Nauticharger

Smart Charger 12V 12A - 2 output

User manual - English

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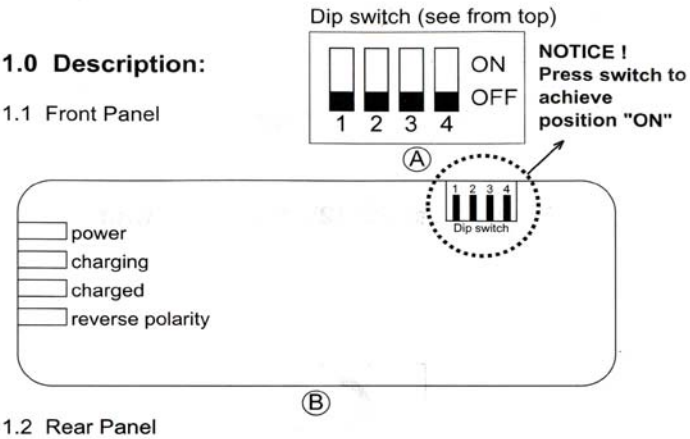
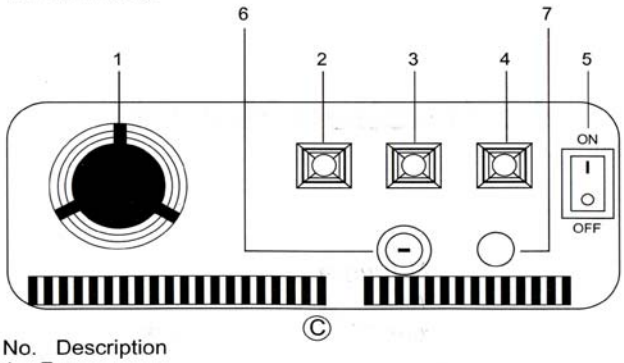
Read these instructions carefully before the installation and commissioning and keep them in a safe place. Pass it on to the buyer in case of the further sale of the system.

1.0 Description:

1.1 Front Panel



1.2 Rear Panel



No.	Description
1	Fan
2	Bat *-* (minus) terminal
3	Bat 1 *+* (plus) terminal
4	Bat 2 *+* (plus) terminal
5	Power switch
6	Output fuse
7	AC cable

2.0 General safety information

2.1 General safety
* Use the smart battery charger only for its use as intended (batterycharger)
* Use the smart battery charger only in well ventilated rooms.
* Always interrupt the power supply when doing repair work on the unit.

Warning!
Batteries contain aggressive acids.
Avoid the contact with the battery fluid agent. If a contact with battery fluid agent should occur, then rinse the affected parts of the body or clothing etc. with plenty cold water. It is imperative to seek medical treatment from a doctor with injuries caused by acid.

1. **Do NOT** expose lead-acid batteries to a lit cigarette, sparks or flames because they produce flammable gasses and could explode.

2. **Never try to charge a frozen battery. There is the danger of explosIon! I**n this case, place the battery at a frost-resistant location and wait until the battery has adapted to the ambient temperature. Only then is the charging process started.

3. Store the smart battery charger in a dry and cool place.

4. Maintenance and repair must only be carried out by a qualified specialist who is familiar with the dangers involved and aware of the relevant regulations.

5. This charger is designed to charge rechargeable lead-acid battery. NEVER CHARGE OTHER TYPE BATTERY OR NON-RECHARGEABLE BATTERY.

2.2 Safety when handling electrical wires

1. If cables have to be led through sharp-edged walls, use a cable duct or cable bushes!
2. Do not lay any loose or sharp bent cables against electric-conducting materials (metal)!
3. Do not pull at the cables!
4. Do not carry the charger by cable and avoid any sharp object.
5. Fasten the wirings well and lay them in such a way that there is no risk of stumbling occurring and damage to the cable can be excluded.
6. Always use socket which are earthed and secured by earth leakage circuit breaker.
7. The electical connection may only be carried out by a specialist firm.
8. Keep to the indicated minimum cable cross-section.
9. Do not lay the 230 V line and the 12 V direct current in the same cable conduit (cable duct).

