

# Single-pole DC protection for 250 V circuits.

amiciSmart DC circuit breaker · SKU 1xDC-MCB-125A-1P · label model DCB-C125A



# 125 A

**250 V DC** rated voltage

**1-pole** · trip curve **C**

Breaking capacity **10 kA**

35 mm DIN rail · IP20

Overload and short-circuit protection for one conductor of a solar PV or other DC circuit.

**Scope:** SKU **1xDC-MCB-125A-1P** only: single-pole DC breaker, **125 A, 250 V DC, curve C, 10 kA** (ratings confirmed by amiciKart, 6 Oct 2026). This guide does not cover the two-pole 100 A or 125 A DC breakers, which have different ratings and wiring.

**Electrician installation only.** DC arcs are harder to break than AC arcs and solar modules stay live in daylight. Wrong polarity or reverse current can stop this breaker from clearing a fault.

## CONTENTS

# What is in this guide

SKU 1xDC-MCB-125A-1P · Version 1.0

|           |                                                               |         |
|-----------|---------------------------------------------------------------|---------|
| <b>01</b> | <b>Product overview</b>                                       | page 3  |
|           | Front of the breaker, label and markings                      |         |
| <b>02</b> | <b>Safety before installation</b>                             | page 4  |
|           | Check voltage, fault level and current direction first        |         |
| <b>03</b> | <b>Wiring and polarity</b>                                    | page 5  |
|           | Positive conductor · source on terminal 1, load on terminal 2 |         |
| <b>04</b> | <b>Mounting and connection</b>                                | page 6  |
|           | DIN rail, conductors, torque, dimensions                      |         |
| <b>05</b> | <b>Operation and reset after a trip</b>                       | page 7  |
|           | Switching, trip response, safe re-closing                     |         |
| <b>06</b> | <b>Technical specifications</b>                               | page 8  |
|           | Electrical, trip characteristic, environment                  |         |
| <b>07</b> | <b>Troubleshooting</b>                                        | page 10 |
|           | What you see and what to check next                           |         |
| <b>08</b> | <b>Installation record</b>                                    | page 11 |
|           | Commissioning checklist for the installer                     |         |

This guide is based on the supplier technical datasheet for this breaker series, the product label, and owner-confirmed ratings for SKU 1xDC-MCB-125A-1P. Where the store listing differs from the datasheet, the datasheet values are used.

## 01 · OVERVIEW

# Know the breaker before you wire it

Front view of the DCB-C125A label and controls



## Label

**DCB-C125A**: curve **C**, **125 A**. Printed ratings: **DC 250 V**, **10 kA**, IEC/EN 60947-2, GB 14048.2 and CE marks.

## Polarity marks

The label symbol shows + at the top and – at the bottom. The housing is also marked + beside the top terminal. Current must enter at the top. See page 5.

## Handle and window

**I ON** up, **O OFF** down. The window is the contact position indicator.

## Terminals

Two screw terminals: **1** on top (source side, +) and **2** at the bottom (load side). The breaker mounts on a 35 mm DIN rail using its quick-fit clip.

## What it does

Opens **one conductor** automatically on **overload** (thermal trip) or **short circuit** (magnetic trip) in a DC circuit. It may also be switched by hand occasionally. It is not designed for frequent switching. DC use only; do not use on AC.

# Check these before installation

All conditions must be met. If any is uncertain, stop and get advice.

## 1 · Maximum system voltage $\leq 250$ V DC

Include the highest voltage the circuit can reach. For solar strings, use the open-circuit voltage at the lowest expected module temperature, not the nominal voltage.

## 2 · Prospective fault current $\leq 10$ kA

Breaking capacity is  $I_{cu} = I_{cs} = 10$  kA. Large battery banks can deliver higher fault currents; confirm the prospective short-circuit current at the breaker location.

## 3 · Current flows in one direction only

This is a polarised DC breaker. Use it only where current always enters at the top terminal (1) and leaves at the bottom (2). **Do not use it on two-way circuits** (battery charge and discharge through the same breaker) unless the supplier confirms that use.

