PRODUCT MANUAL

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ECO SOLAR BOOST
FOR HEATING WATER, BOILER

GREEN BOOST PRO 4000 SINUS BYPASS



VOLT POLSKA

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Congratulations on choosing a VOLT device! This manual is an integral part of the device and contains important information on safety, operation, and disposal. Before using the device, please read all safety and operating instructions carefully. Keep this manual in a safe place for future reference. Use the device only as intended and in accordance with the instructions provided in this manual. If you pass the device on to another person, make sure that this manual is also included.

Installation: The device must be installed by a qualified electrician with SEP electrical qualifications and OZE photovoltaic installer qualifications issued by UDT. Alternatively, the installer must have equivalent qualifications in the country where the device is being installed.

We are not liable for any accidents or damage resulting from the use of the equipment in a manner not in accordance with the instructions described in this manual. This manual is subject to change.

The latest version of the heater manual is always available on the website www.voltpolska.pl

Green Boost PRO 4000 SINUS BYPASS (DC 120-500VDC) for water heating, boilers, underfloor heating and more.

Specyfikacja techniczna Inwerter solarny GREEN BOOST PRO 4000 SINUS BYPASS	
Max constant power	4000W
Output voltage	70-245 VAC / 50Hz
Output voltage Vmp from panels PV	from 120 to 500VDC
Maksymalna moc paneli PV	≤ 4000W
Max Imp current from PV	10A
Output voltage waveform	Pure sinus
Connection of PV panels	series
Output socket	2 pcs
Mode	MPPT / STABLE
Display	LED
Overload protection	YES
Short circuit protection	YES
Thermal protection	YES 100±10℃
Cooling	active fans
Warning system	Sonuds and lights signals
Operationg temperature	from -25 to +55°C
Storage temperature	from -20 to +55°C
IP Class	IP 20
Dimensions	311x232x140mm (with MC-4)
Weight	4,7kg

APPLICATION

Solar InverterThe GREEN BOOST PRO 4000 SINUS BYPASS is designed to power heating devices using both PV solar panels and the utility grid.

Key Features

Multifunctionality (BYPASS): The inverter can be connected to both solar panels and the utility grid.

Pure Sine Wave Output: The inverter generates a pure sine wave output, making it suitable for powering inductive devices such as power tools, air conditioners, refrigerators, freezers, and more.

Operating Principle:

Solar inverter converts the direct current (DC) power generated by solar panels into alternating current (AC) power that can be used to power heating devices. The solar panels should be connected in series with a total Vmp (Maximum Power Voltage) of up to 500V and an Imp (Maximum Power Current) of 10A.

Compatible Devices:

The GREEN BOOST PRO 4000 SINUS BYPASS solar inverter can power a variety of heating devices, including:Electric boilersHeatersElectric heatersElectric matsUnderfloor heating systems

Power Protection:

The GREEN BOOST PRO 4000 SINUS BYPASS solar inverter has an internal maximum power protection of 4kW. The total power of the solar panels should not exceed 4kW. Both sockets can operate simultaneously up to 4kW (total).

Dual Device Support:The Green Boost inverter allows you to connect two heating devices, such as two boilers. Both will heat simultaneously.

Operating Modes:

STABLE Mode: In STABLE mode, the output voltage is maintained at 230V AC (50Hz) as long as sufficient power is generated from the solar panels. If the power from the panels is too low, the device will not supply power to the output sockets.

MPPT Mode: In MPPT mode, the output voltage can oscillate between 70-245V AC (50Hz), allowing the device to supply power to the output sockets even at low power levels from the solar panels (low sunlight conditions).

INSTALLATION

Wiring Requirements:The DC and AC side wires and cables must be selected appropriately in accordance with the technical standards and regulations applicable in the country of installation. Particular attention should be paid to the current carrying capacity of the wires and cables and to ensure that the permissible voltage drop on the wires and cables is within the range:

a) Up to 1% for DC wires and cables*

b) Up to 3% for AC wires and cables**

These values are applicable in Poland.

The cross-section of the wires and cables should not be less than 4mm². Too thin wires will cause heating and voltage drop at the inverter input. In extreme cases, this can lead to system losses or fire.

Ventilation Requirements:Free air circulation is essential for proper inverter operation. Do not cover the ventilation openings on the housing. This can cause overheating and damage to the device. The recommended mounting method for the inverter is vertical. Secure the device to non-combustible surfaces such as concrete or metal.

SAFETY

WARNING: Hazardous Voltage

The solar inverter produces hazardous output voltage. Hazardous voltage is also present at the input of the device (from the PV panels).

Caution: Disconnecting the panels during operation can lead to electric shock and serious injury or death (risk of electric arc).

General Safety Precautions:

- Follow all general safety guidelines for 230V devices during operation.
- Even after disconnecting the power supply, high voltage may persist on the power terminals and internal components for several seconds.
- Entrust any repairs to an authorized service center.
- Avoid using the inverter in high humidity environments.
- Do not expose the inverter to direct sunlight, fire, or flammable substances.
- Shield the device from exposure to sunlight.
- In case of water contact, promptly turn off the device.
- Refrain from short-circuiting the inverter output.
- Avoid connecting a load exceeding the permissible continuous load.
- Inverter damage may result from overloading.
- In the event of a fire, utilize a fire extinguisher suitable for extinguishing electrical devices under voltage (snow/powder).

