AUTOMATIC BATTERY CHARGERS
FOR LEAD BATTERIES
TYPE **CBS - 031 (3,5A) 12V**
CBS - 061 (6A)
with the DIN 41773 Standard

INSTRUCTION AND USER MANUAL

THREE CHARGING LEVELS

- **RAPID** WITH CURRENT CONTROL
- **INTERMEDIATE**
- **MAINTENANCE**

} WITH VOLTAGE CONTROL

THE BATTERY CHARGER SIGNALS THE FOLLOWING CONDITION:

- SHORT CIRCUIT
- POLARITY INVERSION
- BATTERY CABLE DISCONNECTION

- SERIAL OUTPUTS RS485
- REMOTE REPETITION FOR INDICATOR LIGHTS
- ALSO WITH OMEGA RAIL HOOK MOUNTING IN FRONT (STANDARD) OR AT THE SIDE
- ENERGY SAVING

SUITABLE TO BE INSTALLED ALSO ON BOARD THE MACHINE
In this case the standard mounting position is recommended

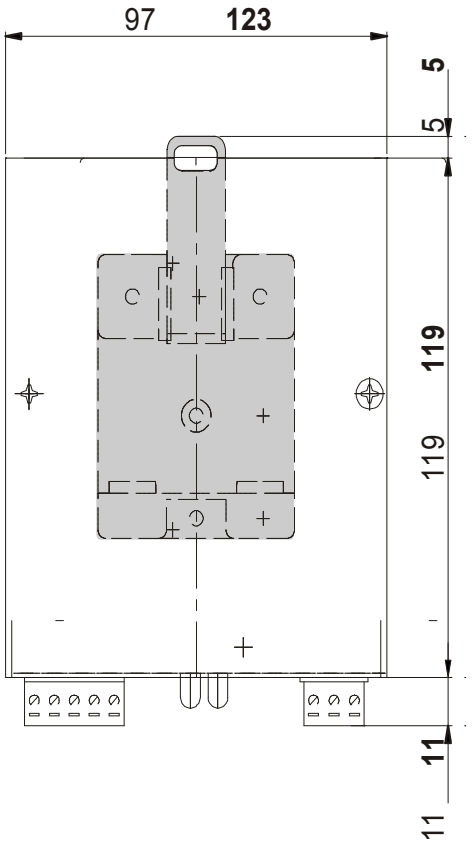
PARMA ELCOS® ITALY
Tel. +39 0521/772021 Fax +39 0521/270218
E-mail: info@elcos.it - HTTP://www.elcos.it

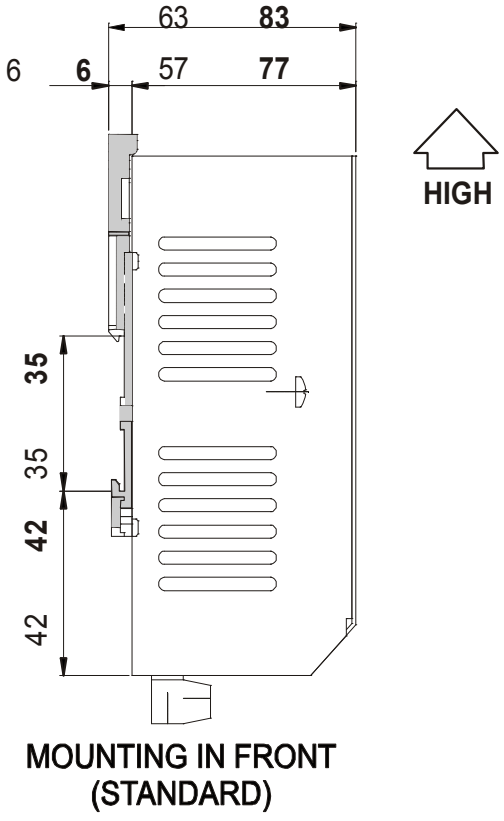
TECHNICAL DATA

	CBS - 031	CBS - 061	
Battery voltage:	12V	12V	24V
Power supply	85V~÷ 265V~	185V~ ÷ 265V~	
Insulation class	Class I		
Nominal charge current:	3,5A	6A	
Connectable battery:	Open lead, sealed lead, 6 cell gel (minimum capacity 30 Ah)	Open lead, sealed lead, 6 cell gel (minimum capacity 60 Ah)	
Maximum absorbed power at 230V:	60W	110W	220W
Full charging ouput	75%	88%	
Circuit loading in absence of mains supply:	15mA	18mA	36mA
Max. load on outputs 11, 12 e 14:	3W		
Typical voltage on output 11:	14V	14V	28V
Terminal board:	8 Poles with screw		
Degree of protection:	IP 00		
Temperature range:	- 10 ÷ 50 °C		
Weight gr.	350	600	700
Energy saving (Absorbed power without load)	1,5W	2W	2W

