



INTRODUCTION

This document provides guidance on how to configure a **RM Young Wind Monitor-HD** and **HD-Alpine** for use with NRG's data loggers. The Wind Monitor-HD measures horizontal wind speed and direction. This sensor has long-lasting, corrosion resistant, ceramic bearings and a ¼ inch diameter propeller shaft. It features a high pitch propeller that will extend bearing longevity due to its lower rotation rate at like wind speeds. The direct output for wind speed is an AC sine wave and direction is a precision potentiometer. The HD-Alpine combines the features of the HD unit along with an all-black design for thermal warming from sun exposure and a specially formulated, ice resistant coating applied to all external surfaces to improve performance in high elevation Alpine environments.





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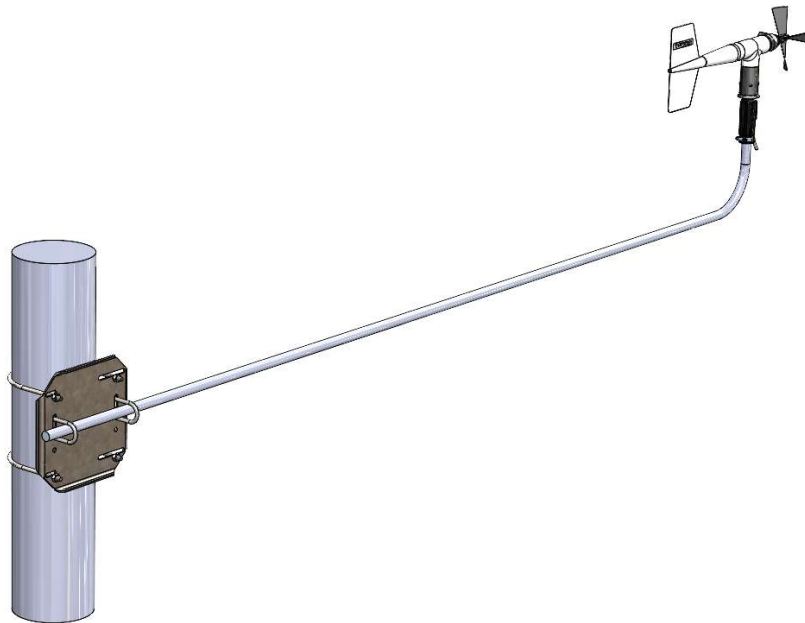
INSTALLATION

Parts

NRG Part Number	Part Description	Part Specification	Qty
20526	Sensor	RM Young Wind Monitor HD	1
or			
20527	Sensor	RM Young Wind Monitor HD Alpine 90m	1
21631	Sensor	RM Young Wind Monitor HD Alpine 70m	1
20560	Cable	Assembly, Cable, 5C, 22 AWG, Shielded, 90m	1
21042	Surge Protection	Surge Protection, 6 channel, RM Young	1

Mounting Kit Parts

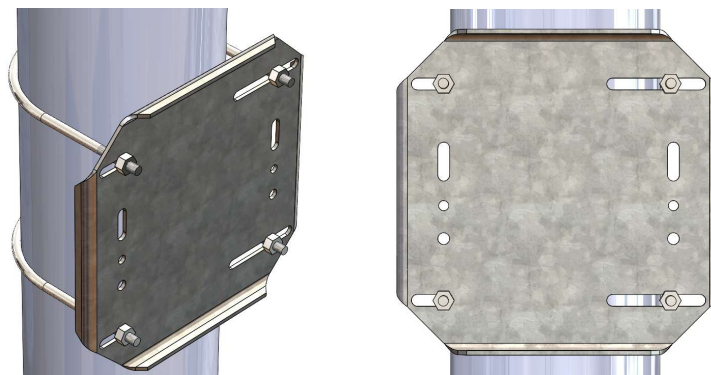
NRG Part Number	Part Description	Part Specification	Qty
2301	Boom	Boom, HD, Single Sided, 113", 1" IMC, 8-10" Tower	1
10601	Mounting Bracket	Bracket, Boom Mount, 6-10" Diameter	1
1895	U-Bolt	U-Bolt, 1.5", Galvanized, w/ Nuts	2
3180	U-Bolt	U-Bolt, 8", Galvanized, w/ Nuts	2
3971	U-Bolt	U-Bolt, 10", Galvanized, w/ Nuts	2
1562	Hose Clamp (Not Used)	Hose Clamp, #36, 5/16" Hex/Slot/Screw, SS	2
1826	Mast (Not Used)	Mast, 16" Stub, Galvanized	1

