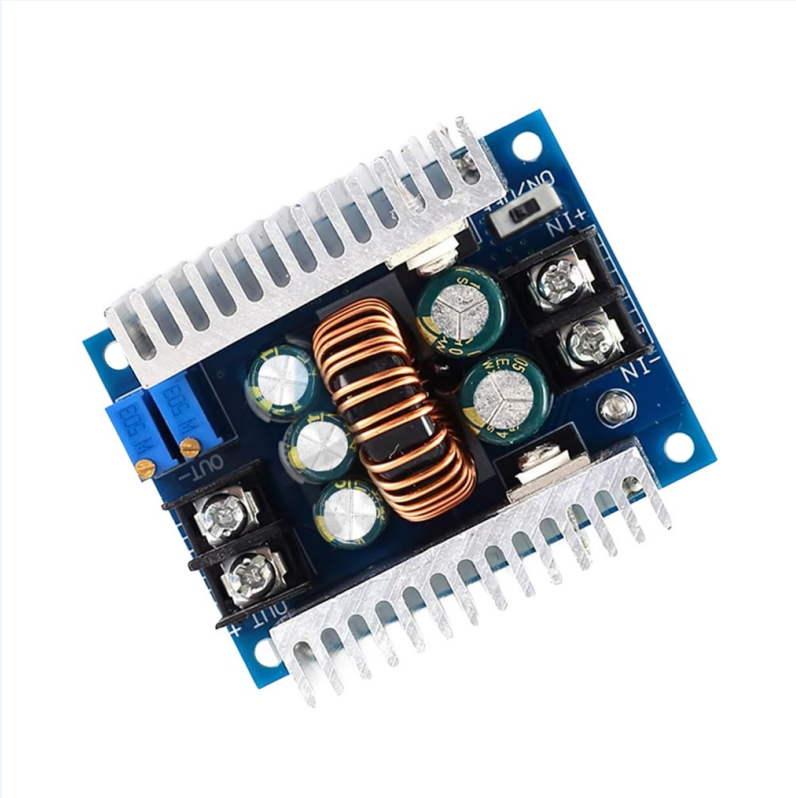


DIGITAL USER GUIDE

High-current step-down, done safely.

amiciSolar 300 W, 20 A DC-DC buck converter with constant voltage (CV) and constant current (CC) · SKU 1xBUCK-CC-300W



20 A

Input **6–40 V DC**

Output **1.2–36 V** adjustable

Up to **300 W**

CV and CC trimmers

For battery charging, LED drivers, solar and automotive projects, and bench power supplies.

Step-down only. The output is always lower than the input. Set the output with a multimeter **before** you connect your load.

Input must never exceed 40 V DC. Reverse polarity will damage the unit. Never short-circuit the output. The heatsinks get hot at high current.

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SKU 1xBUCK-CC-300W · Version 1.0

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This guide is based on the module instruction manual and the product listing. The source of values that come only from the listing is marked.

Read before installation

Safety instructions from the instruction manual

Electric shock hazard

- Disconnect power before installation or maintenance.
- Use only in dry places. Keep away from water, moisture and conductive dust.
- Input voltage must **not** exceed 40 V DC: severe damage or fire risk.
- Never short-circuit the output terminals.
- Use insulated tools and wear safety glasses during installation.

Fire prevention

- Mount on a non-flammable surface.
- Keep about 10 cm of clear space around the unit for heat dissipation.
- Do not cover the unit during operation.

Electrical safety

- Check polarity before connecting: red (+), black (–). Reverse polarity will damage the unit.
- Use wires rated for at least 20 A (for example 12 AWG silicone wire).
- If you fit the module in a metal enclosure, earth (ground) the enclosure.

