



PURE SINE WAVE
DC TO AC POWER INVERTER

APS-600-12
APS-600-24
APS-1000-12
APS-1000-24

Instruction Manual

Read these installation and operating instructions before connecting and using the inverter

Contents

Title	Page
Information for using the installation instructions	2
General safety and installation instructions	2
Purpose of use	3
Required tools and installation equipment	3
Installation	3-4
Electrical connection	4-5
Operation	6
Fault detection	6
Technical data	7

Information for using the installation instructions



Warning! Safety instruction: Failure to observing these warnings may result in injuries to persons or damage the equipment.



Attention! Safety instruction: Failure in observing these warnings may result in damage of the equipment and improper functioning of the inverter.

General safety and installation instructions



Warning! The following fundamental safety measures must be observed when using electrical equipment to avoid danger of:

- electric shocks
- fire
- injury

- The inverter must be kept in a safe place out of the reach of children!
- The inverter may not be operated in a damp or wet environment!
- The inverter may not be used in rooms endangered to explosions!
- Make sure a good ventilation!
- Service and repair may only be carried out by skilled persons who are familiar with the risks involved and the relevant regulations!

Caution when installing on boats!

About the unit itself

- The inverter must only be used for the purpose specified by the manufacturer!
- When working on the inverter, always disconnect it from the mains!
- Do not operate the inverter if the housing of cables are damaged!
- The inverter must be positioned and secured safely in order to avoid knock over or dropping!

- Wrong installation of electrical units on boats will lead to corrosion of the boat. Therefore, please let a (boat-) electrician carry out the installation of the inverter.

Intended use

This inverter is suitable for e.g. high-quality appliances from the audio-, video and PC sector.

The output voltage corresponds to the standard one of your socket (pure sinus-voltage) and its use depends on the respective performance of the inverter.

Attention! Please note that appliances like drilling machines or cooling units do require a high starting-current which is far over the nominal current.

With its low weight and the compact design the inverter can be easily installed into camping mobiles, commercial vehicles or motor and sailing yachts.

Required tools and installation equipment

Depending on the place of installation the following tools are required:

- pencil or ball pen (for markings)
- set of screw drivers
- drilling machine and set of bits
- crimping shears for the 12/24V wire connection

For connection of inverter to battery the following joints are additionally needed:

- 2 different flexible cable connections. The required cable diameter can be taken from the table in chapter "Electrical connection", page 5.
- Various terminals, multicore cable ends.

For fixing the inverter you need the following mounting devices:

- Screw (M4) with spacers and self-locking nuts
- or
- sheet metal screws resp. wood screws.

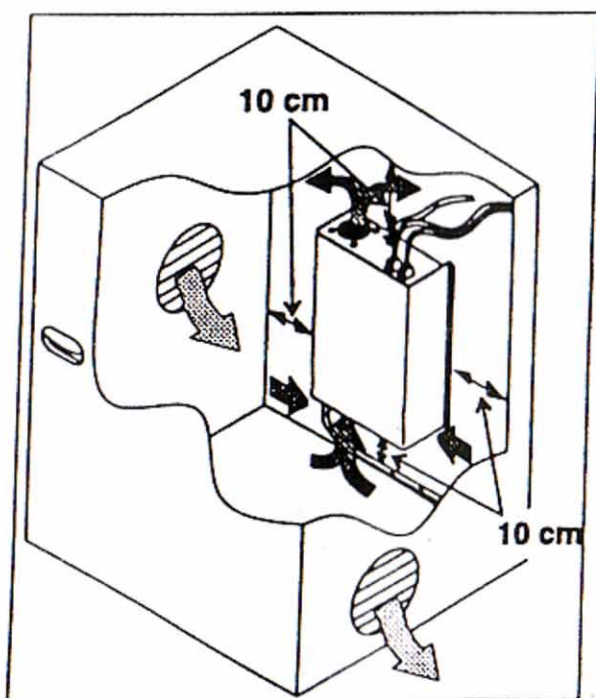
Installation

! General installation instructions!

The inverter has to be installed in a dry and clean place not being exposed to humidity.

Make sure that the place is well ventilated. Keep at least a free space of 10 cm surrounding the inverter. If installed into housing, make sure a good ventilation.

