

Content

1. GENERAL SAFETY INSTRUCTIONS.....	2
2. SCOPE OF DELIVERY.....	3
3. TECHNICAL DESCRIPTION.....	4
3.1 CONTROL ELEMENTS AND CONNECTIONS.....	5
3.1 REMOTE CONTROL (Art. 4403445).....	6
4. FITTING THE INVERTER.....	7
4.1 MOUNTING INSTRUCTIONS.....	7
4.2 MOUNTING THE INVERTER.....	8
5. CONNECTING THE INVERTER.....	8
5.1 GENERAL INSTRUCTIONS.....	8
5.2 WIRING DIAGRAM.....	9
5.3 CONNECTING THE INVERTER TO THE BATTERY.....	9
5.4 CONNECTING THE 230V OUTPUT.....	10
6. USING THE INVERTER.....	10
6.1 Switching on the inverter.....	10
6.2 Protections feature.....	10
7 WARRANTY.....	11
8 TECHNICAL DATA.....	12



1. GENERAL SAFETY INSTRUCTIONS.

The manufacturer accepts no liability for damage in the following cases:

- a. Faulty assembly or connection
- b. Damage to the product resulting from mechanical influences and excess voltage
- c. Alterations to the product without express permission from the manufacturer

Warning!

- d. Use for purposes other than those described in the operating manual
 - ❖ Do not operate the device in a damp or wet environment.
 - ❖ Do not operate the device near any flammable materials.
 - ❖ Do not operate the device in areas that are potentially explosive.
 - ❖ Installation, maintenance and repair work may only be carried out by qualified workers who are familiar with the risks involved and the relevant regulations.
 - ❖ People (including children) whose physical, sensory or mental capacities or whose lack of experience or knowledge prevent them from using this product safely should not use it without the supervision or instruction of a responsible person.
 - ❖ Do not expose the device to a heat source (such as direct sunlight or heating). Avoid additional heating of the device in this way.
 - ❖ If cables have to be fed through metal walls or other walls with sharp edges, use ducts or tubes to prevent damage.
 - ❖ Do not lay cables which are loose or bent next to electrically conductive material (metal).
 - ❖ Fasten the cables securely.
 - ❖ Always disconnect the power supply when working on the device.
 - ❖ Make sure the air inlets and outlets of the device are not covered.
 - ❖ Ensure good ventilation. The inverter produces dissipated heat which has to be diverted.



2. SCOPE OF DELIVERY.

The set include:

1. Pure sine wave inverter
2. Earth cable
3. Battery cables



3. TECHNICAL DESCRIPTION.

The inverter can be operated wherever a 12V DC connection is available. The light weight, compact construction and E mark certification of this device makes the inverter ideal to use in motorhomes, campers and yachts.

The output voltage corresponds to the household voltage from the socket (pure sine wave, THD < 3 %).

The inverter has various protective mechanisms:

- ❖ Overvoltage shutdown: the inverter shuts itself off when the voltage exceeds the cut-off value. It restarts automatically once the voltage returns to the normal values.
- ❖ Undervoltage shutdown: the inverter shuts itself off when the voltage sinks the cut-off value. It restarts automatically once the voltage rises to the normal values.
- ❖ Exceed temperature shutdown: the inverter shuts itself off when the temperature inside the device or the temperature on the cooling element exceeds the cut-off value. It restarts automatically when the temperature returns to the normal values.
- ❖ Overload protection: the inverter shuts itself off when the AC load connected to the inverter output exceeds the cut-off value. It restarts itself once the load connected to the inverter output returns to the normal values.
- ❖ Short circuit protection: the inverter include an internal fuses to prevent any damage in the 12V DC circuit if there is a short circuit.

The inverter can be easily operated using a remote control (not included).



3.1 CONTROL ELEMENTS AND CONNECTIONS.

The inverter has the following connections and control elements on the left side.



