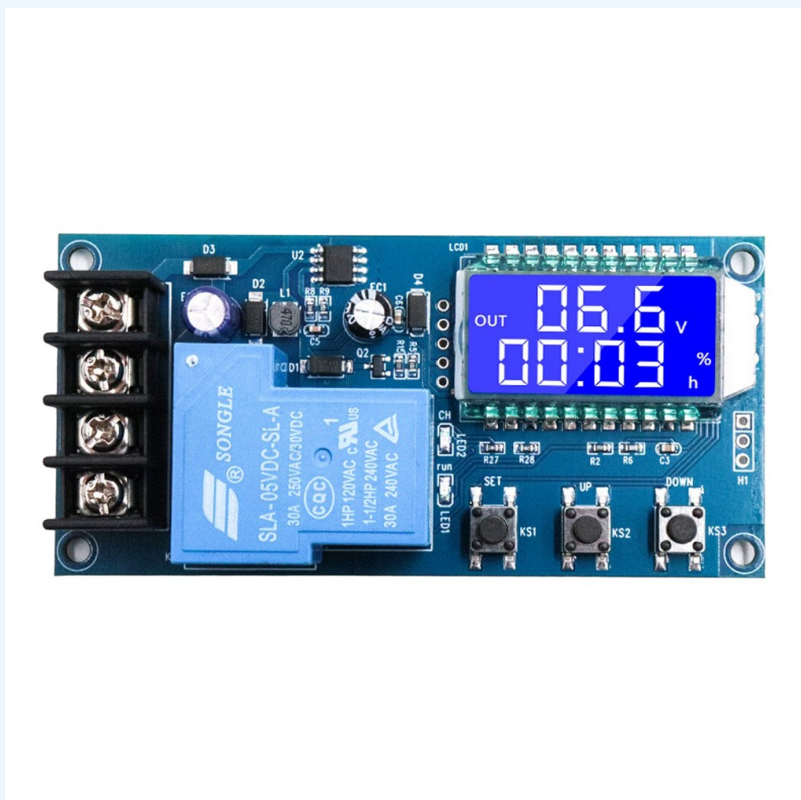


Automatic charge control, set up right.

amiciSmart 30 A battery charge control module with LCD · SKU 1xDC-BORD-CHR-30-N



6–30 V

Operating range **6–30 V DC**

For **12 V** and **24 V** batteries

Relay **30 A max** (30 A at 30 V DC)

LCD voltage, % and time

Switches your charger on and off automatically at the battery voltages you set.

Charge control only. The module connects and disconnects your charger. It does not convert voltage and cannot limit current, so the charger must suit your battery.

Never use above 30 V DC. The relay contacts are rated 30 A at 30 V DC. Use it only with 12 V and 24 V battery systems. Do not connect 36 V, 48 V or higher batteries or chargers.

CONTENTS

What is in this guide

SKU 1xDC-BORD-CHR-30-N · Version 1.0

01	Safety	page 3
	The 30 V DC limit and other rules	
02	Product overview	page 4
	Terminals, display, buttons and lights	
03	Wiring	page 5
	Battery and charger connections	
04	Setting the limits	page 6
	Lower (dn) and upper (UP) voltage and the charge timer	
05	Buttons and display	page 7
	Main-screen keys and display messages	
06	Serial port (UART)	page 8
	Commands and data reporting	
07	Specifications	page 9
	Ratings and dimensions	
08	Troubleshooting	page 10
	If charging does not behave as expected	

This guide is based on the module instruction manual, the relay marking and the product listing. The operating limit is 6–30 V DC, set by the relay contact rating of 30 A at 30 V DC.

01 · SAFETY

Before you connect anything

Low-voltage DC module: the 30 V limit, the charger and the battery all matter

Maximum 30 V DC

Never use this module above **30 V DC**, on either the battery or the charger side. The relay contacts are rated **30 A at 30 V DC**. Above 30 V DC the contacts can arc, weld or start a fire.

12 V and 24 V battery systems only

Use it with 12 V or 24 V batteries. Do not use it with 36 V, 48 V or higher battery systems, even though the board may power up.

The charger must match the battery

The module only switches the charger on and off. It does not change voltage or limit current. Use a charger made for your battery type and voltage, with an output no higher than 30 V DC.

Current: 30 A maximum

The charging current is set by your charger, not by the module. Keep it at or below 30 A and suited to the battery. For example, a 20 Ah battery is usually charged at about 2–3 A (instruction manual).

Wires and fuse

Use wire rated for your charging current and fit a fuse close to the battery positive terminal. Tighten all screw terminals firmly.

Batteries

Set the voltages from your battery maker's data. Lithium batteries need a suitable battery management system (BMS). Charge in a ventilated place, away from flammable material.

