2015

ELECTROSYS
BATTERY CHARGER USER MANUAL

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ELECTROSYS

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1. PRODUCT OVERVIEW

Electrosys manufactures constant voltage battery chargers that are very reliable and easy to maintain. These chargers are SABS approved (SANS 1652).

Chargers can be fitted with an SCADA ALARM panel and it can be installed inside or outside of the charger cabinet (2.4GHz communication link). The SCADA ALARM panel indicates 8 alarms with LEDs and each alarm latches a double pole relay. Alarms must be cleared on site with a push button as alarms will be latched (even if the alarm condition disappears).

Chargers comes with a built in GPRS module. If a user would like to monitor, control and fault find their DC protection system remotely a SIM card can be added and users will be able to access their chargers via our web application (www.rmsportal.co.za). This is completely optional and can be activated or deactivated at any time. Android application available soon.

Chargers can also be linked (2.4GHz wireless link) to an input board. These modules provide additional 12 inputs each that can be used to monitor tripping units (multiple input boards can be linked).

2. GETTING STARTED

The Mini charger range has been developed to operate automatically. All functions and features have been configured in the factory. If users want to change configurations specified in their order Electrosys can change it remotely.

2.1 Connecting supply, load and batteries

a) Connect the 12V Gel battery that serves as backup for the control circuitry.
b) Connect the mains supply to the terminals marked EARTH, LIVE, NEUTRAL. Make sure the mains breaker is off.
c) Connect battery banks to the battery (positive and negative) terminals.
d) Connect the LOAD to the load terminals (positive and negative).
e) Turn on the main breaker.

2.2 Boost Charging

a) The boost function can be tested using the buttons on the front panel. Pressing the BOOST TEST button will cause the charger to enter a 1 minute boost cycle or it can be stopped with the FLOAT TEST button.
b) A user can also start a real boost charge cycle by pressing the BOOST button on the front panel. By default this boost cycle is 8 hours (configurable on website or via RS232\USB). Note that the FLOAT TEST button will not stop this cycle.
c) AUTOMATIC BOOST: By default the charger will automatically enter an 8 hour (configurable) boost charge cycle every 28 days (configurable).

2.3 Using the LCD Display

a) The LCD screen has three tri color LEDS on the right. These LEDs help to indicate the system status. If a LED is solid green in indicates a healthy status. A warning or fault state will be indicated with yellow and red flashes. The top LED indicates the overall system status, if any fault of any kind is indicated this LED will indicate it. The middle LED shows the AC inputs status and the bottom LED shows the network status. For more details read on the home screen or enter the menu and go to the alarms page.
b) The reset button can be used to reset the screen. This will always take one back to the home screen. Also sometimes called the Home button.
c) Enter\Menu button. Use this button to enter into a selected menu item.
d) Buzzer: the screen contains a buzzer which is also utilized to indicate faults to the user.

2.4 Using the SCADA Alarm Panel

If one of the lights on the alarm panel is lit up it means that there was or is a fault condition on the charger. Read the label next to the LED to determine which fault you are dealing with. No look at the LCD screen, if the screen indicates that fault and buzzing the fault is still present on the system otherwise the fault is no longer present on the system. In the latter case press the reset button on the alarm panel. If the fault is still present on the system rectify the issue and then reset the alarm. If the charger has a sim card in it reference the fault reports on the website in order to see what when wrong and when.

2.5 Automatic Load Testing

If the device has been configured (optional) to preform automatic load testing the following procedure will take place. The charger will be turned off and a load will be applied to your batteries in order to test the integrity of your battery. If any faults are detected during this test it will be display on the SCADA alarm panel and will be submitted to the RMS-PORTAL website with supporting reports (if SIM used).

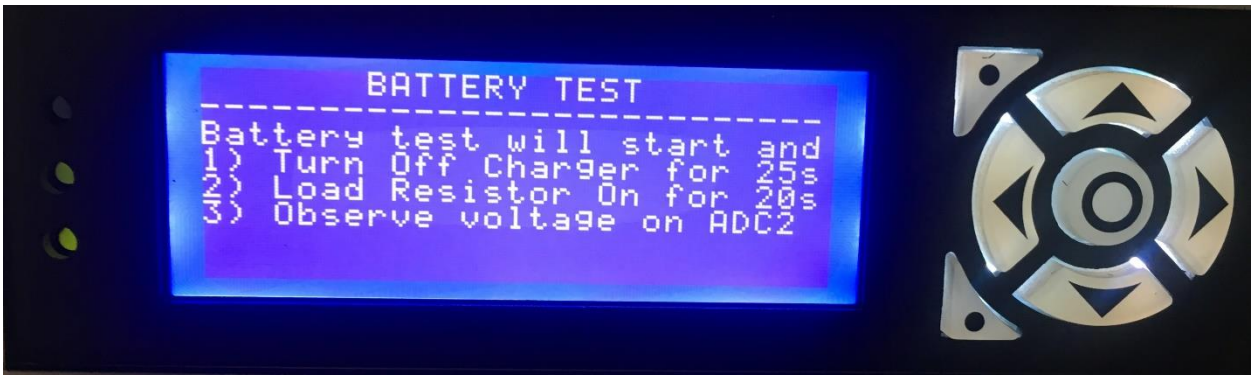
2.6 Tamper Detection

The charger is fitted with vibration sensors witch can let you know via SMS, Email or SCADA that the system is being tampered with.