No	Description
1	230V AC output socket
2	Remote control socket
3	ON/OFF switch
4	USB socket
5	Earth connection
6	Fault indication LED
7	Power indication LED

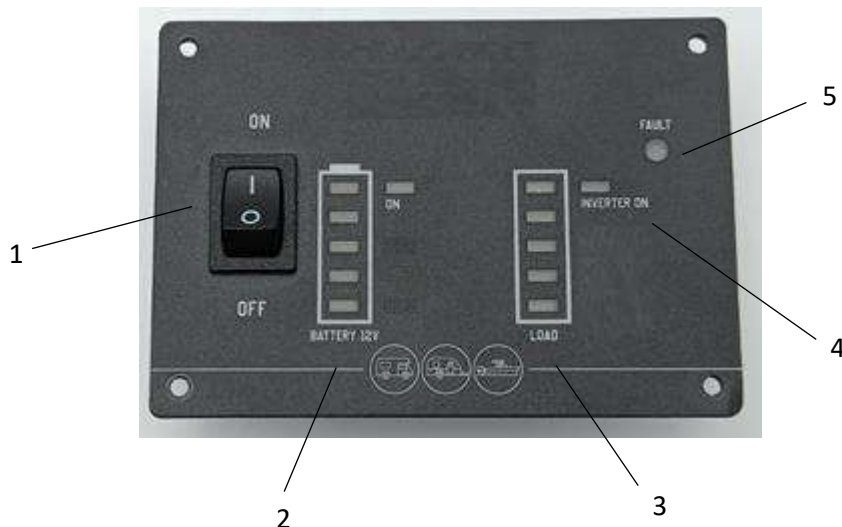


The inverter has the following connections on the right side:



No	Description
1	Cooling ventilator
2	DC input positive pole
3	DC input negative pole

3.1 REMOTE CONTROL (Art. 4403445) NOT INCLUDED



No	Description
1	ON/OFF switch
2	Battery capacity 5 levels (20%, 40%, 60%, 80%, 100%)
3	Load level 5 levels (20%, 40%, 60%, 80%, 100%)
4	ON/OFF indication LED
5	Fault indication LED

The communication cable is 5m. This cable is connected to the RJ11 jack on the rear of the remote control and to the remote port on the rear of the inverter

NOTICE!!! Inverter's ON/OFF switch and remote control's ON/OFF switch is connected in parallel. To use this remote control, you have to switch OFF the remote control and also the inverter. Otherwise, the remote control will not work properly.

4. FITTING THE INVERTER.

4.1 MOUNTING REQUIREMENTS.

When selecting the installation location, observe the following instructions.

- ❖ The inverter can be mounted horizontally or vertically.
- ❖ The inverter must be installed in a place that is protected from moisture.
- ❖ The inverter may not be installed in the presence of flammable materials.
- ❖ The inverter may not be installed in a dusty environment.
- ❖ The place of installation must be well ventilated. A ventilation system must be available for installations in small, enclosed spaces. The minimum clearance around the inverter must be at least 20 cm (fig. 1).
- ❖ The air intake on the underside or the air outlet on the back of the inverter must remain clear.
- ❖ For ambient temperatures higher than 50 °C (such as in engine or heating compartments, or direct sunlight), the heat from the inverter under load can lead to automatic shutdown.
- ❖ The device must be installed on a level and sufficiently sturdy surface.

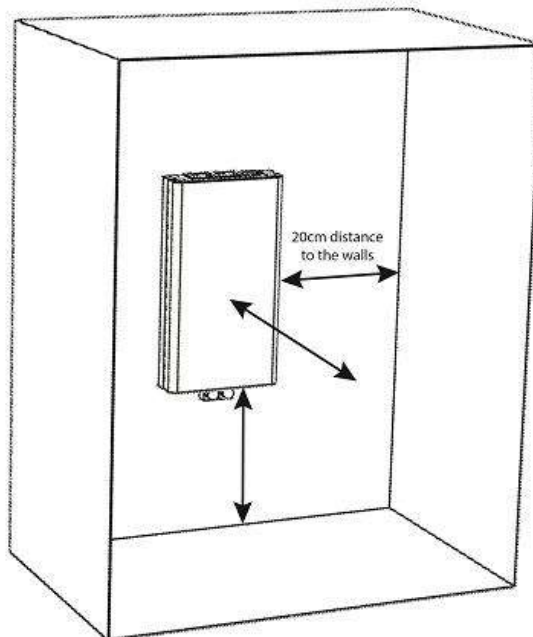


Fig. 1



4.2 MOUNTING THE INVERTER.

Hold the inverter against the installation location and mark the fastening points. Then, attach the inverter using your chosen fastening method.

