INVERTERS

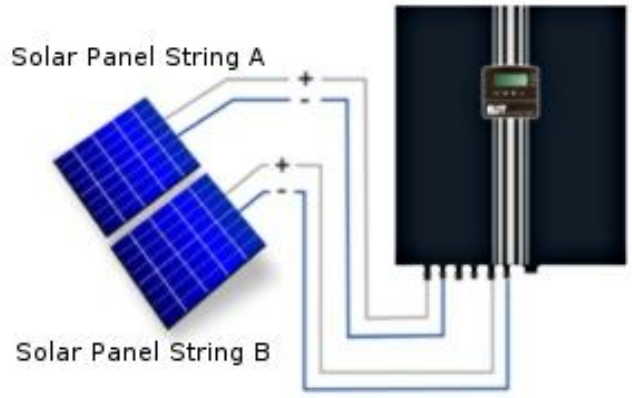
Designed in a waterproof chassis IP65, the ELIT PV inverter, ELIOS series, is suitable to be connected to the grid. The natural cooling and the transform less technology reduce the losses and optimize the efficiency, reducing the cluttered, weight and parts liable to wear, for the maximum reliability with time and an efficiency till 96%.

PRINCIPLE OF WORKING

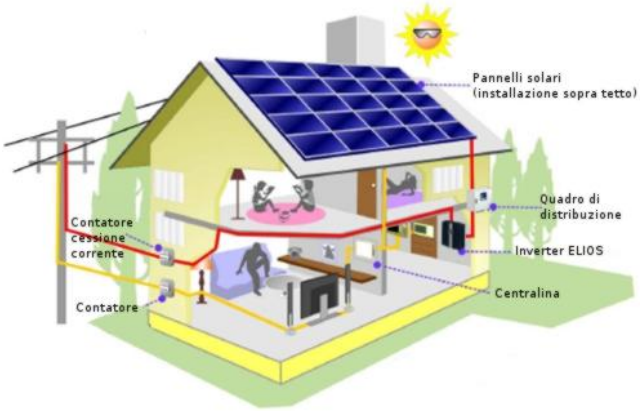
Some materials as the silicon can produce electric energy if irradiated by the sun light. The photovoltaic cells connected among them compose a photovoltaic module to be able to transform the sun light in direct current.
The ELIT PV inverter interfacing PV modules with the grid involves two major tasks. One is to ensure that the PV modules are operated at the maximum power point (MPP). The other is to inject a sinusoidal current into the grid. The ELIT PV inverter provides to detect an islanding situation, and take appropriate measures in order to protect persons and equipment.
The ELIT PV inverter, ELIOS series, has been designed to transform the dc link voltage, produced by solar panels, into an alternating sinusoidal stabilized voltage, with a PWM modulation, to put in the grid to feed the local electric energy consumption and to be counted in credit by a special meter of the public utility. Since the control unit is fed by solar panels, the ELIT PV inverter, ELIOS series, is completely off during the night, without any energy consumption.

MAXIMUM POWER POINT TRACKER

The power produced by photovoltaic module is called peak power (abbreviated Wp).
The photovoltaic modules have a optimal ideal voltage at which they can put out the maximum power, called exactly Maximum Power Point. This point varies continuously with sunlight and with solar cell temperature. Connected to the grid, the ELIT PV inverter, ELIOS series, ensures that the PV modules are operated at the maximum power point with his MPPT boosters. The ELIT PV inverter, ELIOS4200 and ELIOS5000W provided with two independent MPPT boosters allow to manage the solar panel strings with different inclinations, improving the flexibility of their use and ease configurations.



According to local the system can be realized with a bidirectional meter or with two meters, consumption and feed-in meter.



FEATURES

- Two built-in independent MPPT booster to increase efficiency system even with solar panel strings with different inclinations (ELIOS4200 and ELIOS5000 models).
- Sinusoidal output waveform.
- Detection anti islanding device.
- Inverter working from 120Vdc.
- MPPT booster working from 150Vdc.
- Natural cooling to achieve absolute silence during operation.
- Compact size and light weight.
- Up to 96% high conversion efficiency.
- LCD display for measures and signaling.
- High MTBF industrial components used.
- IP65 chassis for indoor and outdoor use.
- According to DK5940, VDE0126-1-1, EN50178, IEC62103 .. etc.
- Optional monitoring software to visual status and electricity generated data.

CONTROL PANEL

The user friendly control panel si composed by three parts:
- Power Management LCD Display (PMD).
- LED indicators.
- Keys.

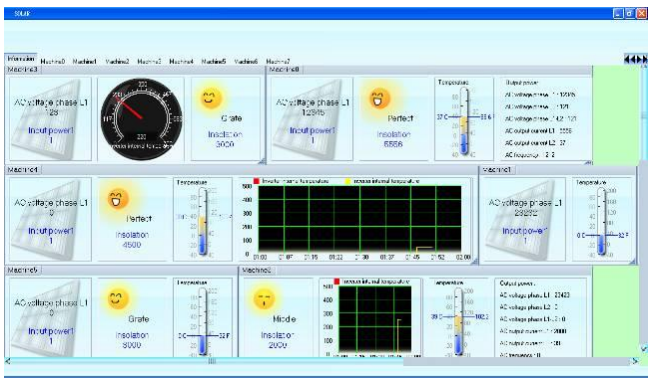
LED indicators:
Red LED: leakage current fault or DC input insulation fault.
Yellow LED: Utility parameters are not conforms to the inverter specifications.
Green LED fixed: MPPT booster ON.
Green LED flashing: Sleep power inverter.

