INTRODUCTION

This document provides guidance on how to configure a **RM Young Heavy Duty Wind Monitor-HD** and **HD-Alpine** for use with NRG's data loggers. The Heavy-Duty 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	1
20560	Cable	Assembly, Cable, 5C, 22 AWG, Shielded, 90m	1
18570	Junction Box	Assembly, Junction Box, IMT	1
3259	Boom Mounting Kit	Boom, HD, Single Sided, 113", 1" IMC, 8-10" Tower	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

# RM Young Wind Monitor-HD and HD-Alpine
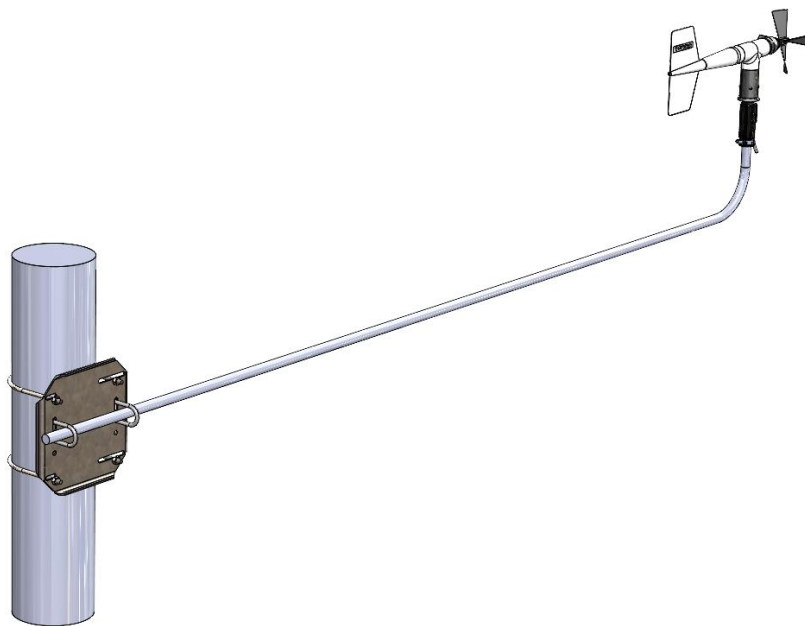
Tools Required

- 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.
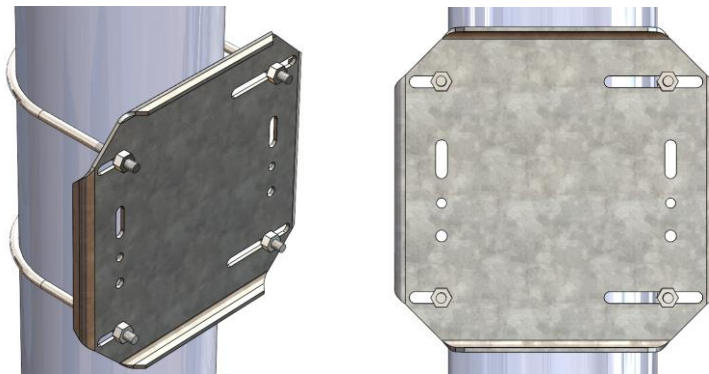
2. Mount the #2301 boom to the mounting bracket using the #1895 U-bolts and provided nuts and washers. Hand tighten the nuts onto the U-bolts and adjust the boom as desired. Finish tightening with a ½" wrench or socket.
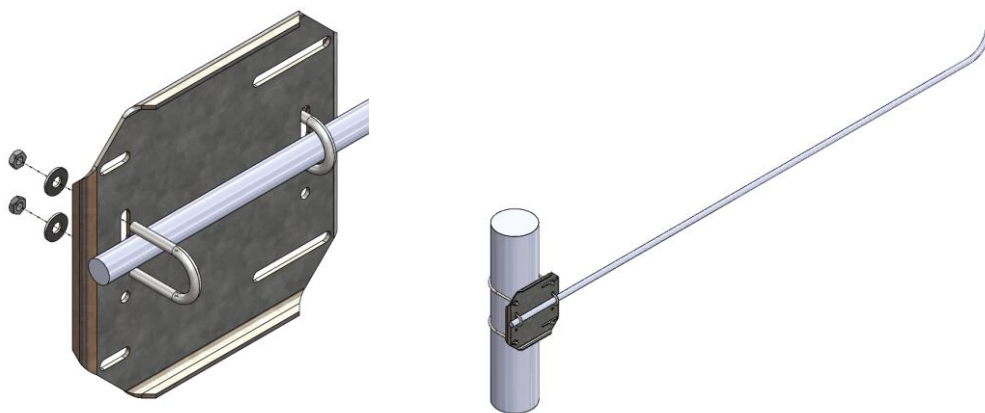
3. Mount the **RM Young Wind Monitor** to the boom using the orientation ring and hardware provided with the sensor. Tightening the sensor hardware will require a $^{5}/_{16}$" wrench or socket.