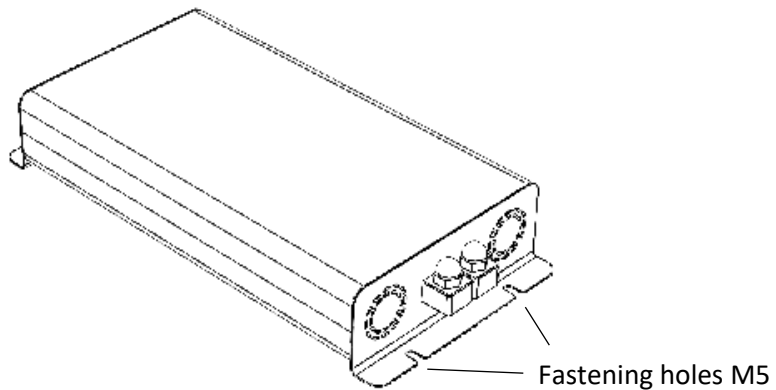


Fig. 2

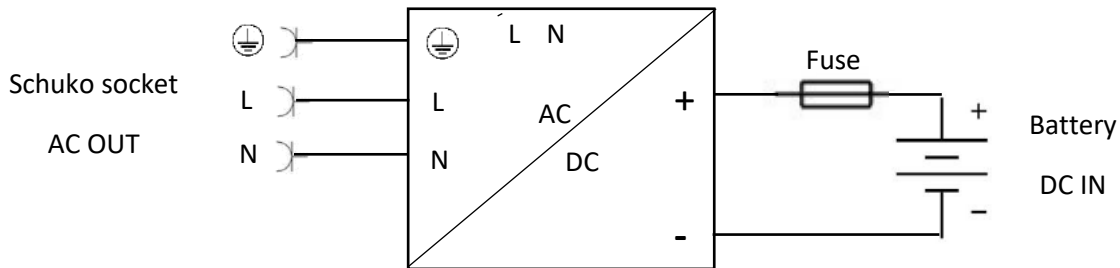
5. CONNECTING THE INVERTER.

5.1 GENERAL REQUIREMENTS.

- ❖ When installed in vehicles or boats, the inverter must be connected to the chassis or earth.
- ❖ Never use the inverter on vehicles where the positive terminal of the battery is connected to the chassis.
- ❖ When setting up a socket distribution circuit (mains setup), comply with the applicable regulations.
- ❖ Only use copper cables.
- ❖ Keep the cables as short as possible.
- ❖ Make sure to install a fuse on the positive cable, otherwise the cables can overload which might result in a fire.
 - 4403405: 30A fuse
 - 4403415: 60A fuse
- ❖ The inverter may only be connected by qualified persons. Please, make sure that the connection is made following the wiring diagram.



5.2 WIRING DIAGRAM.



5.3 CONNECTING THE INVERTER TO THE BATTERY.

- Set the main switch to "OFF".
- Loosen the screw (fig. 3) from the red positive terminal (fig. 3).
- Push the cable lug (fig. 3) of the positive cable into the red positive terminal and fasten it with the bolt.
- Connect the negative cable to the black negative terminal (fig. 3).
- Lay the positive cable from the inverter to the positive terminal of the vehicle battery and connect it.
- Lay the negative cable from the inverter to the negative terminal of the vehicle battery and connect it. A small spark can occur if the capacitors are being charged in the inverter.
- Connect the earth terminal to the vehicle chassis.

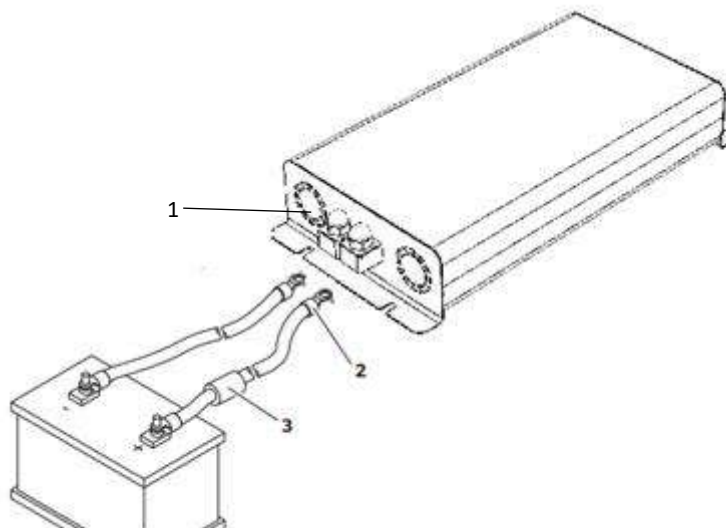


Fig 3.