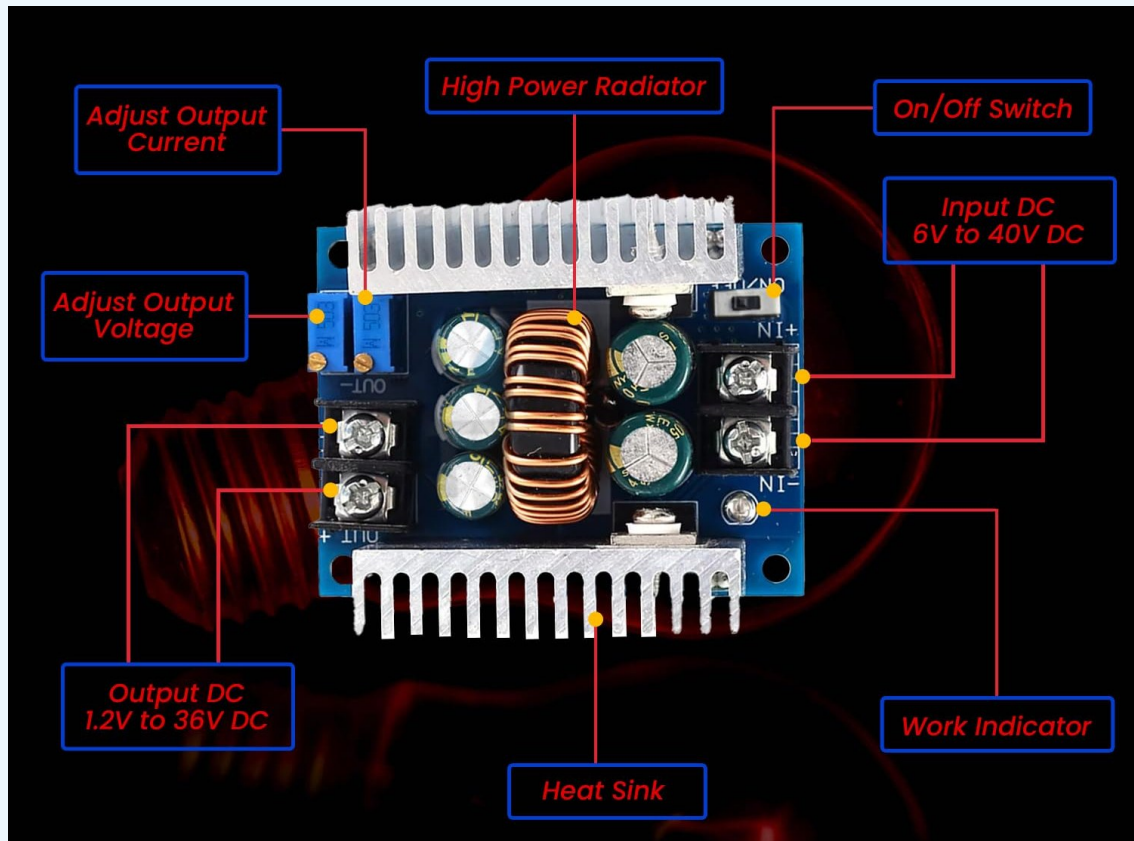
Batteries

For battery charging, set the charge voltage and current recommended by the battery maker. Never guess a charge voltage. Lithium batteries need a suitable battery management system (BMS).

02 · OVERVIEW

Know the module

Parts as labelled on the product image



Terminals

IN+ and **IN-** (input, 6–40 V DC) on one side;
OUT+ and **OUT-** (output, 1.2–36 V DC) on the other. Check the marks printed next to each terminal on your board.

Trimmers

Two blue trimmers: one adjusts the output **voltage** (CV), the other the output **current** limit (CC). Turn clockwise to increase.

On/off switch

A small slide switch next to the input terminals switches the module on and off (listing image).

Work indicator

An indicator light shows the module is working (listing image).

03 · INSTALLATION

Mounting and wiring

From the instruction manual. Turn off the power source first.

Mounting

1. Secure the unit with M3 screws (mounting holes Ø 3.5 mm).
2. Use a flat, rigid surface: bending can damage the board.
3. Do not mount near heat sources (above 85 °C). Keep 10 cm clearance for air flow.

