MIDTRONICS

071020251002-D

CX PRO 100-2

12V/24V

2 Channel Charger (50A/Channel)

User Manual

Contents

Safety Guidelines

SAVE THESE INSTRUCTIONS

1.1 IMPORTANT SAFETY INSTRUCTIONS. IT IS OF UPTMOST IMPORTANCE THAT BEFORE USING YOUR BATTERY CHARGER, YOU READ THIS MANUAL AND FOLLOW SAFETY AND OPERATING INSTRUCTIONS EXACTLY.

1.2 Use of an attachment not recommended or sold by the Battery Charger manufacturer may result in a risk of fire, electric shock, or injury to persons.

1.3 To reduce risk of battery explosion, follow these safety instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use near a battery. Review cautionary marking on these products and on the engine, and on the vehicle or equipment containing the battery.

If you are uncertain as to the type of battery you are attempting to charge, or the correct procedure for checking the battery's state of charge, contact the seller or battery manufacturer.

The charger is not intended to supply power to a low-voltage electrical system other than applications using rechargeable, flooded type batteries. Do not use the battery charger for charging dry-cell batteries commonly used with home appliances. These batteries may burst and cause personal injury and property damage.

WARNING

Charging a non-rechargeable battery may cause the battery to burst.

To reduce the risk of injury, only charge rechargeable flooded type batteries including maintenance free, low maintenance or deep-cycle batteries.

WARNING

Risk of explosive gases.

Batteries generate explosive gases during normal operation and when discharged or charged.

1.4 Never charge a frozen battery

1.5 To reduce the risk of damage to the electric plug and cord, pull by the plug rather than by the cord when disconnecting the unit.

1.6 Position the AC and DC leads to avoid tripping over them and to prevent damage by hood or moving engine parts. Protect from heat, oil and sharp edges.

1.7 Do not operate the unit if it has received a sharp blow, been dropped or otherwise damaged in any way. Take it to an approved service centre.

1.8 Do not disassemble the unit. Take it to an approved repair centre when repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

1.9 To reduce risk of electric shock, unplug the charger from the AC outlet and disconnect DC output leads before attempting any maintenance or cleaning. Turning off the controls will not reduce this risk.

1.10 Connect and disconnect the battery leads only when the AC supply cord is disconnected.

1.11 Never place articles on or around the unit or locate the unit in a way that will restrict the flow of cooling air through the enclosure.

1.12 An extension cord should not be used unless absolutely necessary.

1.13 Have a damaged cord or plug replaced immediately.

1.14 Do not expose the unit to rain or snow. Use the charger in a dry area.

1.15 Risk of explosive gases. Batteries generate explosive gases. Charge the battery in a well-ventilated area. Do not overcharge the battery.

1.16 This equipment is for use in a commercial or industrial environment only.

1.17 This equipment is NOT suitable for use in locations where children are likely to be present.

Personal Precautions

2.1 WARNING – California Proposition 65

Battery port and related items contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects of other reproductive harm. Wash hands after handling.

2.2 Wear complete eye protection, clothing protection, and wear rubber soled shoes. Place damp cloth over battery to protect against acid spray. When ground is very wet or covered with snow, wear rubber boots. Avoid touching eyes while working near battery.

2.3 If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters the eye, immediately flush with cold running water for at least 10 minutes and seek medical attention. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes

2.4 Always have someone within range of your voice, or close enough to come to your aid, when working around flooded batteries.

2.5 NEVER smoke or allow a spark or flame near a battery or engine.

2.6 Before working with a flooded battery, remove personal metal items such as rings, bracelets, necklaces, watches, etc. A flooded battery can produce a short circuit current high enough to weld such items causing a severe burn.

2.7 Be extra cautious to reduce risk of dropping a metal tool onto the battery. It might spark or short circuit the battery or other electrical part that may cause an explosion.

Charging a Battery

3.1 Be sure the area around the battery is well ventilated while the battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other non-metallic material as a fan.

3.2 If it is necessary to remove the battery from vehicle to charge it, always remove the grounded terminal from the battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.

3.3 Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

3.4 Add distilled water in each cell until the battery acid reaches the level specified by the manufacturer. This helps purge excessive gas from the cells. Do not overfill. For a battery without caps, carefully follow the manufacturer's recharging instructions

3.5 Make sure that the charger output voltage and battery type is correct for the battery voltage and battery type you wish to charge.

3.6 Clean the battery terminals. Be careful to keep corrosion from coming into contact with your eyes.

Grounding & AC Power Cord Connection

4.1 The charger must be grounded to reduce risk of electric shock. The charger is equipped with an electric cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances

WARNING

Hazardous Voltage

An improper connection can result in electric shock.

To avoid electrical shock or burn, never alter the charger's original AC cord and plug. Disconnect the plug from the outlet when charger is idle.

