

CONGRATULATIONS

on the purchase of your new professional switch mode battery charger. This charger is included in a series of professional chargers from CTEK SWEDEN AB and represents the latest technology in battery charging. PRO 60 is a charger with multiple adjustable parameters.

DISPLAY AND BUTTONS

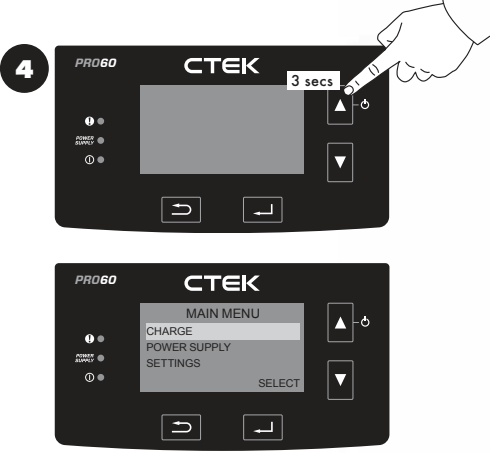
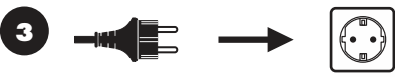
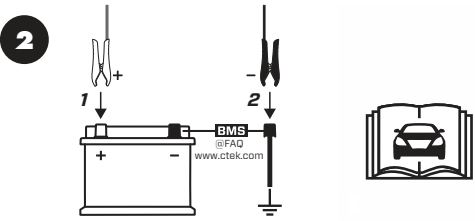


	ON/OFF-button. Press 3 seconds to start or interrupt charging. Press to scroll up in menu and to increase values.
	Press to scroll down in menu or to decrease values.
	Press to activate selected program or setting.
	Press to step back or stop in menu.
	Lights red to indicate error (see errors and displays).
	Lights yellow when power supply mode is active.
	Power connected and switched on.

HOW TO OPERATE

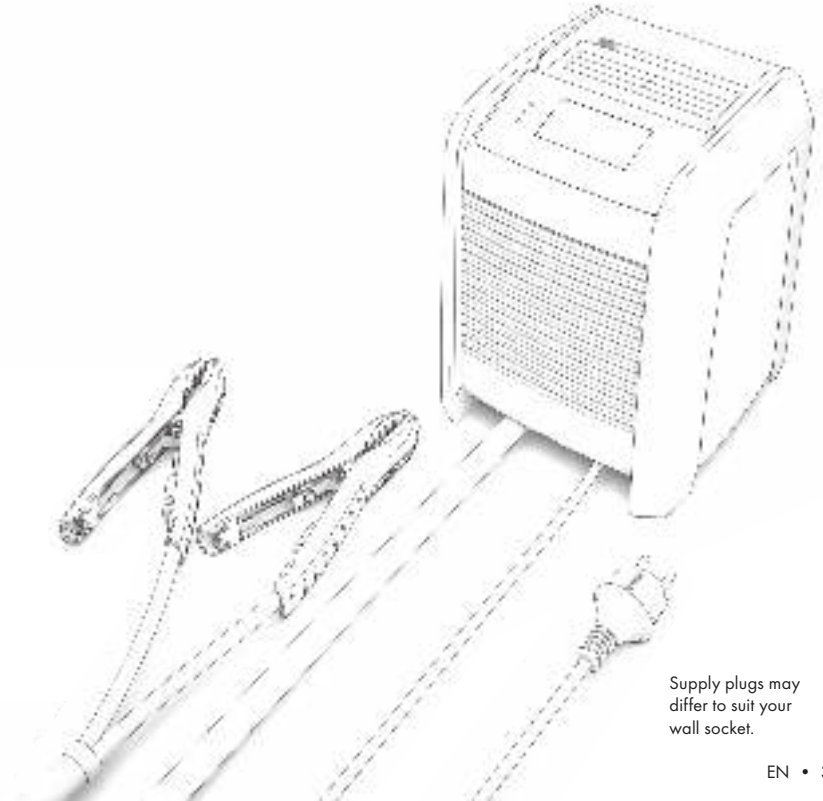
1 Read safety instruction

- Lesen Sie die Sicherheitsanweisungen
 - Lisez les consignes de sécurité
 - Leer las instrucciones de seguridad
 - Leggere le istruzioni di sicurezza
 - Lees de veiligheidsaanwijzingen
 - Läs säkerhetsanvisningen
 - Læs sikkerhedsanvisningerne
- Les sikkerhetsinstruks
 - Lue turvallisuusohjeet
 - Přečtěte si bezpečnostní pokyny
 - Прочтите инструкцию по технике безопасности
 - Przeczytaj zalecenia dotyczące bezpieczeństwa



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Supply plugs may differ to suit your wall socket.