**Tools Required**

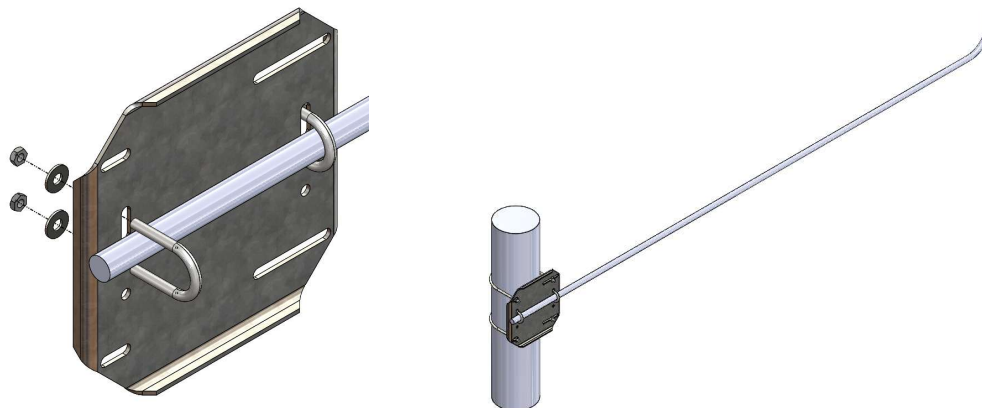
- ½" wrench (for 1895 U-bolt) (Washer included with U-bolts is NRG PN 2814)
- 11/16" wrench or socket (for 3180 or 3971 U-bolts)
- 5/16" wrench or socket (for sensor mounting)
- Small flathead screwdriver (for logger terminations)

Installation Instructions:

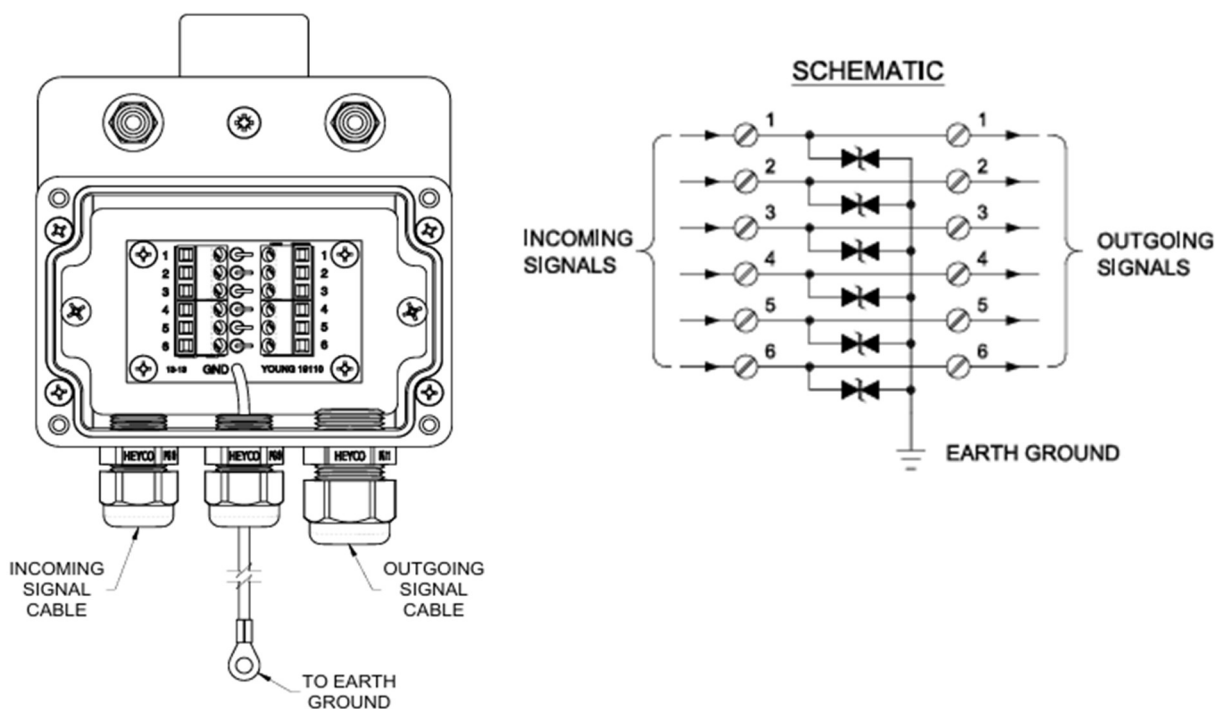
1. Mount the #10601 mounting bracket to the tower using the appropriate size U-bolts (#3180 or #3971). Hand tighten the nuts provided with the U-bolts. Finish tightening with an 11/16" wrench or socket.



