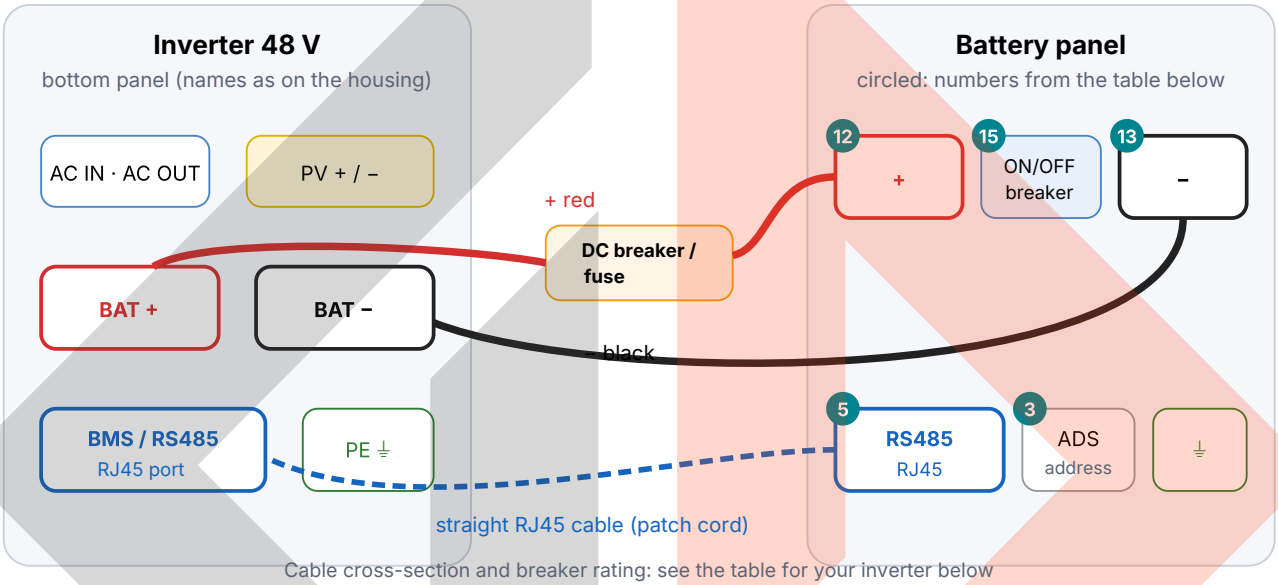
CONNECTING THE BATTERY TO THE INVERTER

MFUZOP 51.2V 314Ah 16.07kWh

Model MF-48314S: power cables, RS485 communication cable, protocol and settings for each of our 48 V inverters



Wiring diagram



Cable cross-section and breaker rating: see the table for your inverter below

Battery

Model	**MF-48314S, LiFePO4 16S**
Rated voltage	**51.2 V**
Capacity / energy	**314 Ah / 16.07 kWh**
Charge / discharge current	**maximum 210 A / 210 A**
Communication	**RS485, CAN; display on the housing**
Weight, size	**≈ 113 kg, 453 × 260 × 879 mm**

What you will need

- Two battery–inverter power cables (cross-section in the table below), lugs for the terminals
- DC breaker or fuse on the positive cable (rating in the table)
- Straight RJ45 cable (patch cord), e.g. «Communication cable 1.3 m»
- Earth wire, multimeter, spanners for the terminals