AUTO-program analyzes the battery and selects optimal current for the size of the battery. AUTO program is disabled when charging lithium batteries.



WARNING! Do not charge Lithium batteries with Lead-Acid battery program or vice versa.



LITHIUM Batteries with DISCHARGE Protection

Some Lithium-ion batteries have an on-board discharge protection that disconnects the battery to avoid it becoming too deeply discharged. This prohibits the CTEK charger from detecting that there's a battery connected. To safely bypass the discharge protection, press the START-button. Once the discharge protection has been bypassed and the battery is ready to be charged, the charger automatically starts the charging cycle.



LOCK BUTTONS

Lock buttons if charger used in public or unattended.
Press and hold buttons for 3s to lock/unlock buttons

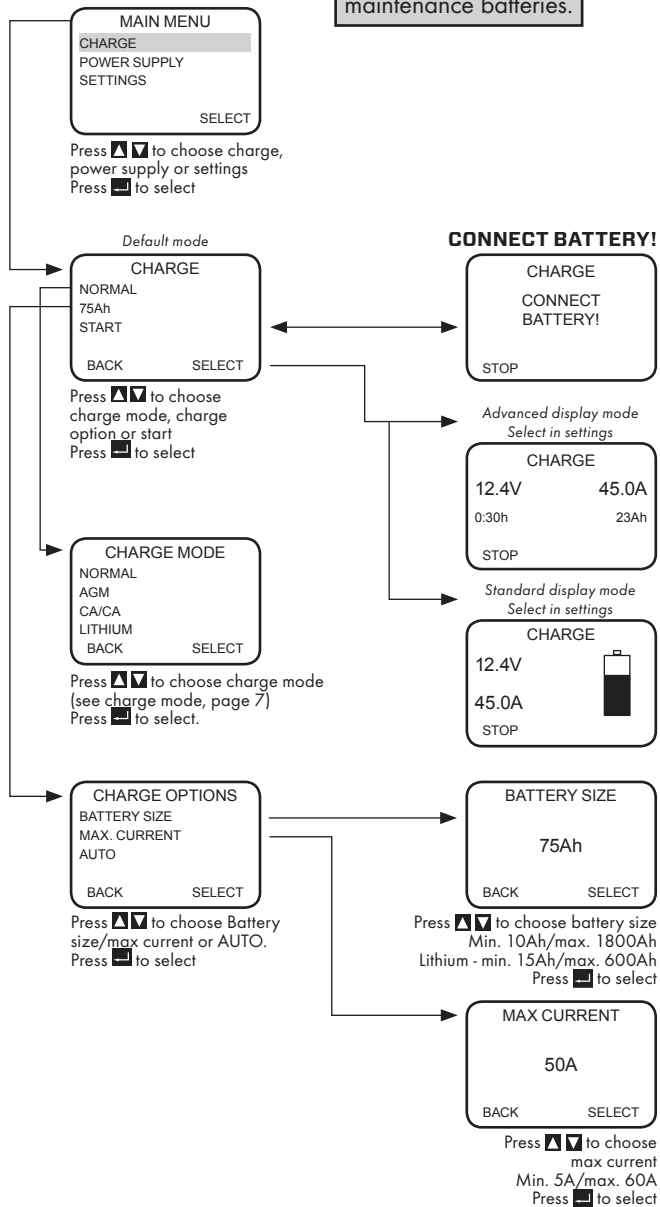


MEMORY SAVER

Turn the memory saver feature ON when using PRO60 to supply power to the car when the battery as not connected. Spark protection is disabled when ON is chosen.
When using supply with battery present, use Memory Saver OFF.

