



SMARTCHARGER

User manual type 3245

SAFETY

READ THESE INSTRUCTIONS PRIOR TO USING THE CHARGER

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance

The charger is protected against injects of dust and water according to IP65.

If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid a hazard.

Note! Make sure the charger terminals are not short-circuited and ensure that the polarity is correct.

If the charger is disconnected from the mains voltage during a charge cycle the charger will resume the charge cycle when it is reconnected to the mains.

To avoid overheating make sure there is sufficient room for circulation of air around the product when in use. Do not cover it up.

The mains socket outlet used should always be easily accessible to facilitate immediate removal of the products mains supply should an operational error occur during use.

The product contains hazardous voltages and there are no user replaceable parts inside the product. Never attempt to remove the cover. Any repair/service should be carried out by qualified personnel who may get assistance by contacting the manufacturer or the manufacturer's agent.

The charger has automatic polarity protection and will be switched off if the battery is connected with reverse polarity. The protection will be automatically reset when the polarity has been corrected.

Lead-Acid chargers are designed for charging Lead-Acid batteries only. For safety reasons, individual battery types should have a minimum capacity, please check

that the specifications for your battery allows for the maximum charge current indicated on the charger. If in doubt; contact the battery manufacturer for the specific battery. Do not attempt to charge batteries that are not rechargeable.

WARNING

As explosive gases may arise during charging lead-acid batteries the charger and the battery should be placed in a well-ventilated area during charging. Avoid sparks and open flames.

Maintenance and warranty

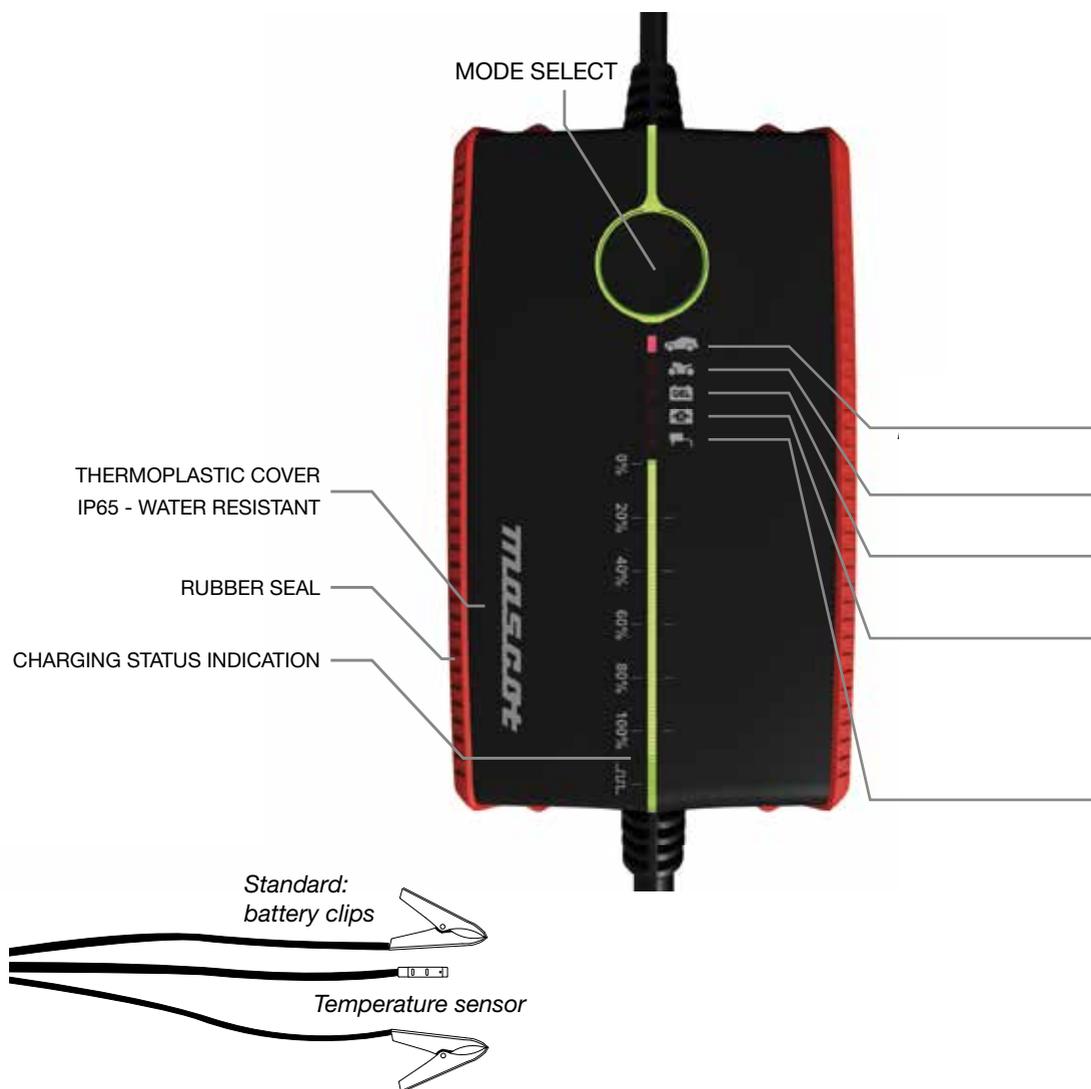
The charger is maintenance free. If the unit itself or its cords are damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid a hazard. Do not attempt to service or open the charger yourself. It is possible to clean the unit using a mild detergent and a towel. When cleaning the unit, it must be disconnected from mains.

