



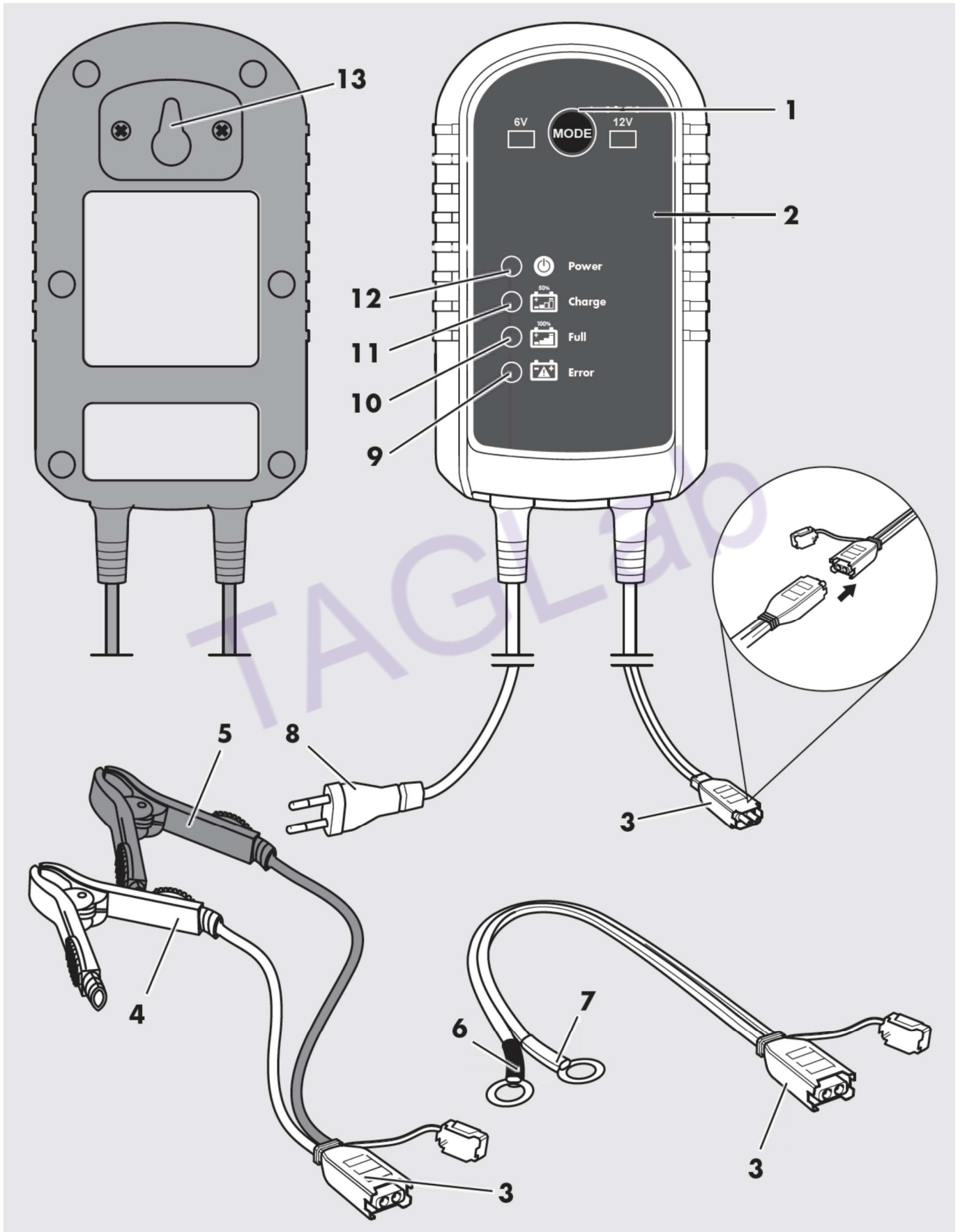
C4

Battery Charger User Manual

Battery Charger User Manual (EN) ----- 1~16

TAGLab

Battery Charger User Manual



No.	Functions
1	MODE button for selecting the voltage - 6V or 12V The Red LED will light up next to 6V or 12V as per the selection.
2	C4 Charger
3	Quick connection plug
4	Terminal connection cable (+) with clamp (red)
5	Terminal connection cable (-) with clamp (black)
6	Terminal connection cable (-) with ring lug (black)
7	Terminal connection cable (+) with ring lug (red)
8	Mains cable
9	Error – Red LED - see “Troubleshooting”.
10	Full – Green LED - Lights up once the connected battery is fully charged.
11	Charge – Orange LED - Lights up during the charging process.
12	Power – Green LED - Lights up whilst the charger is connected to the 230V / 50Hz mains socket.
13	Mounting hook

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Introduction

- Explanation of symbols and pictograms used in this user manual and/or the device:



You must follow these instructions prior to each use of the device
Follow warnings and safety instructions



The gases are explosive. The charger contains components which can cause sparks. Sparks occurring on connection may cause an explosion. Place the charger in a suitable area.



Never connect and disconnect the clamps of the charger to the terminals of the battery when the mains plug is plugged into a socket



You must always remove the mains plug from the socket first.



Class II appliance. No earth connection is required.
Double-insulated casing

IP65

Dust and water resistant



Never dispose the electrical equipment with daily waste

- **Attention:** On certain vehicles, disconnection of the battery may lead to a loss of information and not being able to restart. Refer to the vehicle manufacturer's instruction manual.
- Carefully study the user manual. The user manual should be kept in a safe place and submitted together with the device in the event of these changing hands.
- Thank you for purchasing **TAGLab C4 Battery Charger**.
