eSolar DUO
MONITORING SYSTEM FOR PHOTOVOLTAIC PLANTS

eSolar DUO is a system for monitoring and managing local or remote maintenance of photovoltaic systems.

eSolar DUO includes a home automation engine, using the KNX communication protocol, the only global standard open for home and building automation in accordance with CEI EN 50090 and ISO / IEC 1454 standards.

eSolar DUO is able to communicate with most of photovoltaic inverters, energy meters, string controllers in the market through RS232 / RS485, ETHERNET and S0 pulse output

It can also manage inverter groups so as to allow a detailed examination on each part of the plant, whether different photovoltaic technologies have been used.

eSolar DUO can calculate the energy production, performance ratio and economical data of every plant's section (in agree with EN61724).

eSolar DUO collects, stores and allows the visualization of charts or log files graphics every 15 minutes, every day, every month and every year for 10 years.

eSolar DUO support KNX communication, in order to integrates different tipologies of analogical sensors and to make actuations throught the KNX bus.

STRENGHTS

- Integrated web interface for easy consultation
- Easy installation and setup
- Compatible with inverters, controllers, string, multi-meters (please check compatibility on our website)
- O&M activities support tool
- Details of technical and economic information
- Management of historical data with the possibility to export multiformat data
- Advanced energy meters data acquisition feature
- Manage several plant section feature

SYSTEM ELEMENTS

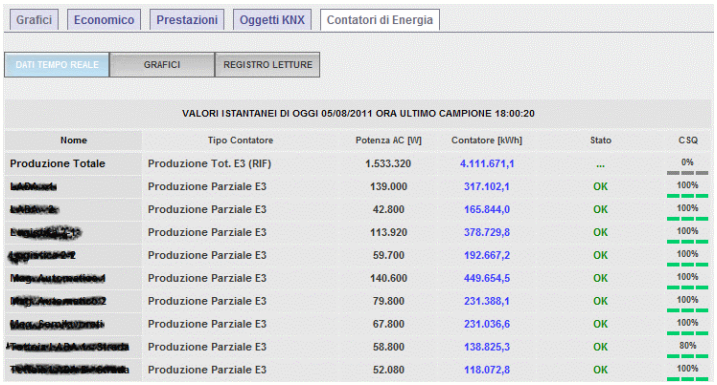
- Standalone monitoring system
- Compatible with cloud monitoring multiplant service SINAPSI DATA SERVICE
- Visualization via web / tablet / smartphone
- Accessories for communications, sensors, advanced communication

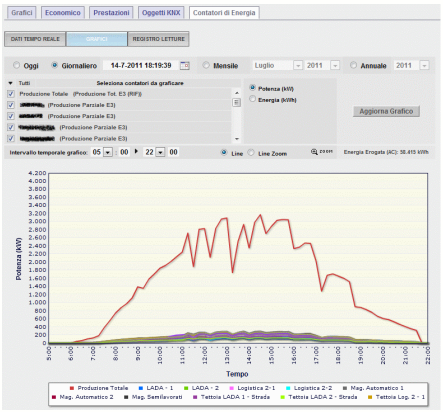
MODULE FOR ADVANCED VIRTUAL METERS MANAGEMENT

This feature permit to eSolar DUO to manage up to 10 energy meters (instead of 3 for eSolar standard).
Every energy meter could be configured as:

- Energy consumption
- Energy released to the grid
- Partial production
- Total production
- Partial/Aux
- Virtual (as sum of all energy partial-production energy meters)

Energy meters could be connected to eSolar DUO via RS232/RS485/Ethernet/S0 Pulse output (KNX interface).
For each energy meter is also possible to activate a “no-production” alarm. This alarm will be notified via web-page, email and SMS.





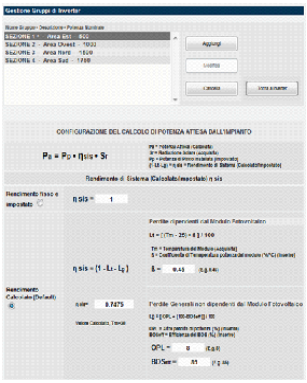
The module for advanced virtual meters management allows virtual counters the possibility to observe in real time the reading of the active energy [kWh] status and the quality of transmission on the serial communication line (CSQ).
It is possible to analyze the trend graph of each meter, enabling / disabling the reading of the individual.
The graphs can be analyzed back in time with a daily summary, monthly, yearly through a simple check. The zoom tool allows detailed analysis of abnormal situations, and the ability to access a detailed view via "Zoom Chart" with on / off graphic mode CAD layer style.
In the readings register, it is possible to view the daily summary of each meter (with the possibility of selection via check) with detail on the quarter-hour. It also possible to analyze a given period of time within the day with the possibility of temporal window determination. From this page it is also possible to export in excel format all meter readings with detail on the quarter-hour.

MODULE FOR SYSTEM SECTIONS MANAGEMENT

This module is particularly interesting in view of what has been proposed by the 4th energy bill on the predilection of photovoltaic systems "roof" and then where it is essential for the analysis of the functioning of a system, define performance indicators, economic reports, productions details for each section of the plant, through the provision of radiation sensors and the temperature of the reference module for each section of the plant.