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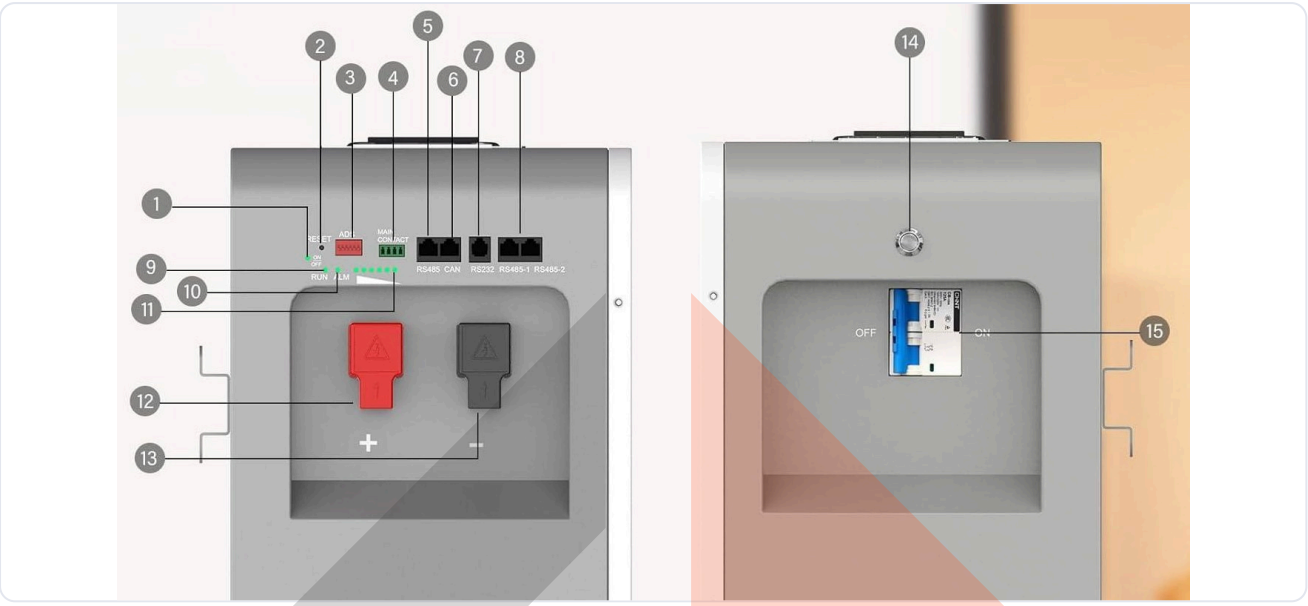
Connector panel: what we use



№	Label	What to connect
12	**+** positive terminal (red)	power «+» to the inverter BAT+ via the DC breaker / fuse
13	**–** negative terminal (black)	power «–» to the inverter BAT–
5	**RS485** communication with the inverter	straight RJ45 cable to the inverter's BMS / RS485 port
6	**CAN** CAN communication	not needed: our inverters work with the BMS over RS485
3	**ADS** DIP address switches	one battery: address 1, switch 1 ON, 2–4 OFF
15	**OFF / ON** breaker	switches the power output to the terminals
14	**—** power button	switches on the BMS and display
8	**RS485-1 / 2** parallel communication ports	only with several batteries

Manufacturer's diagram with numbers 1–15: on the left, the connector panel and terminals; on the right, the other side of the housing with the power button (14) and breaker (15).

Connection procedure

1. The inverter is off, the grid and panels are disconnected from it. The battery breaker (15) is in the **OFF** position, the DC breaker on the cable is off.
2. Address: **ADS** switches (3), address 1: switch **1 ON,** 2–4 OFF (5 and 6 are not used).
3. Connect the housing earth to the PE of the distribution board.

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4. Negative cable: battery terminal – (13) → inverter **BAT–**.
5. Positive cable via the DC breaker / fuse: terminal + (12) → inverter **BAT+**. Check the polarity with a multimeter before switching on.
6. Communication cable: battery port **RS485** (5) → inverter port **BMS / RS485**, with an ordinary straight RJ45 patch cord.
7. Check the protocol in the BMS (section below) and select the same one in the inverter (table below).
8. Switch on the battery breaker (15), then the power button (14), then the DC breaker, then the inverter. After 10–30 s the inverter should show the battery charge in %.
9. Connect the grid, loads and solar panels according to the inverter manual.

