

Using the Ammonit P6312 on RNRG Symphonie Loggers

Introduction

Symphonie loggers support meteorological sensors using a choice of optional Signal Conditioning Modules (SCMs). The Ammonit P6312 provides signals for Temperature and Relative Humidity (RH).

The Renewable NRG Systems logger collects and stores data in raw format; a scale factor needs to be calculated to convert the raw data to engineering units. This application note explains which SCM and scale factor to use for the P6312, and also how to connect the sensor to Symphonie.

SCM Selection

The NRG 0-1V SCM (Item 7758) is compatible with the P6312 temperature and relative humidity outputs.

Sensor Scale Factor

The Ammonit P6312 provides a 0-1V output signal corresponding to temperatures from -30 to +70C, and also provides a 0-1V output signal corresponding to RH from 0-100%. The Symphonie logger samples the sensor output voltage and converts it to a raw value in counts. The real-time display and the scaled data generated by SDR require a scale factor be applied to the raw value to obtain values in meaningful units (such as Deg. C or % RH).

Measurement	SCM item	Symphonie Logger Channel Type	Slope	Offset	Units
Temperature	7758	Analog or flex	0.0977	-30	C
Relative Humidity	7758	Analog or flex	0.0977	0	%RH

Entering Sensor Information into the Logger

The Symphonie logger calculates and stores 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 the scaling information in the data file headers for later use. Refer to your logger's User Guide for more details on entering values into the Symphonie logger.

When the logger is started, it will identify the sensor channel as an NRG 110S temperature sensor. Press [Home][4][2][9], then press [F1] to change channel 9 settings, for example.

Press [F1] and select "custom"; press [SET] to accept, and then edit the sensor description. Press [SET] to see the current scale factor setting; enter the Scale Factor 0.0977. Press [SET] to see the current Offset; for

temperature enter an offset of -30. Press [SET] to see the current Units setting, and enter "C". Press [SET]. Enter the sensor mounting height if desired, and then 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], then use the [] key to display instantaneous sensor readings.

Data Processing

When importing data into Symphonie Data Retriever (SDR) software for the first time, the site parameters entered at the logger will be imported automatically. If the calculated scale factor was not entered into the logger, you should enter the scale factor for your sensor into the Site Information Editor before importing the site data.

Wiring

Ammonit P6312 sensors are equipped with a multi-conductor cable, which carries signals from the sensor as well as power to the sensor. Please consult the documentation which came with the sensor. Note wire colors vary between manufacturers and sometimes change over time, so please cross check the pin out shown here with the sensor manual.

Ammonit P6312	Color	Symphonie and SymphoniePLUS Logger	SymphoniePLUS3 Logger
Temperature (C)	White	sig	sig
Relative Humidity (%RH)	Brown	sig	sig
Supply	Green	connect to "+" on one P6312 SCM Channel	connect to "EXC" on one P6312 SCM Channel
Ground	Yellow	connect to "-" on one P6312 SCM Channel	connect to "GND" on one P6312 SCM Channel