## 4 · One pole is switched

This breaker interrupts only the conductor it is fitted in. The other conductor stays connected when it trips or is OFF. Where local rules or the system earthing need both conductors protected or isolated, use a two-pole device or an additional DC isolator.

## 5 · Load current and temperature

Rated current is 125 A, calibrated at a 30 °C reference temperature. In a hotter enclosure it can trip below 125 A. Size the circuit and ventilation accordingly.

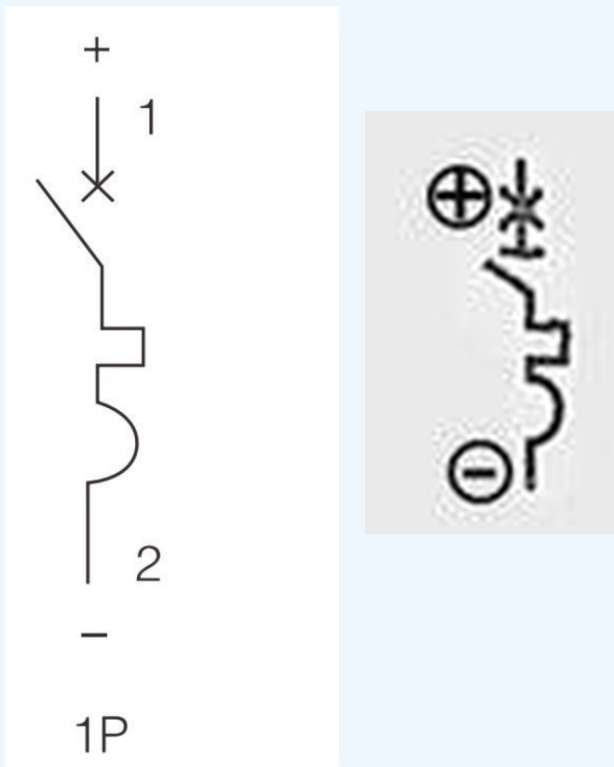
## Work safely

Qualified electrician only. Isolate every source first: solar modules are live in daylight. Prove dead with a DC-rated tester before touching terminals.

## 03 · WIRING

# Source on top, load at the bottom

Single-pole wiring in the positive conductor



Left: supplier 1P diagram. Right: product label.

| Terminal           | Connect to                                                                  |
|--------------------|-----------------------------------------------------------------------------|
| 1 (top, +)         | Source <b>positive</b> (PV string / DC supply +)                            |
| 2 (bottom, -)      | Load / inverter / controller <b>positive</b>                                |
| Negative conductor | Runs directly from source – to load –. <b>Not</b> switched by this breaker. |

## What the + and – marks mean

They show the **current direction** through the pole: in at + (terminal 1), out at – (terminal 2). In the positive conductor, current flows from the source into terminal 1 and out of terminal 2 to the load. The – mark at terminal 2 does not mean "connect the negative wire here".

## Do not

- feed the breaker from the bottom terminal (reverse feed)
- fit it in the negative conductor with the source on terminal 2
- use it where current can reverse, such as battery charge and discharge, unless the supplier confirms that use
- exceed 250 V DC or 10 kA prospective fault current

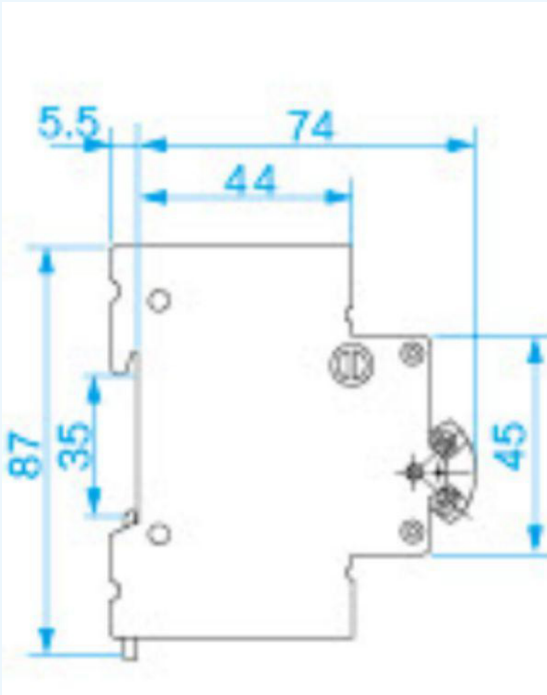
## Check polarity before closing

With the breaker **OFF** and the source connected, measure with a DC meter between terminal 1 and the source negative: it must read positive. If it reads negative, isolate and correct the wiring before switching ON.