Communication protocol on the battery display

1. The protocol for communication with the inverter is selected on the battery display: **protocol setting** tab, **RS485-PCS** line (manufacturer's manual, section 5.6).
2. Use the ◀ ▶ buttons to select **Pylon** and press **Set.** Pylon is available in all our 48 V inverters, and for GSIKE it is the only option. The **Read** button shows what is currently saved in the BMS.
3. For JSDsolar, POWGROW, POWLAND and EASUN you can also select **Growatt** and set GRO in the inverter (table below).
4. After changing the protocol, switch the battery off and on again with the power button (14).

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Settings for each of our 48 V inverters

Inverter	DC breaker · cable	Protocol in the BMS → what to set in the inverter (numbers from this inverter's menu)	Charging current
GSIKE 11kW 48V WiFi	250 A 50 mm² (or 2×35 mm²)	BMS: **PYLON → F2-01 = Li2** PYLON only: Li4 / LI4 of this inverter is its own protocol, not Growatt	F2-09: total, F2-10: from the grid
GSIKE 6.2kW 48V WiFi	200 A 35 mm²	BMS: **PYLON → 05 = Li2** PYLON only: Li4 / LI4 of this inverter is its own protocol, not Growatt	02: total, 11: from the grid
JSDsolar J6500HC 6.5kW 48V	100 A (fuse) 21 mm²	BMS: **PYLON → 17 = FEL, 44 = PYL** or BMS: Growatt → **17 = FEL, 44 = GRO**	07: total, 06: from the grid
POWGROW SMS-6.5KP 6500W 48V	150 A 35 mm²	BMS: **PYLON → 17 = FEL, 44 = PYL** or BMS: Growatt → **17 = FEL, 44 = GRO**	07: total, 06: from the grid
EASUN SMS-6.5KP 6.5kW 48V WiFi	150 A 35 mm²	BMS: **PYLON → 17 = FEL, 44 = PYL** or BMS: Growatt → **17 = FEL, 44 = GRO**	07: total, 06: from the grid
POWLAND SMS-6.5KP 6.5kW 48V WiFi	150 A 35 mm²	BMS: **PYLON → 17 = FEL, 44 = PYL** or BMS: Growatt → **17 = FEL, 44 = GRO**	07: total, 06: from the grid
POWLAND SMS-12KW 12kW 48V WiFi	300 A 70 mm² (or 2×35 mm²)	BMS: **PYLON → 17 = FEL, 44 = PYL** or BMS: Growatt → **17 = FEL, 44 = GRO**	07: total, 06: from the grid
EASUN SMT-6.2KW 48V	150 A 38 mm² (or 2×25 mm²)	BMS: **PYLON → 05 = PYL, 37 = ON** or BMS: Growatt → **05 = GrO, 37 = ON**	02: total, 11: from the grid

The first line is the protocol to set in the BMS and the inverter; «or» is another protocol if it is already selected in the BMS. The protocol in the BMS and in the inverter must match. Other settings (source priority, output 230 V / 50 Hz) per your inverter manual.

Charge current. The maximum charge current of this battery is 210 A. Set the total charge in the inverter up to 100 A; with BMS communication the inverter also limits charging according to the BMS data.

No BMS communication (only voltage instead of percent (GSIKE 11kW: BMS communication warning on the screen; GSIKE 6.2kW: warning 19; JSDsolar J6500HC: warning 56; POWGROW SMS-6.5KP: warning 56; EASUN SMT-6.2KW: warning 61)): check that the cable is in the RS485 port (5), not CAN, RS232 or RS485-1/2, and that the protocol in the BMS matches the inverter. After changing the protocol, restart the battery and the inverter.

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Several batteries in parallel

- Up to 15 batteries in parallel. Give each one its own address with the **ADS** switches (3): master 1 (switch 1 ON), second 2 (switch 2 ON), third 3 (switches 1 and 2 ON). The full table is in the manufacturer's manual, section 4.5.
- The batteries are daisy-chained: port **RS485-2 (ADD-OUT)** of one to port **RS485-1 (ADD-IN)** of the next (8).
- The communication cable to the inverter comes only from the master battery (address 1), port RS485 (5).
- The power cables from each battery to the common busbar are of equal length and cross-section.

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