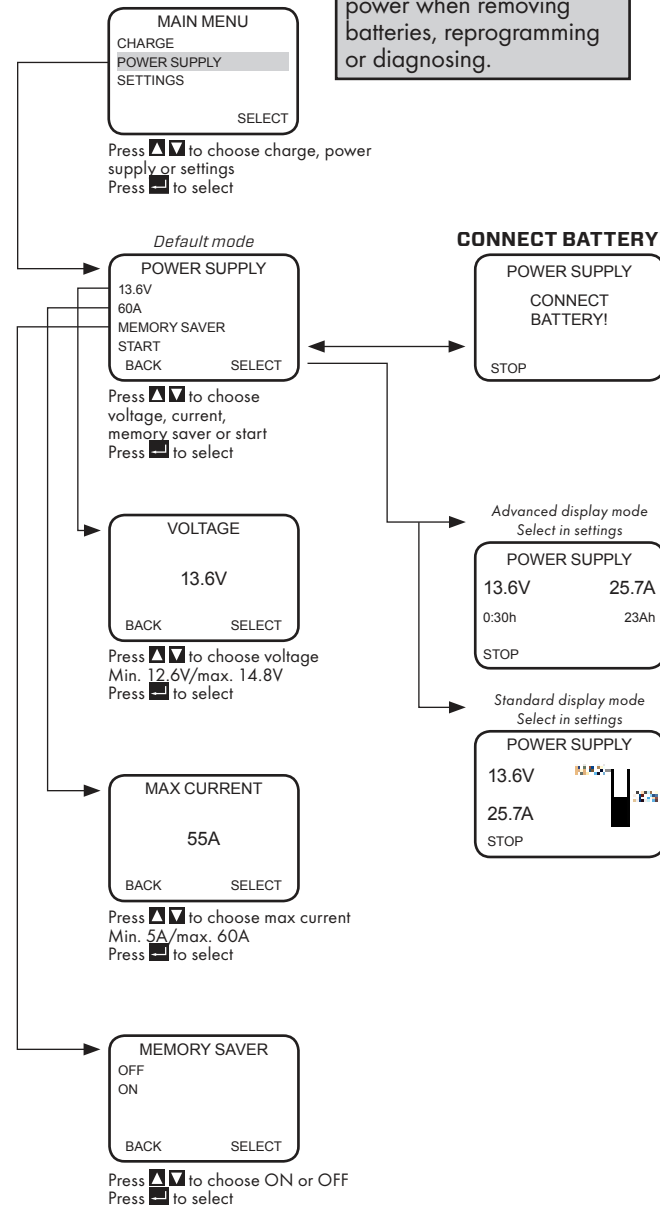
CHARGE

Use to charge or maintenance batteries.