2. Mount the #2301 boom to the mounting bracket using the #1895 U-bolts and provided nuts and washers. Hand tighten the nuts onto the U-bolts and adjust the boom as desired. Finish tightening with a ½" wrench or socket.



3. Mount the **RM Young Wind Monitor** to the boom using the orientation ring and hardware provided with the sensor. Tightening the sensor hardware will require a $\frac{5}{16}$ " wrench or socket.
4. Mount the surge protection J-Box (PN 21042) below the **RM Young Wind Monitor** at the base of the boom's upright.
 - a. Follow these guidelines for wiring all (5) of the wires plus the ground wire into the Incoming and Outgoing terminals.



For more information on sensor mounting and vane alignment, refer to the sensor manufacturer's user manual. **Proper vane alignment is also shown on licabelow.**



RM Young Wind Monitor-HD and HD-Alpine

SETTING UP WITH SYMPHONIEPRO:

Ensure that the *SymphoniePRO Desktop Application* software is up to date.

Programming SymphoniePRO:

Open the *SymphoniePRO Desktop Application* and connect the logger using a USB cable directly to the laptop or secure a connection via remote Metlink with the iPack static IP address. From the **Fleet View**, enter the logger and navigate to the **Channels** tab located on the left side of the window. Scroll down to the desired channels and begin configuration.

The **RM Young Wind Monitor HD** and **HD Alpine** can be configured using Counter Ch. 8 or 9 for the anemometer and Analog Ch. 13 – 15 for the vane. The scale factor and offset for wind direction and speed are as follows:

	Wind Direction	Wind Speed
Scale Factor	72	0.1666
Offset	0	0
Units	Degrees	m/s
Excitation Voltage	5V Constant	N/A

Note: If required, the vane can be used on P-SCM channels with a #9133 P-SCM. This P-SCM applies a 2.5V pulsed excitation and requires a scale factor of 144. Due to the long cable length, pulsed excitation can lead to a slight offset while operating in the Dead Band region of the sensor. Due to dithering and average data, this offset may be imperceptible to the end user.

SymPRO Configuration and Wiring (Vane):

Select the desired channel for the vane (Ch. 13-15) and select **RM Wind Monitor 05108 DIR** from the **Load From Defaults** dropdown menu.

The screenshot displays the SymphoniePRO configuration window. On the left, a dropdown menu titled 'Load From Defaults' is open, showing a list of sensors including 'NRG 200M Wind Vane', 'NRG 200P Wind Vane', 'NRG 5762 Hybrid XT Vane', 'Vector W200P Wind Vane', 'Thies 10k Wind Vane (xx.210)', 'Thies 2k Wind Vane (xx.212)', 'RMY Wind Monitor Dir.', 'Custom Wind Vane (Potentiometer)', 'NRG 110S Temperature', 'NRG T60 Temperature', 'NRG BP60 Barometer', 'NRG BP60 Barometer with SN > 99395002878', 'NRG BP65 Barometer', 'No Sensor', and 'RMY Wind Monitor 05108 Dir'. The 'Description' field is set to 'RMY 05108'. Below this, there are input fields for '0 Meters', '0 Degrees', and '180 Degrees'. The 'Excitation' section shows 'Mode' as 'Constant On' and 'Voltage' as '5 V'. The 'Dead Band Compensation' section shows 'North East' as '0 Degrees' and 'North West' as '5 Degrees'.



