

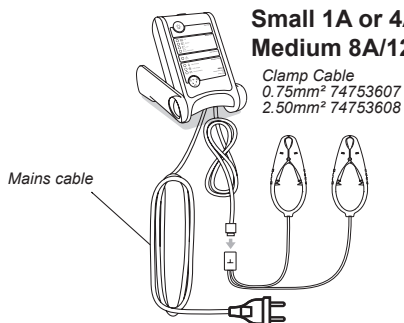


Keepower Battery Charger

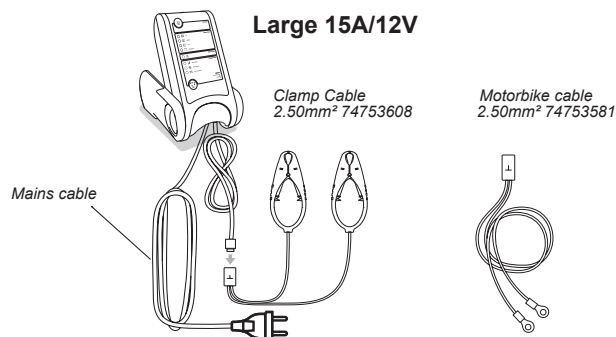
User guide

The Keepower Charger kit

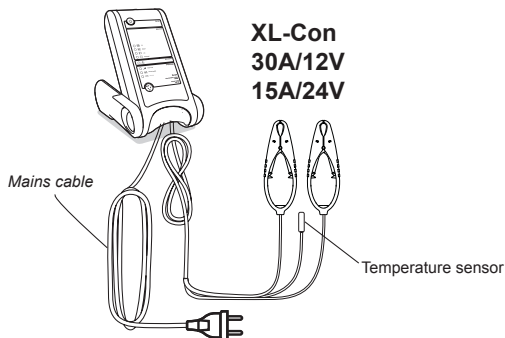
Small 1A or 4A/12V Medium 8A/12V



Large 15A/12V



XL-Con 30A/12V 15A/24V



English

Safety instructions

BATTERY CHARGER FOR 12V/24V LEAD ACID BATTERIES



Before charging, read this quick guide instruction.



Protect charger from moisture and keep dry.



Risk of explosion! Avoid fire, open flame and sparks.



Turn off the charger before attaching and removing the charging clamps.

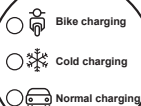
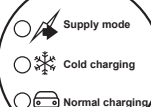
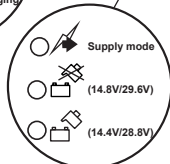
- the battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains;
- after charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.
- Battery acid is highly corrosive. Acid on the clothes should be rinsed off immediately in running water. Acid on the skin or in the eyes, rinse thoroughly in running water and contact a doctor.
- A battery produces explosive gases during charging and good ventilation should therefore be ensured if charging takes place indoors.
- The charger have to be placed upright on a solid surface or hanged on the wall with the possibility for good ventilation.
- The charger may not be covered or exposed to direct sunlight.
- The battery manufacturer advices have to be followed carefully.
- The charger can only be used for rechargeable lead/acid batteries.
- Do not recharge non-rechargeable batteries.
- The charging wires can only be changed to other keepower wires.
- If the supply cord is damaged, it must be replaced by authorised shop.
- Repair of the charger may only be done by an authorised shop.
- The charger is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the charger by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

Flash light button

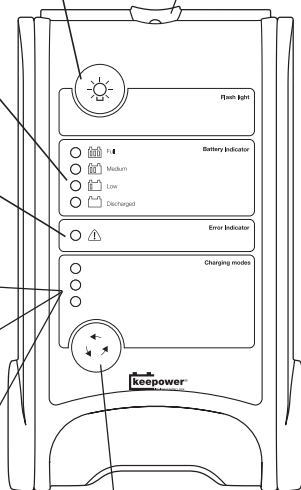
Battery indicator

Error indicator

Flash light

Charging mode:
Small 1A or 4A/12VCharging mode:
Medium 8A/12V
Large 15A/12VCharging mode:
XL-Con
30A/12V
15A/24V

Selection button



Selection of the different charging modes



Normal charging is used on normal batteries (Wet, open type), maintenance-free, GEL and sealed battery with a gas limit at 14.0V/12V in Bulk mode, and 14.4V/12V in Aftercharge mode.



Normal charging is used on normal batteries (Wet, open type), maintenance-free, GEL and sealed battery with a gas limit at 14.0V/12V or 28.0V/24V in Bulk mode, and 14.4V/12V or 28.8V/24V in Aftercharge mode.



“Bike charging” is the same as a “Normal Charging” but the current is limited to 1A (only Keepower small).