2.3 Safety when operating the unit

1. Do not operate the smart battery charger if the hosing or cables are damaged!
2. Dry location use only.
3. Take care that there is a firm position!
4. Keep away from fire when charging.
5. The srnart charger as well as the battery to be charged rnust be securely position, so that they cannot fall over or down.
6. You should connect or disconnect the battery leads when the mains supply is disconnected.
7. Ensure that the smart charger is kept out of the reach of children.
8. Dangers may arise which children are not able to recognize!
9. Do not wear loose clothing or jewellery as these may touch the battery charger when in use.
10. Operate the unit only over a socket which is earthed and secured with an earth leakage breaker.

3.0 Technical Specification

Use as intended: smart battery charger are being designed to charge Lead Acid Battery ONLY, suitable for following types: LEAD ACID and GEL Battery used on board vehicles or boats for the power generation.

The smart battery chargers are used for the continuous charging of supply batteries or starter batteries. Thus the batteries can be charged or be kept at a high capacity level.

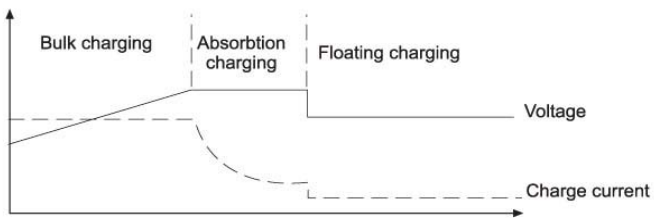
3.1 POWER SUPPLY DATA

Input voltage	230 VCA (±15%).
Frequency	50 Hz (±10%)
Consumtion	1 A (230 VCA)
Performance	80% typ.

3.2 OUTPUT DATA

Number of outputs	2 insulated outputs
Charge type	3 stages: bulk/absorbtion/Floating
Battery type selector	Two battery types selectable
Maximum output current	12A(+/- 5%)
Batteries	12V (6 elements) Lead Acid or Gel 30 Ah to 150 Ah Max (raccomanded)

3.3 CHARGING ALGORITHM



Bulk Charging Stage : charged the battery with current of 12A. When finished, the battery is 80% charged

Absorbtion Charging Stage : charging the remaining 20% and current drop.
Notice : the charging voltage and period of time can be seleded via a switch (see DEP SWITCH settings)

Float Charging Stage : Can keep the battery at full 100%

3.4 SPECIAL NOTICE
The 2 outputs are separated internally via diodes.

3.5 OUTPUT VOLTAGE (DEP SWITCH setting)
(See last page)

3.6 SAFETY DEVICES

In event of short circuit on output	Battery charger shutdown (automatic operation reset)
In event of polarity inversion	Output fuse blown
In event of battery overvoltage	Battery charger shutdown (automatic operation reset)
Power supply fuses	3A 250V 5x20mm (inside of the case)
Output fuse	15 A, 250V (at rear panel)

3.7 STANDARDS

Emissions and sensitivity	EN 55014; EN61000-3-2; EN61000-3-3
Safety	EN 60335; EN 60335-2-29
Appliance category	Class 1

3.8 INDICATORS

1st LED - green color - power	“On/Off” Led
2nd LED - yellow color - battery charging	In charging
3rd LED – green color – battery charged	Charged Led
4th LED – red color - reverse polarity	Output fuse blown

*Note: “charged” led turns on after the charge cycle is finished (if the charge cycle doesn't start it's because the battery is still charged, obviously you can't see the“charged” led turned on)

3.9.1 TEMPERATURES

Operating temperature	from -10* to +40*
Storage temperature	from -20* to +60*
Cooling	Forced with 1 fan
Relative umidity	From 10% to 90% comdensate free

3.9.2 MECHANICAL DATA

Enclosure	Enclosure in aluminium with epoxy powder finish
Assembly	Well-mounted (flush mount, fm model)
Protection rating	IP 20
Fixture	screws
Dimensions	240x185x65mm
Weight	2.2 kg

SPECIAL FEATURE

Our smart charger has been designed to be silent. The fan of charger will stop working after the charging current drop to small amount for a period of time, by then the heat generated inside of charger won't damage the charger working.