Caution!!

Reverse polarity can damage the inverter.

Tighten the nuts and bolts to a minimum torque of 1Nm. Loose connexions may cause overheating

5.4 CONNECTING THE 230V OUTPUT

- a) Set the main switch OFF.
- b) Connect the 230V AC plug from the loads to the 230V AC inverter sockets output.

6. USING THE INVERTER.**6.1 Switch on the inverter**

- i. Set the main switch of the inverter to the ON position to power on the inverter
- ii. The inverter start a self-test. During the self-test, the inverter emits a tone and LED flashes.
- iii. After the self-test is completed, the LED power lights up green.

6.2 Protections features.

Inverter is equipped with numerous protection features to ensure safe operations.

- ❖ Input low voltage protection:
 - When DC input voltage is below 10.5 ± 0.5 V DC, buzzer sounds 2 times, which indicates DC power supply voltage is decreasing and batteries need to be charged.
 - When input voltage reach 10 ± 0.5 V DC, buzzer sounds 3 times and red light turn on. AC output will be automatically shut off. The inverter will switch on again automatically once the voltage returns to the normal values.
- ❖ Input over voltage protection
When the DC input voltage reach 16 ± 0.5 V DC, buzzer sounds 4 times and red light turns on, the AC output will automatically shut off. The inverter will on again automatically once the voltage returns to the normal values.
- ❖ Short circuit protection
When there is a short circuit, the fuses will be burned to protect appliance. After short circuit, the fuses on the AC socket and the internal fuses need to be checked and replaced if they are damaged. The fuses installed on the inverter are:
 - 4403405 DC fuse: MOSFET transistor
 - 4403415 DC fuses : 2x45A



- ❖ **Overload protection**
When overload occur, buzzer constantly sounds and red light turn on, output will be shut off automatically. The user need to restart the inverter manually once the overload is removed.
- ❖ **Reverse polarity protection.**
Via MOSFET, when the battery terminals are reverse connected, the inverter will not work until the end user connect the battery terminals correctly.
- ❖ **Over temperature protection.**
When heat sink temperature exceed 45 degrees, the inner cooling fan will automatically turn on to cool the inverter internally. When the inner temperature exceed the 75 degrees, buzzer sounds 5 times and red light turn on, AC output will automatically shut off. The inverter will on automatically once the temperature returns to the normal values

7 WARRANTY.

We guarantee this product against defects in materials and workmanship for a period of 12 months from the date of retail purchase by end user.

This warranty will be considered void if the unit has been misused, altered or accidentally damaged. We are not liable for anything that occurs as a result of the user's fault.

If the warranty period for your product has expired, if the unit was damaged by misuse or incorrect installation, if other conditions of the warranty have not been met or if not dated proof of purchase is available, your unit may be serviced or replaced for a flat fee.



8 TECHNICAL DATA.

Model	4403405	4403415
Nominal power	300W	600W
Peak power	600W	1200W
Signal	Pure Sine Wave	Pure Sine Wave
Nominal input voltage	12V DC (10V-16V)	12V DC (10V-16V)
Nominal output voltage	230 +/-10% V AC	230 +/-10% V AC
Frequency	50+/-1 Hz	50+/-1 Hz
Stand-by power	<0.45A	<0.55A
Efficiency	>85%	>85%
Fan cooling	yes	yes
Overheat protection	75°C = shut-off (under 75°C =recovery)	75°C = shut-off (under 75°C =recovery)
Overload protection	110-120% rated power= shut down	110-120% rated power= shut down
Low voltage protection alarm	10.5 V +/- 0,5V	10.5 V +/- 0,5V
Low voltage protection cut off	10V +/- 0,5V	10V +/- 0,5V
Over voltage protection cut off	16 +/- 0,5V	16 +/- 0,5V
Reverse polarity protection	yes / MOSFET	yes / MOSFET
Short circuit protection	Yes / MOSFET	Yes / Fuse DC – 2x45 A
Section / length of cables	6mm ² / 60cm x 2	10mm ² / 60cm x 2
Connector on cables	Ring Terminal M8+M10	Ring Terminal M8+M10
USB output	5V 2.1A	5V 2.1A