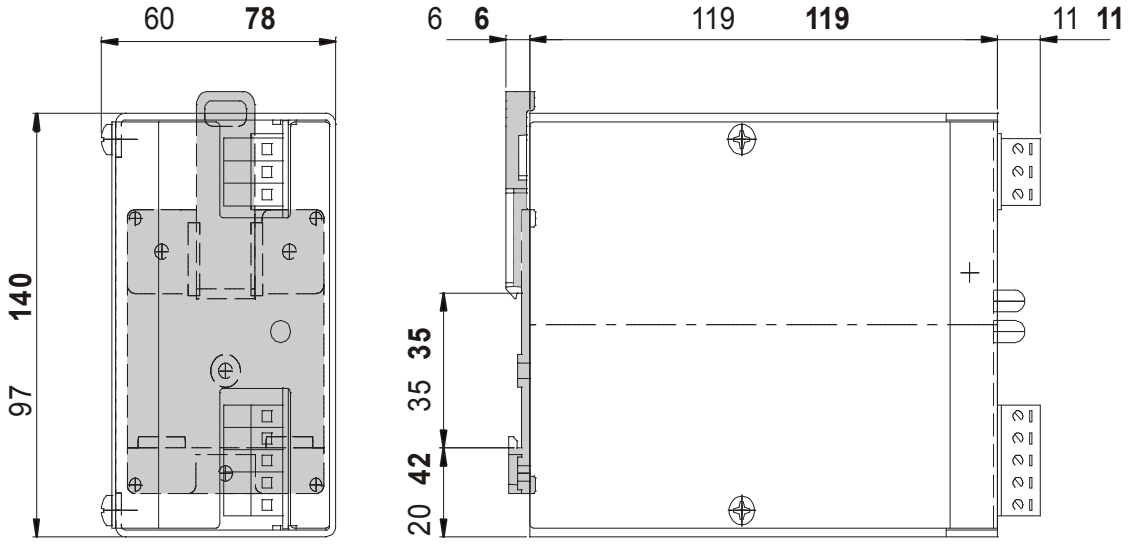
DIMENSIONS AND INSTALLATION

DIMENSIONS CBS-031
DIMENSIONS (HEAVY CASE) CBS-061





MOUNTING IN FRONT
(STANDARD)



MOUNTING AT THE SIDE

To mount at the side, move the OMEGA bar hook support (highlighted) to the position shown on the drawing.

- During the charging phase the equipment heats up. One must therefore ensure that the natural flow of air is not obstructed by nearby objects.
- If the equipment is installed in a closed cabinet, holes or slits should be provided so that the heat can escape.

OPERATION

AUTOMATIC CHARGING

Automatic charging takes place at four levels:

1. Rapid charge via current control 3,5A (CBS-031), 6A (CBS-061), until 14 V (28 V) (± 4%) are reached in the battery.
2. Intermediate charge via voltage control, until14,4 V, (28,8 V) (± 4%) are reached in the battery.
3. Maintenance charge using a very low current value, but sufficient to maintain the voltage value at 13,5 (o 27 V) (± 4%).
    a. With battery voltage between 13.5 V and 13.7 V (27 V) the battery charger does not carry out adjustments
    b. With battery voltage higher than 13,7 V (27,4 V) V the battery charger decreases the supply of current.
    c. With battery voltage lower than 13.5 V (27 V) the battery charger tries to maintain this voltage by supplying current
    d. Starts again with fast charging (point 1) with battery voltage lower than 11,5 V (23V) (+/-4%).
4 Recovery of the battery unloads. The battery is recharged to impulses with pauses of 20 second between a package and the other signals.

