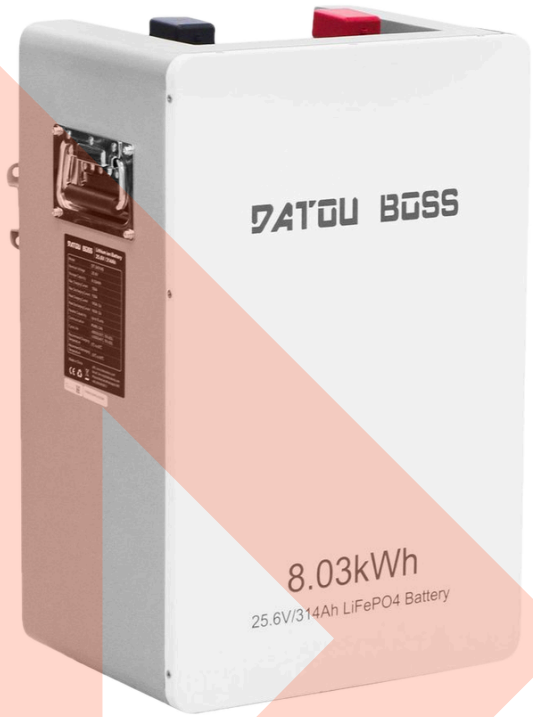
Connecting to Deye inverters

Setting up the battery and inverter to work via the BMS communication protocol (CAN / RS485)



DATOU BOSS 25.6V 314Ah

wall-mounted · 8.03 kWh · 24 V

TESTED
compatible with Deye inverters

CAN recommended link	**00** Lithium Mode in Deye
RS485 · 12 fallback option	**≤ 15** units in parallel
25.6 V Deye SUN-3K-...-24-EU	**8.03 kWh** one unit

25.6 V · 314 Ah · 8.03 kWh · LiFePO4. This guide supplements the battery manual and the Deye inverter manual.

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1 In short: 5 steps

The battery BMS has an **RS485/CAN** port and the factory **Pylon** protocol, the same one Deye officially supports for lithium batteries, so the battery works with a 24 V Deye hybrid inverter with full communication. The inverter receives the state of charge (SOC), voltage, temperature and permitted charge and discharge currents from the BMS and keeps charging within safe limits by itself. Setup takes 10–15 minutes.

1
Check the Deye model: **SUN-3K-SG04LP1-24-EU** (24 V)

2
On the battery: address 1, protocol **Pylon** (factory setting)

3
Cable: battery port **RS485/CAN** → Deye port **RS485/CAN**

4
In Deye: **Lithium,** 314Ah, currents, **Lithium Mode 00**

5
Check: the **Li-BMS** page shows data, the SOC matches

1.1 Which Deye inverters are suitable

This is a **24 V** battery. Deye has one 24 V hybrid inverter: the **SUN-3K-SG04LP1-24-EU** (3 kW, "-24" at the end of the name). All other low-voltage Deye models are 48 V; this battery is not connected to them.

Deye series	Models	Suitable
24 V single-phase	SUN-3K-SG04LP1-24-EU (battery 20–30 V, current up to 140 A)	yes
48 V "LP"	SUN-...-SG03LP1 / SG04LP1 / SG05LP1 / SG01LP1 / SG04LP3 / SG05LP3	no
High-voltage "HP"	SUN-...-SG01HP3, SG02HP1 etc. (160–800 V battery)	no

HOW TO FIND THE MODEL
The model is written on the label on the side of the housing and in the **System Setup → Device Info** menu. You need the model with "-24" in the name. For 48 V Deye inverters, take our 51.2 V batteries.

1.2 What you need

Setting	Note
RJ45 communication cable	Included with the battery. Can be replaced with an ordinary straight-through Cat5e/Cat6 network cable (both ends T568B), up to 10 m long.
Power cables "+" and "−"	From the battery kit, or stranded copper of at least 50 mm² with lugs for the inverter terminal bolts. As short as possible (up to 2 m).
DC breaker or fuse	Between the battery and the inverter, rated for at least the maximum discharge current you set in Deye (e.g. 160 A for 140 A).
Ferrite rings	Included with the Deye inverter: power cable 2 turns, communication cable 4 turns.
Tools	Spanners for the terminal bolts, screwdriver, multimeter to check polarity, phone with the JBD BMS app.