- The TAGLab C4 is suitable for charging open and a variety of closed, maintenance-free lead-acid batteries as found in bike, cars, boats, and other vehicles, e.g.
 - WET batteries (Wet) Lead-acid batteries (liquid electrolyte)
 - GEL batteries (gel-type electrolyte)
 - AGM batteries (electrolyte inside absorbed glass matt)
 - Maintenance-free lead-acid batteries (MF)








- The device is designed to recharge 6V and 12V lead acid batteries. It delivers a maximum current of 4A. The power supply voltage is 230V/50Hz.
- This device is not intended for use by children or persons with limited mental capacity or lacking experience and/or lacking expertise. Children should be supervised to ensure they do not play with the device.
- Any other use or modification of the device is considered improper and involves significant risks. The manufacturer assumes no liability for damages due to improper use.
- A sealed battery will not have removable caps and requires no maintenance. It is important that the charging voltage does not exceed the gas release threshold. This charger is particularly suited to these batteries.

Scope of Delivery

- Charger
- Mains cable
- Quick connection plug
- Clamp terminal connection cable
- Ring terminal connection cable
- User Manual

Technical Data

Model	C4
Rated Input Voltage	230V / 50Hz
Rated Input Current	0.7A
Rated Output Voltage	6V / 12V
Charging Voltage (max.)	7.2V / 14.7V
Charging Current +/-10 %	2A / 4A
Battery Capacity	6V : 1.2 ~ 16 Ah 12V : 5 ~ 130 Ah
Ambient Temperature	0°C to +40°C
Battery Types	Lead-acid batteries (VRLA, WET, GEL, EFB, AGM)
Degree of Protection	IP65

Voltage	Mode				
6V		Charging Bike	1.2 – 16 Ah	7.2V	2A
12V		Charging Bike	5 - 60 Ah	14.4V	4A
12V		Charging Car & Motorboat	12 – 130 Ah	14.7V	4A
12V		Charging AGM winter	15 – 130 Ah	14.7V	4A
12V		Power Supply	/	13.6V	4A
12V		Regeneration	12 – 130 Ah	14.6V	0.5A

Safety

General Safety Guidelines

- Read all safety guidelines and instructions. Non-compliance with safety guidelines and instructions can cause electric shock, fire and / or serious injury. Keep all safety guidelines and instructions for future reference.