04 · MOUNTING

# Mount on DIN rail and terminate firmly

Datasheet values for the single-pole breaker



Side profile (mm), supplier drawing

| Dimension (1-pole) | Value                                           |
|--------------------|-------------------------------------------------|
| Width              | 27 mm (one module)                              |
| Height             | 87 mm                                           |
| Depth              | 74 mm (drawing also shows a 5.5 mm rear offset) |
| Front step         | 44 mm deep, 45 mm high                          |
| Rail               | 35 mm DIN rail (EN 60715)                       |

Install inside a suitable enclosure or distribution board. The body is **IP20** (finger-safe), not weatherproof.

## 1 · Mount

Hook the breaker onto the 35 mm rail and snap the quick-fit clip home, with terminal 1 (+) at the top.

## 2 · Conductors

Terminals take cable up to **25 mm²**, or U-type or pin-type busbar. Choose the conductor size for 125 A under local wiring rules and the installation method.

## 3 · Terminate

Strip only enough insulation for the terminal. Insert fully, with no loose strands, and tighten to **3.0 N·m**.

## 4 · Check

Pull-test each conductor. Re-check polarity (page 5) and label the circuit before closing the enclosure.

## 05 · OPERATION

## Switching and resetting after a trip

Handle positions are printed on the label: I ON (up), O OFF (down)

### Switching ON

Confirm the polarity and installation checks are complete, then push the handle firmly up to **I ON**.

### Switching OFF

Pull the handle down to **O OFF**. Only the positive conductor opens: the negative conductor stays connected. Before working on the circuit, isolate all sources and prove it dead.

### When it trips

The handle moves to **O OFF** on its own. Typical causes: overload (current above the rating for some time), short circuit, or a wiring fault. Do not hold the handle ON or re-close it repeatedly.

### Before re-closing

1. Isolate the circuit and find the cause.
2. Correct the fault, or reduce the load.
3. Inspect terminals and cables for heat damage.
4. Switch back to **I ON**. If it trips again straight away, leave it OFF and call an electrician.

### Occasional manual switching only

The supplier allows infrequent operation of the line. Mechanical life is **20,000** operations. For frequent or routine isolation, use a dedicated DC isolator.

## 06 · SPECIFICATIONS

# Electrical ratings

SKU 1xDC-MCB-125A-1P · 1-pole · from the supplier datasheet, using the 1P / 125 A values

| Parameter                                                  | Value                                          |
|------------------------------------------------------------|------------------------------------------------|
| Rated current $I_n$                                        | 125 A                                          |
| Poles                                                      | 1 (1P)                                         |
| Rated operational voltage $U_e$                            | 250 V DC (1-pole rating)                       |
| Rated insulation voltage $U_i$                             | 1000 V                                         |
| Rated impulse withstand voltage $U_{imp}$ (1.2/50 $\mu$ s) | 6 kV                                           |
| Rated breaking capacity                                    | $I_{cu} = I_{cs} = 10$ kA (10,000 A)           |
| Trip characteristic                                        | Curve C (thermal-magnetic)                     |
| Current type                                               | DC only; polarised (one-way current, + at top) |
| Label markings                                             | IEC/EN 60947-2 · GB 14048.2 · CE               |

The 250 V rating applies to this single-pole breaker. Do not apply ratings for other pole counts or other amiciKart DC breakers.