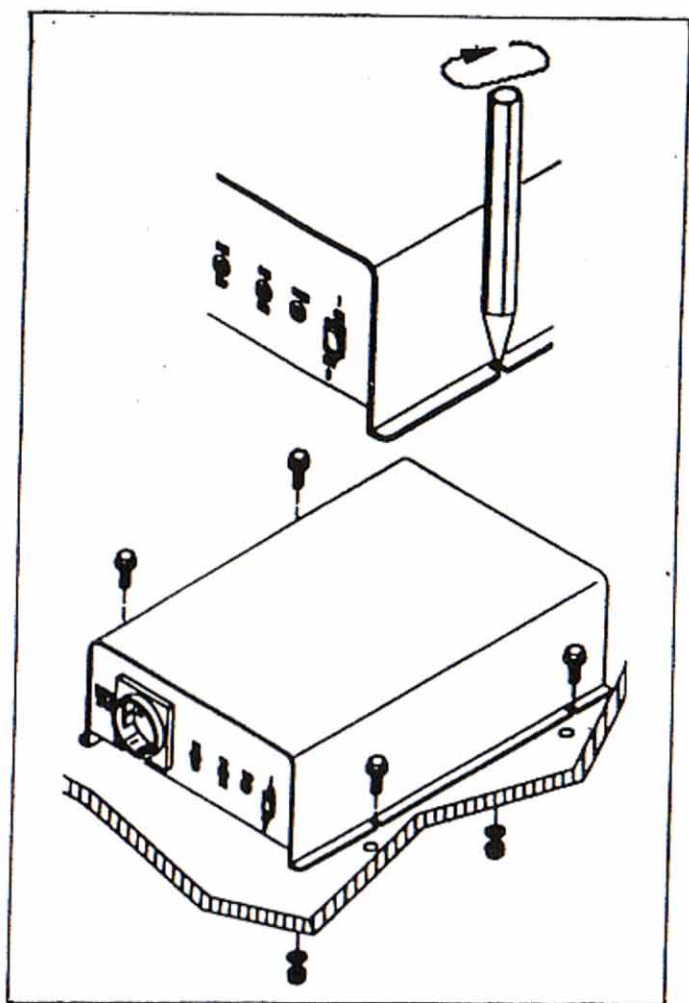
The air intake on the bottom of the inverter and the air outlet on the back side may not be handicapped.



In case of ambient temperatures of more than 35°C (e.g. engine or heating room, direct sunlight), the inverter will switch off automatically, because of self heating effect on operation. The installation surface must be balanced and sufficiently strong. In case of drilling works leave enough space for out coming bits.

Installation of the inverter

- Adjust the inverter to the chosen installation place and mark the fixing points.
- Fix the inverter by using the self chosen fixing method.



Electrical connection

! General instructions for electrical Connection

In case the inverter is installed into vehicles or boats it has to be connected to the chassis (ground). On building up an electricity supply network the safety regulations according to the VDE 0100 standard are to be kept. If cables have to be inserted to metal walls or other sharp-edged means, use a cable duct or cable bushes! Do not pull the cables!

Do not lay cables loose or in sharp bends on electrical conducting materials (metal)!

Do not lay 115V mains cable and 12/24 VDC cable together into the same cable duct!

The specified minimum cable cross section must be complied with!

Secure cables properly!

Lay cables in such a way that no tripping is possible!

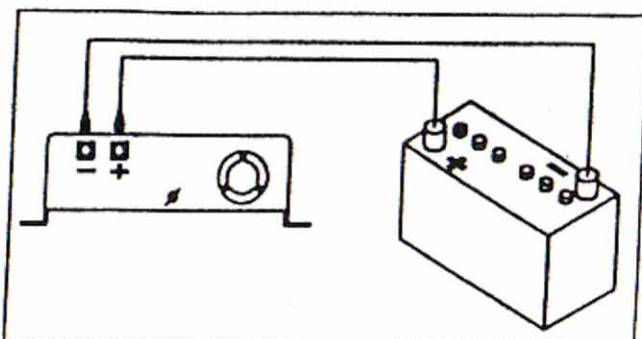
Lay cables in such a way that no exposure to or risk of damage is possible!

Cables. Make sure to use the correct cables. A chart is provided below, for your reference:

Max. Watt Output	Amps Req'd..	Wire Gauge
150W	15A	#14
300W	30A	#10
600W	60A	#6 or 2 x #10
1000W	100A	#2 or 2 x #6

Connection to the battery

-Lay the flexible connecting cable (plus and minus) from the battery to the connecting poles of the inverter (take cable cross section from the table).



