




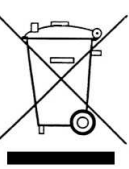


Multi-Mover Charger for model S15, Internal



Important safety instruction. Keep these instructions. This manual contains important instructions for the safety of the user and the operation of the device.

1. SYMBOLS

The followings show the symbols used.

	<p>A triangle containing an exclamation mark indicates important information in these operating instructions which is to be strictly followed.</p>
	<p>Read instruction manual.</p>
	<p>Double insulation</p>
	<p>Apparatuses containing hazardous substances are marked by this symbol. This symbol also indicate that it is prohibited to dispose of these apparatuses in the household waste. You can return these apparatuses free of charge to the collection points in your community or to the supplier of the apparatus. You thus fulfil the legal requirements and make your contribution to the protection of the environment!</p>
	<p>This equipment is CE-tested and thus meets the EMC directive 2004/108/EG and the low-voltage directive 2006/95/EG.</p>
	<p>The GS-symbol (Geprüfte Sicherheit) is a German certification mark, indicating, that the apparatus satisfies the "Gerätesicherheitsgesetz" (law for safety of apparatus).</p>

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2. DESIGN / SPECIFICATIONS

Primary voltage : 230 Vac - 50/60 Hz - 1-phase
 Secondary nominal voltage : 24 Vdc
 Secondary maximum voltage : 35 Vdc
 Secondary current : max. 10A :
 Battery type
 Battery capacity

	Min.	Max. (in order to charge 80% capacity within 8 hours)
LA-MM10	80 Ah	100 Ah

Protective devices : - protected against reversed polarity
 - protected against overvoltage
 - protected against high temperatures
 Input power : 215 W with LA-MM8
 Efficiency : min. 80% (at full load)
 Ambient temperature : 0 °C to +40 °C
 Dimensions cabinet : Height 90 x Width 150 x Depth 200 mm
 Safety class : II
 Overall weight : 1.5 kg
 Transport and storage
 Ambient temperature storage : -15°C ... +50°C.
 Relative air humidity max. : 95 % (non condensing)

3. General Warnings

1

Before each use of the battery charger the instructions set out below must be carefully read and abided by

2

The failure to follow these Instructions and/or errors in installing or using the battery charger, could lead to endangering the operator and/or damaging the device, voiding the manufacturers guarantee.

3

The battery charger cannot be used as a component in systems which provide life support and/or medical devices, without explicit written authorization from Multi-Mover Europe BV,

4

The battery charger must not be used by persons with reduced physical, sensory and mental capabilities or with lack of experience and/or knowledge, unless they are properly supervised and instructed by a person responsible for their safety,



CHILDREN

5

The battery charger must not be used by children. The battery charger is not a toy and must not be treated as such.

WHERE TO INSTALL

6

Never place the battery charger in the immediate vicinity of the battery in order to prevent gases produced and/or emitted by the actual battery during charging corroding and/or damaging the battery charger. Place the battery charger as far away from the battery as the length of cables permits.

7

Do not install the battery charger in a closed space or in such a way as to somehow prevent ventilation. For units equipped with fans, at least 30 mm clearance must be left around the vents. In order to facilitate the heat exchange of the battery charger it must be positioned vertically, exploiting the fixture holes(when provided).

8

Do not use the battery charger outdoors,

9

Do not expose the battery charger to rain, water splashes or steam,

10

Do not install the battery charger in caravans and/or similar vehicles.

11

Do not install the battery charger near any heat sources or in areas with high concentrations of dust

12

Do not install the battery charger near any potential sources of flammable material, for example methane gas pipes or fuel depots(petrol, kerosene. etc...)

13

Do not place and/or fit the battery charger onto surfaces manufactured out of combustible materials, like wooden shelves or walls.

BATTERIES

14

Follow the specific safety instructions provided by the battery manufacturer carefully, for example, whether or not to remove cell caps during charging and the recommended charge rates.

15

Working in the vicinity of a lead-acid battery is dangerous, as batteries generate explosive gases during charging, Therefore smoking and/or generating open flames and/or sparks must be avoided,

16



Never charge a frozen battery,

17

Batteries must be charged in specific, well-ventilated areas.

18

In order to reduce risk of injury only charge Lead-Acid, GEL or AGM type. Do not charge other types of rechargeable or non-rechargeable batteries as they could explode causing damage and/or injury,

19

Do not charge Lithium polymer or Lithium Ion batteries. This Charger can be used for the Multi-Mover S15 only.

CHECKING CABLES, GRID, EARTHING

20

Do not transport the battery charger by pulling on the cables as they could be damaged. Use the handles, if provided.

21

Before using the battery charger, check that the sleeping on the mains cable and battery cables is in good condition. Should one of the cables be damaged, have it replaced by Multi-Mover Europe BV qualified technician.

22

Check that the input voltage of the battery charger given on the data plate is in line with the voltage available.

23

Check the compatibility of the mains plug supplied with the battery charger the use of adaptors is not recommended (in many Countries it is against the law).

24

The battery charger must be plugged into a socket fitted with an earth wire. Should the socket not be equipped with an earth connection, do not use the device before having a suitable socket installed by a qualified technician.

25

The power socket to which the battery charger is to be connected must be protected by an electrical device by law (fuse and/or automatic cut-out), capable of absorbing an electrical current equaling the absorption of current stated on the matriculation number of the battery charger. increased by 10%.

