

Special Information for the Vertical Propeller Anemometer SCM for Symphonie Loggers

Introduction

This SCM has been modified to support an R. M. Young 27106 Anemometer. Typically, this SCM is used as a W (vertical component of wind speed) sensor.

This Application Note explains how to connect the anemometer to the Symphonie, Symphonie*PLUS*, or Symphonie*PLUS3* logger and provides scale factors for correct scaling of the logger raw data into customary units such as meters per second or miles per hour.

Channel Configuration

The Symphonie and Symphonie*PLUS* loggers have six analog channels, numbered 7 to 12. Channels 7 and 8 are pre-configured for RNRG 200P wind direction vanes. You can install this SCM in any of channels 9 through 12.

Symphonie*PLUS3* loggers have three flex channels, numbered 4 to 6, in addition to analog channels 7 to 12. You can install this SCM in any of channels 4 to 6 or 7 to 12.

The SCM is marked as "RMY Vertical Prop Anemometer."

Refer to your logger User's Manual for more information on installing SCMs and configuring logger channels.

Wiring the Sensor Signals to the Logger

All sensor signal connections are made to the field wiring panel on the logger. Refer to these diagrams for terminal names and positions.

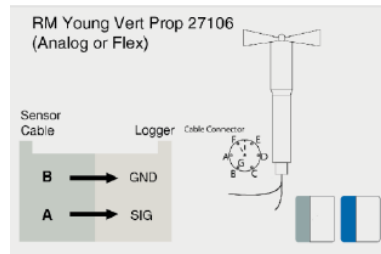
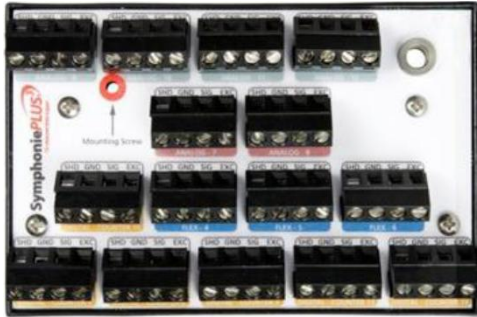
Symphonie Logger



SymphoniePLUS Logger



SymphoniePLUS3 Logger



As always, verify that the logger ground wire is connected to a suitable earth ground before connecting sensors. Make sure that you discharge any static electricity by touching the earth ground before handling the sensor wires. This application note assumes that you are connecting your sensor to channel 9. The same information applies to any of the other analog or flex channels.

Conventionally, the vertical anemometer is wired to give an increasing signal for updraft, with the anemometer mounted propeller up. To connect the anemometer with this orientation, connect the "A" terminal of the anemometer to the logger's "SIGNAL" terminal. Connect the "B" terminal of the anemometer to the logger's "-" terminal. The "+" input terminal is not used for the vertical anemometer.

Scaling for the RMY Propeller Anemometer

The output signal of the RMY anemometer is a voltage proportional to the wind speed component. The SCM and the logger's A/D converter capture the signal from the anemometer as a raw count value of 0 to 1023 counts for the full range of the input. Since the anemometer signal reads positive and negative wind speeds, zero wind speed corresponds to the mid-range of the input, or 512 counts. The scaled range is +/- 15 m/s (approx. +/- 34 mph).

To obtain units...	use Scale Factor...	and enter Offset...
meters per second (m/s)	0.0293	-15.00
miles per hour	0.0656	-33.59

Scaling for the RM Young 27106 anemometer *with 30cm pitch propeller*

Entering Sensor Information into the Logger

As with all sensors, the Symphonie logger calculates and stores this data in raw units; no scaling is applied to the data in the logger. The logger uses the descriptive and scaling information that you enter to display present values, and stores it in the data file headers for later use. Refer to your Symphonie User's Manual for more details on entering values into the Symphonie logger.

When the logger is started, it will identify channel 9 as an RNRG 110S temperature sensor. Press [Home][4][2][9], then press [•] to change channel 9 settings.

Press [•] to select "Custom", then press [SET] to accept and to edit the description. Enter the sensor description, "Vertical Wind Speed" for example. Press [SET] to see the scale factor 1.0; enter the scale factor

from the table above. Press [SET] to see the offset, 0.0; enter the offset from the table. Press [SET] to see the units, "unit". Enter the desired units ("m/s" for example). Press [SET]. Enter the sensor mounting height if desired; press [SET]. Enter the sensor serial number if desired. Press [SET] to complete the settings for channel 9.

Once these parameters are entered, press [Home][1], and then use the [•] key to view the present values of the sensor.

Data Processing

When creating the site in Symphonie Data Retriever software (SDR), the site parameters entered at the logger will be transferred to the site information (Site Information Editor screen) automatically. If desired, you can make additions or corrections to the site parameters before saving the site.