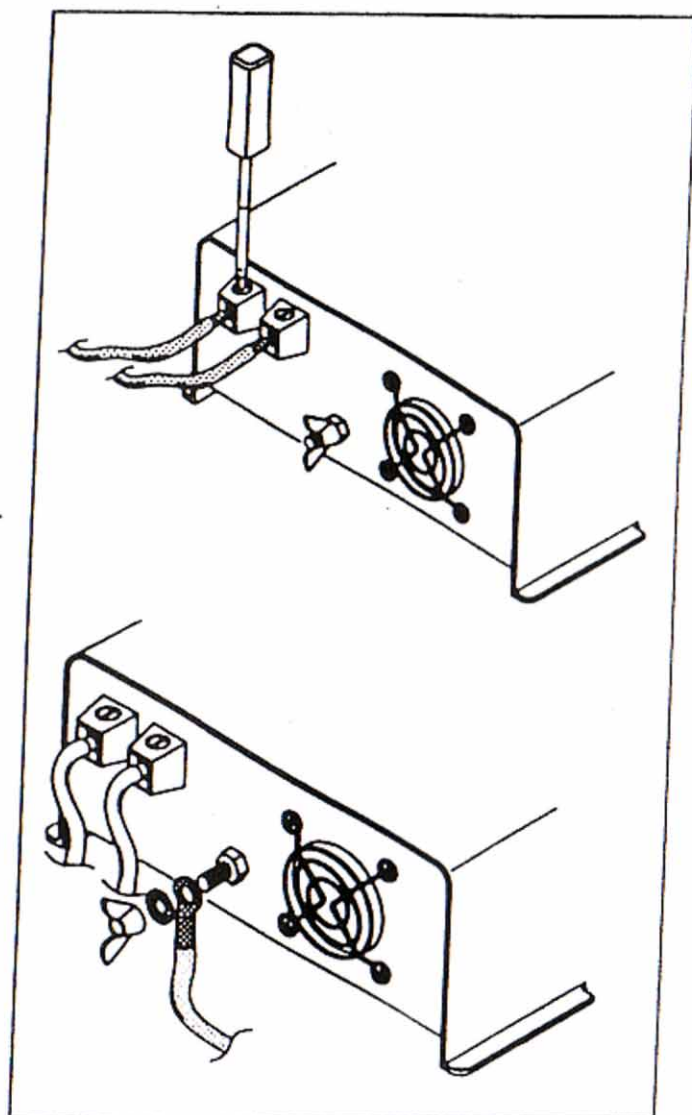
-Connect first the plus, afterwards the minus cable.

⚠ Make sure that the poles will not be exchange! Reverse polarity connection will blow the internal fuses. Exchange of fuses by experts!

-Lay the flexible earth cable from the earthing point of the vehicle to the earthing point of the inverter.

-Connect the earthing cable.

⚠ Reverse polarity connection of the battery wires can damage the inverter. Do not use the inverter with electrical systems using positive ground.



Operation

600W / 1000W sine wave inverter:

- Power on – On the led control “Power” lighting.
- Over load – On the led control “Over-Load” Lighting.
- Over temperature – On the led control “Over-Temp” lighting.

At the front side the inverter is equipped with a 115V earthing contact type socket. Out of security reasons, basically only one consumer may be connected.

Fault detection

Problem:	Possible cause:
No output voltage LED does not twinkle	1. ON/OFF switch is not in position power ON 2. Bad contact of the connections between battery and inverter 3. Internal fuses defect. In this case send the unit back to supplier.
No output voltage, OVER-TEMP LED twinkles	The inverter has been overheated. Switch off the inverter and the consumer. Wait for approx. 2 minutes and switch on the inverter only. Reduce the loading and make sure that a better ventilation for the inverter is given. Then switch on the consumer again.
Overload LED	Current consumption of the consumer is too high. Evtl. there is a short circuit at the consumer given. Switch off the inverter and disconnect the consumer. Switch on the rectifier again. If the OVERLOAD LED is off, there is a short circuit at the consumer or the total load was higher as the performance specified within the technical data table. Check the connecting cable of the consumer for mechanical damages.
Acoustic signal in Case of loading	Battery voltage too low. In case of loading battery voltage falls below 11V resp. 22V. The battery has to be re-charged.

Technical data**PURE SINE WAVE 600W & 1000W INVERTER:****A. 600W Pure Sine Wave Inverter:**

Model	115V	APS-600-12	APS-600-24
Output Power:			
Continuous:		600W	600W
20 Minutes:		650W	650W
Surge:		1000W	1000W
Output Voltage:		115V+/-3%	115V+/-3%
Output Frequency:		60Hz	60Hz
Output wave form:		Pure Sine Wave	Pure Sine Wave
Total Harmonic Distortion		<3%	<3%
Input Voltage Range:		10V-15V	20V-30V
Efficiency:		>85%	>85%
No Load Current Draw		0.85A	0.45A
Low Battery Alarm:		10.7V	21.4V
Low Battery Shut-Down:		10V	20V
Dimension (L x W x H)		335 x 236 x 83 mm	335 x 236 x 83 mm
Weight		3kgs	3kgs

B. 1000W Pure Sine Wave Inverter:

Model	115V	APS-1000-12	APS-1000-24
Output Power			
Continuous		1000W	1000W
15 Minutes		1200W	1200W
Surge		2000W	2000W
Output Voltage		115V+/-3%	115V+/-3%
Output Frequency		60Hz	60Hz
Output wave form		Pure Sine Wave	Pure Sine Wave
Total Harmonic Distortion		<3%	<3%
Input Voltage Range		10V-15V	20V-30V
Efficiency		>85%	>85%
No Load Current Draw		1.8A	1A
Low Battery Alarm		10.7V	21.4V
Low Battery Shut-Down		10V	20V
Dimension (L x W x H)		395 x 236 x 83 mm	395 x 236 x 83 mm
Weight		4kgs	4kgs