

MONITORING AND CONFIGURATION SOLUTIONS FOR CENTRAL INVERTERS AND HBS STORAGE SYSTEMS

Sirio Data Control

MONITORING SOFTWARE

Sirio Data Control was developed with the aim of **simplifying the configuration of controlled inverters** as much as possible, without compromising the main functions of the **supervision** program, and to **monitor their status** through an Ethernet or Internet connection, with **up to 300 inverters**.

The Sirio Data Control graphical user interface has been designed to be as **simple and intuitive** as possible, showing all the available measurements and all the historical data of each inverter at the same time. Sirio Data Control recovers any missing historical data from the devices connected to it without the limitation of having the software always running on a dedicated PC. Sirio Data Control also enables the user to remotely send control commands (like switching on/off, management of the active and reactive power, soft starts) to the inverter in the field.

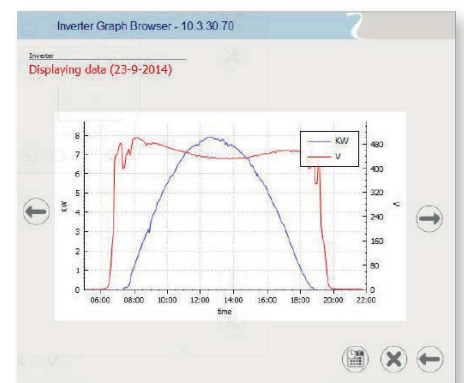
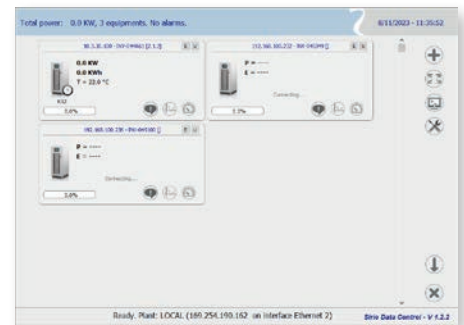
Compatibility is guaranteed with central inverters running firmware version 1.2.5 or later and with HBS systems equipped with a NetMan 208 network card.

MAIN FEATURES

- Monitoring of Riello Solartech inverters via LAN or internet;
- Sending control commands to a single inverter or to the entire plant;
- Simple and self-explanatory push-buttons;
- Scanning the LAN and automatically adding inverters without user intervention;
- Assigning the addresses without using the DHCP server;
- Real-time measurement of each inverter;
- Synchronising the inverter's date/time with the PC;
- Optional: display the plant's production data in full screen mode (for example for large monitors in large-scale installations or public administrations).

SUPPORTED OPERATING SYSTEMS

- Microsoft Windows
- Linux
- Mac OS X



STRING BOX

A field switchboard able to monitor the string currents and promptly diagnose any faults.

It has a general 250 A 1000 Vdc circuit breaker, specific to photovoltaic applications, and also allows for the addition of a release coil to disconnect the photovoltaic field from the inverter. The casing is made of UV-resistant polyester resin with an IP65 protection level and enables the connection of up to 16 strings (with a maximum input current per string of 12 A) or 8 strings with maximum current per string of 20 A.

As it is compatible with the Sirio Data Control monitoring software, it can display currents and send signals and alarms in the event of current faults according to the thresholds set at configuration. Communication solutions include an RS485 and an RS232 port (supplied as standard), a slot for an optional NetMan Plus PV Ethernet card, digital and analogue

inputs for the connection of environmental sensors (temperature, radiation and wind).

MAIN FEATURES

- Parallel connection of up to 16 strings of 12 A each (8 measurement channels) or 8 strings of 20 A each;
- local and remote indication of status and alarm conditions;
- RS232 and RS485 connections as standard
- one slot connection for expanding communication (e.g. with Ethernet board);
- proprietary communication protocol and MODBUS RTU, both available on all the communication ports;
- wide configurability of the monitoring parameters using the available software;
- local history log of alarms;
- protection fuses for each input with 1000 V DC fuses on the positive and negative pole;
- for each input it is possible to connect wires up to 16mm²;



- output disconnect switch, with optional release coil, used for disconnecting the inverter;
- monitored discharger, used against overvoltage situations, protected against over-currents and easy to restore thanks to removable cartridges;
- direct power supply from the photovoltaic field or from auxiliary voltage;
- insulated digital inputs for local monitoring;
- insulated analogue inputs for environmental sensors (2xPT100, 0-10 V, 4-20 mA);
- configurable digital outputs with voltage-free contacts;
- polyester box for outdoor use with IP65 protection level.

STRING BOX SETUP

The String Box Setup application is used to set up the String Box according to the features of the plant and the user's requirements. The items that can be set are the analogue inputs, digital inputs and outputs, read channels and alarm thresholds.