SIGNALS

The GREEN LED is lit when the following conditions happen at the same time:

- mains on
- battery voltage above 1,5 V

RED LED is lit (flashing code) when at least one of the following conditions happens:	NUMBER OF FLASHES FOLLOWED BY PAUSE
- MAINS FAILURE	1
- BATTERY CABLES DISCONNECTED (with engine stationary)	2
- SHORT CIRCUITING OF THE BATTERY CABLES	3

The **remote signals repetition** is available on terminals 11, 12 and 14:
The load connected between terminals 11 and 12 is supplied when the **green** signal is lit**;**
The load connected between terminals 11 and 14 is supplied when the **red** signal is lit**;**

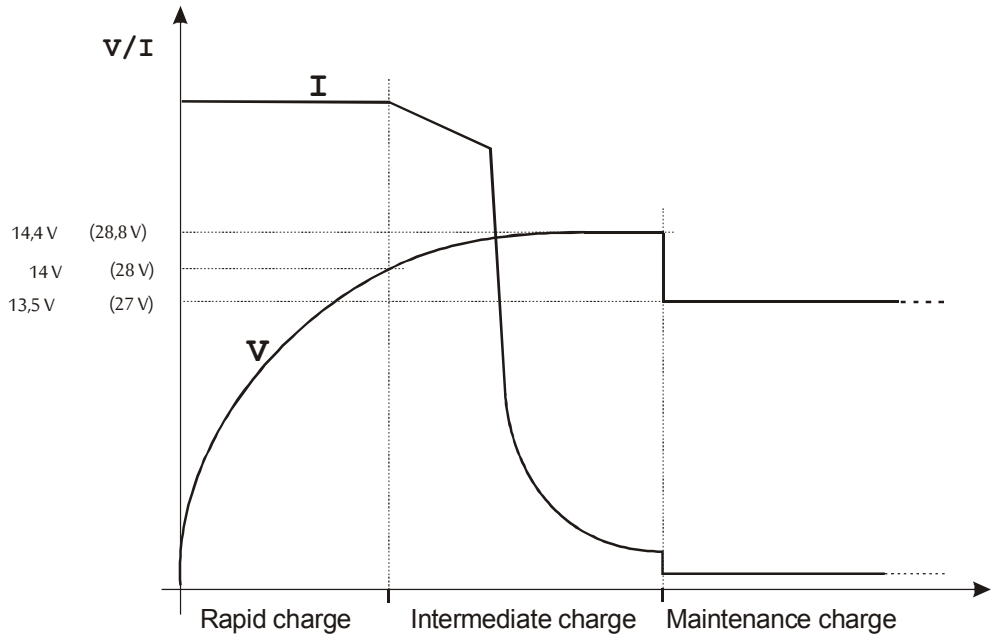
SERIAL COMMUNICATION PORT RS485

Serial output for transmission of data on the state of the battery to the prepared control unit
Data sent

- Battery voltmeterer
- Load current ammeter
- Battery charger status (see signals)

If there is overloading of the remote repetition terminals or if there is a mains failure, both of the indicators will remain unlit.

TYPICAL LOAD CURVES



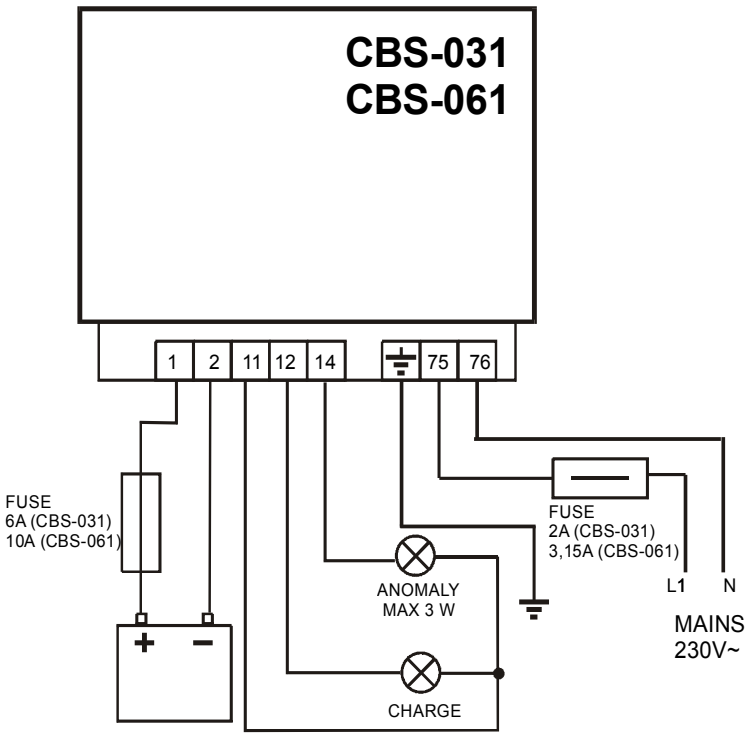
SERIAL TWIN WIRE CONNECTION

Only suitably trained electrical personnel may make this connection.

