Operating Instructions

MOTION+ PREMIUM Charger

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1 Introduction

In response to growing global environmental concerns and our commitment to sustainability, we are taking targeted measures to integrate environmentally friendly practices into all areas of our business. We are constantly striving to reduce our paper consumption, which is why we have provided this printed manual in English only. However, online versions are available in other languages. To access these, simply scan the QR code.

Multilingual manual

2 Safety

Only a trained person should operate this equipment. The input and output voltages used with this equipment may be high enough to endanger life, so insulated, shrouded connectors must be fitted.

Please read this manual completely and convey instructions to all personnel concerned. Keep the manual in a safe and convenient place.

It is advisable to thoroughly read the information on battery safety supplied with the battery, prior to charging.

Towards the end of charge, lead acid batteries give off hydrogen gas, which is explosive if in sufficient concentration, therefore avoid flames and sparks. Appropriate measures must be taken to ensure adequate ventilation.

Incorrect use of a charger or maladjustment of its controls can damage a battery. The equipment has been factory set and does not require user adjustment.

This product has been designed, manufactured and certified to be in conformance with European Union (CE), United Kingdom (UKCA) and Australian (RCM) Safety and EMC Directives. Testing has ensured that the battery and charger combination conform as a system for use in Light and Heavy Industrial environments for each respective product variant. The following notes are for the guidance of the person installing and using the product.

The charger must be isolated from the input supply and the battery, before any panels are removed.

3 Installation

Installation must only be carried out by suitably qualified personnel and in accordance with current local and national wiring regulations.

Battery leads should not be altered without prior consultation with service personnel.

The charger should be sited in a cool, dry, well-ventilated location away from corrosive fumes and humid atmospheres.

Care must be taken to ensure that the chargers vents are not obstructed and have at least 100 mm of clearance from any surface. Chargers must be positioned so that the exhaust of one charger is not directly affecting the inlet of another.

The charger is for inside use only.

Before installation, check that:

- The charger has not sustained any transit damage.
- The rating is suitable for the intended input supply and battery (lead-acid (vented, gel, AGM) or lithium-ion) to be charged.
- The connector polarity is correct and matches the polarity of the battery connector.

Input supply

The input current rating and voltage of the charger is stated on the charger rating plate.

The rating of the protection device should be based on the maximum input current, as stated on this plate.

4 Display and Control

4.1 Overview

The user interface is located near the AC and DC outlet of the charger. It consists of:

1. 14-pin connector for Service
2. USB-connector for Service
3. RGB-LED for function signals
4. Button to start/stop charging and additional functions

4.2 Charge Status Indicator Summary

Mode	Indication
Bulk Charge	Yellow flashing
Second Stage	Yellow / green alternating
Charge Complete	Constant green
Reset	Red Green Blue sequence
Auto-balance / Refresh	Green blinking
Fault / Warning	Green followed by a number of red flashes indicating error code
Equalise	Green blinking

Pause	Light blue flashing
Standby	Constant light blue

5 Operation

Before connecting the battery, check that the battery voltage corresponds to the voltage indicated on the charger rating plate.

5.1 Charging

When a battery is connected to the charger & mains applied, charge will start automatically. The charge status indicator will show yellow during bulk charge or yellow and green alternating during the second stage of charge.

5.2 Charge Complete

When charge is complete, the charge status indicator will show constant green.

The battery should be left connected to the charger until required; under these conditions the battery will receive periods of auto-balance / refresh charge to maintain it in the fully charged condition. During these periods, the charge status indicator will be green blinking.

5.3 Removing the battery

The battery can only be disconnected when charging current has stopped flowing. Therefore, the pause button must be pressed before disconnection. *A second press of the pause key will clear the pause condition and continue charge.*

When the charger is paused the charge status indicator will flash blue, indicating that it is safe to remove the battery.

If the pause mode is entered but the battery is not removed within 10 minutes, the charge will automatically continue.

5.4 Equalise Mode (Profile Dependant)

Periodically, low maintenance batteries require additional charging to equalise all the cells to the same charge state, this should be performed after the battery is topped up.

