

WindSensor P2546-OPR Anemometer: Wiring and Installation Information

Introduction:

The purpose of this document is to explain the differences between the two versions of the WindSensor P2546-OPR anemometer as well as address the different wiring schemes and power requirements. Boom options and a drawing with physical dimensions of the sensor can be found at the end of the document.

There are currently two available models of the P2546-OPR anemometer, the P2546**A**-OPR and the P2546**C**-OPR. The P2546A-OPR uses a mercury-wetted reed switch to produce pulses as the anemometer head spins. This version of the sensor works as a digital anemometer and requires either a 5v or 12v excitation voltage (depending on the wiring).

The P2546C-OPR uses a coil to produce a low level AC sine wave. This version of the sensor has a frequency-based output similar to #40C and NRG Class 1 anemometers and does not require excitation voltage.

From the standpoint of measuring the wind speed, the performance of the two anemometer versions is identical.

P2546A-OPR Wiring and Power Requirements:

When connecting a WindSensor P2546A-OPR anemometer to the SymphoniePLUS[®] 3's *built-in channels (1-3, 13-15)*, **an iPack is required**. These channels use the 12V excitation from the iPack to create pulses that feed into the channel as the sensor's reed switch turns on and off.

When using the SymphoniePLUS3's *flex channels (4-6)* with a Digital Anemometer SCM, **no iPack is required**.

When using Symphonie or SymphoniePLUS logger *counter channels (4-6)* with a Digital Anemometer SCM, **no iPack is required**. The Digital Anemometer SCM routes the data logger's 5V supply to the sensor's reed switch.

WindSensor P2546A-OPR Wiring Summary Table			
Logger Type	SymphoniePLUS3: Built-in: 1-3, 13-15	SymphoniePLUS3: Flex: 4-6	Symphonie/SymphoniePLUS
SCM / iPack	No SCM / iPack Required	#3151 SCM / No iPack Required	#3151 SCM / No iPack Required
Black (or brown) lead:	EXC (excitation)	SIG (signal)	(-) negative
White lead:	SIG (signal)	GND (ground)	(+) excitation

P2546C-OPR Wiring and Power Requirements:

WindSensor P2546C-OPR anemometers are wired to Symphonie, SymphoniePLUS and SymphoniePLUS3 loggers in the same Ground/Signal configuration (see below) and do **not require an iPack**.

The sensor can be installed on the built-in channels of a Symphonie (1-3), SymphoniePLUS and SymphoniePLUS3 (1-3, 13-15 for both) without an SCM card.

The sensor can be installed on open counter channels or flex channels (4-6) with a P/N 3148 #40 Anemometer SCM card.

WindSensor P2546C-OPR Wiring Summary Table			
Logger Type	SymphoniePLUS3: Ch. 1-3, 4-6, 13-15	SymphoniePLUS Ch. 1-3, 4-6, 13-15	Symphonie Ch. 1-3, 4-6
SCM / iPack	#3148 SCM for ch. 4-6 No iPack Required	#3148 SCM for ch. 4-6 No iPack Required	#3148 SCM for ch. 4-6 No iPack Required
Black (or brown) lead:	GND (ground)	"-" (negative)	"-" (negative)
White lead:	SIG (signal)	"+" (signal)	"+" (signal)

Scaling:

All WindSensor anemometers are individually calibrated. Each unit has a unique calibration report with a unique slope and offset. Use these calibration parameters when programming the logger. If you do not have a copy of the calibration report, you can download it from the Renewable NRG Systems website using the serial number found on the sensor: <http://nrgapps.com/calreports/>.

If you have any questions about the sensor, how to wire it, or how to enter the slope and offset into a Symphonie logger, feel free to contact Renewable NRG Systems Technical Support at 802-482-2255 or email us at support@renewablenrgsystems.com.

Mounting:

For mounting a WindSensor to our standard tubular towers, we offer the boom listed below. We also sell a number of adapters and risers kits for retrofitting existing installations. Please contact our sales department for more information.

- #4478 – 2.4 m (95") Side Mount Boom with WindSensor Extension

For mounting a WindSensor to a lattice tower, we offer a complete boom with mounting hardware that complies with IEC requirements for lattice tower face widths up to 18 inches (45 cm). Optionally, we offer a separate support pole kit if you plan to fabricate your own booms:

- #7372 – Single Lattice 95" Boom + #4475 – WindSensor Adapter Kit
- #6746 – Support Pole w/ Saddle Washers & Bolt for WindSensor, 525mm riser

Note: If you plan on manufacturing your own booms, a riser may be required to increase the height of the anemometer rotor in order to comply with the IEC-61400-12-1 standard depending on the diameter of the horizontal boom arm. According to the specs, the anemometer cups should be 15 or more times higher than the boom width.

If you plan to design your own boom or adapter, the dimensions you will need are provided in the drawings below:

