wind Direction 1	WDIR1	2	3
Wind Speed 2	WSPD2	3	4
Wind Direction 2	WDIR2	4	4
Relative Humidity	RH	7	2
Optical Rain Gauge	R-RATE	8	1