

TECHNICAL MANUAL



Dolphin booster

Converter charger 24V30A

12V/24V30A
399201 - PF.14043

24V/24V30A
399202 - PF.14044

24V/48V15A
PF.17094

SAFETY PRECAUTIONS

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TO PREVENT ANY RISK OF ELECTRIC SHOCK OR FIRE, READ THIS MANUAL CAREFULLY BEFORE INSTALLING THE EQUIPMENT.

In the event of any problems or misunderstandings, please contact your dealer.

This equipment is not designed for use by people (including children) with diminished physical, sensorial or mental capacities, or people without experience or knowledge of such equipment, unless they have received prior instruction in the use of the equipment from a person responsible for their safety or are under the supervision of such a person. Ensure that children are supervised in order to prevent them playing with the device.

This equipment contains components that may cause electric arcs or sparks, when connecting cables, for example. To prevent any risk of fire or explosion, do not install this equipment close to flammable materials, liquids or gases.



Installation precautions

In order to prevent any risk of overheating or permanent damage to the equipment, the recommendations below must be respected.

- ▶ The unit must not be installed close to a heat source.
- ▶ The unit must not be installed in a sealed or poorly ventilated container.
- ▶ The cooling vents must not be obstructed.
- ▶ Leave a free space of at least 10 cm all around the case, to allow proper convection.
- ▶ The unit must not be exposed to run-off water, water projection or any form of dust.

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▶ The case must not be mechanically modified in any way, for example by drilling supplementary holes.

▶ This unit is not a toy. It should therefore, quite clearly, not be left in the hands of a child.



Connection precautions

To prevent any risk of electric shock or irreversible damage to the equipment, ensure that you follow the recommendations below.

To prevent undesirable heating, ensure that cable cross-sections are correct and that connectors are properly tightened.

Cables must not be longer than 1.5 metres.

Check that all cables are properly connected.



Activation precautions

In order to prevent any risk of electric shock when switching on or during operation, the instructions below must be respected.

The product should not be disassembled under any circumstances.

This device is compliant with applicable regulations concerning transmitted interference and immunity from external interference (see EMC paragraph in the Technical Specifications section).

When using the unit, ensure that it is not subjected to conducted or radiated interference at levels above the legal limits (e.g. unit too close to a powerful wave transmitter). Such exposure may result in major malfunctions.

SAFETY PRECAUTIONS

NOT_BOOSTER-03

Also, this device transmits conducted and radiated interference at levels under the applicable legal limits. Ensure that other sensitive equipment used in the vicinity is compatible with this device otherwise malfunctions may occur.

Device serial number

The unit serial number is on a grey label, bonded on one of the case sides. The serial number is vertical and comprises two digits indicating the year of manufacture (e.g. 14 for 2014), one letter indicating the month of manufacture (e.g. C for the month of March) and a 4 or 5-digit number indicating the unit number within the series.



Important Note on the choice of charge curve

Important: Using a charging cycle that is incompatible with the battery technology can seriously impair the performance of the battery or damage it.

This is particularly true when charging voltages are significantly higher than those recommended by the battery manufacturer.

Considerable risk of battery overheating and release of noxious gases that represent a health hazard.

Refer to the manufacturer's recommendations when selecting the charging cycle.

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Maintenance precautions

▶ In order to prevent any risk of electric shock during external maintenance operations, the following recommendations must be respected.

▶ **Maintenance work should only be carried out by a qualified technician.**

▶ For safety reasons, damaged cables should only be replaced by qualified personnel.

▶ Battery connections must be disconnected (cable, connectors and/or power on/off switches).

▶ Battery fuses must only be replaced by fuses with identical characteristics and ratings.

CE CONFORMITY

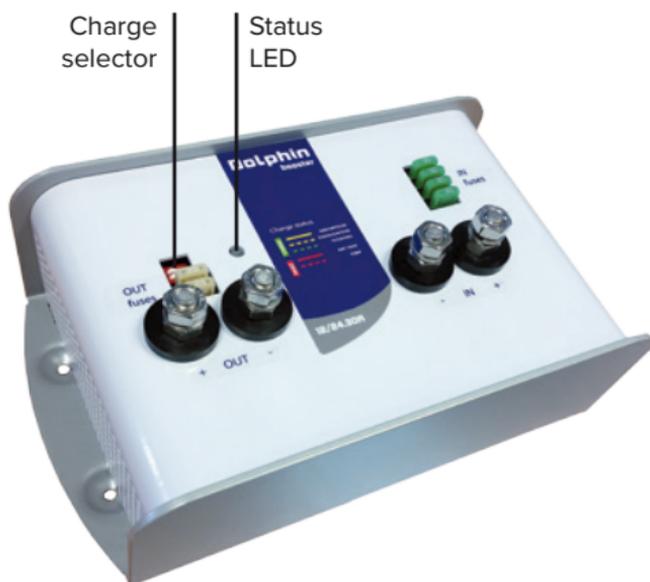
This product meets the requirements of the applicable European standards and possesses CE marking. Certificate of conformity available on request.