By leveraging the capabilities to manage groups of inverter is possible to calculate the production of each plant section, calculate the performance ratio of the section of interest, check the economic performance of each section.
During the configuration phase it is possible for each section / group of inverters, define:

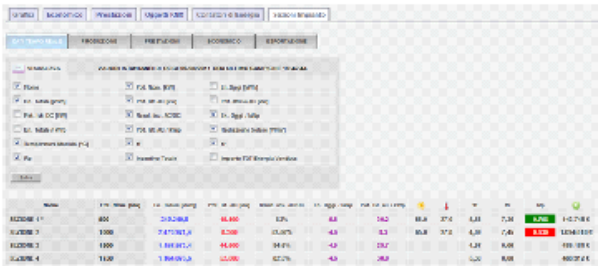
- rated power and the surface of the single section
- a solar radiation sensor and a temperature reference module among all those connected to eSolar
- an alarm threshold that is activated in the event that the performance ratio falls below the value set
- the incentive and the amount paid for the plant section
- the monthly production data to design for a comparative analysis on the single section

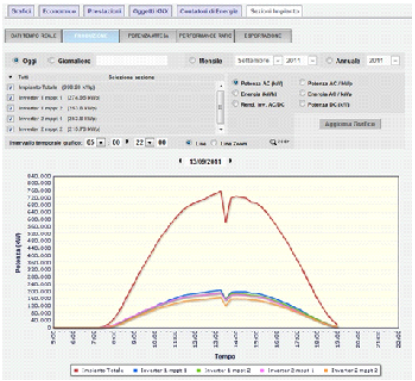


And it is possible to configure the calculation of performance expected from the section of the plant. This tool helps you get to the detail structure of an algorithm for calculating the performance, considering all the parameters considered (see IEC 61724) essential for the calculation of the performance ratio of a photovoltaic system.

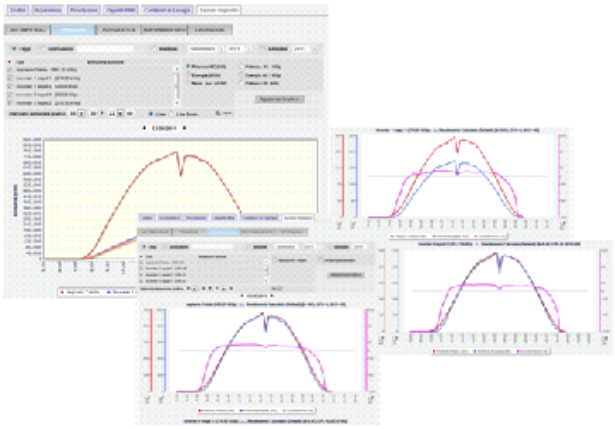
Once you configure every aspect of each section, the section MANAGEMENT of eSolar you can control:

- Real-time data. Reading of up to 18 parameters per section, "scrollable" on the same page, selected by check box with
- Production data. Detailed analysis of the production of the plant from the point of view of each inverter with the possibility of zooming and graphic definition time interval custom trace





- Power Hold. Performance analysis system with detail at each inverter. Switch between display mode data in graphical and tabular form for verification actual behavior to expected behavior
- Performance Ratio. Analysis of the performance ratio of each section with the possibility of detail at each inverter. Switch between display mode data in graphical and tabular form for verification daily performance ratio and system performance parameters with respect to temperature reference module. Automatic determination of the sections with better performance



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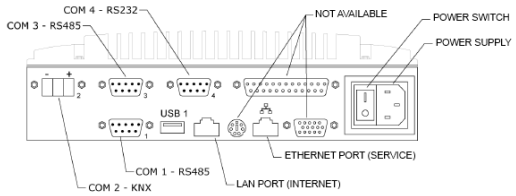
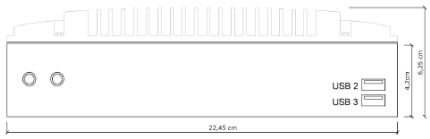
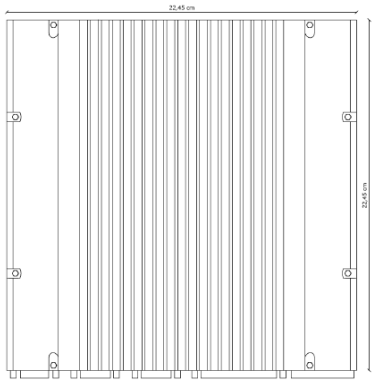
TECHNICAL SPECIFICATIONS

Color	Silver
Costruction	Aluminum and Heavy-duty steel
I/O Port system	• 2 x 9-pin D-Sub male connector, COM1, 3 for RS-485 • 1 x 9-pin D-Sub male connector, COM4 for RS-232 • 2 x RJ-45 connector for 10/100Base-T Ethernet • 3 x USB 2.0 connector • 1 x VAC power input connector
Data backup slot	1 x type II CompactFlash™ slot
System indicator	• 1 x green LED for system power-on • 1 x orange LED for memory activity
Power supply	Input rating: 1. VAC100-240 universal/0.5A 2. Max power consumption, 70W 3. Typical power consumption, 16W
Operating temperature	-20°C to 50°C
Storage temperature	-20°C to 80°C
Humidity	10-90% RH (non-condensing)
Vibration endurance	• 2Grms w/ CF (5-500Hz, X, Y, Z directions) 0.5Grms w/ HDD (5-500Hz, X, Y, Z directions)
Weight	2.15 Kg
Certification	CE
Dimensions	• 225mm (8.86”)(W) • 225mm (8.86") (D) • 51mm (2.01") (H)







ORDERING CODE: **SIN.ESOLARDUO**

Advanced system for the supervision and management of local and remote maintenance of photovoltaic systems integrated home automation engine that uses the KNX communication protocol, can support up to # 10 counters and calculate the PR (according to EN 61 724) to detail of a single inverter

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