Stylitis-101

ADVANCED PORTABLE DATA ACQUISITION SYSTEM

By Symmetron

STYLITIS-101 was designed to cover a wide range of measurement and recording needs in the industry, research, renewable energy, laboratory and education areas.

FEATURES

- Statistical or time-series recording.
- Sealed enclosure for extreme environments.
- Low power consumption.
- Upgradeable: up to 27 input channels.
- 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, up to 6 heights.
- Wind Turbine power curve analysis
- Solar plant monitoring.
- Remote Data acquisition.

INTEGRATED SYSTEM

Part of a complete system, Stylitis-101 collaborates with other Symmetron products:

- **Opton 4** – 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.

MEASUREMENTS

- Voltage: single-ended, differential, 4-wire, 6-wire (bridge), strain gages.
- Current: 0 ~ ±20mA.
- Resistance: 0 ~ 50kΩ.
- Potentiometer (ratiometric) sensors.
- PT100/PT1000 sensors.
- Frequency and events.
- Digital state (switches, etc.)

With suitable sensors it is capable of measuring:

- Wind speed, direction and wind-turbine power curves. 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 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:

- Time-series values (no math processing), or
- Math values (Min, Max, Average, SDV values).

The free **Opton 4** software manages data logger operation. It also downloads and manages data files. These can be exported as:
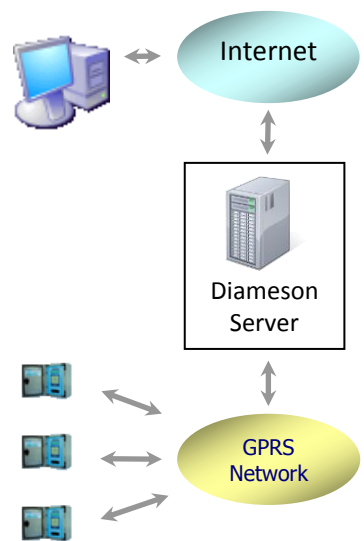
- Text files (ASCII) organized in columns.
- Graphs.
- Excel files.

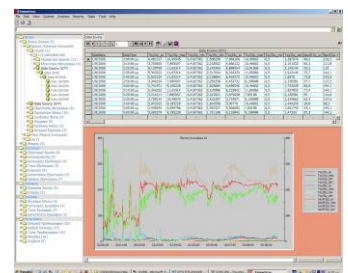The optional **Emmetron** software imports Opton 4 files into an Access or MySQL database. Emmetron presents:

- Statistics
- Reports
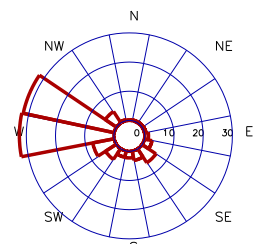- Queries
- Graphs
- Station comparisons
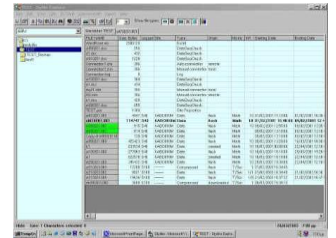
Opton 4

On-line GPRS connection using dynamic IP SIM cards

Emmetron

WindRose

INPUTS

- **ANALOG (w/ plug-in modules):** 18, 12bit each. See Card11~17 input modules. Each module carries 3 channels. Basic accuracy: ±0.15% - refer to User's Manual. Vane resolution: ±1.4 degrees.
- **COUNTING (built-in):** 3, 16 bit each (C1~C3). 0.5Hz resolution using a frequency doubling circuit when sampling at 1Hz. Accuracy ±0.5 count. Input range: 0~5kHz. Input imp: 1MΩ. Sensitivity: 200mV. Input type Low-level AC, TTL.
- **COUNTING (w/ plug-in modules):** 3, 16 bit each (C4~C6). See Card21~27 input modules.
- **DIGITAL:** 3, 1 bit each (TTL).

OUTPUTS (Sensor supply)

- 0~6 programmable (1 per Card1x module). Accuracy ±0.2%. Total current: 100mA.
- 3 fixed +5V. Accuracy ±5%. Total current: 10mA

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. Operating Modes:
- **TIME-SERIES MODE:** Individually programmable and synchronized sampling rate for each input: 1, 2, 4, 8, 16, 32 Hz. Statistical data (Minimum, Maximum, Average and Standard Deviation), for selectable intervals, may be automatically generated during decompression.
- **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 2 weeks (Math mode, 10 min intervals).
- **EXTERNAL:** 6~15V, DC/AC typical consumption 2 mA (Energy save) or 50mA (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.

INPUT MODULES

CARD-11 (for analog slots)

- 2 differential voltage inputs ±5mV~±5V. Diff. Input imp: >10MΩ.
- 1 single-ended current input ±200μA~±20mA. Input imp. 35Ω.
- 1 voltage output 0~5V step 0.1V

CARD-12 (for analog slots)

- 2 differential voltage inputs ±5mV~±5V. Diff. input imp: >10MΩ.
- 1 single ended voltage input ±5mV~±5V. Input imp: >10MΩ.
- 1 voltage output 0~5V step 0.1V

CARD-13 (for analog slots)

- 2 differential current inputs ±200μA~±20mA. Input imp: 35Ω.
- 1 single-ended current input ±200μA~±20mA. Input imp: 35Ω.
- 1 voltage output 0~5V step 0.1V

CARD-14 (for analog slots)

- 2 differential voltage inputs ±5mV~±5V. Diff. input imp: >10MΩ.
- 1 single ended voltage input ±5mV~±5V. Input imp: >10MΩ.
- 1 current output 0~5mA step 0.1mA

CARD-15 (for analog slots)

- 2 differential voltage inputs +0.025mV~+25mV. Input imp: >3.3MΩ.
- 1 single ended voltage input ±5mV~±5V. Input imp: >10MΩ.
- 1 voltage output 0~5V step 0.1V

CARD-16 (for analog slots)

- 2 differential voltage inputs ±0.5V~±50V. Diff. input imp: >10MΩ. Common mode input imp: 110KΩ.
- 1 single-ended voltage input ±0.5V~±50V. Input imp: 110KΩ.
- 1 voltage output 0~5V step 0.1V

CARD-21 (for counting slots)

- 1 input. Resolution: 1Hz. Accuracy: ±1 count. Range: 0~5kHz (TTL), 0~50Hz (REED). Input imp: 100kΩ. Sensitivity: 2V.

CARD-22 (for counting slots)

- 1 input. Resolution: 1Hz. Accuracy: ±1 count. Range: 0~5kHz (Sin), 0~5kHz (TTL). Input imp: 100kΩ. Sensitivity: 200mV.

OUTPUT MODULES

CARD-25 (for counting slots)

- 1 'open drain' output. Output impedance <0.5Ω.

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.

1010

SYMMETRON
ELECTRONIC APPLICATIONS

Tel: +30-2106034002
Fax: +30-2106034003
http://www.symmetron.gr