TECHNICAL SPECIFICATIONS

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| | PF.14043 | PF.14044 | PF.17094 |
|-------------------------------|---|---------------|---------------------|
| INPUT CHARACTERISTICS | | | |
| Voltage tolerance | 10V to 15V | 20V to 30V | |
| Max. consumption | 70A | 30A | |
| Efficiency | 85% typ | 90% typ | 92% typ |
| OUTPUT CHARACTERISTICS | | | |
| Number of outputs | 1 | | |
| Input / output isolation | No isolation, 0V common | | |
| Battery voltage | 24V | 48V | |
| Battery capacity | 50Ah à 200Ah | | |
| Charging voltage | Variable from 26V to 30V $\pm 1\%$ | | 52V à 60V $\pm 1\%$ |
| Max. charging current | 30A $\pm 5\%$ | | 15A $\pm 5\%$ |
| Charging cycles | 4 (selection by toggle switch) | | |
| Charge curve profiles | Type IUUo | | |
| Free electrolyte | 26,4V - 28,8V | 52,8V - 57,6V | |
| Gel | 27,2V - 28,4V | 54,4V - 56,8V | |
| AGM | 27,2V - 29,0V | 54,4V - 58,0V | |
| LiFeSo4 | 28,4V | 56,8V | |
| Ripple | < 1% | | |
| PROTECTION | | | |
| Input under and overvoltage | Electronic (automatic restart) | | |
| Output under and overvoltage | Electronic (automatic restart) | | |
| Short-circuit on output | Electronic (automatic restart) | | |
| Overheating | Electronic (automatic restart) | | |
| Reverse polarity | Fuses | | |
| Input fuses | 4 x F30A | 4 x F15A | |
| Output fuses | 2 x F25A | | 2 x F15A |
| Climatic | Tropicalised electronics board | | |
| GENERAL | | | |
| Operating temperature | -10°C à +55°C | | |
| Storage temperature | -20°C à +70°C | | |
| Relative Humidity | 10% to 90% (without condensation) | | |
| Convection | Forced and thermostatically controlled | | |
| Standards | ISO13297 | | |
| Input connections | Studs M8 | | |
| Output connections | Studs M8 | | |
| Display | Multi-function LED - 3 colours | | |
| Case | Painted aluminium alloy | | |
| Mounting | Wall-mounting by 3 screws \varnothing 4mm | | |
| Protection index | IP22 | | |
| Dimensions | 240 x 139 x 100mm | | |
| Weight | < 2Kg | | |
| OPTIONS | | | |
| Bus ANC interface | On request | | |

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| Cycle | Selector position | | Cycle |
|------------------|-------------------|--|-------|
| LIFoSo4 | | | Gel |
| Free electrolyte | | | AGM |

| Led | Mode | Status |
|-----------------|-----------------------------------|---|
| Yellow on | Absorption | Battery charging. Charging time is variable and depends on the initial charge status of the battery |
| Yellow flashing | Balance | Battery is in cell balancing phase. Cell balancing time is variable and depends on the duration of the previous phase (charging) |
| Green flashing | End cycle | Indicates the last 30 minutes of the cell balancing phase. The total time of a charging cycle (charging + balancing) cannot exceed 10 hrs |
| Green steady | Floating | Battery is charged |
| Red steady | Overheating | Charger is in standby due to internal overheating. Restart is automatic when fault is cleared. |
| Red flashing | Input and/or output voltage fault | Charger is in standby due to an input and/or output voltage fault. Restart is automatic when fault is cleared |