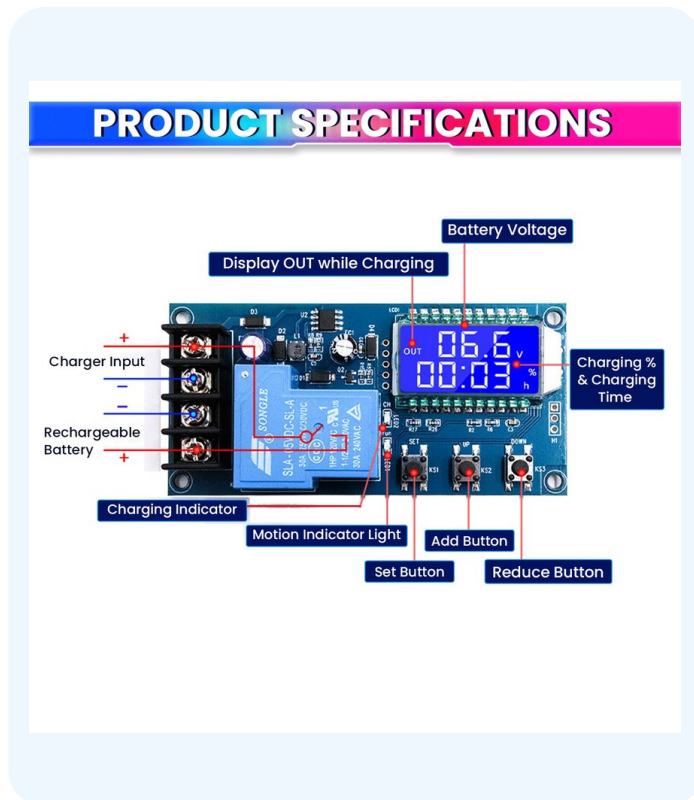
Work safely

Unplug the charger before changing any wiring. Check polarity before connecting. Mount the board on an insulating surface.

02 · OVERVIEW

Know the module

Parts as labelled on the product images



Screw terminals

Four terminals, top to bottom: **CH+**, **CH-** (charger input) and **BT-**, **BT+** (battery). The marks are printed on the back of the board.

LCD display

Top line: battery voltage. Bottom line: charge percentage and charging time. **OUT** shows while the relay is charging.

Lights

A charging indicator lights while the charger is connected through. A running light shows the module is working.

Buttons

SET, **UP** and **DOWN** (marked Set, Add and Reduce on the listing image). Pages 6 and 7 explain them.

Relay

The charger current flows CH+ → relay → BT+. The relay contacts are rated 30 A at 30 V DC.



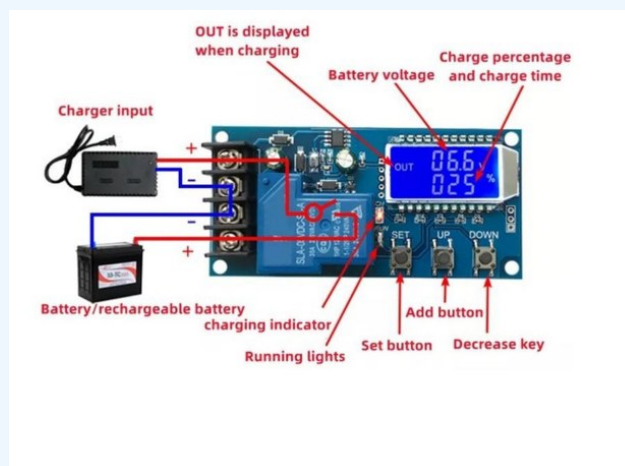
Images: product listing. Top, labelled front view. Bottom, terminal marks on the back of the board.

03 · WIRING

Battery and charger connections

Unplug the charger before wiring

Terminal	Connect to
CH+	Charger positive (+), max 30 V DC
CH–	Charger negative (–)
BT–	Battery negative (–)
BT+	Battery positive (+), through a fuse



Wiring order

1. **Battery first.** Connect battery – to BT– and battery + (through the fuse) to BT+. The module powers up and shows the battery voltage.
2. **Set the limits** for your battery (page 6) before connecting the charger.
3. **Charger last.** With the charger unplugged, connect charger + to CH+ and charger – to CH–. Then plug in the charger.
4. **Check the first cycle.** Watch that charging stops at UP and check the wires and terminals for heat in the first minutes.

04 · SETTING THE LIMITS

Lower and upper voltage, and the timer

From the instruction manual

How it works

When the battery voltage falls to the **lower limit (dn)** or below, the relay closes and the charger starts charging. When it reaches the **upper limit (UP)**, the relay opens and charging stops. You can use the battery while it charges.