As the charger has a plastic housing, please avoid any contact with lotions, oils, grease and solvents as most types of plastic may be degraded by such chemicals.

Keep this manual!

CONGRATULATIONS!

For optimal charge and maintenance of your battery, whether it is a standard lead acid, calcium, GEL or AGM battery, this microprocessor-controlled temperature compensated charger will be at your service for many years to come, provided the correct use and care of both the charger and the batteries.



Quick start

Check that the battery and charger specifications match. Take the charger out from the case and connect the charger to the battery. To charge a vehicle battery, connect first the positive clip (marked "+") to the positive battery pole then connect the other clip (marked "-") to the car's chassis away from the battery and fuel system (fuel hoses, fuel pump etc.). Place the temperature sensor on top of or close to the battery or inside the positive battery. Connect the charger to the mains. The charger will show that the power is on and that the mains cable is connected to the wall socket. The charger will start charging battery automatically. If your 12V battery is not standard or AGM, press the mode button to select correct program for your type of battery. If pulse LED flashes in 1 sec. intervals, check whether the battery clips are properly connected. Cancel charge by disconnecting the charger from the wall socket then remove the chassis connection and then the battery connection.

Programs

The following 5 charge programs are available by pressing the "mode" button:

-  **Large batteries**
14.7VDC max 7A, recommended battery capacity 30-120Ah
-  **Small batteries**
14.7VDC max 1.5A, recommended battery capacity (3)5-30Ah
-  **Gel batteries**
14.4VDC max 7A, recommended battery capacity 30-120Ah
-  **Recond (recovery) improves deeply discharged and severely sulfated batteries. For large batteries only. Indicator returns to large battery mode when cycle is completed. Use once a year or when your battery has been fully discharged.**
15.7VDC max 1.5A, recommended battery capacity 30-120Ah
-  **Power supply or float charger**
13.7VDC max 6.5A

The «mode» button is active in 5 seconds after the battery and the mains have been connected and charging has started. After this, it is possible to change program by pressing the button for 3 seconds: when Mode LED is blinking it is possible to change program. If the charger is disconnected from the mains, the last program selected will be memorized.

“Mode” programs

MODE (Charge programs)	SYMBOL AT CHARGER	SOFTSTART	BOOST	TOP UP CHARGE	RECOND PHASE	FLOAT CHARGE	PULSED FLOAT CHARGE	
LARGE BATTERY		Charge voltage (U) Charge current (I)	7A fast charge until 14.7V @20°C	14.7V @ 20 °C Charge until < 1.6A or 4hrs	Not Available	13.7V @20°C	13.7V Short 7A pulses	
SMALL BATTERY		0.25A low current precharge until >10.5V	1.5A fast charge until 14.7V @20°C	14.7V @ 20 °C Charge until < 0.25A or 4hrs	Not Available	13.7V @20°C	13.7V Short 1.5A pulses	
GEL		1.6A low current precharge until >10.5V	7A fast charge until 14.4V @20°C	14.4V @ 20 °C decreasing current Cut-off at 1.6A	Not Available	13.7V @20°C	13.7V Short 7A pulses	
RECOND		1.6A low current precharge until >10.5V	7A fast charge until 14.7V @20°C	14.7V @ 20 °C Charge until < 1.6A or 4hrs	1.5A max. 15.7V Cut-off @ 0.25A	13.7V @20°C	13.7V Short 7A pulses	
POWER SUPPLY		Not Available	Not Available	Not Available	Not Available	13.7V Max. 6.5A @20°C	Not Available	
INDICATION		LED 0% Flashing 15/15 0.5hrs start timer	LED 0% to 80% Shows the battery capacity. 4hrs	LED 0% to 100% Flashing 0.5 – 4hrs	LED 100% Lights	LED 100% Lights when pulse		
LIMIT		Safety timer 72hrs						

LED indication

Mains connected Mode and error indication Charge progression (in %) Pulse

- Pulse LED flashing in 1 sec interval when battery is not connected
- Pulse LED flashing in 7 sec intervals when in Float and Pulse charge phase
- All LEDs 0-100% are flashing simultaneously when in Recond phase. (after top up charge)
- LED 0% Flashing in 1 sec interval during softstart (when the battery voltage is below 10,5V)

LED error codes

Sequential flashing RED "MODE" LEDs



Battery voltage remains low after precharge.
Wrong or defect battery.