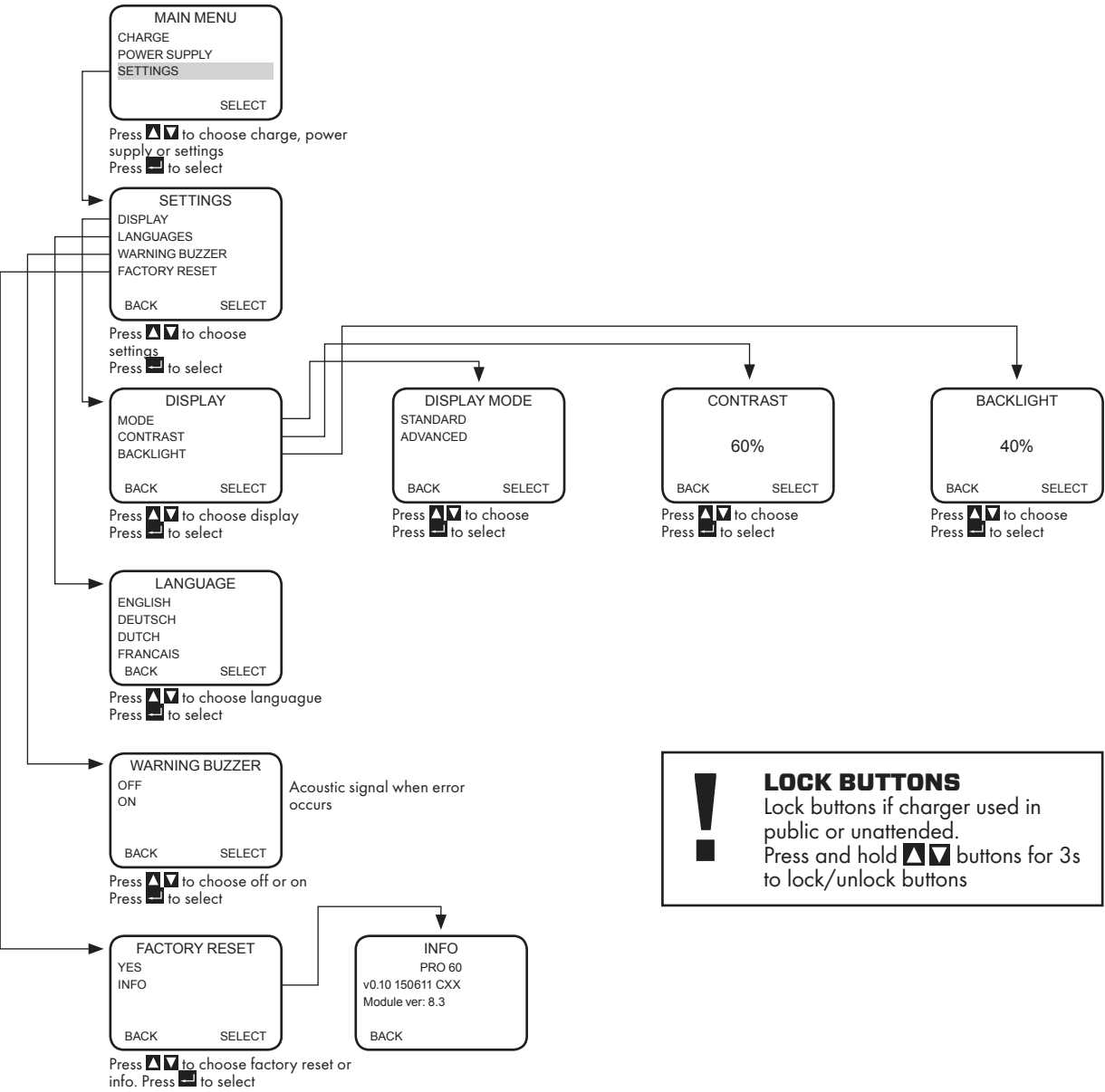


POWER SUPPLY

Use to supply vehicles with power when removing batteries, reprogramming or diagnosing.



SETTINGS



RECOMMENDED CURRENT

12V		
Current	Battery size Min	Battery size Max
5A	10Ah	150Ah
10A	20Ah	300Ah
20A	40Ah	600Ah
30A	60Ah	900Ah
40A	80Ah	1200Ah
50A	100Ah	1500Ah
60A	120Ah	1800Ah

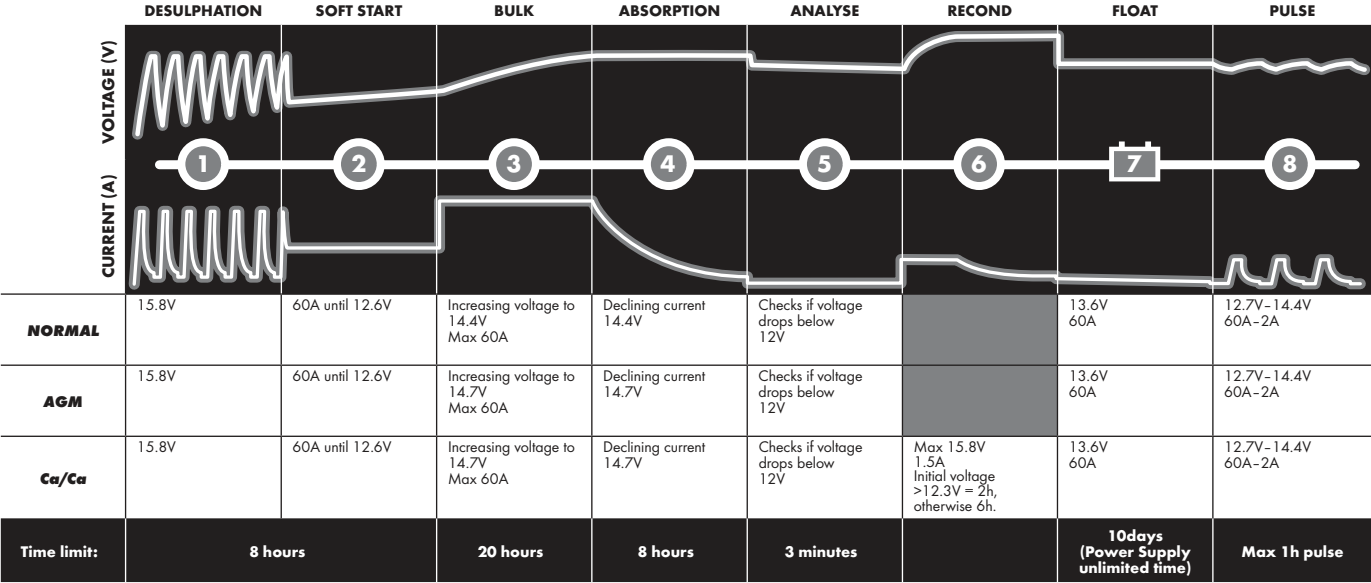
- Using higher current than recommended may result in batteries not being completely charged.
- Using lower current than recommended will prolong the charging time.
- The currents are the maximum recommended current for battery charging. If a parallel consumer is connected then the current setting could be increased with this current value.

