



Symphonie

INTERNET ENABLED

Internet-Enabled Data Loggers

The revolutionary Symphonie data logger gives you all the accuracy and durability of other NRG loggers, but allows you to collect data without ever leaving your desk. Symphonie works with a standard data card or with any NRG manufactured iPack which sends data reports to your Internet provider over an embedded standard or cellular phone. You get an email with an attached data file at any interval you choose.

Symphonie has been engineered to be simple to set-up and use. We supply you with Plug-in Signal Conditioning Modules (SCM) that are preconfigured to work with sensors from NRG or other manufacturers. The Symphonie logger supports over a year's worth of data on non-volatile Multi-Media (MMC) Flash Cards. iPacks are "plug and play", with battery, modem and phone already installed.

As with all products from NRG, the Symphonie system is rugged, straightforward, and allows for a wide variety of customized preferences for sensor inputs and data processing to meet your individual needs and specifications.

ORDERING INFORMATION

Symphonie Logger (Item 3147)

iPack Kits

- AMPS cellular (Item 3162)
- GSM cellular (Item 3164)
- Dial-up (Item 3161)
- PV/Battery only (Item 3166)

Accessories

- SCM Card
- Shelter box (Item 3159)
- PV Panel (Item 3160)
- MultiMedia Card (Item 3157)
- MMC Card Reader (Item 3158)

FEATURES

Designed to be easy to install, and durable in any climate. Wherever you need to measure the wind, no matter how demanding the environment, Symphonie and the "plug and play" iPacks make data collection as easy as reading your email.

- **Wind industry specific and preconfigured to industry standards. All features for wind energy assessment built in. No complex configuration.**
- **Convenient "plug and play" Signal Conditioning Modules (SCM) for additional sensor inputs. Preconfigured for sensor type.**
- **Uses Non-volatile Multi-Media Flash Cards. Cards are available most anywhere in the world and are safer for data storage than RAM memory cards.**
- **Average, Standard Deviation, Maximum and Minimum values for all sensor channels at every 10 minute interval. Set up is done for you.**
- **Free data retriever software is included and produces versatile tab-delimited text files. Data files can be used with wide range of data processing software, including SQL databases, MS Excel, MS Access, and more. Supports international numeric formats.**
- **Easy to read 4 line x 20 character display provides easy to understand real-time data and configuration information.**
- **Dedicated navigation buttons (up, down, left, right, home), plus a data entry keypad. Full-text, menu-driven display is easy to use.**
- **Separate Lithium battery-backed real-time clock for accurate and reliable time stamping.**
- **Runs on two alkaline "D" cells (included) for up to one year, depending on sensor configuration. Batteries available anywhere.**
- **Rugged, non-corroding, weather-proof polycarbonate enclosure.**
- **Optional iPacks provide solar/battery power and automatic remote data download capabilities via Internet email. Support for AMPS cellular, GSM cellular, and dial-up phone lines.**

SPECIFICATIONS

Symphonie Logger

COUNTER INPUTS (6):

- 3 inputs for NRG #40 Maximum Anemometers or compatible.
- 3 configurable counter inputs for additional anemometers or rain gauge.
- All channels have built in over-voltage and electromagnetic interference protection.

ANALOG INPUTS (6):

- 2 inputs for NRG #200P Wind Direction Vane or compatible.
- 4 configurable analog inputs for additional direction vanes, temperature, solar pyranometer, barometric pressure, relative humidity, etc.
- All channels have built in over-voltage and electromagnetic interference protection.

DATA STORAGE:

- Average, standard deviation, maximum and minimum values stored for each channel, plus time stamp, for each 10 minute interval.
- Data is stored in internal non-volatile memory and written to the removable flash memory card once per hour.
- 680 days data storage capacity on standard 16 MB MultiMedia Card. MMC Card Format is compatible with Windows™ Operating System.

DATA SAMPLING:

- 2 second sampling interval. Symphonie Loggers constantly count accumulated wind run over each 2 second interval.
- 10 minute fixed averaging interval.

RESOLUTION:

- Counters Average: Measured resolution is 0.5 Hz. Stored resolution is 0.1% of the value stored.
- Analogs Average: Measured resolution is 0.1% of full scale (1024 counts). Stored resolution is 0.1% of the value stored.
- Standard Deviation (all channels): stored resolution is 4% of the value stored.
- Min / Max (all channels): stored resolution is 0.3% of the value stored.

LOGGER DISPLAY:

- 4 line x 20 Character LCD with full text menu.
- Adjustable display contrast.
- Display readable from -30 to 55 C (-22° to 130° F).
- 16 key pad (6 navigation keys plus numeric/phone pad) with audible feedback.

LOGGER DISPLAY FUNCTIONS:

- Display Units and scaling are user configurable. Defaults are provided for all channels based on channel type.

Logger Display Functions, continued

- Instantaneous Input values (2 second sample updates) for all 12 channels.
- Flash card status
- Time and date
- Site number (user assigned)
- Battery status
- iPack status

REAL TIME CLOCK:

- Programmable, date and time auto-adjust for leap years.
- Separate Lithium battery keeps clock powered even if main batteries fail.
- Accuracy: +/- 3 minutes per month.

INTERFACE:

- 25 pin connector to any NRG iPack (Dial-up, AMPS, GSM) for automatic remote data transfer via Internet.

CONNECTIONS:

- All sensor connections to one 37 pin connector.
- Field wiring panel included for signal inputs.
- Separate #10 stud for Earth connection.

POWER REQUIREMENTS:

- Uses two "D" alkaline cells. Nominal voltage: 1.5 Volts. Minimum voltage 0.9 Volts. Battery life approximately one year, depending on configuration.
- Optional NRG iPack modules provide solar / battery or external power options for unlimited life.

ENVIRONMENTAL:

- Operating Temperature: -40 to 65 C (-40° to 149° F).
- Operating humidity: 0-100% RH non-condensing.
- Note: Display readable from -30 to 55 C (-22° to 130° F).

SIZE:

- Logger overall: 22.2 cm height, 18.8 cm width, 7.7 cm thick (8.7 x 7.4 x 3.0 in.).
- iPack overall: 22.2 cm height, 18.8 cm width, 5.1 cm depth (8.7 x 7.4 x 2.0 in.).

WEIGHT:

- Logger: 1.3 kg (2.60 lbs), including batteries.
- iPack: 1.4 kg (3.22 lbs), including batteries.

ENCLOSURE:

- Weatherproof polycarbonate; meets NEMA type 4, 4X and 13, and IEC: IP65 specifications.

MOUNTING:

- From the back, with four logger mounting screws.

WARRANTY:

- 2 year limited warranty.

Meets or exceeds Industry Standards