Safety timer expired.
Wrong or defect battery.



Battery voltage above 16V.
Check battery type.

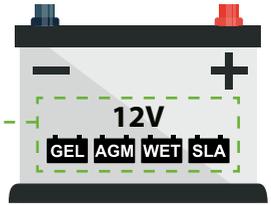
Old, sulfated Lead-Acid batteries usually have a reduced capacity and may be difficult to charge. The charge current may fall rapidly as if the battery had received a full charge, and the charger will indicate 100% charge. Even though a battery in this condition should be replaced, it will retain a small charge .

Technical data 12V

Input voltage: / Line frequency:	198 - 264VAC / 47 - 63Hz
Max output power:	103W
Modes	1. Large batteries 2. Small batteries 3. Gel batteries 4. Recond 5. Power supply
Charge voltage:	14.7V at 20°C
Charge voltage GEL:	14.7V at 20°C
Charge voltage Recond:	Max 15.7V
Float voltage:	13,7 at 20°C
Charge current:	7A (1.5A small batteries and Recond Phase)
As Power supply:	Output voltage: 13.7V max 6.5A
Ripple:	< 100mVp-p
Formation Charge:	Low current start-up of deeply discharged battery.
Float charge:	Auto modus: 7.0A pulses at safe float voltage level for maximum topping of battery capacity (1.5A pulses,small batteries).
Temperature compensation of charge voltage:	-3 to -4mV/°C pr. cell
Efficiency (at 100% load, 230V):	> 89 %
Switch frequency approx.:	65kHz
Leakage current from battery with mains switched off:	< 50 uA at 12V
Protection:	Protected against reversed polarity and short circuit proof. Prevents sparking. Charge timer: 4h. Safety timer : 72h Thermal protection. Charging of wrong lower voltage battery pack (e.g. 6V) will be limited to 1.6A (0.25A small battery) and terminated after 30 min. Charging battery > 16.2V terminated immediately.
Temperature range:	Operating: ±25 to +40°C. Storage: ±25 to +65°C
Safety:	EN 60335-2-29
Insulation class :	Class II
Insulation voltage:	Primary – secondary: 3750VAC / 5300VDC
EMC standards:	EN 55014-1 and -2,
Input terminal:	Non detachable mains cable
Output terminals:	Cord with Insulated battery clips and temp. sensor
IP-Grade:	65
Dimensions:	169 x 95 x 47 mm
Weight:	900g

QUICK START

Smart charger

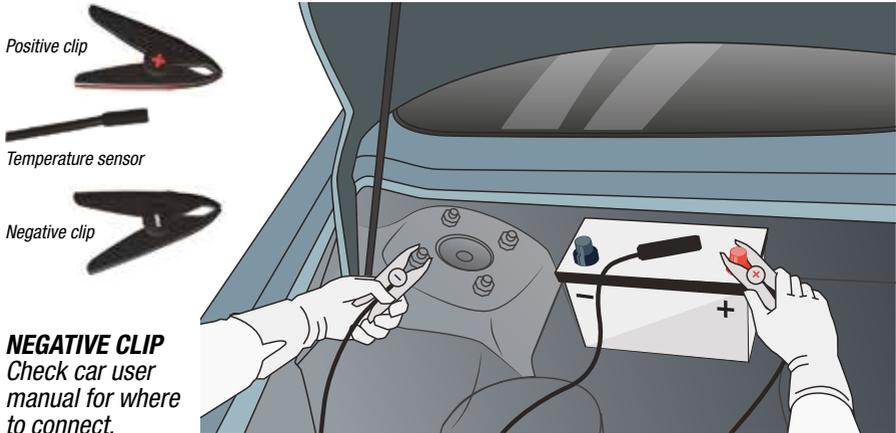


1 Match

Check that the battery and charger *specifications* match.

2 Connect

To charge a vehicle battery, connect first the **positive clip** (marked “+”) to the positive battery pole, then connect the **other clip** (marked “-“) to the **car’s chassis** away from the battery and fuel system (fuel hoses, fuel pump etc.). Place the **temperature sensor** on top of or close to the battery.



NEGATIVE CLIP
Check car user manual for where to connect.

3 Charge

Connect the charger to the mains.



4 Check status/mode

Charger will start automatically.
Check **indication lights** for status.
Use **mode button** to select preferred mode.