Setting the parameters

1. Press and hold **SET** until the display shows **SET**.
2. Short-press **SET** to move between parameters (dn, UP, OP).
3. Change the value with **UP** or **DOWN**. Hold the key to change quickly.
4. Press and hold **SET** to save and exit.

Example: 12 V battery

dn = 12.0 V and UP = 14.5 V (instruction manual example). Check these values against your battery maker's data before use.

24 V battery

Use the charge voltages from your battery maker. Keep UP, and your charger output, at or below **30.0 V**.

Charge timer (OP)

OP limits each charge to a time from 00:01 to 99:59 (hours:minutes). --:-- (the default) or 00:00 turns the timer off. With the timer on, charging stops at UP or when the time runs out, whichever comes first. If the time runs out while the battery is still below dn, the relay stays on, the timer switches off and **H:ER** flashes. Press any key to clear it.

Main-screen keys and messages

From the instruction manual

On the main screen	What it does
SET, short press	Shows the current settings
SET, long press	Enters the settings (shows SET)
UP, short press	Switches the display to charge percentage and charging time
DOWN, short press	Turns the relay on or off. OFF on the display means the relay is disabled and the charger is disconnected
UP, long press	Backlight setting L-P. OFF: backlight always on. On: backlight turns off after about 5–10 minutes

Display	Meaning
OUT	Relay closed, charger connected to the battery
OFF	Relay disabled with DOWN. Press DOWN again to enable
Err	Lower limit dn is equal to or above the upper limit UP. Correct the settings
nbE	No battery detected. Check BT+ and BT–
H:ER	Charge timer ran out while the battery was still below dn. Press any key; check the charger and the timer setting

Charge percentage

The percentage is worked out from the battery voltage between your dn and UP settings. It is a voltage estimate, not a measured state of charge.

Charging time record

With the timer off, the module records the length of the last charge. It flashes on the time screen and resets when the next charge starts.

06 · SERIAL PORT (UART)

Commands and data reporting

Optional. For monitoring or setting the module from a microcontroller or computer

Connection

TTL-level UART, **115200 baud, 8 data bits, 1 stop bit, no parity**. Use a TTL serial adapter, not an RS-232 port. The pin order and logic voltage are not given in the instruction manual, so check the marks on your board first.

Command	Function
on	Enable the relay
off	Disable the relay
start	Start data reporting
stop	Stop data reporting
read	Read the current settings
dw12.0	Set the lower limit (dn), here 12.0 V
up14.5	Set the upper limit (UP), here 14.5 V
hh:mm	Set the charge timer, for example 05:30. 00:00 turns the timer off

Report format

Battery voltage, percentage, charging time and status, for example:
12.0V,020%,00:10,OP

Stay within limits

Never send an upper limit above 30.0 V. The 30 V DC limit applies whichever way the module is set.

07 · SPECIFICATIONS

Ratings and dimensions

Values from the instruction manual unless marked

Parameter	Value
Operating voltage	6–30 V DC. Do not use above 30 V DC
Battery systems	12 V and 24 V
Switching	Relay, CH+ to BT+. Contacts rated 30 A at 30 V DC (relay marking)
Maximum current	30 A (set by your charger; the module does not limit current)
Control	Voltage control: lower limit dn / upper limit UP; accuracy 0.1 V (listing)
Charge timer	00:01–99:59 (hh:mm); --:-- or 00:00 = off
Display	LCD: voltage, charge %, charging time; charging and running lights
Serial port	UART, TTL level, 115200 8N1
Terminals	Screw terminals CH+, CH–, BT–, BT+
Size and weight	About 92 × 45 mm, 80 g (listing)



Image: product listing. Current limiting, load disconnection, reverse-polarity protection and IP rating are not stated, so none are claimed.

08 · TROUBLESHOOTING

If something is not right

Unplug the charger before changing wiring

What you see	Possible cause	Next step
Relay clicks on and off rapidly	Charging current too high or battery too small, so UP is reached at once	Use a lower-current charger. A 20 Ah battery is usually charged at about 2–3 A.
Display shows nbE	Battery not detected	Check the battery wiring at BT+ and BT– and the fuse.
Display shows Err	dn is equal to or above UP	Set dn lower than UP.
Display shows OFF	Relay disabled	Short-press DOWN to enable the relay.
Display shows H:ER	Timer ran out below dn	Press any key. Check the charger and the OP timer setting.
No charging below dn	Charger off or wired wrongly, relay disabled	Check the charger, CH+ / CH– polarity and that OFF is not shown.
Charging does not stop	UP set above what the battery reaches	Lower UP to your battery maker's full-charge voltage (max 30.0 V).
Display goes dark	Backlight auto-off (L-P on)	Press a key, or long-press UP to set L-P off.

Still unsure? Contact amiciKart support with a photo of your wiring, your settings and the voltages shown.

[Contact support](#)

[Product page](#)