- Switch off the mains voltage
- Take out the two terminal boards
- Remove the cover
- Insert the twin wire connector in the serial connector  (male)
- Close the coverInsert the terminal board
- Insert the terminals boards

⚠ **WARNING** NEVER SUPPLY POWER TO THE BATTERY CHARGER WITH THE COVER NOT INSTALLED CORRECTLY

WIRING DIAGRAM



- Devices must be provided for disconnection from the mains: for example, switches with contacts opening greater than 3 mm or supply cables and plugs which are also accessible after installation.

NOTICES

Used only to maintain the battery charge. Used in the starting circuits of diesel and petrol engines, such as those used in genset units, close-coupled pumps, compressor motors, etc. Constructed for installation only inside the electric panel.

Warning:
Adhere closely to the following advice

- Install in such a way that there is always adequate heat disposal.
- Always install under other equipment which produces or spreads heat.
- Adhere to the instructions indicated for installation.
- Check that the absorption and consumption of the connected equipment are compatible with the enclosed technical characteristics.
- Do not try to recharge non rechargeable batteries.
- When charging lead batteries, place the battery in a well-aired area.
- The connection to the mains must be made in accordance with the national installation rules.
- The equipment must be earthed via the relevant terminal.
- Connect the equipment to the battery without other conductor cutouts.
- Disconnect the equipment output terminals before any interventions on the battery.
- Make sure that no copper conductor cuttings or other waste material fall inside the equipment.

THIS BATTERY CHARGER IS NOT SUITABLE FOR OPERATING IN THE FOLLOWING CONDITIONS:

- Where the environmental temperature is outside the limits indicated in the technical data.
- Where the air pressure and temperature variations are so rapid as to produce exceptional condensation.
- Where there are high levels of pollution caused by dust, smoke, vapour, salts and corrosive or radioactive particles.
- Where there are high levels or heat from radiation caused by the sun, ovens or the like.
- Where attacks from mould or small animals are possible.
- Where there is the risk of fire or explosions.
- Where the battery charger can receive strong vibrations or knocks.
- Where the equipment is protected by barriers or casing with protection level less than IP40.

ELECTROMAGNETIC COMPATIBILITY

This battery charger functions correctly only if inserted in plants which conform with the CE marking standards; it meets the exemption requirements of the standard EN61326-1 but it cannot be excluded that malfunctions could occur in extreme cases due to particular situations.

The installer is responsible for checking whether the levels of disturbance are above those consented by the regulations.

CONDUCTION AND MAINTENANCE

The following maintenance operations should be performed every week:

- check that the indicators function;
- check the batteries;
- check that the conductors are tight, check the condition of the terminals.

UNLESS WE MAKE A WRITTEN DECLARATION STATING THE CONTRARY, THIS EQUIPMENT IS NOT SUITABLE FOR USE AS A CRITICAL COMPONENT IN EQUIPMENTS OR PLANTS RESPONSIBLE FOR KEEPING PERSONS OR OTHER LIVING BEINGS ALIVE.

YOUR ELECTRICAL TECHNICIAN CAN ASK ANY QUESTIONS ABOUT THIS EQUIPMENT BY TELEPHONING OUR TECHNICIAN

Warning: Components carrying dangerous voltage levels

Only assigned and suitably trained personnel are allowed to have battery charger access. No maintenance operations are permitted unless the plant has been disconnected from the mains and from the battery. The phases should be earthed and short-circuited as a safety measure. Notwithstanding what is stated above, only assigned and trained personnel, when the plant is live, can perform the following operations:

· visual inspection of the battery charger, the connections and the markings;
· measurement of voltage and/or current values.

These operations must, in any case, be performed using a tool which guarantees the appropriate electrical protection.

ORDERING INFORMATION

Type	Code
CBS-031 12V	00010440
CBS-061 12 V	00010444
CBS-061 24V	00010445

ACCESSORIES KIT

KIT MU-CBS-030/060	40804413