Precaution

- Hydrogen gas (electrolytic gas) may escape from the battery during charging and trickle charging. Electrolytic gas is an explosive mixture of hydrogen gas and oxygen. Contact with naked flames, hot surfaces or sparks will cause an electrolytic gas reaction. Avoid flames and sparks. Never connect the charger if you notice a smell of gas or fuel.
- Always perform charging in a well-ventilated area.
- The charger must be connected to an easily accessible 230V / 50Hz mains socket. Never operate the device if the power supply cable is damaged. It must be repaired or replaced by a qualified technician.
- Before connecting or disconnecting the battery, please unplug the charger by the plug from the mains socket. Do not leave the charger connected to mains when not in use.
- This charger must be used to charge only the batteries stipulated in this user manual. Never attempt to charge dry or non-rechargeable or NiCd or Lithium-Ion batteries with this charger.
- Never charge a frozen battery. If the liquid contained in the battery (acid) is frozen, the battery must be defrosted. Then the battery can be charged.

- Make sure that the acid of the battery does not come into contact with the skin or clothing as it may cause burns. However, if this happens then rinse the affected area immediately with water and contact your physician immediately. Never trip the battery as acid may leak. Always wear safety goggles and protective gloves.
- Store the charger in a dry place (imperatively away from dampness). Protect from liquid, rain and snow.
- Do not place the battery on top of the charger or vice versa. Do not place other equipment on top of the charger.
- Do not allow the two clamps from the charging cable to touch when the charger is on. Only touch the insulated part of the terminals (-) and (+).
- Do not connect the clamps or the battery poles through conductive tools or objects.
- Never use the charger when it has undergone a violent shock or fall. In this case, have the appliance inspected and repaired by a qualified technician.
- Position the electrical cable of the charger so that no one can walk on top of it. Set up the charger as far away from battery as the charging cable allows. Ensure that all plugs and cables are free of moisture. Never connect the device to the mains with wet or moist hands. Do not pull on the electrical cable or charging cable to prevent damaging the charger. The charging cable must never make contact with any fuel pipes e.g. gasoline pipes.
- Do not pour liquid on the charger as there is a risk of electrocution. Never cover the charger when the device is in operation. Make sure there is no risk of explosive or flammable substances e.g. gasoline or solvent, being ignited whilst using the charger.
- Do not expose to heat or an excessive source of light. Keep the charger away from naked flames, hot surfaces and sparks. Stop using the device immediately if you notice smoke or an unusual odour.
- Make sure the mains supply has been disconnected before performing battery charger installation, maintenance and upkeep work.
- Never disassemble the charger or attempt to repair the device. For inspection and repair, take it to a qualified technician. Remove all device cables from the battery before attempting to drive your vehicle.

Warning

Life-threatening danger to infants and children! Never leave children unsupervised with the packing material as this can cause suffocation. Do not allow children to play with cables – strangulation hazard. Do not allow children to play with the components or fasteners, as they could be swallowed and result in suffocation.

The manufacturer is not responsible for damages caused by:

- Improper connection and / or operation.
- Exterior force, damage to the device and / or damage to parts of the device caused by mechanical impact or overload.
- Any type of modification to the device.
- Use of the device for purposes that are not described in this instruction manual.

- Consequential damages caused by non-intended and / or improper use, and / or defective batteries.
- Moisture and / or insufficient ventilation.
- The unauthorised opening of the device.
- This will void the Warranty.

Product Description

- TAGLab C4 is designed for charging wide range of lead acid batteries used for passenger cars, motorcycles and certain other vehicles – e. g. WET batteries (with liquid electro-lyte), GEL batteries (with electrolyte in gel form) or AGM (absorbent glass mat) batteries.
- The battery capacity ranges from 6V (1.2 ~ 16 Ah) to 12V (5 ~ 130 Ah).
- The charger is equipped with a microprocessor (MCU - Micro Computer Unit) and features fully automatic 9 stages charging and maintenance.
- After selecting the connected battery type (6V or 12V), the battery charger will recognise the battery capacity and the battery condition and calculate the required charging parameters (charging voltage, charging current).
- This allows for efficient and safe charging. If the wrong battery voltage is set or the battery is defective, it will not charge and the “Error” LED will light up (also see “Troubleshooting”).
- The “trickle charge” function allows the charger to be left permanently connected to maintain the full battery charge. After completion of charging, the charger switches automatically to “trickle charge” function.

