



## Digital Anemometer SCM (#3151)



### INTRODUCTION

These instructions explain how to use the digital anemometer Signal Conditioning Module (SCM) to interface a wide variety of digital pulse or reed switch sensors to the NRG Symphonie, SymphoniePLUS and SymphoniePLUS3 data loggers.

### DESCRIPTION

The digital anemometer SCM (NRG #3151) expects a frequency signal as either a square wave voltage or as reed-switch closures. This SCM includes a built-in 20 K Ohm pull-up resistor for reed switch or “NPN” style outputs. The signal high-level must be above 3 volts, and the signal low-level must be below 1.5 V for reliable detection of the signal. Input noise filtering rejects frequencies higher than approximately 2500 Hz.

When configuring your sensor channels in Symphonie Data Retriever Software, scroll to the appropriate channel number, click ‘Load Defaults’, and choose ‘Unknown Anemometer’ from the drop-down menu. Enter the manufacturer’s recommended slope and offset values in the appropriate fields.

We have designed this card to be compatible with all of the sensors listed below. NRG Systems has run verification tests with some of the sensors on the list. The other sensors listed should be compatible based on manufacturer’s output specifications.

### USER INSTRUCTIONS

To use the SCM with a digital anemometer in an NRG Symphonie Data logger, simply insert it into the SCM slot that corresponds to the channel where the anemometer is connected. SCM slots are located underneath the battery cover.



## APPLICABLE SENSORS

### Pulse Anemometers

Verified	Brand	Sensor	NRG Part Number
Yes	NRG	#40H	1901
Yes	NRG	IceFree3 Hall Effect	2749, 2776, 2780, 3289, 3578, 3956
Yes	Vector	A100L	-
Yes	RM Young	27106D	-
No	Thies	First Class, Digital Output	-
No	Thies	Classic, Digital Output	-
No	Thies	Compact, Digital Output	-
No	Vaisala	WAA252	-
No	Vector	A100M	-
No	Vector	A100K	-

### Reed Switch Anemometers

Verified	Brand	Sensor	NRG Part Number
Yes	WindSensor	P2456A	4303 (Discontinued)
Yes	Vector	A100R	-

### Other

- kW or kWh outputs as “KYZ” contacts from utility meters

## SENSOR WIRING EXAMPLES

In some cases, cabling may be supplied by the sensor manufacturer. For convenience, we have included known wiring configurations here. These configurations may be subject to change; please refer to specific wiring instructions included with the sensor.

Please note that the Scale Factor and Offset values listed below are provided as *default* values – these values can be used if calibration values are not available. Scale factor and offset values are listed on WindSensor Certificate for Calibration of Cup Anemometer reports which are included with every anemometer. These values are listed as *Calibration equation obtained* (ie.  $v [m/s] = 0.6201 \cdot f [Hz] + 0.270$ ).



WindSensor P2546A Connection Information			
WindSensor Cable	Symphonie & SymphoniePLUS Wiring Panel	SymphoniePLUS3 Wiring Panel	
Brown wire	CH 4,5,6	EXC (CH 1-3, 13-15) iPack required, no SCM needed	SIG (CH 4-6) w/ Digital Anemometer SCM, no iPack required
White wire	CH 4,5,6	SIG (CH 1-3, 13-15) iPack Required, no SCM needed	GND (CH 4-6) w/ Digital Anemometer SCM, no iPack required
Bare wire braid (cable shield)	Shield or Earth Ground Stud	SHD - Shield	SHD – Shield
Default Scale Factor Value	0.6201	0.6201	0.6201
Default Offset Value	0.270	0.270	0.270

## SPECIFICATIONS

Description	Accessory type	Signal Conditioning Module (SCM)
	Applications	To connect a pulse or reed-switch anemometer to NRG Symphonie loggers
	Instrument compatibility	NRG Symphonie Loggers (Not compatible with SymphoniePRO)
	Sensor compatibility - counter channels	One pulse or reed-switch anemometer
	Functions	Provides input channel electronics to connect a pulse or reed-switch anemometer to a counter channel
Power requirements	Other	Powered by logger
Installation	Mounting	Plugs in to SCM slot in logger front panel
Physical	Connections	<ul style="list-style-type: none"> <li>Installs in Counter 4, Counter 5, or Counter 6 SCM slot on all Symphonie Loggers</li> <li>Sensor is connected to logger input terminals</li> </ul>
	Dimensions	41 mm x 27 mm x 5 mm (1.6 inches x 10.7 inches x 0.2 inches)