

Your charger contains a microprocessor that makes it suitable for automatic recharging of batteries. For best results and safety, the user is required to read, follow and keep these instructions carefully. The manufacturer is not responsible for any damage due to improper use.

BATTERY

The charger performs a Wa charging cycle (with decreasing current) suitable for recharging unsealed lead batteries. The battery voltage must be the same at the rated voltage of the charger (see rating plate, e.g. 12V). The correctly rechargeable capacity of the battery can be calculated as : $C = \ln x 6$ ($\pm 10\%$) where \ln is the nominal current of the charger (see rating plate). Example : $\ln = 30A$ the capacity will be $C = 180 Ah \pm 10\%$.

INSTALLATION

To ensure maximum safety, installation has to be carried out as indicated by the manufacturer. Any work on the charger must be carried out by qualified and authorized technical personnel. Before doing any work on the charger, disconnect the mains power supply cable and the battery cables. After unpacking, ascertain that the device is in perfect condition; in case of doubt, do not use it, and contact the supplier. The charger will function well for a long time only if installed indoors, in a room that is free of humidity, acids or dust, with room temperature between 0 and 40 °C. During use do not obstruct the ventilation apertures with covers, do not place against a wall (leave at least 5 cm all around). Do not use extension cables without the manufacturer's approval. Plug into a socket compatible with the voltage, frequency and power features required by the charger (see the rating plate).

INITIAL CALIBRATION

To adapt the charger to normal variations of voltage in the mains power supply (10% with respect to the rated value) open the charger (Fig. 1) and move the BLUE wire to the correct position shown on the table in the figure. This operation is fundamental for proper operation and should be performed only when installing the charger. Models with less than 500W power do not require this calibration.

CONNECTION TO BATTERY

Respect the polarity : red wire to + and black wire to -. Incorrect connection does not cause any damage but prevents the charging cycle from starting. USE. Connect the battery and switch on. LEDs C and S light up for 2 seconds (PAN.1), then only LED C stays on (PAN. 2). If this does not happen, check the connection to the bat-

tery or the internal fuse F1 (see Fig. 1). If everything is functioning properly the charger performs the first charging phase (PAN. 2), in which the current sent to the battery tends to decrease while the battery voltage increases. The duration of this phase depends on the initial charge level of the battery, normally it takes 6-8 hours. When the battery voltage reaches 2.40 V/el gasification starts and the charger switches over to the final charging phase (PAN. 2 with LED C flashing). The microprocessor now calculates the time necessary to complete recharging and after that time (minimum 15 minutes, maximum 3 hours) it trips the STOP switch (PAN. 4) and stops charging. Now you can switch off the charger and use the fully recharged battery.

USE

Connect the battery and switch on. LEDs C and S light up for 2 seconds (PAN. 1), then only LED C stays on (PAN. 2). If this does not happen, check the connection to the battery or the internal fuse F1 (see Fig. 1). If everything is functioning properly the charger performs the first charging phase (PAN. 2), in which the current sent to the battery tends to decrease while the battery voltage increases. The duration of this phase depends on the initial charge level of the battery, normally it takes 6-8 hours. When the battery voltage reaches 2.40V/el gasification starts and the charger switches over to the final charging phase (PAN. 3 with LED C flashing). The microprocessor now calculates the time (minimum 15 minutes, maximum 3 hours) it trips the STOP switch (PAN. 4) and stops charging. Now you can switch off the charger and use the fully recharged battery.

SPECIAL REMARKS

When the microprocessor detects a problem it stops charging and signals the type of problem by making LED C flash in different ways (PAN. 5):

- continuous rapid flashing: after 9 hours of charging the battery has not reached the final charge phase. There might be a problem with the battery (too old or with broken elements) or a problem with the power supply. If this happens frequently, contact the supplier.
- 2 rapid flashes followed by a pause: battery voltage not compatible with charger, check the type of battery connected.
- 3 rapid flashes and a pause: internal breakdown detected, call the service department

INTERRUPTION OF CHARGE

Power outages interrupt charging and all LEDs go out (PAN. 6); when power returns to the mains charging starts again where it



INSTRUCTIONS MICRO-LOGIC-A chargers

was interrupted. If charging has to be interrupted for any reason, first switch off the charger and then disconnect the battery. Never disconnect the battery if the charger is supplying current, as the break-off spark could ignite the gases produced by the battery and cause an explosion. For optimum charging, disconnect the battery only when the microprocessor indicates STOP.

GENERAL RECOMMENDATIONS

Never let the battery run down completely (maximum 80%). This will make it last longer. Keep the battery contacts free of oxidation. Keep the charging area ventilated. If replacement of some cables is necessary, it should be done by competent and authorized personnel.