Additional Safety Precautions:Do not connect the AC outputs of the Green Boost inverter to a new or existing power grid.

Install DC electrical protection devices between the photovoltaic panels and the inverter:

- DC surge arrester
- DC overcurrent protection

Electrical Protection between Solar Inverter and Energy Receiver

AC Electrical Protection:
Install AC electrical protection devices between the solar inverter and the energy receiver to safeguard against surges and overcurrents. These devices should be properly selected and connected to the installation in accordance with the technical standards and regulations applicable in the country of installation.

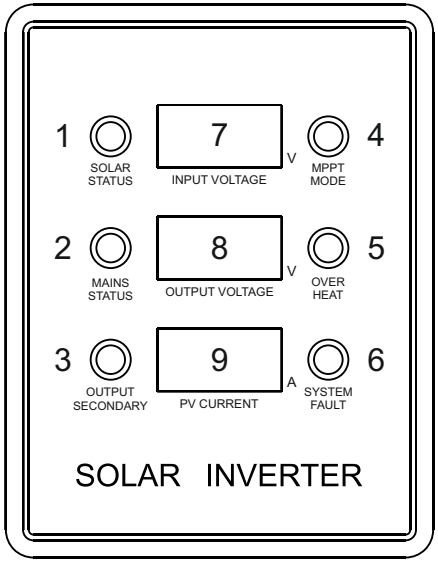
CONNECTION. IMPORTANT!
When connecting the panels to the inverter, pay close attention to the polarity of the power supply. Reverse connection of the wires will damage the inverter and void the warranty.

Connecting the Solar Panels:
The Green Boost inverter has cables with MC4 connectors. 
Connect the connectors to the existing PV installation. 
Connect the male connector to the negative terminal of the PV installation.
Connect the female connector to the positive terminal of the PV installation.

Connecting the DC Power Cable:
The power cable from the PV installation should have a DC safety switch installed (designed for this type of installation).
Connect the DC power cable to the DC input terminals on the inverter.
Connecting the Heating Device:
Connect the appropriate heating device (e.g., boiler) to the output of the inverter.
Power On and Operation: Once voltage from the PV panels is detected, the inverter will automatically turn on.The indicator light will confirm activation.

Operating Modes:
STABLE Mode: The output voltage is maintained at 230V AC (50Hz) as long as sufficient power is generated from the solar panels.
MPPT Mode: The output voltage can oscillate between 70-245V AC (50Hz), allowing the device to supply power to the output sockets even at low power levels from the solar panels (low sunlight conditions).

AC Output Sockets:The GREEN BOOST PRO 4000 SINUS BYPASS inverter has 2 E-type AC power sockets.
After connecting the voltage from the PV installation (120V-500V), the inverter will check for connected devices.
Both sockets can operate simultaneously (up to 4kW total).









1. **SOLAR STATUS:** when button choose SOLAR, this lights will lightning on and on screen (7 INPUT VOLTAGE) will show all solar panels data.
2. **MAINS STATUS:** When this button choose MAINS, this lights will lightning on and on screen (8 - OUTPUT VOLTAGE) will show all AC grid data.
3. **OUTPUT SECONDARY:** When secondary socket working, this light will lightning on, othewise light is off. (If there is no graded for output, the light will never lightning on)
4. **MPPT MODE:** When device choose this button (Stable/Mppt), the light will be flashing lightning, otherwise, it is off.
5. **OVER HEAT:** When the device temperature is too high, the device is pretected, the light will be lightning on. Otherwise, it is off.
6. **SYSTEM FAULT:** When the device abnormal of fault, the light will be long lightning on; When overloading or PV voltage high voltage, this light will be flashing lightning; when device is normal working, the light is off.
7. **INPUT VOLTAGE:** When choose SOLAR, it shows currently PV input voltage, when it choose MAINS, it shows currently AC input voltage. The screen only can show 3 bit integer.
8. **OUTPUT VOLTAGE:** When choose SOLAR, it shows inverter output voltage at iverter mode. If choose MAINS, it shows ac grid output voltage.
9. **PV CURRENT:** It shows current PV input current, it is 2-bit integer and 1 decimal place. When loading on inverter mode, is too heavy, this data will flashing to warning over loading

When select STABLE, the output voltage will be 230V; When choose MPPT, the output voltage is the max. 245V, it is according to currently solar panel max. Power to adjust the output voltage.

When choose SOLAR, the data on screen shows PV data' When shoose MAINS, the data on screen shows AC grid data.

When OUTPUT is ON is turn on, there is output voltage on the outlets. When OUTPUTS is OFF this switcher off, there is no output voltage on outlets.

WARRANTY SERVICE COMMENTS

DATE OF PURSCHASE	
SHIPPING ADDRESS	
SIGNATURE / STAMP	
DAMAGE DESCRIPTION	
SERVICE COMMENTS	

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)
The marking on the product or in related texts indicates that it is at the end of its useful life should not be disposed of with other household wastes. To avoid harmful effects on the environment and human health as a result of uncontrolled waste disposal, please separate the product from another type of waste and responsible recycling to promote the reuse of material resources as a permanent practice. Users in the households should contact the retailer where they purchased the product, or with a local authority. Business users should contact their supplier and check the terms of the contract purchase. The product should not be disposed of with other commercial waste.

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