Backlit LCD:
LCD simplifies the communication and provides the necessary monitoring information about the inverter. The menu driven LCD enables the access to:
Vdc input: V, A and kW.
Vac output: V, A, Hz, kW and KWh.
Temperature (Surroundings heat sink), error code, alarm code. Block diagram.
keys:
The keys allow the user to operate with the inverter to perform settings and adjustments.

INTERFACES

Every ELIT PV inverter, ELIOS series, is provided with a standard RS232 port. This interface can be employed with the software supplied in standard package.

In additional to the standard interface, it is possible, using the customer option communication slot, supply as alternative, the following accessory interfaces:
- SNMP card for monitoring and integration in network management.
- RS485 port.
- USB port.
- Dry contact card to provide isolated contacts for industrial and remote alarm application.
- The Emergency Power Off facility must use a normally NO contact, which closes to operate the emergency stop procedure.



Daily and monthly photovoltaic generation trend graph, status information, measurements and energy generation block diagram as option.

The software is compatible with many operating systems such as Windows 98, 2000, XP, Vista and Windows 7. For other applications like Novell, NetWare, Unix, Linux, please contact your local distributor for a proper solution.

ELECTRICAL CONNECTIONS

– PV array connections (Vdc)

The ELIT PV inverter, is equipped with PV quick terminals to connect up two PV strings; with the same PV module string number for ELIOS2200/3300, and with the same or different PV module for ELIOS4200/5000 (two MPPT).

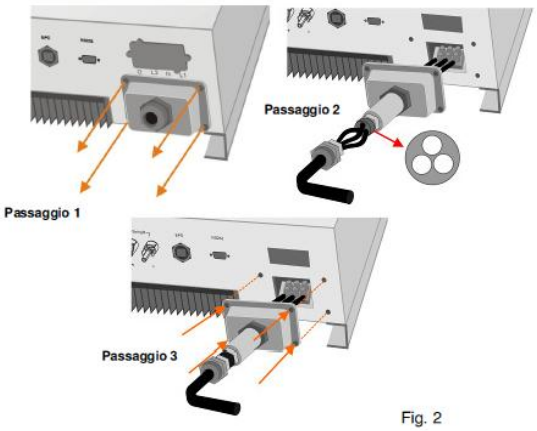


Fig. 2

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– Connection to the grid (Vac):

Output terminals to feed the users.

ACCESSORIES

- Network software: An optional data collecting and analysis system is able to measure up to 200 ELIT PV inverter, ELIOS series, through a RS485 port.

- EMD, Energy Management System allows to collect several PV data system as event log, daily and monthly photovoltaic generation trend graph etc..

- Joint box: It is available, for the ELIOS series, with plug & play connection design a distribution box to get easier the installation process.

Model	ELIOS2200	ELIOS3300	ELIOS4200	ELIOS5000
Nominal output power	2000W	3000W	4000W	5000W
Maximum output power	2200W	3300W	4200W	5300W
Topology	High frequency PWM transform less			

INPUT				
Nominal voltage	360Vdc			
Maximum voltage	500Vdc			
Working range	120Vdc ÷ 500Vdc			
MPPT range	150Vdc ÷ 450Vdc			
No. input connections and max current for each connection	1/14.6A	1/22A	2/14A	2/17.65A

OUTPUT				
Phases and wires	1Ph/2w			
Nominal voltage	230Vac (184 ÷ 264.5Vac)			
Nominal frequency	50 or 60Hz (47.5 ÷ 50.2Hz or 59.3 ÷ 60.5Hz)			
Rated current	8.7A	13A	17.4A	21.7A
THD distortion	< 3%			
Power factor	> 0.99			
Efficiency	96%			
Protections	Over voltage , voltage sag, over frequency, under voltage			
Active antislanding ctrl	Reactive power control			
Passive antislanding ctrl	Voltage phase jump detection			

MISCELLANEOUS		
Protection degree	IP 65	
Operating temperature	from -10°C to + 50°C	
Altitude w/o derating	0-2000 mt sl	
Humidity	90% without condensing	
Interfaces	RS232 standard (USB, RS485 and dry contacts as option)	
Cooling	natural	
Dimensions (mm)	455x430x170	455x510x170
Weight (kgs)	20	25

STANDARDS	
Safety	Directive 2006/95/EC EN 62040-1-1, EN50178
EMC	Directive 2004/108/EC EN61000-6-1, EN61000-6-3, EN61000-6-4, EN55022, EN60146-1
Performance	DK5940, VDE0126-1-1, RD1663, IEC62103, AS3100