26

Do not open the battery charger as there are no parts which can be serviced and/or replaced by the user. Only specialized personnel, authorized by Multi-Mover Europe BV may carry out servicing which involves opening the actual device. Electrical/electronic components inside may cause electric shocks even if the device is not plugged in.

CHECKING BATTERY CHARGER OPERATION AND CABLE

27

Before charging, make sure that the battery charger 24 Volt is in line with the voltage of the battery 24Volt, that the charging current suits the capacity of the battery and that the selected charging curve **This Charger can be used for the Multi-Mover S15 only**



28

We recommend fitting a fuse between battery charger and battery. Which is standard on the Multi-Movers. The fuse must be installed along the connection to the positive terminal of the battery. The rating of the fuse must be proportionate to the nominal output current of the battery charger, the diameter of cable used and the environment in which it is to be installed.

29

We recommend unplugging it from the mains supply before connecting and disconnecting batteries.

30

During normal operation of the battery charger. The external surface may become hot and may remain so for a certain period of time after it has been switched off.

31

The battery charger needs no special maintenance, only regular cleaning procedures. To be carried out according to the type of working environment. Cleaning procedures should only be carried out on the external surface of the battery charger. Before starting any cleaning procedures, the mains supply cable and battery cables must be unplugged. Do NOT use water and/or detergents in general and/or pressure washers of any kind when carrying out cleaning.

LACK OF USE

32

If safe operation of the battery charger can no longer be ensured, stop the device and ensure that it cannot be put back into operation.

33

The specifications set out in this manual are subject to change without any notice. This publication replaces any previously supplied information.



4. ELECTRONIC BATTERY CHARGER OPERATING MANUAL

TECHNICAL FEATURES OF THE Charger Multi-Mover S15.

- 10A charger is supplied with the S15 with 70 AH batteries.

The innovative characteristics of the S15 range of 24 Volt battery chargers are:

1. **High Frequency** System technology
2. Charging process fully controlled by microprocessor.
3. Universal input voltage 100-240 VAC
4. Charging process start in the "soft start" mode.
5. Protection against polarity inversions, short-circuits, over-voltages or anomalies by means of an output relay.
6. Battery to battery charger connection without sparks on the output terminals with obvious advantages for the active safety, thanks to the recognition of the battery voltage downstream the normally open output relay.
7. Signaling of possible anomalies by red LED Flashing.
8. Insensitive charge parameters in case of 10% network voltage oscillations.
9. Efficiency > 85%.
10. Output ripple at maximum charge lower than 100mv.
12. Start of the charge cycle even with 2 x 8V is 16 Volt batteries.

OPERATING PRINCIPLE

On switching on a new battery charger of the Multi-Mover S15 series, the charger will check the battery voltage and decide whether to start the charging process.

If the battery is not connected to the battery charger, the **yellow LED will flash**. If the result of the test is positive after 1 second the charging of the battery can start, with the **red LED on**.

The output relay closes and the current of the first phase rises slowly till the nominal value programmed is reached.

If during the battery charge process the user disconnects the actual battery from the battery charger, after a few seconds the battery charger will reset and get ready to start a new charge process.

The progress of the charging process is shown by three LED's: red, yellow and green, as in the whole range of the Multi-Mover battery chargers.

The green LED shows the end of the charging or the last phase in case of deep charging process: in the former case. The relay is opened to disconnect galvanically the battery from the battery charger.



VISUAL SIGNALS

Please find in the following table a list of the visual signals

Depending on what type of batteries you ordered with your Multi-Mover:

Red LED flashing (twice)	Battery charger set to charge the Lead/Acid batteries. Starting up
Green LED flashing (twice)	Battery charger set to charge the Gel or AGM batteries. Starting up

Charging :

Red LED on	First phase of charge in progress, do not disconnect yet.
Yellow LED on	Second phase of charge in progress, do not disconnect yet.
Green LED on	End phase of charge or maintenance phase, you may disconnect. If you do not use the Multi-Mover for a longer period of time you can keep the charger connected

Anomalies

Yellow LED flashing	Unsuitable battery or battery is not connected the battery charger, or output short circuit. Multi-Mover is not connected to the charger. Multi-Mover battery can be dead or broken.
Red LED flashing	Safety Timer exceeded internal short circuit



CE declaration of Conformity (EN ISO/IEC 17050-1:2005)

THE ELECTRONIC AUTOMATIC BATTERY CHARGER MODEL Multi-Mover XL series to which this declaration applies, complies with the provisions of the Directives of the Council of the European Union on the approximation of the laws of the members states :

Relating to Electromagnetic Compatibility (EMC) Directive 2004/108/EC of the European parliament and of the council of 15 December 2004 on the approximation of the laws of the member states relating to electromagnetic compatibility and repealing directive 89/336/EEC, conformity is proven compliance with the following standard :

- EN 55014-1 (Emission)
- EN 55014-2+ A1+ A2 (Immunity-Category II)

Relating to Extra Low Voltage (LVD) Directive 2006/95/EC of the European parliament and of the council of 12 December 2006 on the harmonization of the laws of member states relating to electrical equipment designed for use within certain voltage limits, conformity is prove by compliance with the following standards: - EN 60335-2-29

Safety of household and similar electrical appliance Part 2: Particular requirements for battery chargers: - EN 62233

Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure.