## 06 · SPECIFICATIONS

## Trip characteristic and environment

Curve C time-current values from the supplier datasheet

| Test current                                              | Datasheet value                                      | At $I_n = 125\text{ A}$ |
|-----------------------------------------------------------|------------------------------------------------------|-------------------------|
| $1.05 \times I_n$ ( $I_{nt}$ , conventional non-tripping) | $t \leq 1\text{ h}$                                  | 131 A                   |
| $1.30 \times I_n$ ( $I_{lt}$ , conventional tripping)     | $t < 1\text{ h}$                                     | 162.5 A                 |
| $2.55 \times I_n$                                         | $t = 1\text{--}120\text{ s}$ ( $I_n > 32\text{ A}$ ) | 319 A                   |
| Magnetic (instantaneous) trip, curve C                    | $12 \times I_n \pm 20\%$                             | 1,200–1,800 A           |

| Parameter                               | Value                                                   |
|-----------------------------------------|---------------------------------------------------------|
| Reference temperature (thermal setting) | 30 °C                                                   |
| Ambient operating temperature           | –5 °C to +40 °C (daily average $\leq 35\text{ °C}$ )    |
| Storage temperature                     | –25 °C to +70 °C                                        |
| Protection degree                       | IP20                                                    |
| Contact position indicator              | Yes                                                     |
| Mechanical life                         | 20,000 operations                                       |
| Terminal connection                     | Cable / U-type busbar / pin-type busbar; top and bottom |
| Cable size                              | Up to 25 mm <sup>2</sup>                                |
| Tightening torque                       | 3.0 N·m                                                 |
| Mounting                                | 35 mm DIN rail (EN 60715), quick-fit clip               |
| Dimensions (W × H × D)                  | 27 × 87 × 74 mm                                         |

## 07 · TROUBLESHOOTING

# What you see, and what to check next

Isolate and prove dead before touching terminals

| What you see                                      | Possible cause                                           | Next step                                                                                         |
|---------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Trips as soon as it is switched ON                | Short circuit, damaged cable, or wiring fault downstream | Leave OFF. Isolate, then check insulation and wiring. Do not keep re-closing.                     |
| Trips after running for a while                   | Load above 125 A, or a hot enclosure                     | Measure the load current. Check ventilation and the ambient limit (–5 to +40 °C).                 |
| Handle will not stay ON                           | Fault still present, or the breaker is damaged           | Disconnect the load and try again. If it still will not latch, replace the breaker.               |
| Terminal or body hot or discoloured               | Loose terminal or undersized conductor                   | Isolate. Re-terminate at 3.0 N·m and check the conductor size. Replace if the plastic is damaged. |
| No output with handle ON                          | Upstream isolator open, wiring error, or no source       | Check the source voltage between terminal 1 and source –, then between terminal 2 and load –.     |
| Terminal 1 reads negative to source –             | Breaker fitted in the wrong conductor, or reversed       | Isolate and rewire as on page 5 before use.                                                       |
| Load still live with breaker OFF                  | Negative conductor not switched, or a second source      | Expected for a single-pole breaker. Isolate all sources before work.                              |
| Battery circuit charges and discharges through it | Two-way current: not a supported use                     | Stop using it in that position. Get supplier-confirmed protection.                                |

Still unsure? Contact amiciKart support with photos of the label, the wiring and your meter readings.

[Contact support](#)

[Product page](#)

## 08 · RECORD

# Installation record

Completed by the installing electrician · keep with the system documents

| Item                                                       | Entry    |
|------------------------------------------------------------|----------|
| Date / electrician / licence no.                           |          |
| Site and circuit name                                      |          |
| System type (PV string / battery / DC supply)              |          |
| Maximum system voltage (V DC, incl. cold Voc) $\leq 250$ V |          |
| Prospective fault current at breaker (kA) $\leq 10$ kA     |          |
| One-way current confirmed (not charge/discharge)           | Yes / No |
| Fitted in positive conductor, source on terminal 1         | Yes / No |
| Single-pole switching acceptable for this system           | Yes / No |
| Design load current (A)                                    |          |
| Conductor size and type                                    |          |
| Terminals torqued to 3.0 N·m                               | Yes / No |
| Functional ON/OFF check done                               | Yes / No |
| Customer handover / signature                              |          |