RM Young Wind Monitor-HD and HD-Alpine

Enter the desired sensor description (e.g. RMY Vane) and **serial number** for the sensor along with the **Scale Factor** of **72**. Under Excitation, select **Constant On** for **Mode** and **5V** for **Voltage**. Under **Dead Band Compensation**, enter 0 degrees for North East and 5 degrees for North West.

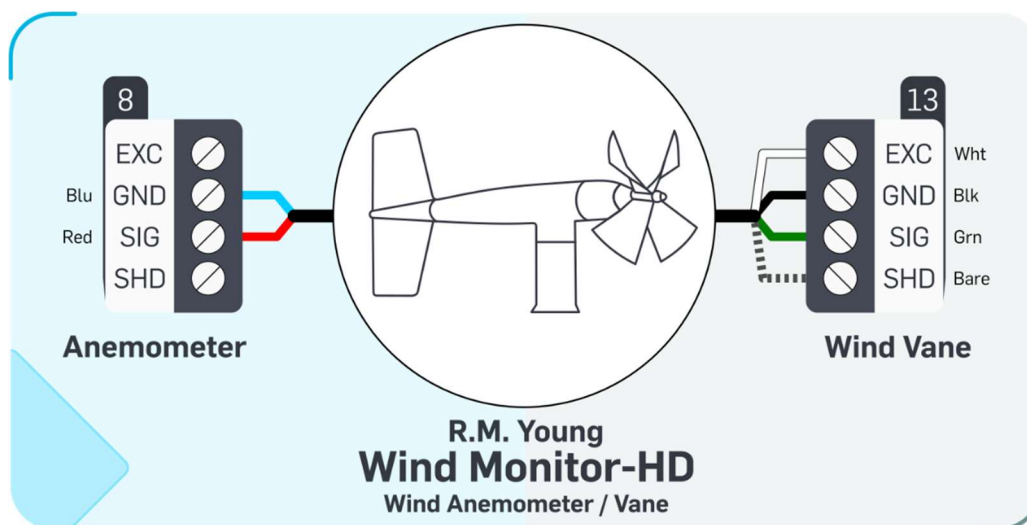
The configuration interface is divided into three main sections:

- Data Logging Mode:** Includes a 'Load From Defaults' button, a 'Statistics' button (indicated by a green power icon), and a 'Channel Type' dropdown set to 'Wind Vane'. Below this, a note states: 'A channel of type Wind Vane records the following statistical wind direction information:
 - Average (unit vector method)
 - Standard Deviation (Yamartino Method)
 - Direction of maximum gust (Channel 13 detects maximum gust with channel 1)
- Sensor Configuration:** Contains fields for 'Description' (RMY 05108), 'Serial Number', 'Height' (0 Meters), 'Boom Bearing' (0 Degrees), 'Vane Mounting Angle' (180 Degrees), 'Sensor Transfer Function' (Scale Factor: 72 Degrees per V, Offset: 0 Degrees), and 'Total Direction Offset' (180.0 Degrees).
- Excitation and Compensation:** Includes 'Excitation Mode' (Constant On), 'Excitation Voltage' (5 V), and 'Dead Band Compensation' (North East: 0 Degrees, North West: 5 Degrees).

Wiring for the vane is as follows:

Wire Color	Function	Termination
White	Wind Direction Excitation	EXC
Black	Wind Direction Ground	GND
Green	Wind Direction Signal	SIG
Shield	Earth Ground	SHD

Note: There is only one shield/earth ground wire coming from the sensor. This wire can be terminated in the SHD terminal of either channel (vane or anemometer) being used for this sensor.





RM Young Wind Monitor-HD and HD-Alpine

SymPRO Configuration and Wiring (Anemometer):

Select the desired channel for the anemometer (Ch. 8 or 9) and select **RM Young Wind Monitor 05108 Anem** from the **Load From Defaults** dropdown menu.