READY TO USE

Table shows estimated time to take battery from empty to 80% charged

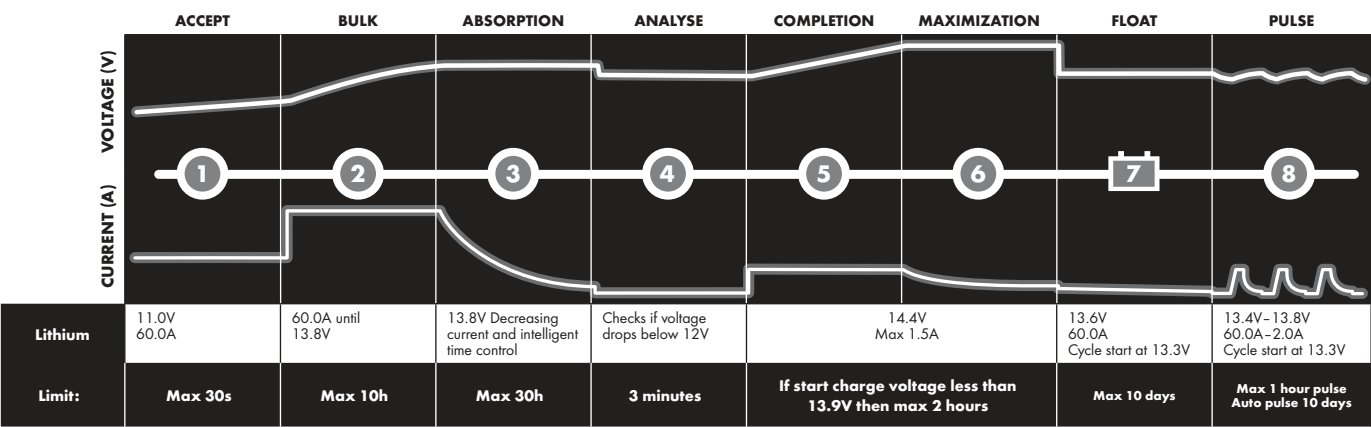
		BATTERY SIZE					
		10Ah	20Ah	50Ah	150Ah	900Ah	1800Ah
CHARGING CURRENT	5A	2h	3h	8h			
	10A		2h	4h	12h		
	20A			2h	6h	36h	
	40A				3h	18h	
	60A				2h	12h	24h

CHARGING PROGRAMS LEAD-ACID BATTERIES



- STEP 1 DESULPHATION**
Detects sulphated batteries. Pulsing current and voltage, removes sulphates from the lead plates of the battery restoring the battery capacity.
- STEP 2 SOFT START**
Tests if the battery can accept charge. This step prevents charging a defective battery.
- STEP 3 BULK**
Charging with maximum current until approximately 80% battery capacity.
- STEP 4 ABSORPTION**
Charging with declining current to maximize up to 100% battery capacity.
- STEP 5 ANALYSE**
Tests if the battery can hold charge. Batteries that cannot hold charge may need to be replaced.
- STEP 6 RECOND**
Select the Ca/Ca program to add the Recond step to the charging program. During the Recond step voltage increases to create controlled gassing in the battery. Gassing mixes the battery acid and gives back energy to the battery.
- STEP 7 FLOAT**
This step maintains the battery voltage by providing a constant voltage charge.
- STEP 8 PULSE**
Maintaining the battery at 95-100% capacity. The charger monitors the battery voltage and gives a pulse when necessary to keep the battery fully charged.

