

TECHNICAL FEATURES OF THE CBHF2 24V 30A

The innovative characteristics of the CBHF2 24V 30A battery charger are the following:

1. Advanced Mosfet technology with **high frequency** and insulation transformer.
2. Charging process fully controlled by microprocessor.
3. Visualization on a lit display of the charging current, of the battery voltage, of the charging time, of the electric charge supplied in Ah's and of the electric energy absorbed in KWh's.
4. Possibility to change the charging curve by means of microswitches (DIP-switches), choosing from 16 standard pre-programmed curves for lead-acid, Gel and VRLA batteries. Any other optional curve available on request.
5. Possibility to change the battery voltage and the charging current by means of the relevant microswitches.
6. Charging process starting in the "soft start" mode, storing of the data of the cycle just finished and automatic reset upon connection of a new battery.
7. Protection against polarity inversions, short-circuits, over-voltages or anomalies by means of an output relay.
8. Battery to battery charger connection without sparks on the output terminals with obvious advantages for the active safety, thanks to the recognition of the battery voltage downstream the normally opened output relay.
9. Alphanumeric signals of possible anomalies.
10. Insensitive charge parameters in case of $\pm 10\%$ network voltage
11. Efficiency > 85%
12. Output ripple at maximum charge lower than 150mV.
13. Compensation of the voltage drop on the connecting cables to the battery with algorithm inside the microprocessor.
14. Start of the charge cycle also with 1V batteries.
15. Thermal protection against over heating.
16. An auxiliary relay that permits the partial or total disconnection of an electric traction machine is available in should the batteries have to be re-charged with the battery charger placed on board the machine. In this way the relay prevents the machine from starting while the battery charger is operating. This is a safety device.

OPERATING PRINCIPLE

On switching on the CBHF2 24V 30A battery charger, programming data are displayed (these parameters depend on internal dipswitch configuration).

After the "**SPE**" logo you can see on display the version of software installed on the machine. At this time the following programmed parameters are displayed on sequence according to internal dipswitch configuration (see tables on page n. 3):

battery voltage, charging current, number of charging curve and is displayed the message "**GEL**" if programmed charging curve is suitable for gel batteries or "**Acd**" if programmed charging curve is suitable for Lead-Acid (Wet) batteries. After these operations the charger is ready to check the battery voltage and to decide whether to start the charging process. If the battery is not connected to the battery charger, the message 'bat' will be displayed. The same message is displayed also in case of negative result of the testing (for example, reversed polarity or battery having a wrong voltage). If the result of the testing is positive, the value of the battery voltage is displayed for about 5 seconds, with output relay open. After 5 seconds the charging of the battery can start. The output relay closes and the current of the first phase rises slowly till it reaches the nominal value programmed.

If the user disconnects the battery from the battery charger during the charging process, after a few seconds the battery charger will re-initialize and prepare to start a new charging process.

The display always shows the charging current of the battery. The battery voltage, the time since the beginning of the charge, the charge yielded in Ah's and the energy consumed in KWh can be seen only by pressing the button S.

The progress of the charging process is shown by three LED's: red, yellow and green, as in the whole range of the battery chargers.

The green LED indicates the stop of the charging or the last phase in case of deep charging process; in the former case, the relay is opened to disconnect galvanically the battery from the battery charger.

TECHNICAL REMARKS

- When the maximum voltage admissible for a specific battery is reached (value given by the manufacturer) the error message '**E01**' is displayed, and the process is terminated.
 - By using an internal thermostat, the charging can be interrupted in case of excessive battery charger over-temperature. In this case the error message '**E02**' is displayed.
 - Possibility of setting each single charging phase. On exceeding this time, the charge will be interrupted and the error message '**E03**' will be displayed.
 - The display of the message '**Sct**' indicates safety timer operation.
 - The message '**Srt**' will be displayed in case of internal short circuit.
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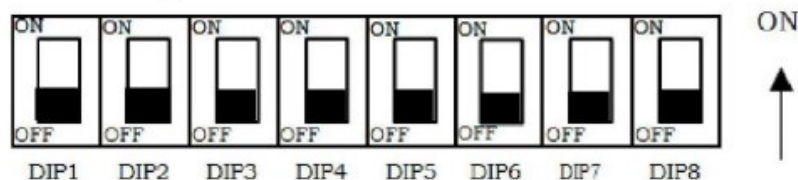
Authorized Service Centers can change the battery voltage and the charging current always by means of a DIP-switch. On the control card placed behind the front panel of the battery charger eight DIP- switches are available for:

1. Selecting the charging curve: DIP1 DIP2 DIP3 DIP4.
 2. Selecting the fast charging current I1 (current of the first charging phase): DIP5 DIP6
 3. Selecting the battery voltage: DIP7 DIP8
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Programming of battery charger is possible by changing dipswitch configuration. According to the charging curve, charging current and battery voltage requested, it is necessary to set the position of each dipswitch either in the "ON" or the "OFF" position in compliance with the selection scheme shown at the following page. The set of 8 dipswitch is located under the front label of the charger, lifting the corner on the upper-left) without opening the charger.

CBHF2 DIPSWITCHES CONFIGURATION

In the following tables you can find the meaning of all different positions of dipswitches for programming CBHF2 battery chargers (all modifications must be done when charger not working)



➤ Dip1 Dip2 Dip3 Dip4 for the selection of the **CHARGING CURVE**

Curve	CHARGING CURVE	DIP1	DIP2	DIP3	DIP4
0	IUa (SO) (IUa + Float Charge 2,30VPC) = IUUo Technology for charging DRYFIT TRACTION BLOCK (Traction Gel battery).	ON	ON	ON	ON
1	IUIa Lead - Acid Technology for charging LEAD - ACID battery.	OFF	ON	ON	ON
2	IUoU ZENITH Technology for charging (AGM) ZENITH battery.	ON	OFF	ON	ON
3	IUUa (2,40VPC) Technology for charging SEALED GEL battery.	OFF	OFF	ON	ON
4	IUIa Lead - Acid + Float Charge 2,30VPC Technology for charging LEAD - ACID battery.	ON	ON	OFF	ON
5	IUUa (2,45VPC) + Float Charge 2,30VPC Technology for charging SEALED LEAD - ACID battery (AGM).	OFF	ON	OFF	ON
6	IUUa (2,40VPC) + Float Charge 2,30VPC Technology for charging SEALED GEL battery.	ON	OFF	OFF	ON
7	IUIa PZV Technology for charging DRYFIT PZV (A800) Gel battery	OFF	OFF	OFF	ON
8	IUIa GNB Technology for charging GNB SEALED Lead - Acid battery.	ON	ON	ON	OFF
9	IUo (2,35VPC) Technology for charging Lead - Acid start - up battery.	OFF	ON	ON	OFF
10	IUIa OPTIMA Technology for charging YELLOW TOP 5.5 OPTIMA battery (only for 12V battery).	ON	OFF	ON	OFF
11	IUIa Gel TRACTION BLOCK + Float Charge 2,30VPC Technology for charging EXIDE - SONNESCHEIN Gel battery.	OFF	OFF	ON	OFF
12	IUa XFC Technology for charging XFC ENERSYS battery.	ON	ON	OFF	OFF
13	IUUo OPTIMA Technology for charging YELLOW TOP 2.7 and 5.5 OPTIMA battery (only for 24V, 36V, 48V battery).	OFF	ON	OFF	OFF
14	IUIa AGM DISCOVER Technology for charging DISCOVER AGM battery.	ON	OFF	OFF	OFF
15	IUIa AGM FULLRIVER Technology for charging FULLRIVER AGM battery.	OFF	OFF	OFF	OFF

- DIP5 DIP6 for the selection of the CURRENT I1

DIP5	DIP6	CORRENTE
ON	ON	15A
OFF	ON	20A
ON	OFF	25A
OFF	OFF	30A

- DIP7 and DIP8 for the selection of the battery voltage

DIP7	DIP8	VB
ON	ON	12
OFF	ON	24
ON	OFF	36
OFF	OFF	48

Op de voorzijde (grijze stikker) van de acculader zit een stikker, op deze stikker staat hoe de lader is ingesteld af fabriek.

Onder de grote grijze stikker bevinden zich de dip switch schakelaars.

Om deze te wijzigen moet u de grijze stikker verwijderen en deze kunt u later makkelijk terug plakken.