MAINTENANCE

The charger does not require any maintenance. To clean the outside, use a damp cloth. Use only original spare parts

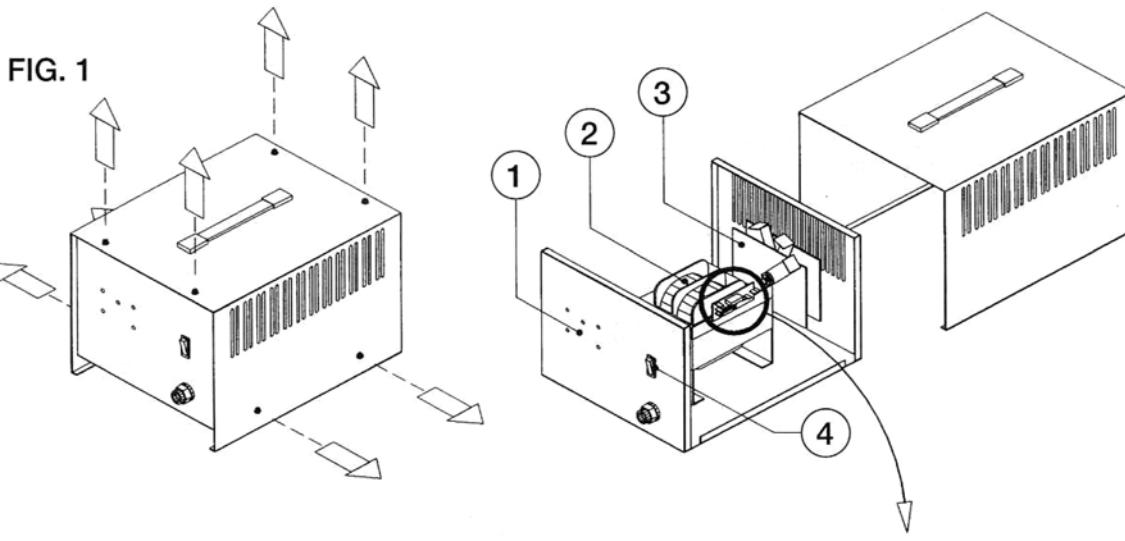
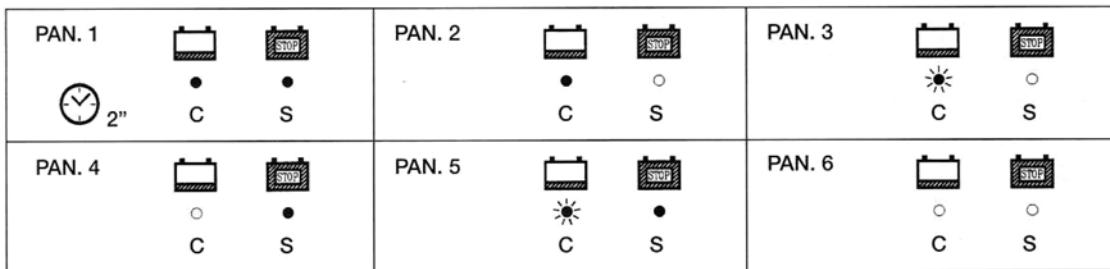


BATTERY CHARGER INDUSTRY s.r.l.

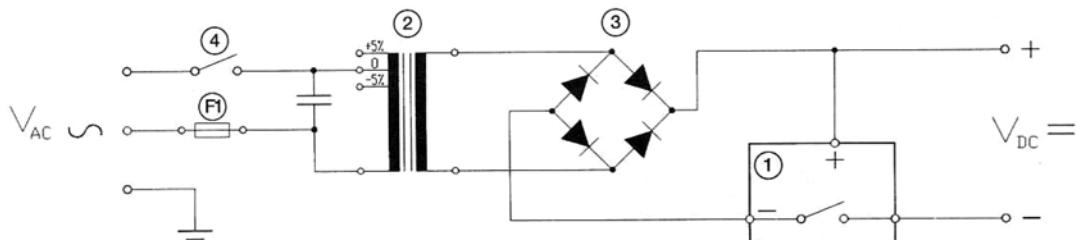
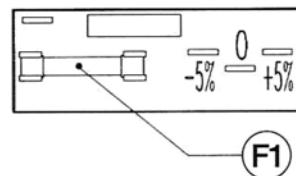
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Vnom.	-5%	0	+5%
110 V.	101-107	107-113	113-119
220 V.	205-215	215-225	225-235
230 V.	215-225	225-235	235-245
240 V.	225-235	235-245	245-255



	1	2	3	4	F1
MLA1210	SCH.ML1.12V	99010150	05010100	11010001	06020303
MLA1215	SCH.ML1.12V	99010151	05010100	11010001	06020304
MLA1220	SCH.ML1.12V	99010152	05010101	11010001	06020305
MLA1230	SCH.ML2.12V	99010153	05010102	11010001	06020327
MLA1240	SCH.ML2.12V	99010154	05010103	11010001	06020328
MLA2410	SCH.ML1.24V	99010240	05010100	11010001	06020305
MLA2415	SCH.ML1.24V	99010241	05010100	11010001	06020327
MLA2420	SCH.ML1.24V	99010242	05010100	11010001	06020328
MLA2430	SCH.ML2.24V	99010243	05010101	11010001	06020329
MLA2440	SCH.ML2.24V	99010244	05010103	11010001	06020330
MLA3620	SCH.ML2.36V	99010350	05010101	11010001	06020329
MLA3630	SCH.ML2.36V	99010351	05010102	11010001	06020330