4.2 This battery charger is for use on a nominal 115- 230 volt circuit with a grounding circuit. Do not use with an adapter.

4.3 If the plug does not fit the outlet have the correct outlet installed by a qualified electrician. The outlet must be earthed.

4.4 An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure;

A) That the pins on plugs of extension cord are the same number, size, and shape as those of the plug of the charger.

B) That the extension cord is properly wired and in good electrical condition;

C) That the wire size is large enough for the AC ampere rating of the charger as specified in the following table.

Recommended minimum AWG size for extension cords for battery support units				
AC Input rating Amperes	AWG size of cord			
	Length of cord, M			
	7.5	15	30	45
8 – 10	18	14	12	8
10 – 12	16	14	10	8
12 – 14	16	12	10	8
14 – 16	16	12	10	8
16 - 18	14	12	10	8

Connecting to a Vehicle

If the battery needs to be removed from the vehicle for charging, ensure it remains upright during lifting and carrying. When charging the battery in the vehicle, switch off all electrical consumers before attaching the charger.

Connect the charger to the battery prior to plugging it into the mains. Attach the red cable to the battery's positive terminal first, followed by the black cable to the negative terminal.

Warranty & Service

For technical support call +44 (0)1453 840 401 or email info@rotronicsbms.com

For repair service, email service@rotronicsbms.com or call +44(0)1453 840 401

Manufacturer Information

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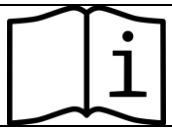
This symbol is used on products that contain a hazardous element and therefore cannot be thrown away in the normal way.

It appears on Electrical and Electronic Equipment (EEE) as part of the WEEE (Waste EEE) directive – separate collection facilities will be set up to divert WEEE away from landfill; funded by producer and retailers of EEE.

Symbols Explained

Please refer to these instruction

	Please refer to these instructions
Lead-Acid	Flooded/Maintenance Free Battery
AGM	Absorbant Glass Mat Battery
Li-ion	LiFePO4 / LFP Battery
A	Amps

Environmental Information

Working Temp ˚C	+0 to +40
Working Humidity	20 – 90% Non Condensing
Storage Temp ˚C	-40 - +85
Storage Humidity	10 – 95% RH
Input Voltage Range	115 – 240 VAC
Input Current (Typ)	8.2A / 115 VAC 3.9A/230VAC
O/P Rated Current	50A
O/P Rated Power	750W
Dimensions W x H x D	280 x x260 x 100 mm
Weight	6.2 KG

Battery Charger Model: CX PRO 100-2
Instructions for Use

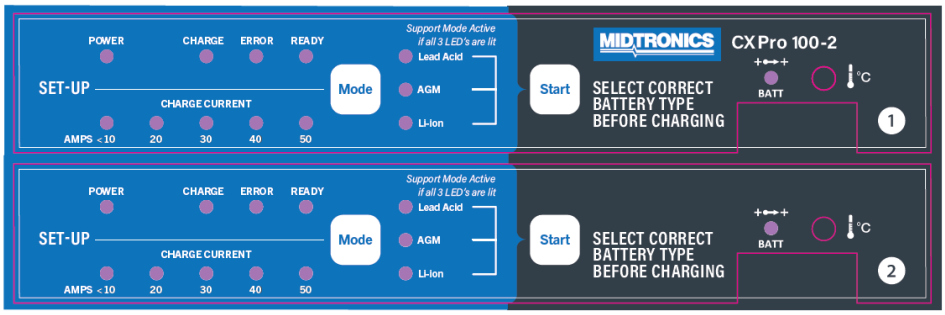
WARNING

1. DO NOT USE THIS BATTERY CHARGER OUTSIDE, FOR INDOORS USE ONLY.
2. DO NOT USE THIS BATTERY CHARGER IF IT BECOMES WET OR IF THE OUTPUT OR INPUT LEADS ARE DAMAGED.
3. DO NOT OBSTRUCT THE VENTILATION SLOTS IN THE CHARGER CABINET.
4. THE BATTERY MUST BE CHARGED IN A WELL-VENTILATED AREA.
5. WHEN THE BATTERY IS REQUIRED, DISCONNECT FROM THE MAINS BEFORE DISCONNECTING FROM THE BATTERY.
6. THE PLUG IS THE PRIMARY DISCONNECT AND SHOULD BE READILY ACCESSIBLE AT ALL
7. ONLY THE SUPPLIED OUTPUT LEAD SETS SHOULD BE USED. USE OF NON-APPROVED LEAD SETS COULD RESULT IN DAMAGE TO THE BATTERY