Operation

Output Voltage

- When not connected to a battery, the charger must not have any output voltage and avoid any short circuits. The charger’s intelligent program does not release any voltage until a battery is correctly connected to the charger.

Before use

- Read the user manual before connecting up the charger.
- Use safety goggles and acid-proof safety gloves.
- Ensure adequate ventilation.
- Make sure the terminals are clean, if required clean them with a brush and apply special grease to protect

the terminals.

- Read the instructions of the battery manufacturer and follow the information shown in the paragraph relating to recharging the battery in the technical documentation of the vehicle.
- For batteries requiring maintenance, it is of prime importance to check the level of electrolyte before charging and top up the level if required. Leave the caps removed during recharging. Use distilled water. Sealed batteries or not requiring maintenance do not have removable caps and do not require any maintenance.

Connecting the Charger



- Connect the required terminal connection cable (with rings or clamps) to the quick plug connection (3).
- Connect the red (+) terminal connector cable to the positive (+) terminal of the battery.
- Connect the black (-) terminal connector cable to the negative (-) terminal of the battery.
- The black (-) clamp can also be connected to the vehicle body however away from the fuel pipes. (Please refer to the vehicle manufacturer's instructions). Be sure both clamps have good contact and are firmly fixed.
- Connect the charger plug into a 230V / 50Hz mains power socket.
- If the charger is connected correctly, the "Power" LED (12) will light up. In this mode the charger will automatically reset to the default settings.
- If the battery is recognised to be defective or connected with the poles reversed, the "Error" LED (9) will light up. In this case, disconnect the charger and check the battery and the correct connection (also see "Troubleshooting").

Operating the Charger

- Repeatedly press the MODE button to select the desired charging mode, 6V or 12V. The LED will indicate your selection.
- If an incorrect charging mode was selected, the “Error” LED will light up. In this case disconnect the charger, wait for some time and reconnect it.
- The charging process will start automatically. The “Charge” LED will light up throughout the charging process.
- The battery is fully charged when the “Full” LED lights up and the “Charge” LED goes out.
- When the battery is fully recharged, the charger will switch to trickle charge to maintain the charging status and protect the battery from overcharging.

Charging Time

- Charging time mainly depends on battery condition and the battery capacity.
- Unused battery stored for prolonged periods may be strongly sulphated or defective. Such battery may not be recharged correctly. The charger may indicate such battery as charged. In this case the battery may no longer be used and must be changed.
- Battery requires regular maintenance and does not have an unlimited service life over time. This is why the battery must be maintained by way of monthly recharges in the event of not being used for prolonged periods.

Disconnecting the Charger

- **Completing charging and disconnecting the charger**
- Always first disconnect the power plug from the mains power socket.
- Disconnect the black (-) terminal connection cable from the negative (-) battery terminal.
- Disconnect the red (+) terminal connection cable from the positive (+) battery terminal.

Back-up / Power Supply

- Under the condition of vehicle battery is taken out from engine compartment, connect positive (+) and negative (-) clamps to power supply connection column in engine compartment correctly, and then connect the charger to 230V / 50Hz mains power socket, the charger will supply power to car appliances (e.g. radio, stereo) automatically.
- "Charge" LED will light up during the power supply.

Alternator Testing

(Available in selected models only)

- Connect the positive (+) and negative (-) clamps to the battery correctly,

- Do not connect to the mains input.
- After 2 seconds, the “Power” LED will light up.
- “Full” LED will light up if voltage is between 13.3V and 15.5V which means alternator system is OK.
- If voltage is lower than 13.3V or higher than 15.5V. “Error” LED will light up which means alternator is in bad condition.