Cold charging is used when the battery is below 5°C and for most AGM batteries. The gas limit is 14.4V/12V in Bulk mode, and 14.8V/12V in Aftercharge mode.



Cold charging is used when the battery is below 5°C and for most AGM batteries. The gas limit is 14.4V/12V or 28.8V/24V in Bulk mode, and 14.8V/12V or 29.6V/24V in Aftercharge mode.



Supply Mode (Indication: Full LED constant):

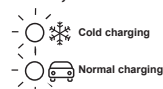
The “Supply mode” is used as a power supply e.g. when the car is in a showroom and the cars facilities is used without the motor running. In case of overload, the Warning LED flashes. If heavy overload, the charger switches off to protect it self (only Keepower Medium, Keepower Large and Keepower XL-con). **A battery has to be connected for activation of “Supply mode”. Please note that spark protection is not active when in supply mode.**



Boost is selected by pressing the selection button for 3 sec.

(Indication: Flashing LED simultaneously):

Small, Medium and Large:



XL-Con



The “Boost” phase is used to kick-start the battery if it has low power. This “Boost” is made as an intelligent boosting. This means that the charger is boosting the battery for 1 hour with maximum current and then the battery is tested to see if it is ready for normal charging. If the battery is not ready for normal charging, the charger will boost again. This process is repeated 4 times and if the battery is not Ok after that the charger will indicate a fault.

If nothing is selected within 5sec. the charger will start charging in the mode selected last time.

Procedure how to charge or detect a battery.

For reliable reading, the battery should be at room temperature (20 °C), and it must have been resting for at least 4 hours (no charging has taken place either in the vehicle or using the Inelco Intelligent Battery Care charger). If charging has taken place within the last 4 hours, a higher reading will be the result.

Step 1 How to detect the battery condition.



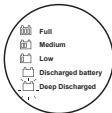
Insure mains supply disconnected.

- Disconnect mains to show battery state in display.



Connect the clamps to the battery.

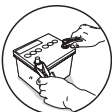
- Red to + terminal
- Black to - terminal



Battery indicator.

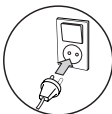
- Indicates the battery state.

Step 2 How to charge the battery.



Connect the clamps to the battery.

- Red to + terminal
- Black to - terminal




Connect to mains supply and switch on.

- Charger can be constant connected.



Select charging mode.

- Select charging mode, and charging will start.
- Charging finish when LED  constant light.
- Charger can be constant connected.



Before disconnection.

- Switch off mains supply.
- Unplug the charger.
- Remove the clamps.

Keepower chargers

This user guide can be used for 4 variants of the Keepower chargers. The first part of the user guide is a general part and the last part is special for the XL-con.



Small



Medium



Large



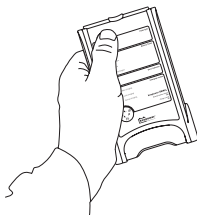
XL-con

How to install the charger

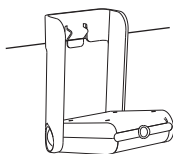
The charger can be installed in 4 different positions.



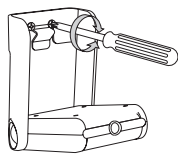
As a stationary device



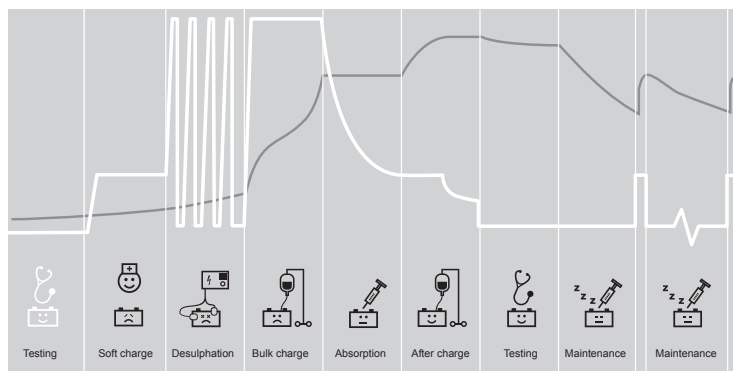
As a handheld device.



As a device hanging on an edge.



As a device on the wall



The intelligent charging curve



Soft charge (Indication: Discharged LED flashing):

The “soft charge” phase is used when the battery is deep discharged. The battery is charged until it is ready to receive normal charging (12.0V) and then the normal charging is started.



Desulphation (Indication: Discharged LED flashing):

The “desulphation” phase is used if the battery has not been used for a longer period.



Bulk charging (Indication: Low LED flashing):

The “bulk” phase is the phase where the battery under a constant current is charged to app. 85% of the full capacity.



Absorption (Indication: Medium LED flashing):

The “absorption” phase is the phase where the battery under a constant voltage is charged to app. 98% of the full capacity.