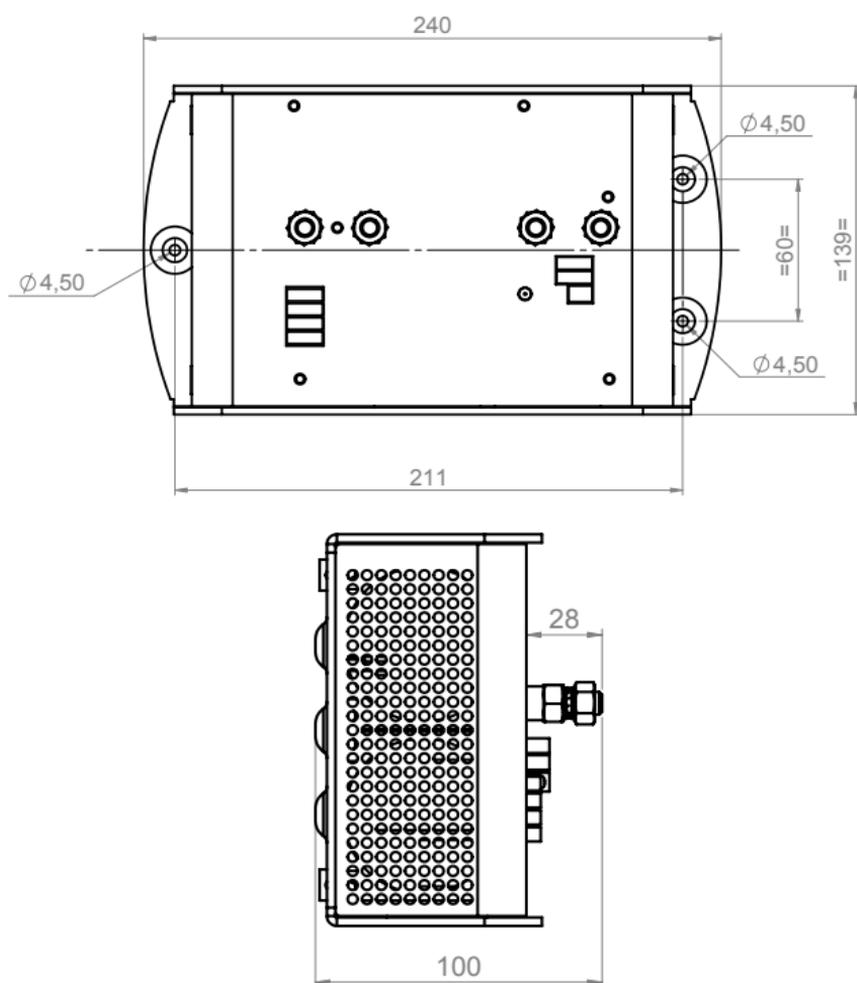
CONNECTIONS

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| | Input 12V model | Input 24V model | Output 24V30A | Output 48V15A |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Recom- mended section and length | 25mm ² / AWG3 < 1,5m | 10mm ² / AWG7 < 1,5m | 10mm ² / AWG7 < 1,5m | 6mm ² / AWG10 < 1,5m |



Dimensions



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Warranty

IN ORDER TO PREVENT ANY RISK OF INCORRECT USE, YOU SHOULD CAREFULLY READ THE LIST OF EVENTS OR POTENTIAL DEFECTS NOT COVERED BY THE PRODUCT WARRANTY

- ▶ Drop or fall of the unpacked unit, that can permanently damage the case and cause the failure of the internal cooling fan and certain electronic components.
- ▶ Modifications to the housing (in particular drilling additional holes) that can cause swarf or metal filings on the electronics board, resulting in malfunctions or permanent damage to the unit.
- ▶ Any work or modification on the electronics board that could result in operating modes for which the unit was not designed, and thus cause malfunctions or permanent damage to the unit.
- ▶ Operating the unit on an incorrect power source (generally a supply voltage that is too high), which can cause permanent damage to the unit.
- ▶ Accidental overvoltage or a lightning strike, which generally causes permanent damage to the unit.
- ▶ Replacement of battery fuses by fuses with different characteristics, which can cause permanent damage to the unit.
- ▶ Wrong connections, which can cause permanent damage to the unit.
- ▶ Water projections or run-off, inside the unit, which can cause permanent electronic malfunctions.

WARRANTY

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Important : Selecting the charging curve.

Important: using a charging cycle that is incompatible with the battery technology can seriously impair the performance of the battery or damage it.

This is particularly true when charging voltages are significantly higher than those recommended by the battery manufacturer.

Considerable risk of battery overheating and release of noxious gases that represent a health hazard.

Refer to the manufacturer's recommendations when selecting the charging cycle.

Precautions for scrapping

This device contains electronic components and materials that must be recycled at the end of the device's useable life for environmental reasons.

All devices at the end of their life must therefore be either returned to the local distributor or entrusted to a specialist electronic equipment recycling company.

Warranty policy

Our full two-year warranty is detailed in the following clauses:

► DOLPHIN guarantees product operation under normal conditions of use (i.e. in accordance with the corresponding instructions) for a period of two years from the date of purchase from a DOLPHIN distributor, up to a limit of three years after the date of manufacture (see information on product label).

► The warranty covers the cost of repair and/or the replacement of defective parts. The warranty does not cover (dis)assembly or shipping costs, and/or any technicians' travel or accommodation expenses.

NOT_BOOSTER-03

▶ The warranty shall be invalidated in cases of damaged caused by using DOLPHIN products in a way for which they were not designed, by incorrect installation or maintenance, component replacement or modifications carried out by third parties, other than approved DOLPHIN servicing centres, or when damage is due to (sea) water, including the penetration of (sea) water into the motor, irrespective of the cause.

Return for repair or replacement under the terms of the warranty

We recommend that all returns be coordinated through the nearest DOLPHIN distributor, retailer or local agent, unless you have explicit approval by the head office, in France, to proceed otherwise. All returns are subject to the following conditions:

▶ An ARM (product return authorisation) number is required for all returns. The ARM number must be shown on all packages and documents.

▶ Shipping expenses must be paid for all returns to France. Dolphin cannot accept any invoice relating to shipping expenses, transaction fees or import duties.

▶ Products returned should be sent with all appropriate information, including telephone numbers, contact details and return addresses, together with a clear description of the reasons for the return.

If there is no DOLPHIN distributor, retailer or local agent close to you, you should contact DOLPHIN France.

Dolphin
charger



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www.dolphin-charger.com