DATA ACQUISITION SYSTEM
Model S-4003

The SIR Model S-4003 is a data acquisition system designed for autonomous unattended applications which allow the collection and storage of data from any type of sensor with electrical output, both in voltage, current, pulses, frequency, RS 232.

It includes internal software for communications with a local or remote PC for an easy and quick setup of any of the possibilities of the instrument in a visual frame, as well as for data transmission to remote locations.

PERFORMANCES

Inputs

- **16** Analog inputs, (24 Bits)
- **4** Analog inputs (internal use)
- **5** Digital inputs, sensors (pulses/frequency)
- **1** Serial port RS 232 sensor
- **1 Internal Temperature sensor (included)**
- **1 Internal Pressure sensor (included)**

Outputs

- **1** Analog output (control)
- **12** Voltage outputs (sensors supply)
- **8** Digital outputs Assignable (alarms - warning)
- **3** Reference voltages (sensors)
- **1** Current output 15 mA (sensors supply)
- **1** Serial port RS 232, communications

Sensors Types

- Single or Differential
- Voltage, pulses, frequency, RS 232
- Module and phase
- High and Low resolution
- Non linear sensors

Programmable Intervals

(From 1 sc to 24 hours in 1 sc steps)

- Waiting Time
- Stabilization Time
- Measurement Time
- Data Storage (5 sc - 24 h)

Calculations Types

- Arithmetic and vectorial averages
- Standard deviation and “Yamartino” method
- Polynomic calculations, sin, cos, tang, log
- Gust winds
- Calm winds
- Incremental measurements (accumulative)
- Differential averages (+/- channels)
- Max, Mín for all the parameters

⇒ Ability to actuate sensors independently, data processing, storage and battery control.

⇒ Capacity of **send SMS**, **e-mail** (GPRS) for sensors o digital events alarms notification.

⇒ **GSM** or **GPRS** serial communications.

⇒ **FTP file transfer** (GPRS).

⇒ User interface trough display and keyboard.

⇒ Protection against over voltages or transients.

⇒ Supply management trough blocks control.

⇒ Analog channel disable from digital events.

⇒ The 16 bits microprocessor provides to the S-4003 enough capacity to work in real and recurrent time.

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SIR SISTEMAS INSTALACIONES REDES

AENOR ER Empresa Registrada FR-0487/1998 IQNet ISO 9001

SPECIFICATIONS Model S-4003

Supply:

Through: ⇒ External Battery 12 VDC. (Not supplied as standard)
⇒ Internal battery 12 VDC included as standard,
(It automatically activated when the external battery is low)
⇒ Mains adaptor, included as standard for 115 or 220 VAC operation and batteries charger

Consumption Control for : ⇒ Sensors. ⇒ LCD display. ⇒ Communication modems
In order to optimize the battery live, the S-4003 includes those automatic and independent circuits for the different blocks with shutdown mechanism: it is possible to maintain on only the microprocessor.

Protections: To over voltage and electrical discharges, independents for: ⇒ Supply. ⇒ Sensors

User Interface: Trough interactive menus
⇒ LCD display, 4 lines, 20 characters per line, and Keyboard
⇒ RS 232 communication serial port, software module SIRLog is included as standard.

Analog Inputs:
- **16 High-resolution 24 bits analogue inputs**, distributed as:
  - ⇒ **4** Differential mode, adjustable ranges: • (0-50 mV), • (0-100 mV), • (0-1 V).
  - ⇒ **4** unipolar (0-5 V).
  - ⇒ **6** unipolar (0-2,5 V).
  - ⇒ **2** bipolar of (± 2,5 V).
- **4 Low resolution analogue inputs** (internal equipment use), can be assigned for:
  - ⇒ **1** Battery voltage monitoring. ⇒ **1** Internal temperature (sensor included)
  - ⇒ **1** Internal equipment reference. ⇒ **1** Ambient pressure (sensor included)

Analog Output:
⇒ **1** Can be associated to any parameter, available for external record or control 0-5 V)

Digital Inputs:
- **5 Digital inputs**, (bounce Project circuits included)
  - ⇒ **4** For measure of Pulses/Frequency, TTL level, up to 32 Hz.
  - ⇒ **1** High Frequency resolution, min. level 100 mV, up to 16 KHz.

Digital Outputs:
- **8 Digital outputs**, ON/OFF type, TTL level. Can be assigned to different channels, for Different uses (threshold definition, etc)

Two Serial Interfaces RS232:
⇒ **1** Connection for serial protocol sensors. ⇒ **1** Local or Remote communication.

