

Stylitis-41

WIND ENERGY DATA ACQUISITION SYSTEM

By Symmetron

Stylitis-41 was designed for the demanding WIND and SOLAR energy evaluation industry.

FEATURES

- Statistical recording over programmable intervals.
- Sealed enclosure for extreme environments.
- Low power consumption.
- Low cost.
- LCD display and 16-key numeric keyboard.
- Up to 2 Gbyte Compact Flash removable memory cards.
- Remote GSM/GPRS operation.
- Local serial port.

APPLICATIONS

- Weather stations.
- Wind energy measurements.
- Solar park measurements.

INTEGRATED SYSTEM

Part of a complete system, Stylitis-41 collaborates with other Symmetron products:

- **Stylitis Explorer** – management software measurements and for data logger.
- **AutoConnect** – automatic connection and download software.
- **Sym-o-net modem** – communication option that allows data emailing, SMS messages and on-line connections in GPRS networks.
- **Emmetron** – Software that consolidates measurement data, resources and events into a central database.
- **WindRose** – Field-proven wind data analysis software from the Greek Center for Renewable Energy Sources (CREs).

For detailed specs please refer to individual product data sheets.



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MEASUREMENTS

It is capable of directly measuring voltage, current, frequency and events.

With suitable sensors it is capable of measuring:

- Wind speed and direction. Capable of interfacing to most types of anemometers and wind vanes.
- Temperature, humidity, pressure.
- Solar radiation, rain height, water speed, etc.

COMMUNICATION OPTIONS

- Built-in RS232 serial port for communication to a PC, external modem, etc.
- Data calls with optional GSM/GPRS modem.
- SMS messages with current data when using Symmetron's Sym-o-net modem.
- SMS alerts (low battery) with Sym-o-net.
- Daily data emailing with Sym-o-net.
- On-line GPRS connections via the Diameson server and Sym-o-net.

DATA PROCESSING

- Data are compressed and stored in the internal buffer or removable Compact Flash card. Cards may be replaced without interrupting the acquisition process. Data retrieval is done via any port or modem. Slope and offset factors are applied to data which are stored as statistical values (Min, Max, Average and Standard Deviation).

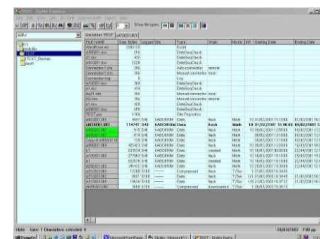
The free **Stylitis Explorer** software manages data logger operation. It also downloads and manages data files. These can be exported as:

- Text files (ASCII) organized in columns.
- Graphs.
- Excel files.

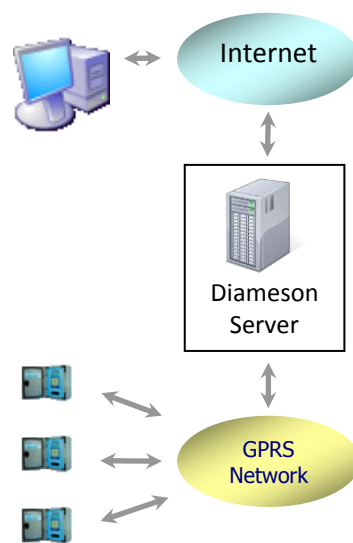
The optional **Emmetron** software imports Stylitis Explorer files into an Access or MySQL database. Emmetron presents:

- Statistics
- Reports
- Queries
- Graphs
- Station comparisons

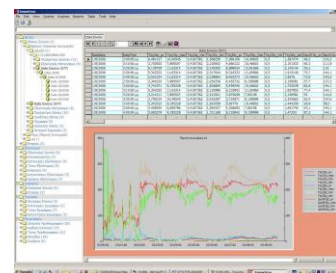
The optional **WindRose** is a software tool dedicated to the analysis of wind characteristics (speed, direction, turbulence, temperature). The results of the analysis are stored graphically and numerically into spreadsheets, which can be further used as ordinary Excel files.