Maintenance

Maintaining the Charge

- The charger automatically switches to charge holding when the battery is recharged. If the energy is removed from the battery during the charge holding, the charging current increases accordingly. The charger can remain connected to a battery without any harmful overcharge.

Incorrect Polarity

- Disconnect the charger from the mains and correct the connection to the battery.

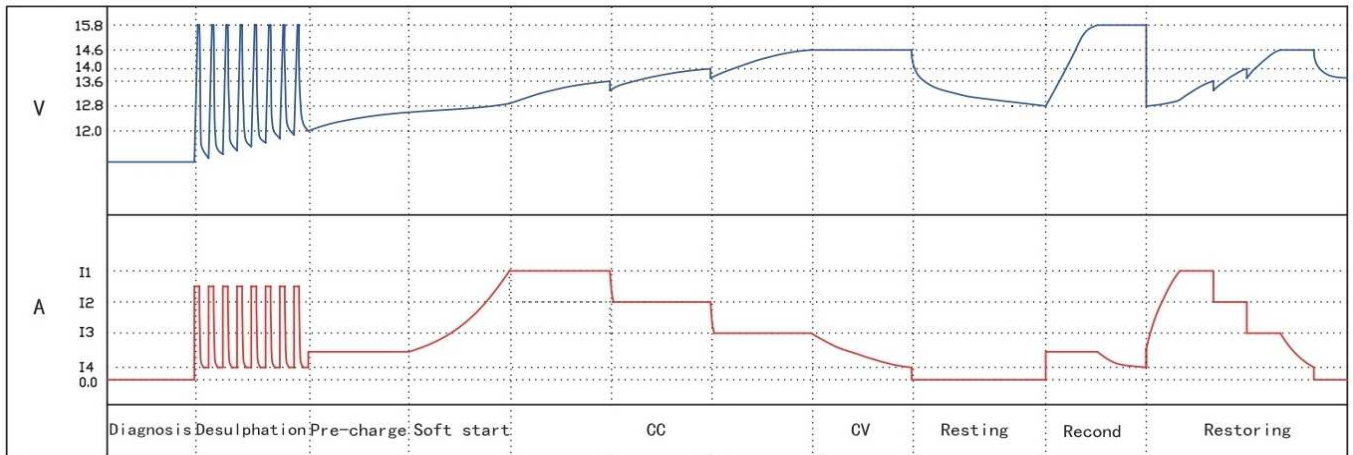
Diagnostic

- The diagnostic function is provided to automatically check the status of the battery and recognize the voltage.

Voltage	Function
0 V to 1.5 V	“Error” LED (9) lit. Battery defective.
1.5 V to 12 V	Charging starts.
12 V to 13 V	Maintenance charging starts.
14.6 V	Battery fully charged. “Full” LED (10) lit.
>15 V	“Error” LED (9) lit.

Charging Phases

- The charger uses a 9-stage charging process designed to optimally charge and maintain batteries. (The below illustration show the charging phases when charging a 12V deeply discharged battery)



Stage 1: Diagnosis

- The charger checks the battery condition and calculates the required charging parameters.

Stage 2: Desulphation

- The charger can rescue most drained batteries with voltages up to a minimum of 1.5 ± 0.5 V.
- The safety switch does not allow the charger to start charging if the voltage is below 1.5 ± 0.5 V.
- At a voltage range of 1.5 ± 0.5 V to 10.5 ± 0.5 V the charger will initiate pulse charging.
- If the voltage rises above 10.5 ± 0.5 V, the charger will switch to the previously selected regular charging mode, which will charge faster and more safely.

Stage 3: Pre-charge

- The battery is gently charged with a low charging current to return the battery to a chargeable state

Stage 4: Soft start

- The battery is gently charged with a low charging current.

Stage 5: Primary charging CC1/CC2/CC3 (Constant Current):

- The battery is quickly and safely charged at the maximum charging current.

Stage 6: Absorption CV (Constant Voltage):

- The battery is charged at a current end-of-charge voltage until charging current no longer flows. Voltage is kept at 14.6V DC.