Equalisation charge can be set at any time during the charge cycle by pressing the pause button for 5 seconds. Repeating this action will cancel equalisation.

To indicate that equalise has been set the charge status indicator will flash green and red alternating.

To indicate that equalise has been cancelled the charge status indicator will switch off for 5 seconds then return to the previous display.

Only one equalisation cycle is allowed per charge cycle.

If enabled, the charger will automatically perform the equalise function after the standard charge has been completed.

5.5 Battery Recover Mode

If a battery is connected to the charger that is below the normal operating voltage an incorrect battery fault (F1) will be displayed. However, if the battery voltage is between 1 and 1.5VPC, battery recover mode is available. This mode employs a special charging technique to recover batteries that have been stood for a long time or have been over discharged.

This mode can be enabled by pressing the pause button for 5 seconds whilst the fault is displayed. Battery recover mode will then start; once the battery voltage has been recovered to a normal level a standard charge will be performed.

6 Faults / Warnings

In the event of a problem occurring, the charger will display an appropriate fault / warning code via the charge status indicator. This code will consist of a number of red flashes, as shown in the tables below, followed by a green flash.

Faults permanently stop charge until they are rectified.

No. of RED flashes	Fault
1	Incorrect battery voltage
2	Incorrect current control
3	Bulk timeout
4	Gassing timeout
5	Auto-balance timeout
6	Charger over temperature
7	Configuration error
8	Safety disconnect system error

- Fault Number 1 is critical and will prevent charging.
- Fault 2 is likely to indicate an internal charger fault.
- Faults 3 to 5 occur when a particular stage of charge takes too long. This indicates that the battery might be at fault or have been over discharged.

- Fault 6 may occur if the charger is in an ambient temperature above 35°C or airflow is restricted. Charge stops under these conditions until the charger has cooled sufficiently.
- Fault 7 will occur if there is a problem with the internal configuration file
- Fault 8 will occur if the optional safety disconnect system wiring is damaged.

Warnings do not affect the charge procedure.

No. of RED flashes	Warning
11	Sulphated battery
12	Battery disconnected during charge

- Warning 11 indicates that the battery might be at fault or have been over discharged. This fault code will be shown every 10 seconds.
- Warning 12 will occur if the battery has been disconnected from the charger, without the pause button being pressed.

7 Repair

This product is not user serviceable. To prevent electric shock, the case must not be removed.

In the event of a problem occurring please contact your local Service Department.

8 Maintenance

Before carrying out maintenance, isolate the mains supply and disconnect the battery.

Only suitably qualified personnel should perform maintenance work on this equipment.

The charger will require little maintenance, but the following schedule is recommended once a month:

(a) Check the condition of all cables, paying particular attention to the points where cables may be severely flexed, i.e. at the entry to charger cabinet, charging plugs and sockets.

(b) Check condition of charging plugs and sockets for wear and any evidence of overheating, which could ultimately
lead to charger malfunction.

(c) Check that ventilation is not obstructed.

(d) Ensure that all safety covers and panels are correctly in place.

Exide Technologies recommends that a yearly periodic inspection / test is performed on this equipment, contact your local agent for details.

9 Guarantee

See local conditions of sale.

10 Specification

Models	SP3 / SP3+
Input Voltage	1PH - 230VAC ± 10% ONLY
Input Frequency	45 – 66Hz
Input Current	Model dependant - Specified on charger rating plate
Input Cable	2 meters of flexible PVC cable to BS6500 with 2 pin Euro or 3 pin UK plug fitted
Input Protection	Non-replaceable fuse inside
Charge Characteristic*	Microprocessor controlled – S, D, L, M, U
Output Voltage*	Model dependant - 12, 24, 36, or 48V
Output Cable	2.9 meters of heat, oil resistant & flame retardant cable to BS6195
Output Current*	Model dependant - 0 to 60A
Output Protection	Replaceable fuse inside the cubicle
IP Rating	IP20
Cooling	Forced cooling during charging
Ventilation	Chargers must be positioned with at least 100mm of clearance at each end
Ambient temperature	0 – 35°C
User Interface	Single RGB LED and one push button

* Factory set as ordered, stated on rating plate

11 Contact

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