Step By Step Instructions

A. CONNECT THE OUTPUT LEAD (RED) TO THE POSITIVE (+) TERMINAL.
B. CONNECT THE OUTPUT LEAD (BLACK) TO THE NEGATIVE (-) TERMINAL.
C. CONNECT THE BATTERY CHARGER MAINS LEAD TO A SUITABLE ELECTRICAL SUPPLY. (SEE REAR OF CHARGER)
D. IF REQUIRED, SWITCH ON THE ELECTRICAL SUPPLY FOLLOWED BY THE CHARGER “ON” SWITCH (IF FITTED).
E. MAKE SURE THAT THE MAINS POWER LED IS ILLUMINATED.
F. SELECT THE BATTERY TECHNOLOGY THEN PRESS THE ‘START’ BUTTON. THE CHARGING AMBER LED WILL ILLUMINATE FOLLOWED BY THE FIVE RED LED’S SHOWING PERCENTAGE OF CHARGE.
G. WHEN THE CHARGE IS COMPLETE THE GREEN LED WILL ILLUMINATE. THE BATTERY. CHARGER CAN BE LEFT CONNECTED TO THE BATTERY UNTIL REQUIRED FOR USE. THERE IS NO DANGER OF OVERCHARGING THE BATTERY.
H. THE PRO100-2 CHARGER HAS BEEN SET TO SUIT VARIOUS BATTERY TYPES FROM 80 TO 500 AMP/HOUR.

Charge Indication



BATT	Illuminated Green when a battery is connected correctly. Red if reverse polarised. Unlit in no battery recognised
CHARGE ON	Bulk Charge / Flashing = Absorption
READY Blue	Battery able to start engine (LiFePO4 and Li-ion only)
READY Green	Charge Complete – If green < 10s after starting charge either battery was fully charged or it is exhibiting an undiagnosed fault.
ERROR	Fault identified with battery – Investigate with tester

Battery Charger Temperature Control (Optional)

The charger can utilise an optional leadset incorporating a temperature probe for measurement of battery terminal temperature and output feedback allowing for alternative cable lengths to be used. Please contact manufacturer to request price.

Charging voltage for Lead Acid is 14.5V

Charging voltage for AGM is 14.8V

Charging voltage for Li-ion (LiFePO4) is 13.6V

Li charging current is profiled to allow safe charging.

Charging Out of Vehicle

To select out of vehicle Li battery charging (LiFePO4 and Li-ion): Press the ‘MODFE’ switch to select the correct battery chemistry. WARNING: Only charge a Lithium battery using the ‘Li’ setting otherwise damage to the battery may occur. Connect the battery to the charger. Ensure the ‘BATT’ LED is GREEN. If it is RED, check the connections are the right way around. To start charging, press and hold the ‘START’ switch for more than 2 seconds. When complete the ‘READY’ light will come on.

Charging In Vehicle

To select in vehicle Li battery charging (LiFePO4 and Li-ion): Press the ‘MODE’ switch to select the correct battery chemistry. WARNING: Only charge a Lithium battery using the ‘Li’ setting otherwise damage to the battery may occur. Connect the battery to the charger. Ensure the ‘BATT’ LED is GREEN. If it is RED, check the connections are the right way around. To start charging, press the ‘START’ switch. The ‘CHARGE’ LED should come on. It will flash if the battery is nearly fully charged. The ‘CHARGE’ light will flash off to indicate In vehicle charging is in progress. It will flash if the battery is nearly fully charged. When complete the ‘READY’ LED will come on.

Current Indication

The ‘CHARGE CURRENT’ lights indicate the battery charging current.

Support Mode – Nominal 14.2V

The CX Pro100 offers a PSU function which will output a simple DC voltage up to a maximum of 14.2V. This voltage will vary depending on the load applied to the output. To activate, connect to the vehicle battery and press the ‘MODE’ switch until all ‘MODE’ lights (Lead Acid//AGM/Li) are on. Press the ‘START’ switch to enable battery support at 14.2V. Pressing ‘START’ again will turn support mode off. Be aware that automatic battery disconnection is disabled in support mode and so terminals will remain live even if disconnected.

Recovery Mode (LiFePO4 & Li-ion only)

Connect to the vehicle battery, ensure that the connection is the correct way around, ‘Red’ to battery +positive, ‘Black’ to battery- negative. Press the 'MODE' switch until AGM is lit. Now press and hold 'MODE' for 5 seconds to enable the recovery output. The Li-Ion LED should now be lit. Press ‘MODE’ or ‘START’ to turn the recovery output off.

Error Light

The ERROR light will come when the ‘start’ switch is pressed with no battery connected or if a fault is detected with the battery.

It will flash to indicate the following conditions:

Code 1 - General Error

Code 2 - Charge time exceeded

Code 3 - Faulty battery detected

Code 4 - Overvoltage trip (battery voltage higher than charger output)

Code 5 - Short circuit detected in output connection

For user manual updates and more information scan the QR Code

MIDTRONICS www.midtronics.com

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