CB520

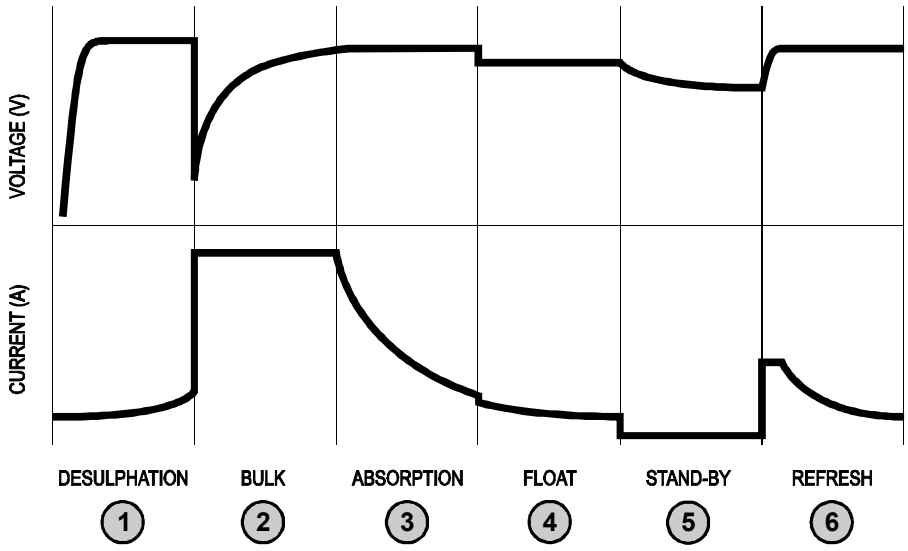
GENERAL INFORMATION

The CB520 switch-mode battery charger has been expressly designed for the caravanning and boating sector and can automatically charge 12V ⎓ lead batteries, with different charging values according to the position set using the selector positioned inside.
The battery charger is protected against overtemperature and the 12V ⎓ outputs are protected against short circuit and polarity inversion.
The high frequency switching technology allows high performances with small dimensions and limited weight.