Supplies for External Sensors and Devices:
- **12 Voltage outputs**, max. current. 1,5 Amp per group**.** High stability, distributed as:
  - ⇒ **4** of 12 VDC ⇒ **4** of 5 VDC ⇒ **4** of 2,5 VDC
- **1 Current output**, regulated at 15 mA.

Reference Voltages:
- **3 Reference voltages:** for supply of external elements requiring high stability references/low consumption (can be used also for analoge channels calibration, etc), distributed as:
  - ⇒ **1** of 1,25 VDC ⇒ **1** of 2,5 VDC ⇒ **1** of 5 VDC

Data Memory: 256 Kb **[Ex:** 40 days, 10 channels, 10 minutes integration period**]**
(battery memory for data preservation, either without main battery)

Dimensions & Weight: *27.3 x 13.3 x 7 cm. / 1.65 Kg (with internal battery); [885 gr. Without battery]*

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COMMUNICATION PROGRAM SIRLog

The SIRLog communications software allows the set up of every option in the S-4003 by communication through the serial port in a fast and intuitive way. Among other options, SIRLog allows:

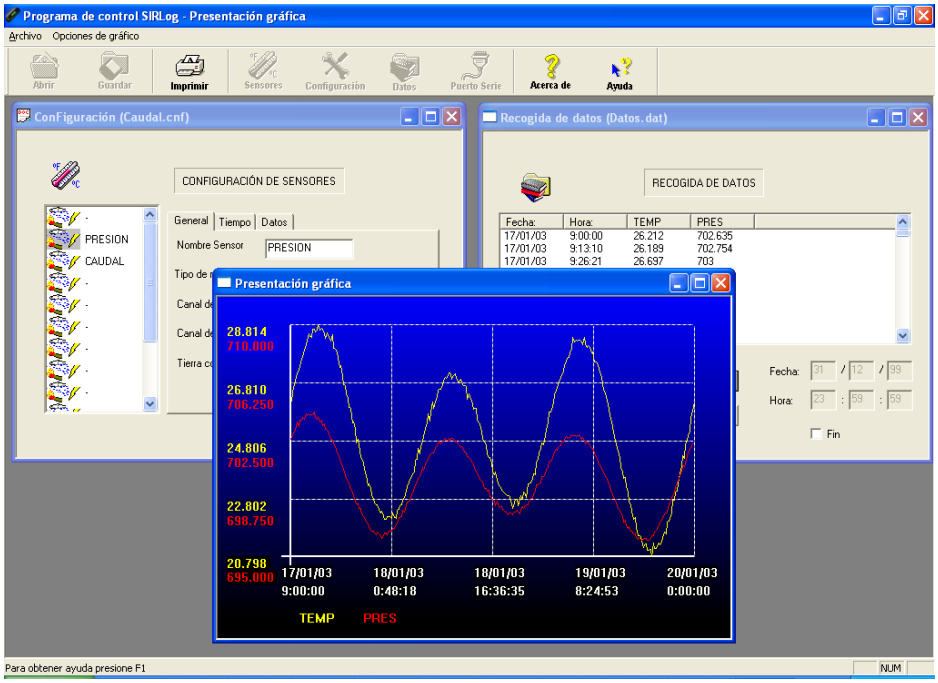
⇒ ***Configuration:*** **Set up** of every sensor in a simple and fast visual menu with the following options:

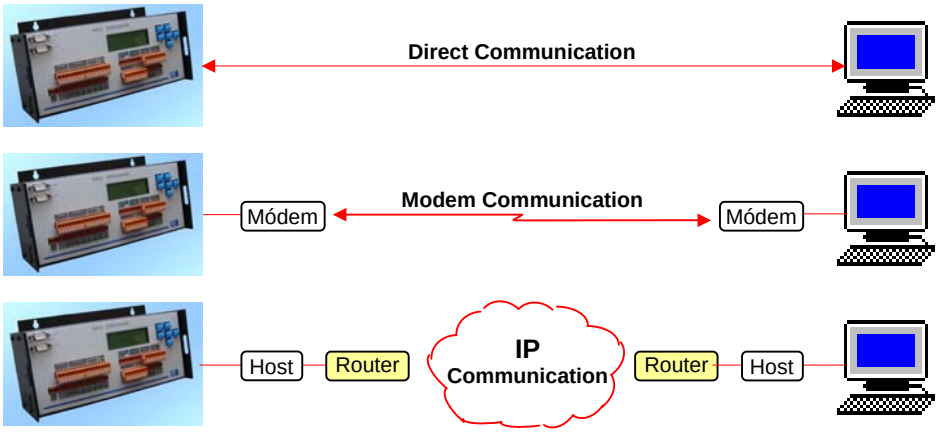
- Save the set up in a file easy to retrieve.
- Retrieve an old set up.
- Print the set up configuration.