Stage 7: Float Charge

- Once the battery is fully charged, the charging process will stop. The charger will cut off with full charged status and achieves the high energy efficiency;

Stage 8: Reconditioning

- After resting for 2 minutes from fully charged status if detected that the voltage dropped to 12.8V, the charger will charge at high voltage to recover the battery.

Stage 9: Restoring

- The charger monitors a fully charged battery automatically. If the battery voltage falls below 12.8V, the charger will restart from stage 4 to stage 7.

Safety Functions

- The charger features the following safety features to prevent damage to the charger and the battery or the vehicle:
 - Short Circuit Protection (defective battery),
 - Reverse Charge Protection (connected with reversed polarity),
 - Sparking
 - Over Heat Protection
 - Over Current Protection
 - Over Charge Protection

Trouble shooting

- Common problems and solutions:
- No display: check the mains cable and the current connector.
- For safety sake, a battery voltage of at least 2.5V is required to start a charge.
- Separate the charger from the mains and check the connection

Error	Possible Cause	Solution
The "Error" LED indicator lamp (9) goes on	Battery defective. The battery voltage is less than 1.5V and greater than 0.5V The battery voltage is less than 5V for a 6V battery or less than 11V for a 12V battery after charging the battery for 4 minutes Battery voltage is under 6V or 12V after 2 minutes of fully charging Unable to fully charge within 24 hrs.	Have the battery checked by a specialised workshop Change the battery.
	Battery incorrectly connected / not connected.	Disconnect the charger and check the connections.
	Battery voltage selected not correct (6/12 V)	Disconnect the charger and wait for the LED indicator lamps to go out. Then reconnect the charger and adjust to the correct battery voltage.

<p>Battery not accepting charge</p>	<p>No mains voltage, charger not connected.</p> <p>Faulty connections to battery terminals</p>	<p>Make sure that the charger is plugged into a 230V / 50Hz mains socket and that the “Power” LED indicator lamp (12) goes on. The battery may also be defective</p> <p>Unplug the charger and check the battery connection; ensure that there is a good connection at the battery terminal/post and/or vehicle chassis.</p>
<p>High charging time</p>	<p>In the event of low temperatures (under 0°C), the charge is only performed with a very low current. This will extend the charging time. As the battery warms up, the charging current is adjusted accordingly.</p>	<p>Charge the battery in normal conditions.</p> <p>Risk of explosion.</p> <p>Never charge frozen batteries.</p>
	<p>Battery capacity too high for the charger used.</p>	<p>Use a suitable charger.</p>
<p>Battery voltage too low.</p>	<p>Battery not charged for long enough.</p>	<p>Make sure that the battery was charged for a sufficient amount of time.</p>

Information

Care

- This device has been designed for a long service life with minimum maintenance. Regular cleaning and maintenance is however advised.
- First remove the device from the mains socket before performing any cleaning and maintenance work.
- Clean the device from time to time with a damp cloth. Do not use abrasive products or solvents or liquids.
- Do not immerse the device in water. Clean the connection clamps after each use and remove any battery liquid to prevent corrosion.
- Carefully wind the cable when storing the device. This will help prevent accidental damage to the cable and the device.
- Store the device in a clean, dry place.
- This device is only to be repaired by qualified technician using genuine spare parts so as to maintain operating reliability.

Disposal

- The product must not be disposed of in the household waste but suitably recycled.
- Do not throw electrical appliances in with domestic waste.
- Illustrations may vary slightly from the product itself. We reserve the right to modify the product in accordance with technical advances. Additional accessories shown in illustrations are not included.

Warranty

- This device is supplied with a 1 year warranty as of the date of purchase.
- It is manufactured with due care and checked diligently prior to delivery.
- Please retain the Purchase Invoice.
- This warranty is only valid for the initial purchaser and is not transferable.
- The warranty applies only to material defects or manufacturing errors and not to wearing parts or damage to fragile components, e. g. switches, cables.
- The warranty is rendered invalid by incorrect, inexperienced handling, the application of force and tampering with the device.

**** End ****

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