6 phase automatic charging system

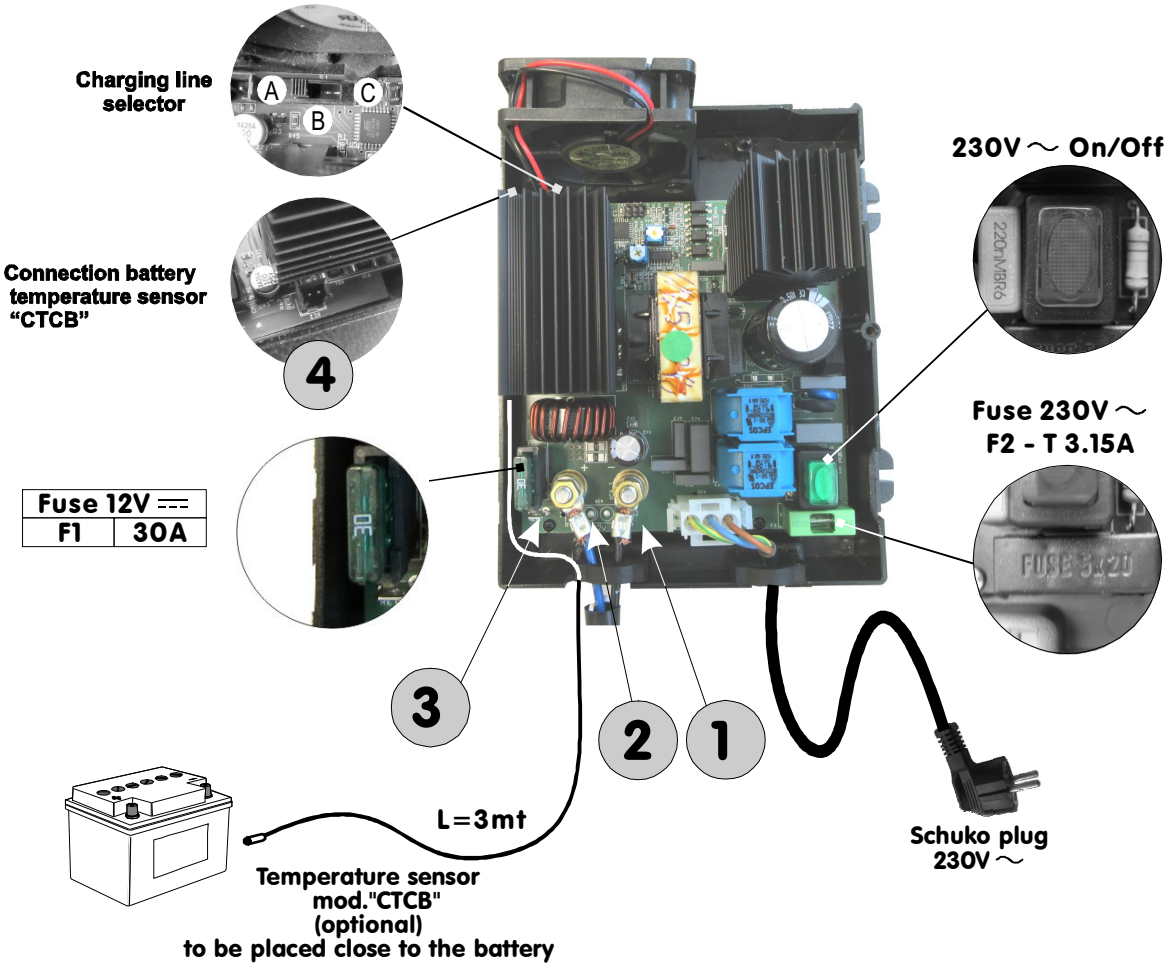
Phase 1: **Desulphation** – when switching on the battery charger, only if needed, the battery is charged at 15.2V ⎓ until the current exceeds 2A or for a maximum of 2 hours.
Phase 2: **Bulk** - battery charging with maximum current until the end-of-charge voltage is reached.
Note: the end-of-charge voltage is reached only if the battery is efficient.
Phase 3: **Absorption** – battery charging at costant end-of-charge voltage for the time defined by the charging line, with a progressive current reduction until the charging is completed.
Phase 4: **Float** – Maintenance charging at constant voltage for a maximum time of 15 hours. A high load leads to phase **Bulk** starting again.
Phase 5: **Stand-by** – The battery charger stops supplying power. It will switch over to the **Refresh** phase only when the battery voltage goes under 13V ⎓.
Phase 6: **Refresh** – The battery is charged at the **Bulk** voltage for a maximum time of 1h; this phase is designed to compensate for the battery self-discharge. Once completed, the charging starts again from the **Float** phase.

The position of the selector must be set according to the most suitable charging voltages for the type of battery installed.
In most cases, the selector can be set on position “A” for led-acid batteries, on position “B” for lead-gel batteries and on position “C” for AGM batteries.
Nevertheless, it is recommended to consult the data sheet of the battery installed.



Selector on position “A”	15,2V	Max 14,1V	1,5h	13,5V	0A	14,1V
Selector on position “B”	15,2V	Max 14,4V	8h	13,8V	0A	14,4V
Selector on position “C”	15,2V	Max 14,7V	3h	13,8V	0A	14,7V
Threshold	Max 2h			Max 15h	V< 13,0V	Max 1h

CONNECTIONS



1	-12V	**12V ⎓ CONNECTION** -12V ⎓ supply
2	+12V	**12V ⎓ CONNECTION** +12V ⎓ supply
3		**SIGNAL** Net signal (+12V ⎓)
4	**BLACK**	**CONNECTION BATTERY TEMPERATURE SENSOR (optional)** Temperature sensor (mod. "CTCB") to be placed close to the battery, where it cannot be affected by other heat sources When connected, the charging voltage is adapted according to the temperature measured by the sensor.