MAIN FEATURES

- Via the Time Windows function, time windows can be set for each of the 8 inputs necessary to avoid false alarms (e.g. in case of systematic shading in certain periods and at certain times of the year);
- configuration of the relays present on the device depending on the status of the alarms;
- configuration of the two inputs 4/20 mA and 0/10 V;



- full management of the minimum alarm threshold parameters;
- management and download of the events log.

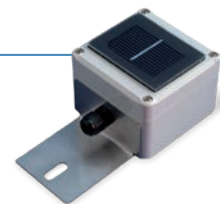
RADIATION SENSOR ENVIRONMENTAL SENSOR

Compatible with String Box too.

MAIN FEATURES

- Measuring range: 0 to 1500 W/m²;
- Sensor type: monocrystalline cell (33mm / 50mm);
- Sensor accuracy: ± 5% yearly average;

- Electrical output: 4–20 mA or 0–10 V or 0–3.125 V or 0–150 mV;
- Consumption: C. 30 mW;
- Connection type: connection terminals, 1.5 mm²;
- Dimensions: 150x80x60 mm (WxDxH);
- Weight: 700 g.



PV MODULE TEMPERATURE SENSOR ENVIRONMENTAL SENSOR

Compatible with String Box too.

MAIN FEATURES

- Measuring range: -20 to 150 °C;
- Sensor type: platinum resistance wire;
- Electrical output: PT100;

- Cable: 3 m, connection with 3 conductors;
- Mounting: adhesive tape (included);
- Dimensions: 50x50x1 mm (WxDxH).



POWER REDUCER KIT SELF-CONSUMPTION SOLUTION

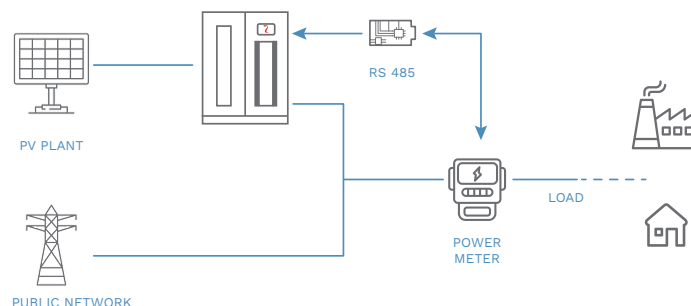
In some cases, the mains supply cannot accept the power generated by the photovoltaic stations, but the user wishes to reduce his energy costs by installing a PV field with the intention of using all the energy produced.

To adhere to contractual limitations and not supply energy to the grid, Riello Solartech recommends adding the "Power Reducer" Kit which forces the inverter to produce only the power required to supply the connected loads.

MAIN FEATURES

- Compatible with RS and Sirio Central inverters
- Kit consisting of:
 - RS485 card (only for Sirio Central inverters)
 - Power meter (modular digital

multimeter with multilingual graphic LCD and RS485 output port)
- Current transformer rated based on the load.

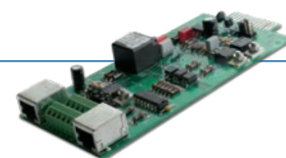


RS485 COMMUNICATION ADAPTER

The RS485 card enables the creation of a BUS to connect multiple inverters, displaying all the parameters via connection to a Datalogger.

MAIN FEATURES

- Plug & Play installation;
 - Data transfer up to 9.6 Kbaud.
- Note: accessory compatible with Sirio Central inverters.*



ENERGYMANAGER COMMUNICATION ADAPTER

In HBS storage systems, the EnergyManager card enables managing static and dynamic Peak Shaving and communication with lithium batteries via BMS.

MAIN FEATURES

- Compatible with 10/100 Mbps Ethernet interface;
- RS485 port;
- ModBus/TCP;
- IP address (DHCP) with dynamic or manual assignment;
- Operating system: MAC OS, Windows.



Note: accessory compatible with Hybrid Battery Storage (HBS).

MODCOM PV MODBUS PROTOCOL CONVERTER

MODBUS is an open-source and royalty-free serial communication protocol, which has become an industry standard in recent years thanks to its ease of use and implementation. The ModCOM PV device makes it possible to monitor Riello Solartech photovoltaic inverters via the MODBUS RTU protocol over half-duplex RS-485 serial cable.

MAIN FEATURES

- MODBUS/JBUS port can be configured as RS232 or RS485;
- RJ-45 connector for connecting to the MODBUS network;
- can be integrated with the main BMS management programs;
- LED signals for communication activity;
- firmware upgradeable through serial port.



Note: For Central series, needed for ModBUS/RTU (standard for ModBUS/TCP).

