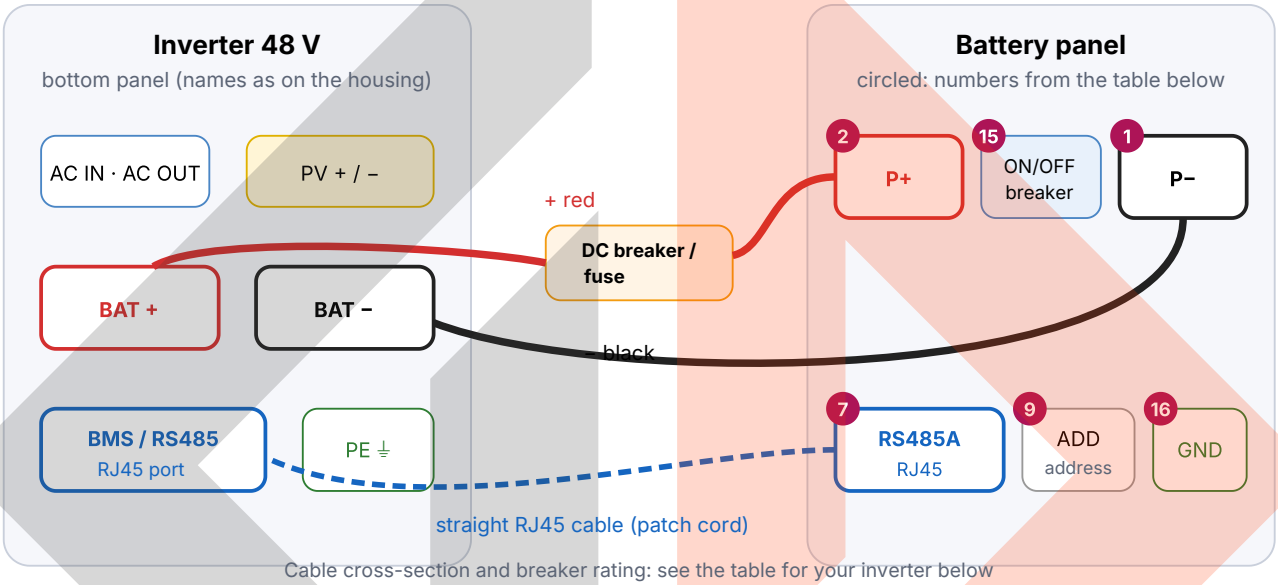
CONNECTING THE BATTERY TO THE INVERTER

Braun Power 51.2V 628Ah 32kWh

Power cables, RS485 communication cable, JK BMS 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

Chemistry, cells	**LiFePO4, 1P16S**
Rated voltage	**51.2 V (operating 43.2–58.4 V)**
Capacity / energy	**628 Ah / 32.15 kWh**
Charging current	**recommended 50 A, maximum 200 A**
BMS	**JK BMS, RS485 and CAN communication**
Weight, size	**236 kg, 800 × 630 × 430 mm, on wheels**

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
- Phone with the JK BMS app

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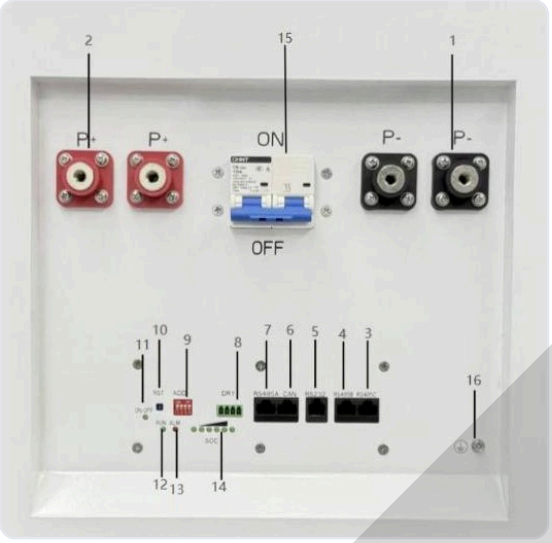
Connector panel: what we use



№	Label	What to connect
2	**P+** positive terminal (red, two)	power «+» to the inverter BAT+ via the DC breaker / fuse
1	**P−** negative terminal (black, two)	power «−» to the inverter BAT−
7	**RS485A** communication with the inverter	straight RJ45 cable to the inverter's BMS / RS485 port
6	**CAN** communication with the inverter over CAN	not needed: our inverters work with the BMS over RS485
9	**ADD** DIP address switches	one cabinet: address 0, all switches OFF
15	**ON/OFF** cabinet breaker	switches the battery output to the P+ / P− terminals
16	**GND** earth	cabinet earth wire to the PE of the distribution board
3, 4	**RS485C / B** communication between cabinets	only with several cabinets

Cabinet connector panel. Numbers as in the manufacturer's «Battery Interface Panel Definition» table.

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: **ADD** switches (9): all switches **OFF** (address 0) for one cabinet.
3. Connect the housing earth (16) to the PE of the distribution board.
4. Negative cable: battery terminal **P−** (1) → inverter **BAT−**.
5. Positive cable via the DC breaker / fuse: terminal **P+** (2) → inverter **BAT+**. Check the polarity with a multimeter before switching on.
6. Communication cable: battery port **RS485A** (7) → 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 DC breaker, then the inverter. After 10–30 s the inverter should show the battery charge in %.