- Technical data are indicated also on the label inside the cover -

SPECIFICATIONS

INPUT TECHNICAL DATA	
Nominal voltage	230V ~ ±10%
Frequency	50 Hz
Maximum power	300W
Protection fuse ref. F2	T 3.15A (glass 5x20)
Safety switch	230V ~ Luminous

OUTPUT TECHNICAL DATA	
Bulk voltage	14,1V ⎓ (A) - 14,4V ⎓ (B) - 14,7V ⎓(C)
Float voltage	13,5V ⎓ (A) - 13,8V ⎓ (B) - 13,8V ⎓(C)
Maximum output current	20A
Charging line	IUoU
Charging line selector	3 positions (A - B - C)
Short circuit and polarity inversion protection ref. F1	30A (car type)
Thermal protection	Yes
Signal AC power supply (S)	12V ⎓ ; 50 mA

GENERAL TECHNICAL DATA	
Efficiency	86 %
Room temperature	0 - +50 °C
Ventilation	Automatic regulation variable
Low voltage directive	2014/35/UE
EMC directive	2014/30/UE
Net connection	Schuko plug
Battery connection	“M6” screw
Net signal connection	Faston “6.3”
Dimensions	180 x 140 x 85 (mm)
Weight	1kg

INSTALLATION

Fig.1 - DIMENSIONS (mm):

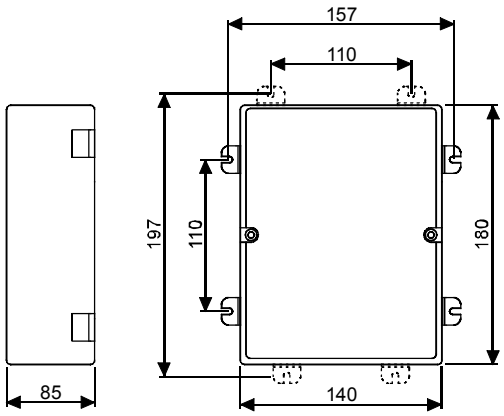


Fig.2 - VERTICAL INSTALLATION



IMPORTANT:
- **The installation of this device must be carried out by specialist technicians.**
- **Caution, do not connect the battery charger**
  - **when a generator set with non stabilised output voltage is employed**
  - **with power mains voltage exceeding the rated value (230V ∼ ±10%)**
- **Do not carry out any maintenance when the battery charger is connected to the 230V ∼ power supply net.**
- **In case of battery charger misuse, the guarantee becomes invalid and the manufacturer declines all responsibility for damages to people and property.**
- **This appliance can be used by children aged 8 years or more and people with reduced physical, sensory or mental capabilities or lack of experience or knowledge, only provided they are being supervised or they have been instructed concerning the use of the appliance in a safe way and that they understand the hazards involved. Children shall not play with the appliance.**

BATTERY CHARGER
- Install the battery charger in an appropriate housing, dry and ventilated; maximum efficiency can be obtained when the battery charger is installed in a vertical position (see figure 2), keeping the front at a minimum distance of 300 mm and the bottom and top at a minimum distance of 100 mm from the housing sides.
- Do not cover air intakes.
- To guarantee proper air exchange, installation of two air intakes (one placed on the top and one on the bottom, see figure 2) ensure a working temperature inside the housing not exceeding 50 °C.
- Make sure that the 230V ∼safety switch can be easily reached.
- The connection to power supply mains shall be made in accordance with national installation rules.
- Before disconnecting the battery charger from 230V ∼power supply, turn the safety switch off.
- Installation requires the fixing of 4 pins that can be easily placed on the 4 sides.
- The battery charger can be installed together with CBE 12V and 230V distribution panels, using the appropriate modular joints.

CABLES
- Battery connection: use N07 V-K cables having adequate cross section (minimum cross section 4mm²).
- Fix the cables with the relevant cable fastenings devices supplied.
- Protect cables from any possible damage.

BATTERY
- Lead-acid batteries shall be positioned in a well ventilated place.
- Use only 12V(6 cells) rechargeable lead batteries (capacity >40Ah).
  Warning:
  - Do not use with “not rechargeable" batteries.
  - Exhausted batteries shall be disposed in accordance with existing environmental protection regulations.