CHARGING PROGRAMS LITHIUM BATTERIES (LiFePO₄)



- STEP 1 ACCEPT**
Tests if the battery can accept charge. This step prevents that charging proceeds with a defect battery.
- STEP 2 BULK**
Charging with maximum current until approximately 90% battery capacity.
- STEP 3 ABSORPTION**
Charging with declining current to maximize up to 95% battery capacity.
- STEP 4 ANALYSE**
Tests if the battery can hold charge. Batteries that can not hold charge may need to be replaced.
- STEP 5 COMPLETION**
Final charge with increased voltage.
- STEP 6 MAXIMIZATION**
Final charge with maximum voltage up to 100% battery capacity.
- STEP 7 FLOAT**
Maintaining the battery voltage at maximum level by providing a constant voltage charge.
- STEP 8 PULSE**
Maintaining the battery at 95-100% capacity. The charger monitors the battery voltage and gives a pulse when necessary to keep the battery fully charged.

CHARGE MODES

The table explains the different charge mode:

Mode	Battery Size (Ah)	Explanation	Temp range
NORMAL	10-1800Ah	Use to charge GEL, WET and MF batteries.	-20°C--50°C (-4°F-+122°F)
AGM	10-1800Ah	Use to charge most AGM batteries including AGM START/STOP types. Some AGM should use lower voltage (NORMAL Mode), check battery manual if unsure.	-20°C--50°C (-4°F-+122°F)
Ca/Ca	10-1800Ah	Use to charge Ca/Ca batteries including AGM START/STOP types. Use Ca/Ca program to maximize charge with minimum loss of fluid.	-20°C--50°C (-4°F-+122°F)
LITHIUM (LiFePO ₄)	15-600Ah	Use to charge Lithium batteries (LiFePO ₄). "Auto-function" in "charge options" is not possible when charging Lithium batteries.	-20°C--50°C (-4°F-+122°F)

TECHNICAL SPECIFICATION

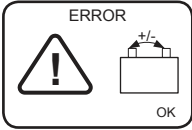
Model number	1089
INPUT	220-240VAC, 50-60Hz, 4.6A
OUTPUT	60A, 12V
Start voltage	0.8V
Back current drain*	Less than 2Ah/month
Ripple**	Less than 4% voltage
Ambient temperature	-20°C to +50°C (-4°F to +122°F)
Battery types	All types of 12V lead-acid batteries (WET, EFB, Ca/Ca, AGM and GEL). 12V (4cells) LiFePO ₄ batteries.
Battery capacity	10-1800Ah, Lead Acid battery types 15-600Ah, LiFePO ₄ battery types
Insulation class	IP40
Warranty	2 years

*) Back current drain is the current that drains the battery if the charger is not connected to the mains. CTEK chargers have a very low back current.

**) The quality of the charging voltage and charging current is very important. A high current ripple heats up the battery which has an aging effect on the positive electrode. High voltage ripple could harm other equipment that is connected to the battery. CTEK battery chargers produce very clean voltage and current with low ripple.

ERROR DISPLAYS

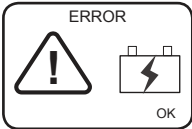
 Lights red to indicate error



Wrong polarity

Reversed polarity or short circuit in charge cables error.

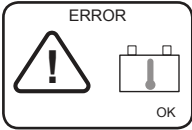
Action: Connect the charger according to "how to operate".



Overvoltage

The charger is connected to a 24V battery.

Action: Connect the charger to a 12V battery.



Overtemperature

The battery is too hot to charge.

Action: Let the battery cool down or the battery is damaged and may need to be replaced.



Broken battery

Action: Check connections and settings, and retry charging, before replacing the battery.

LIMITED WARRANTY

CTEK, issues this limited warranty to the original purchaser of this product. This limited warranty is not transferable. The warranty applies to manufacturing faults and material defects. The customer must return the product together with the receipt of purchase to the point of purchase. This warranty is void if the product has been opened, handled carelessly or repaired by anyone other than CTEK or its authorised representatives. One of the screw holes in the bottom of the product may be sealed. Removing or damaging the seal will void the warranty. CTEK makes no warranty other than this limited warranty and is not liable for any other costs other than those mentioned above, i.e. no consequential damages. Moreover, CTEK is not obligated to any other warranty other than this warranty.

SUPPORT

For support, FAQ, latest revised manual and more information about CTEK products: www.ctek.com.

