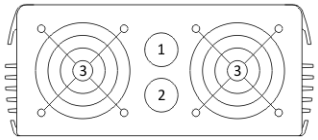
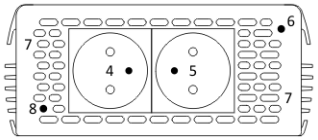
HOUSING / CONNECTORS

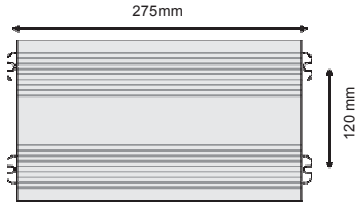




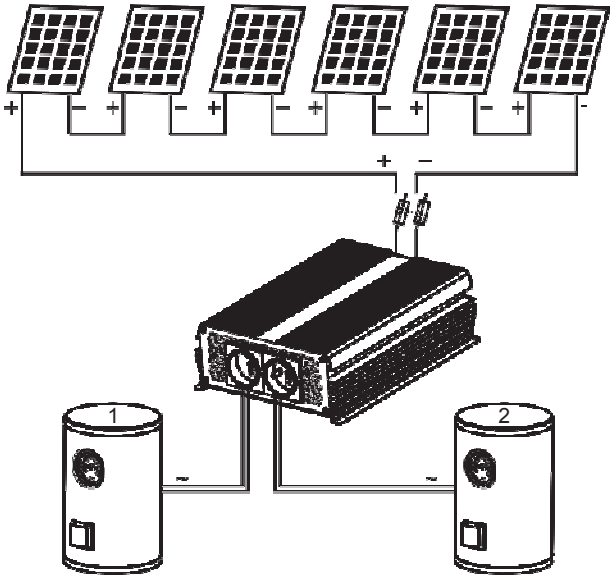
1 - power connector "+" VDC
2 - power connector "-" VDC
3 - fan

4 - socket VAC No. 1
5 - socket VAC No. 2
6 - signal light
7 - ventilation holes
8 - earthing

MOUNTING HOLE SPACING



INSTALLATION EXAMPLE



SPECIFICATION

model	MPPT- 3000
input voltage (DC)	120V ÷ 350V
output voltage (AC)	120V ÷ 350V
output voltage type	modified sine wave
output voltage frequency	50Hz
maximum power	3000W
MPPT function	yes
PV panels connection	in series or in series-parallel
input terminal	M6 screw terminal - 2pcs or MC4 - 2pcs
output socket	E type - 2pcs
housing	aluminium
dimensions (L x W x H)	290 x 190 x 80 [mm]
net weight	2,4kg

SAFETY AND OTHER FUNCTIONS

model	MPPT- 3000
overload protection	yes
short-current protection	yes
thermal protection	80 °C
over voltage protection	yes
operating temperature range	-25 °C ÷ 55 °C
efficiency	> 94 %
cooling type	active
protection class	IP21

MPPT

USER MANUAL
Solar inverter
ECO Solar Boost
MPPT-3000 3kW

produkt polski

CE

Version 4.0

MANUFACTURER

AZO Digital Sp. z o.o.
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AZO DIGITAL

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APPLICATION

The ECO Solar Boost 3kW inverter is designed to power heating devices such as boilers, heaters, electric heaters or heating mats directly from PV panels.

The system requires: 4 to 9 typical PV panels (250W - 330W) connected in series, with a total voltage from 120V to 350V, an ECO Solar Boost inverter and an energy receiver with a 200W to 2.5kW heater. The total power of the panels in principle is not limited, as the inverter is equipped with an integrated maximum power protection of 3kW.

Optimal power for systems operating between spring and autumn, (for boilers with a capacity of 50-200L) is 1000W to 2000W (4 to 7 PV panels). On the other hand, for a year-round systems the power should be slightly larger due to heavy clouds and a small angle of incidence of sunlight in winter.

Two mains sockets located on the housing allow the connection of two heating devices (e.g. two boilers), one of which will always be the first to be heated and the second only if the thermostat of the first one interrupts the energy consumption of the inverter. Thanks to this, energy from PV panels will not be lost when one of the devices reaches the set temperature.

