BRIERLY TECHNOLOGIES INC.

Elite Eco Series

Models CBHD3

HIGH FREQUENCY ELECTRONIC BATTERY CHARGERS

Attention: Carefully read this operating manual before using the battery charger.

OPERATING MANUAL

GENERAL INFORMATION ABOUT THIS CHARGER

- This device is an electronic battery charger with microprocessor control suitable for any wet or sealed lead acid battery type when correctly set.
- Fully automatic charging with electronic setting; protected against overload, short-circuit and reversed polarity.

WARNINGS

- Never disconnect the battery while charging: this could cause sparks.
- Never use the equipment in the rain, in areas used for washing or in damp areas.
- Caution: the gases generated during charging are explosive. Do not smoke in the vicinity of the batteries. When working with cables and electrical equipment, avoid open flames and sparks.
- Before starting to charge, make sure the voltage of the equipment suits the voltage of the battery, that the charging current suits the capacity of the battery and that the selected charging curve (for lead-acid wet batteries or VRLA - i.e. gel or agm - batteries) is correct for the type of battery to be charged. In addition, make sure the rated input voltage of the charger suits the available supply voltage and the system is grounded.
- Use battery chargers only in well ventilated areas.
- Pay attention to any remarks of the battery manufacturer.

- **Attention:** Use protective glasses and gloves during battery maintenance. Battery acid causes injuries. In case of contact with battery acid, wash the affected parts with fresh water and consult a doctor if necessary.

CHARGE STATUS DISPLAY

CBHD3 chargers have a 3 led charge status and fault indication display.

When connected to AC power, the red, yellow and green leds will flash to indicate the battery type setting.
Red led flashing = setting for wet lead acid batteries (IUIa)
Green led flashing = setting for agm batteries (IUUo)
Red and Yellow led flashing = setting for gel batteries (IUUo)
Red and Green led flashing = setting for agm batteries (IUIUo)

- **Make sure the type of batteries to be charged (sealed or wet lead acid batteries) matches the setting of the charger. If it doesn't, contact your dealer.**

As the charging process begins, the red led will light and remain lit indicating the charge is in its bulk phase.
When the yellow led it lit as well as the red led, the charge is in an absorption phase.
When only the yellow led is lit, the charger is in a gassing or equalization phase.
Following this, and depending on the battery type setting, either the yellow led turns off and green led is lit – or – both the yellow and green led will be lit.
If only the green is lit, the batteries are considered fully charged.
If both the yellow and green led are lit, the batteries can be used if necessary, but it is best to wait until the yellow led switches off and only the green led stays on.

If the red or yellow led is continually flashing, it indicates a fault of some type. Refer to the troubleshooting information below to determine the possible cause.

OPERATION

Connect the battery pack, checking the polarity.
Plug the charger into the AC supply, thus starting the automatic charging cycle.

First a test is run on the battery voltage to decide if the charging process should be started or not. If the battery is not connected to the battery charger, or if the battery polarity is reversed the yellow led will flash continually.

If the test is passed, a small click may be heard. Following that the red led will turn on.

At the end of the charge, when the green indicator is on, disconnect the AC power supply and disconnect the battery pack. (Some charging profiles have a float stage at the end of charge: in this case the charger needs to be left connected to the battery pack.)

Troubleshooting

PROBLEMS	SOLUTIONS AND CHECKS
The battery charger leds do not switch on	Check that the plug is connected to the mains supply. Check the condition of the AC cordset and the AC input cable.
The yellow led is flashing.	Battery is not connected, or battery is connected in reverse or battery output is shorted.
The red led is flashing.	The safety timer has elapsed. Restart charge cycle and cycle begins OK, check batteries. If red led still flashes there may be an internal short circuit. Call for service.

RATING PLATE
The rating label on the unit provides the follow ing details:

- Model
- serial number
- date of manufacture
- mains (input) voltage
- output voltage and current
- internal fuse rating
- max input current
- charging curve set at factory
- range of battery sizes possible

NOTE: The rating plate stipulates the initial setting of DC voltage and current. The setting of your particular unit may be different. Consult your dealer if unsure.

OTHER TECHNICAL DATA

- Storage Temperature Range: - 40 to +50 degrees Celcius
- Relative Humidity Range: 0 – 80%
- Operating Temperature Range: -10 to 45 degrees Celcius

REPAIRS

- Repairs must only be carried out by qualified personel.
- Use only original equipment manufacturers (OEM) parts for repairs.

ELECTRICAL FEATURES

1. System input 115V/240V, 50-60z.
2. Charging parameters insensitive to ±10% system voltage variations.
3. Efficiency > 85%.
4. Output ripple at max load below 150mV.
5. Accuracy of power and voltage measurements 2%.

ELECTROMAGNETIC COMPATIBILITY

The tests of electromagnetic compatibility (EMC) on these devices were carried out in compliance with the CEI EN55014-1+A2(04/98-06/99) and CEI EN 55014-2(10/98) STANDARD norms, with the test instructions and conditions as requested by the norms.

NORM	***RESULT***
EN 55014-1+A2	*COMPLIANT*
EN 55014-1	*COMPLIANT*
EN 61000– 3-2	*COMPLIANT*
EN 61000– 3-3	*COMPLIANT*
EN 61000– 4-2	*COMPLIANT*
EN 61000– 4-4	*COMPLIANT*
EN 61000– 4-5	*COMPLIANT*
EN 61000– 4-6	*COMPLIANT*
EN 61000– 4-11	*COMPLIANT*

As to the immunity the devices are classified as Category II.

ELECTRICAL APPROVALS

The CBHD3 chargers are cULus Listed.

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