For more information on sensor mounting and vane alignment, refer to the sensor manufacturer's user manual.

SETTING UP WITH SYMPHONIEPRO:

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

Programming SymphoniePRO:

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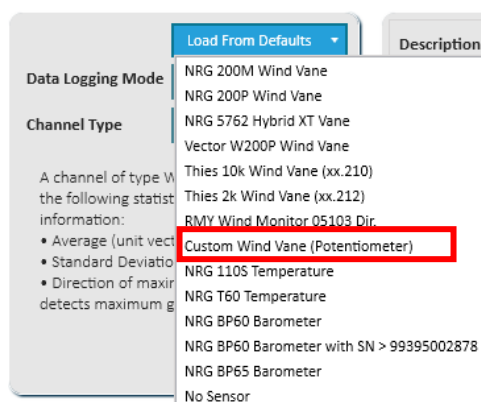
The **RM Young Wind Sensor HD** and **HD Alpine** can be configured using Counter Ch. 8 or 9 for the anemometer and Analog Ch. 13 – 15 for the vane. The scale factor and offset for wind direction and speed are as follows:

	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 deadband region of the sensor. Due to dithering and averaged data, this offset may be unperceivable to the end user.

SymPRO Configuration and Wiring (Vane):

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

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.

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.*
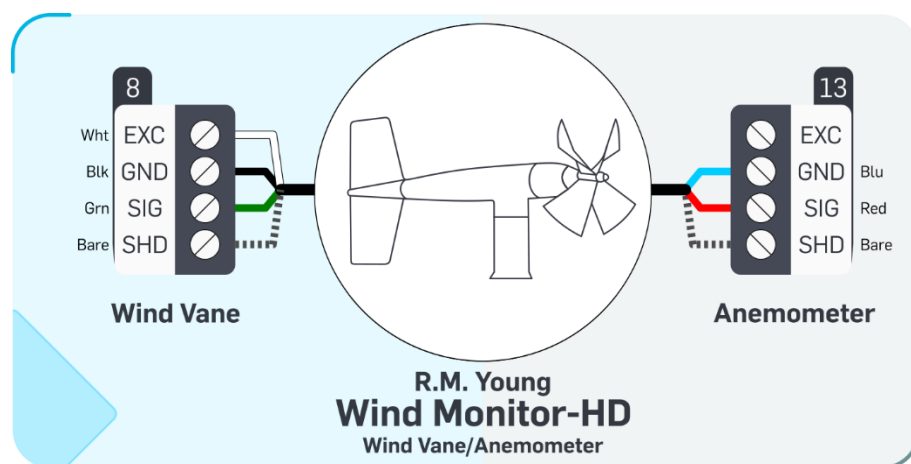
SymPRO Configuration and Wiring (Anemometer):

Select the desired channel for the anemometer (Ch. 8 or 9) and select **Custom Anemometer** from the **Load From Defaults** dropdown menu.

Enter the desired sensor description (e.g. RMY Anemometer) 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.

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.*
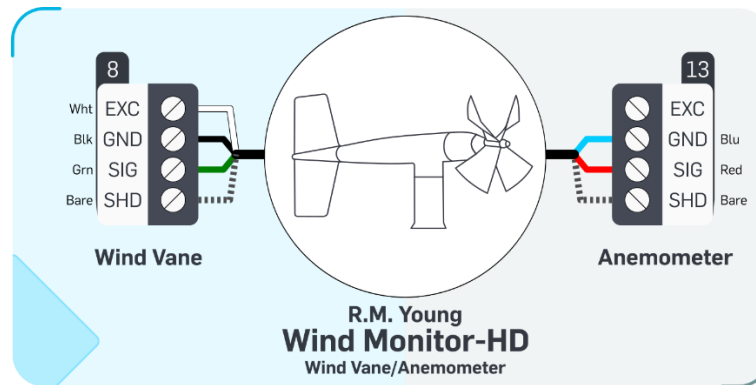
Final SymPRO Checks:

Pull-test all wires to ensure proper connection; If any disconnect, reseat, 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.