The ECO Solar Boost inverter is equipped with the MPPT algorithm maximising the amount of energy taken from PV panels and ensuring automatic adjustment to the heater power.

CORRECT INSTALLATION

Use suitable cables to connect the PV panels to the converter, with a cross-section of not less than 4mm. If the cables are too thin, they will heat up and the voltage at the inverter input will drop, which leads to losses in the system, and in extreme cases can cause a fire.

To work properly, the inverter requires air circulation. Under no circumstances should the air vents in the housing be covered (3 and 7 in the diagram), since this might cause overheating of the device and its malfunction or damage.

In order to improve heat dissipation and for your own safety, it is recommended to screw the converter vertically.

WARNING !!!

When connecting the polarization of the supply voltage is important!

Reverse connection of the cables will damage the converter and invalidate the warranty!

SAFETY

The ECO Solar Boost series voltage inverter produces a dangerous voltage at the output which can cause an electric shock or fire. When using you must follow all safety rules that apply to electrical equipment of 230V.

High voltage can be maintained on the power supply clamps and internal components even after the power supply has been disconnected, and in case of no load even for several seconds, up to the time when the green LED goes out.

Any repairs should be made only by an authorized service.

It is not allowed to use the voltage inverter in places with high humidity, close to sources of fire, flammable substances and direct sunlight.

In case the device gets wet, immediately disconnect the power supply.

Do not connect to the inverter an output load greater than allowed for continuous operation. Overloading can cause damage to the device.

In case of fire, use a fire extinguisher designed for extinguishing live electrical equipment in accordance with its manual.

The input (VDC connectors "+" and "-") and output (VAC connectors 1 and 2) of the ECO Solar Boost inverter must not be connected to the grid or to earth potential.

CONNECTING / START

Version with M6 screw terminals: the device has two terminals on the housing that need to be connected to the PV installation. Red terminal must be connected to the installation's plus, the black one to the installation's minus.

Version with MC4 connectors: the device has two MC4 connectors on the housing that need to be connected to the PV installation. Connector labelled "+" must be connected to the installation's minus. Connector labelled "-" must be connected to the installation's plus.

Both versions: for such installations a DC safety switch must be installed on the PV cable.

A suitable 230 V heating energy receiver should be connected to the inverter output marked as "1", e.g. it may be an electric boiler. When the inverter detects that a voltage from PV panels is present in the correct range, the inverter will automatically switch on, which will be confirmed by the green LED indicator (7) flashing.

Optionally, a second power receiver can be connected to the output marked as "2". When output no. "2" is activated, the green / red LED indicator (7) flashes alternately.

The inverter should be earthed by means of a dedicated screw connector on its housing (8).

USE

The ECO Solar Boost inverter is equipped with two mains sockets (E type sockets) marked as "1" and "2". Socket No. "1" is the master output - voltage is present on it all the time. Socket no. "2" is a slave output, on which voltage appears if output no. "1" is under 100 W. The switching time of output no. "2" is at least 30 minutes from the moment when the load on output no. "1" decreases below 100 W.

An additional heating energy receiver can be connected to output no. "2", which will be supplied only when output no. "1" is not loaded, e.g. when the boiler connected to it reaches the set temperature. **The load capacity of output No. "1" is 3 kW and the load capacity of output No. "2" is 2 kW maximum.**

TROUBLESHOOTING

The ECO Solar Boost inverters are equipped with a number of safety features (table: safety and other functions), so that in case of output overload or overheating, the device will switch off safely and will not cause permanent damage.

In the case of irregularities inverter signals the lack of possibilities of further proper operation by flashing the green / red LED indicator, located on the housing, and a beep:

the green LED flashes quickly	too low or too high voltage from PV panels
	the inverter will not start
red LED flashes with an intermittent beep	working temperature too high
	restarting after reaching the proper temperature
red LED flashes quickly with an intermittent beep	too much load on the output
	automatic shutdown for a few seconds and switch-on attempt