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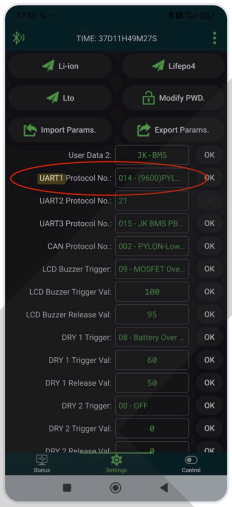
9. Connect the grid, loads and solar panels according to the inverter manual.

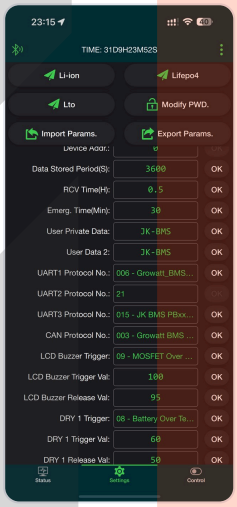
Protocol in JK BMS («JK BMS» app)

1. Install the **JK BMS** (Google Play or App Store) app, turn on Bluetooth and stand next to the cabinet. Find your battery in the list and connect. Android will ask for the password **1234.**
2. At the bottom, open the **Settings** tab. To make changes, the app will ask for the administrator password **888888.**
3. In the **UART1 Protocol No.** line, select the protocol per the inverter table below: **006: Growatt BMS** or **014: (9600) PYLON,** and press **OK** to the right of the line. For GSIKE only **014: PYLON.**

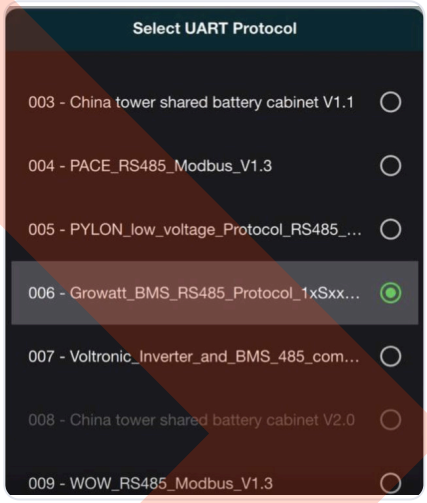
4. Check **Device Addr. = 0** (one cabinet). Switch the cabinet off and on with the breaker (15) so that the protocol takes effect.



UART1 Protocol No. = 014 — (9600) PYLON, OK button on the right



UART1 Protocol No. = 006 — Growatt BMS, Device Addr. = 0



UART1 protocol selection window

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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: **014 — (9600) 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: **014 — (9600) 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: **006 — Growatt BMS → 17 = FEL, 44 = GRO** or BMS: 014: (9600) PYLON → **17 = FEL, 44 = PYL**	07: total, 06: from the grid
POWGROW SMS-6.5KP 6500W 48V	150 A 35 mm²	BMS: **006 — Growatt BMS → 17 = FEL, 44 = GRO** or BMS: 014: (9600) PYLON → **17 = FEL, 44 = PYL**	07: total, 06: from the grid
EASUN SMS-6.5KP 6.5kW 48V WiFi	150 A 35 mm²	BMS: **006 — Growatt BMS → 17 = FEL, 44 = GRO** or BMS: 014: (9600) PYLON → **17 = FEL, 44 = PYL**	07: total, 06: from the grid
POWLAND SMS-6.5KP 6.5kW 48V WiFi	150 A 35 mm²	BMS: **006 — Growatt BMS → 17 = FEL, 44 = GRO** or BMS: 014: (9600) PYLON → **17 = FEL, 44 = PYL**	07: total, 06: from the grid
POWLAND SMS-12KW 12kW 48V WiFi	300 A 70 mm² (or 2×35 mm²)	BMS: **006 — Growatt BMS → 17 = FEL, 44 = GRO** or BMS: 014: (9600) PYLON → **17 = FEL, 44 = PYL**	07: total, 06: from the grid
EASUN SMT-6.2KW 48V	150 A 38 mm² (or 2×25 mm²)	BMS: **006 — Growatt BMS → 05 = GrO, 37 = ON** or BMS: 014: (9600) PYLON → **05 = PYL, 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 recommended charge current of this battery is 50 A, maximum 200 A. In the inverter: total charge (solar + grid) up to 150 A, grid charge 60–100 A; with BMS communication the inverter also limits charging according to the BMS data.

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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 RS485A port, not CAN or RS485B/C, that the address is 0, and that the protocol in the BMS matches the inverter. After changing the protocol, restart the battery and the inverter.

Several batteries in parallel

- One cabinet is the master: address 0. Give the others different addresses 1–15 with the **ADD** switches (9).
- The cabinets are linked via the **RS485B** (4) / **RS485C** (3) ports: from RS485C of one cabinet to RS485B of the next.
- The communication cable to the inverter comes only from the master cabinet (port RS485A, 7). If several inverters run in parallel, the BMS cable goes to only one of them, and the protocol is selected only on it.
- The power cables from each cabinet to the common busbar or the inverter are of equal length and cross-section.

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