⇒ ***Stored Data Retrieving for:***

- Edition from the own program.
- Graphical representation of every channel.
- Data table or graphic printing.
-

⇒ ***Graphical Representation:*** of the collected channels.





BASIC SYSTEM incluyes:

- ➔ D.A.S S-4003 (with internal battery)
- ➔ SIRLog software package
- ➔ Mains power adaptor
- ➔ Operating manual

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SISTEMAS INSTALACIONES REDES

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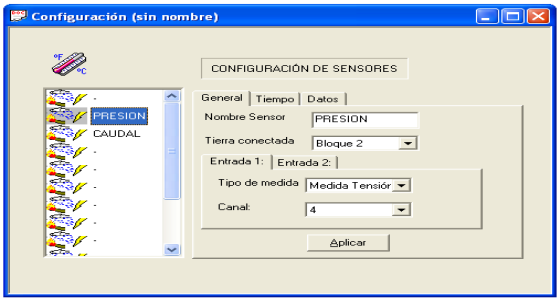
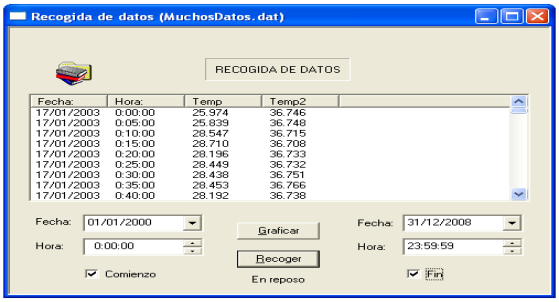
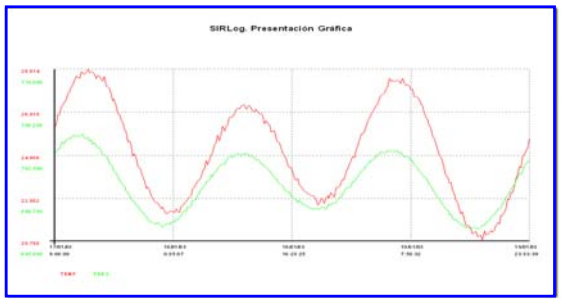
Intuitive Menus





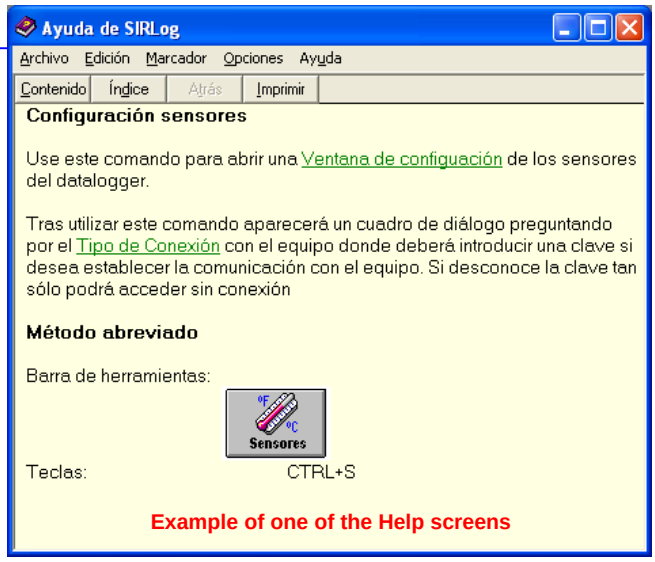


Help File:

The SIRLog also has a helping file where every option is explained in detail, as well as the software possibilities and the data logger performance.

Easy to use, this helping menu can be accessed either from the menu bar or using the contextual help which displays the subject related to the selection.

The step-by-step guide and the table of contents make this tool the more useful operations manual of the instrument



Example of one of the Help screens

Options:

The S-4003 can be used on for many applications, SIR, S.A., can supply different type of sensors and analyzers to conform complete measurement stations (meteorology, hydrometric, hydro-meteorology, agro-meteorology, radiometry, air and water quality, etc). Please contact SIR, S.A., the technical or commercial division.

Description	**Reference**
• Comm. GSM or GPRS:	S-4003-1
• Solar Panel Supply:	S-4003-2
• Weather housing:	S-4003-3
• External Battery:	S-4003-4

SIR, S.A., is able to develop other type of customized applications, under specific quotation

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