**After charging** (Indication: Full LED flashing):

The “after charging” phase is the phase where the battery under a constant voltage is charged to app. 100% of the full capacity. The voltage is raised 0.4V compared to the Bulk charging phase.

**Testing** (Indication: Full LED flashing):

The “testing” phase is the phase where the battery is tested for a defect battery cell.

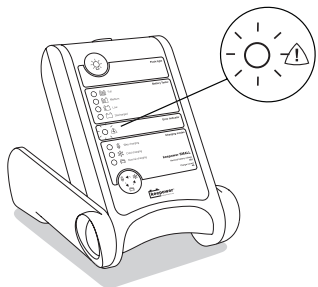
**Maintenance** (Indication: Full LED constant):

The purpose with “maintenance” phase is to keep the battery fully charged over a long period of time. The charger is at all time measuring the voltage and when it goes below 12,8 / 25,6 V it will start charging the battery.

**Boost** (Indication: Discharged LED flashing):

The “Boost” phase is used to kick-start the battery if it has low power. This “Boost” is made as an intelligent boosting. This means that the charger is boosting the battery for 1 hour with maximum current and then the battery is tested to see if it is ready for normal charging. If the battery is not ready for normal charging, the charger will boost again. This process is repeated 4 times and if the battery is not Ok after that the charger will indicate a fault.

Please note that spark protection is not active when in supply mode.



Error indication

Warning flashing:

- Clamps not connected to battery.
- Mains cable not plugged in or mains switch not switched on.
- Supply: overload, i.e. the voltage is dropping due to loading with more than the nominal current (8/15/30A).

Warning constant:

Before start of charging

- Over voltage. E.g. a 12V charger connected to a 24V battery.
- Shorting the clamps.
- Clamps polarized wrong (i.e. plus to minus and vice versa).

While charging

- Battery can not be charged within the time of the security timer. If the battery is larger than the recommended maximum size, charging once more might help. If the Warning comes on during charging, try using the Intelligent Boost function.

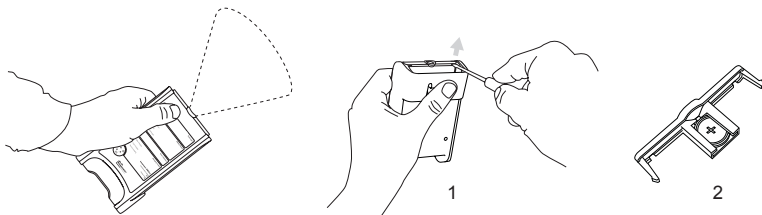
There can be two reasons for no indication in the battery tester during testing:

- The battery in the car is deep discharged.
- Wrong polarization of the charger to the battery.

Maintenance

The charger can be cleaned with a moist cloth. Running water and detergent contained solvent may not be used.

Repair of the chargers may only be done by an authorised shop and that includes replacement of the battery cables.



Flash light

The charger contains a flash light to be used as a small working lamp when using the charger in a dark room.

The flash light is using an internal battery so it can be used with or without the mains connected.

The flash light can be replaced. Please order sparepart no. 4500 4105 (see picture 2).



Keepower XL version

Temperature sensor

The Keepower XL version has a temperature sensor in the battery clamp. This sensor is used to adjust the charging parameter while charging the battery.








USB connection

Can be used as a connection to other devices (mobile phones, Ipad) that need to be charged. Your mobile phone or Ipad player might need a special USB charging cable. Check the users guide.

Guarantee

Keep valid receipt or guarantee card. To obtain guarantee within the guarantee period, it is an absolute must that, either a valid receipt or guarantee card is submitted to service station together with the appliance.

Technical data

							
	CLASSIC	MICRO	SMALL	MEDIUM	LARGE	XL-con	XL-pro
Nominal battery voltage	6V	12V	12V	12V	12V	12/24V	12/24V
Charge Current	0.8A	0.8A	4A	8A	15A	30A/15A	30A/15A
Battery size	1.2Ah to 32 Ah	1.2Ah to 32Ah	3Ah to 80Ah	20Ah to 160Ah	40Ah to 300Ah	90Ah to 600Ah	3Ah to 600Ah
Max. total input power	8W	15W	75W	150W	275W	525W	525W
Input voltage (Mains voltage)	230Vrms±10% 50Hz ±3Hz						
Ripple voltage (charging old battery with 40% capacity left)	100mVpp	<100mVpp	<100mVpp	<100mVpp	<100mVpp	<100mVpp	<100mVpp
Current ripple (charging old battery with 40% capacity left)	3%	3%	3%	3%	4%	4%	4%
IP classification	IP65	IP65	IP65	IP65	IP44	IP44	IP44



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