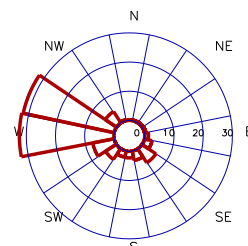
Stylitis Explorer



On-line GPRS connection using dynamic IP SIM cards



Emmetron



WindRose

Stylitis-41

TECHNICAL SPECIFICATIONS

(Subject to change without notice)

INPUTS

Each individually selectable:

- **ANALOG:** 4 inputs, 12bit each.
 - Input range:0~+5V.
 - Input impedance 10MΩ.
 - Resolution 1.22mV.
 - Accuracy: ±0.1%.
 - Vane resolution ±1.4 degrees.
- 2 of the inputs have a selectable resistor-set gain of up to x1000 and/or input impedance of 20 Ohms for 4~20mA sensors. Accuracy: ±0.2%.
- **COUNTING:** 3 inputs, 16 bit each (0~65535 counts).
 - Accuracy ±1 count.
 - Input range: 0-5kHz.
 - Input impedance: 100kΩ.
 - Sensitivity: 100mV.

OUTPUTS (SENSOR SUPPLY)

- **PULSED 5V:** 3 outputs.
 - Total current 25mA.
 - Accuracy ±0.2%.
- **FIXED 5V:** 2 outputs.
 - Total current 10mA.
 - Accuracy ±5%.

DATA STORAGE

- **INTERNAL BUFFER:** 512 kBytes. Typical capacity (1 analog and 1 counting input, 10 min averaging): 7 months.
- **REMOVABLE COMPACT FLASH MEMORY CARDS:** up to 2GByte, FAT16 formatted.
- **REAL TIME CLOCK:** With automatic lap year correction. Accuracy: ±1 minute/month.

DATA PROCESSING

- Individually programmable slope and offset for each input. Each record is time-stamped. Data may be read from the logger or using a standard Compact flash reader.
- **MATH MODE:** Sampling @ 1 Hz. Calculation and storage of Minimum, Maximum, Average and Standard Deviation selectable @ 1, 2, 5, 10, 15, or 60 minute intervals.

REMOTE OPERATION (via MODEM)

- Remote data file transfer.
- Remote data logger programming.
- CSD connection (data call).
- GPRS online connection (via Sym-o-net modem and Diameson server).
- Daily data emailing with Sym-o-net.

LOCAL OPERATION (via SERIAL PORT)

- **PROGRAMMING AND DATA TRANSFER:** RS232C port. 9600 baud, 8 bits, no parity, 1 stop bit. Socket is DB9M. Optionally connects to Ethernet adapter (serial server).

PROTECTION

- All inputs/outputs are over-voltage protected.

POWER SUPPLY

- **INTERNAL BATTERY:** 2x9V alkaline. Life 1 month (Math mode, 10 min intervals).
- **EXTERNAL:** 6~15V, DC/AC typical consumption 1 mA (Energy save) or 30mA (Continuous mode).
- **OPTIONAL:** PV panel and internal rechargeable cell.

VARIOUS

- **ENCLOSURE:** IP65 sealed.
- **DIMENSIONS:** 31 x 21,5 x 17,5cm.
- **WEIGHT:** 4kg.
- **CONNECTORS:** Removable terminal strips on right side.
- **OPERATING TEMPERATURE:** 30°~ +70°
- **APPROVAL:** CE
- **WARRANTY:** 1 Year.

OPTIONAL

- **GSM PACKAGE:** GSM Modem and antenna.
- **GPRS PACKAGE:** Symmetron Sym-o-net modem and antenna.
- **ETHERNET ADAPTER:** Allows operation in LANs.
- **POWER SUPPLY:** Solar panel, charger and lead-acid battery.
- **SHELTER BOX:** 50 x 40 x 20 cm polyester, IP65 sealed.
- **WINDROSE:** Wind data analysis software for Excel.
- **EMMETRON:** Data base software.

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