2.7 Battery Test

Operators can initiate a manual battery test as follows;

1) Press the MENU\ENTER button on the LCD screen.
2) Scroll down to “Battery Test” and press ENTER.
3) The battery charger will now be switched off for 25s and a load applied to the battery. The operator can now look at the voltage meter to see if the battery holds its charge.



2.8 Self Test

The battery charger has a “Self Test” program. This program tests the entire charger and all its features. The program requires user input (actions like turning the main breaker on and off or creating a DC earth fault). This program is used during production and technicians also use it to help them identify problems on a faulty charger. This test will require you to disconnect the batteries from the charger. This program is not intended as a daily check for maintenance personnel and should be used with care.

Figure 1: Charger Front Panel

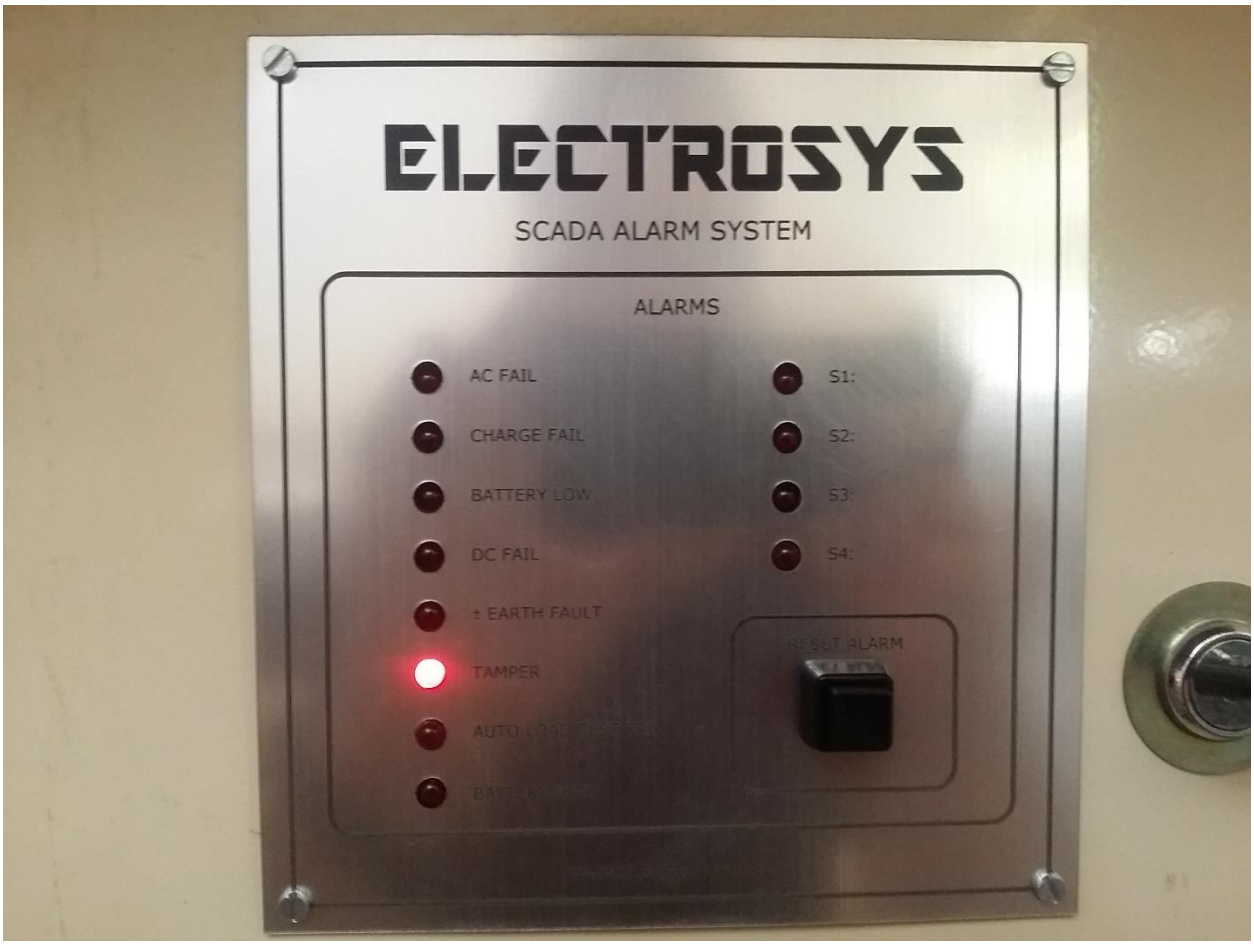


Figure 2: SCADA ALARM PANEL

Appendix A: Functional Block Diagram and Circuit Diagrams

Please request a hard copy from Electrosys, electronic copies are not distributed.