4.0 Installation and Connection

4.1 Precautions during Installation

1) Set the power switch at “off” and pull out the mains plug before connecting or disconnecting the direct battery.
2) Ensure a clearance of at least 10cm around the battery charger to ensure adeguate ventilation.
3) The battery charger must not be installed in the vicinity of heat sources or exposed to water.
4) Ventilation slots must not be obstructed.
5) Modifications to the metal enclosure was strictly prohibited (in particular drilling of new holes). The presence of metal filaments inside the battery charger can cause irreparable damage!
6) Fix the battery charger in a vertical position with the cable outlet facing downwards.
7) The applicance can be connected to a 230VAC 50Hz.
8) CAUTION: the appliance is set for use with 230V mains power supply. (+ - 15%)
9) Power supply input must be equipped with a disconnect switch (residual current circuit breaker) to protect persons from electic shocks. Circuit breaker sizing must correspond to battery charger absorbed power.
10) In compliance with EC directives, the following is recommended:
a) use short, shielded or twisted battery cables
b) ensure installation of an efficient earthing system
11) Recommend sections for battery cables : 4 or 6 mm^2

12) ENSURE CORRECT POLARITY
Connect the *-* (minus) battery pole with a connecting cable with the *-* (minus) terminal at charger.
Connect the *+* (plus) battery pole with the connecting cable with the *+* (plus) terminal at the charger.
13) The mains connection cable must only be replaced by a technical assistance center.

5.0 Maintenance
Preliminary Measures and Warnings

1 > Before maintenance inside the appliance, observe the following
a) disconnect the unit frorn the main
b) wait 5 rninutes before opening the case
c) disconnect the battery cable
2> If the mains fuse is blown, do not attempt to replace as this condition is often due to a general fault on the mains and therefore irreversible on the electronic circuit.
3> Polarity inversion on battery cables automatically blows the output fuse.
4> In the event of replacernent of a blown output fuse, replace with a version with the same characteristics. To obtain an adequate electrical contact, tighten the fuse holder contacts before mounting the new fuses.
5> Disconnect from the power supply mains before connecting/disconnecting batteries.
6> Always charging battery in a well ventilated area.

6.0 Setting on the Unit

Charging Voltage and time limitation (absorbtion stage)

The required charging voltage and the period for absorbtion charging phase are selected via a switch field on the unit:

Settings for the limitation of period of the main charging phase:

Time limitation of the absorbtion charging phase	Switch 2	Switch 3	Switch 4
4 hrs.	ON	OFF	OFF
8 hrs.	OFF	ON	OFF
12 hrs.	OFF	OFF	ON
No timer function	OFF	OFF	OFF

Notice : If you choose two time limitation simultaneously, the charger will automatically choose the longer time selection.

Setting for the charging voltage

Absorbtion charging voltage	Absorbtion	Floating	Switch1
Battery type 1	14.8V	13.8V	OFF
Battery type 2	14.4V	13.8V	ON

7.0 LED DESCRIPTION AND FAULT

FRONT PANEL:

" On/Off" Led off :
Battery charger disconnected
Power supply failure
Incorrect power supply connection
Mains voltage too low
Mains fuse blown
Short Cut on output

"On/Off " Led on :
Battery charger on

"Charging" Led on :
Batteries charging (Constant Current Stange)

"Charging" Led flashing :
Batteries charging (Constant Voltage stage)

"Charged" Led on :
Batteries charged (Floating)

"Reverse Polarity" Led on :
Output fuses blown
Polarity inversion on output
Loose contacts on fuse holder