Terminal	Connect to
IN+	Red (+) wire from the DC source, 6–40 V
IN–	Black (–) wire from the DC source
OUT+	Red (+) wire to the load
OUT–	Black (–) wire to the load

Connection steps

1. Turn OFF the power source.
2. Connect the input wires first: red → IN+, black → IN–.
3. Set the output voltage with no load connected (page 6).
4. Connect the load: red → OUT+, black → OUT–.
5. Double-check polarity.
6. Apply input power.

Critical

Reverse polarity will damage the unit. Check every connection before switching on.

04 · ADJUSTMENT

Setting voltage and current

Use a multimeter to check the output before connecting the load

Output voltage (CV)

1. Power the module with no load connected.
2. Measure the output (OUT+ / OUT–) with a multimeter set to DC volts.
3. Turn the **voltage** trimmer clockwise to increase (1.2–36 V) or anticlockwise to decrease.
4. Check the reading again before connecting the load.

Current limit (CC)

1. Turn the **current** trimmer clockwise to increase the current limit (0–20 A).
2. Set the limit below your load's maximum current: for example 18 A for a 20 A LED load (instruction manual).

How CC/CV works

CV: the module holds the voltage you set while the load draws less than the current limit.

CC: when the load reaches the current limit, the module holds the current and lowers the voltage.

Multi-turn trimmers

The trimmers need several turns for a large change. Turn slowly and keep checking with the multimeter. The output must always stay below the input voltage.

Battery charging and LED drivers

Using the CC/CV function, based on the instruction manual

Battery charging steps

1. Find the battery maker's **charge voltage** and **maximum charge current**.
2. With no battery connected, set the output voltage to the charge voltage.
3. Set the current limit to the charge current you want, within the battery's limit and 20 A.
4. Connect the battery (+ to OUT+, – to OUT–).
5. Charging starts in CC mode at the set current. As the battery nears full, the module changes to CV mode and the current falls.

Charging safety

Use the correct voltage for the battery type and number of cells. Never leave a charging battery unattended for long periods. Stop if the battery gets hot or swells.

High-power LEDs

1. Set the voltage to the LED's maximum operating voltage.
2. Set the current limit below the LED's rated current.
3. Connect the LED and check the current with a meter.

Solar input

A solar panel can supply the input only if its open-circuit voltage never exceeds 40 V.

06 · SPECIFICATIONS

Ratings and care

Values from the instruction manual unless marked (listing)

Parameter	Value
Input voltage	6–40 V DC
Output voltage	1.2–36 V DC, adjustable (below input)
Output current	20 A max, CC adjustable 0–20 A
Output power	Up to 300 W (listing). Stay within both 20 A and 300 W.
Efficiency	95 % (24 V → 12 V at 20 A)
Output ripple	≤ 50 mV
Protections	Over-current, short-circuit
Operating temperature	–40 °C to +85 °C; derate output current by 20 % above 60 °C ambient
Storage	–20 °C to +60 °C, dry
Mounting	M3 screws, holes Ø 3.5 mm

Maintenance and care

- Cleaning: wipe with a dry cloth. Never use liquids or solvents.
- Storage: keep in a dry place if unused for more than 30 days.
- Inspection: check terminals monthly for corrosion and loose connections.
- Avoid sustained operation above 85 °C.
- At full load, add a cooling fan and keep air flowing over the heatsinks.

07 · TROUBLESHOOTING

If something is not right

From the instruction manual. Turn off the power before changing wiring.

What you see	Possible cause	Next step
No output voltage	Reversed input polarity, switch off	Check the wiring and polarity. Check the on/off switch.
Output fluctuating	Input voltage below 6 V or above 40 V	Check the input source.
Overheating	Load above 20 A or poor air flow	Reduce the load; add a cooling fan.
Excessive ripple noise	Missing input capacitor	Add a 1000 μ F / 50 V electrolytic capacitor at the input.
Output stops after a short	Output short-circuit	Disconnect the load, remove the short, then reset the power.
Output will not reach the set voltage	Input too low, or CC limit reached	The output must be below the input. Check the current limit.

Still unsure? Contact amiciKart support with a photo of your wiring and the voltages you measured.

[Contact support](#)

[Product page](#)