

Angling Technics Limited

Operating Instructions 3 Stage Charger

This battery charger utilizes the latest computer-controlled technology to give greater charging control of Lead Acid Batteries, with increased product reliability.

What follows is the correct procedure for the operation of the battery charger:

Make sure the charger is unplugged.

Plug the connector into the gold charging socket at the back of the boat.

Plug the charger in at the wall and switch it "on".

During the start up the charger will determine the battery status and depending on the result, will switch to either bulk charge mode RED indicator "on" or float charge mode GREEN indicator "on". Note when the charger enters float charge mode the battery is fully charged.

If neither of the indicators light then unplug the charger, check the fuse in the plug, if necessary, plug back in and switch "on". If this still does not work then check the connection to the boat, to ensure a good contact.

Features:

Short Circuit Protection – Prevents damage to the charger if the DC output is short circuited.

Reverse Polarity Protection – Prevents damage to the charger if the battery is accidentally connected in reverse. Visual indication is displayed by RED flashing and GREEN static LED.

Soft Start – On power up the system will enter a "soft mode". This facility checks for possible faults ie. Reverse battery connection, short circuit etc, before offering maximum charge current.

Constant Current Bulk Charge and 3 Stage Charging – Provides the fastest possible way to recharge SALS batteries without over charging.

Constant Voltage Float – Compensates for self discharge, holding the battery at peak charge, ready for use. The battery can be left on charge until required without fear of overcharging.

Proportional Charging – automatically proportional adjusts the second (constant voltage) stage length of charge based on the time taken to carry out the first (constant current) stage. This facility allows optimal charging by eliminating overcharging and comprises of fixed charge timers.

Operation:

First Stage – Constant current (CC) mode. Visual indication: RED LED “on”, GREEN LED “off”.

Second Stage – Constant voltage (CV) mode. Visual indication as above.

Third Stage – Float charge mode. The battery will be maintained fully charged. Visual indication: GREEN LED “on”, RED LED “off”.

Note 1: on power up the charger will appear to be in “float” mode for a short period of time. This is to complete all checks as described in feature “soft start”.

LED Protocol:

LED Status

Red “on” static
Green “on” static
Red / Green “on” static
Red flashing / Green “on” static
Red / Green flash alternately
Red only flashing

Green only flashing

Charger Status

Bulk charge mode
Float charge mode (charge complete)
Open circuit
Reverse polarity
Short circuit
Trickle charge, low battery voltage detected, see Note 2
Time out forced end of charge.
See note 3

Note 2: The charging system has detected an abnormally low battery voltage possibly due to incorrect battery ie. 6 volt battery connected to 12 volt charger, or the battery is discharged below recommended level. The charger will supply a low current of approx 20% max value of the charge rating, insufficient to seriously damage an incorrect battery but sufficient to bring an over-discharged battery to a level where bulk charge can begin. Recommend check battery.

Note 3: Bulk charge has continued in excess of 18 hours, possibly battery fault ie. Battery may be of higher capacity than max recommended for charge rating, or the battery may have one or more damaged cells. The charger will continue to charge but at a lower voltage. Recommend check battery.