The screenshot shows the SymPRO configuration interface for an anemometer. The 'Load From Defaults' dropdown is open, showing a list of sensor options. The 'Description' field is set to 'RMY 05108 Alpine'. The 'Signal Type' is set to 'Coil'. The 'Scale Factor' is set to '0.166 m/s per Hz'. The 'Offset' is set to '0 m/s'. The 'Units' are set to 'm/s (meters per second)'. The 'Enable High Speed Coil Signals' checkbox is checked.

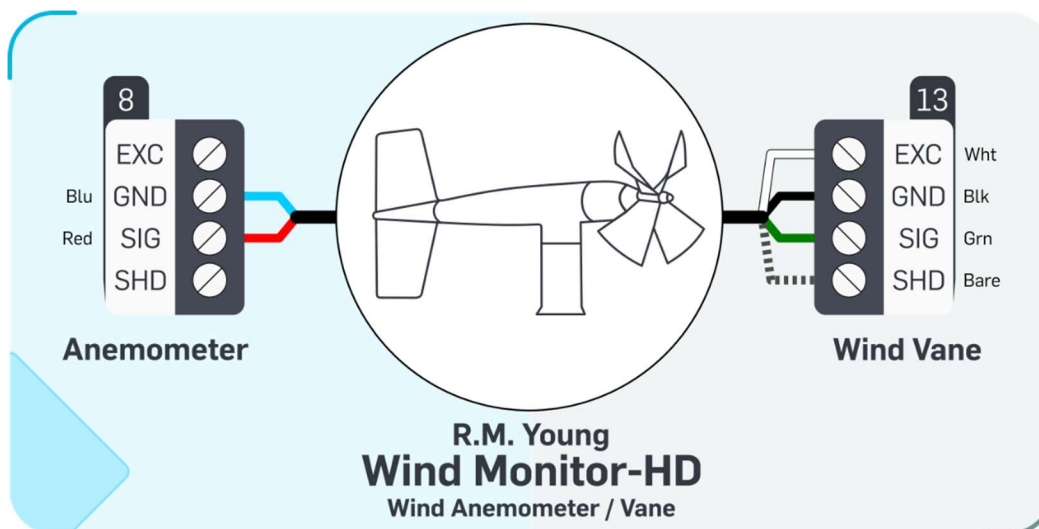
Enter the desired sensor description (e.g. RMY Anemometer Alpine) and serial number for the sensor along with the **Scale Factor** of **0.1666** for wind speed in m/s. Ensure that the **Signal Type** selected is **Coil** and the **High Speed Coil Signals** checkbox is selected.

The screenshot shows the SymPRO configuration interface for an anemometer. The 'Description' field is set to 'RMY 05108'. The 'Serial Number' field is empty. The 'Height' field is empty. The 'Boom Bearing' field is empty. The 'Scale Factor' is set to '0.166 m/s per Hz'. The 'Offset' is set to '0 m/s'. The 'Units' are set to 'm/s (meters per second)'. The 'Signal Type' is set to 'Coil'. The 'Enable High Speed Coil Signals' checkbox is checked.

Wiring for the anemometer is as follows:

Wire Color	Function	Termination
Blue	Wind Speed Reference	GND
Red	Wind Speed Signal	SIG
Shield	Earth Ground	SHD

Note: There is only one shield/earth ground wire coming from the sensor. This wire can be terminated in the SHD terminal of either channel (vane or anemometer) being used for this sensor.

**Final SymPRO Checks:**

Pull-test all wires to ensure proper connection; if any disconnect, reseal, and hand-tighten.

View Live Data (either at the logger display, or via SymphoniePRO Desktop Application) to verify that the sensor output is producing reasonable values and the units are labeled correctly.

Proper Vane Alignment:

RM Young recommends aligning the vane on the boom using a 7-step process:

1. Wire the sensor to the logger as described in the instructions above.
2. Choose a known wind direction reference point on the horizon. Double check the reference point with a compass.
3. Sighting down the instrument center line, point nose cone at reference point on the horizon.
4. While holding the vane in position, slowly turn base until the logger shows the correct wind direction measurement.
5. Tighten the mounting post band clamp.
6. Engage the orientation ring indexing pin into the notch at the instrument base.
7. Tighten the orientation ring band clamp.