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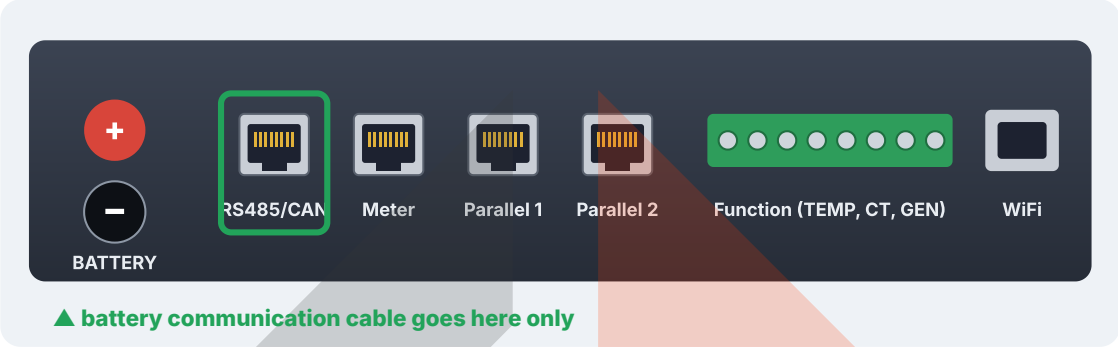
2 Ports and communication cable

2.1 Port on the Deye inverter

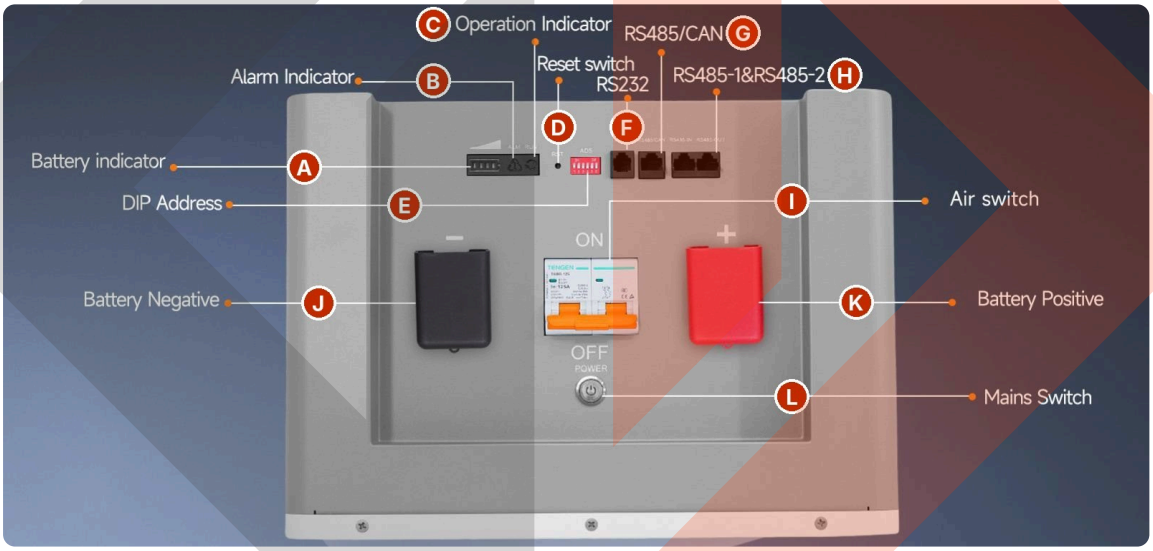
At the bottom of the Deye inverter there are several identical-looking RJ45 sockets. The battery cable goes **only** into the socket labelled **RS485/CAN** (on some models **BMS 485/CAN**). The **Meter** (energy meter) and **Parallel 1 / Parallel 2** (inverters in parallel) sockets are not for the battery.



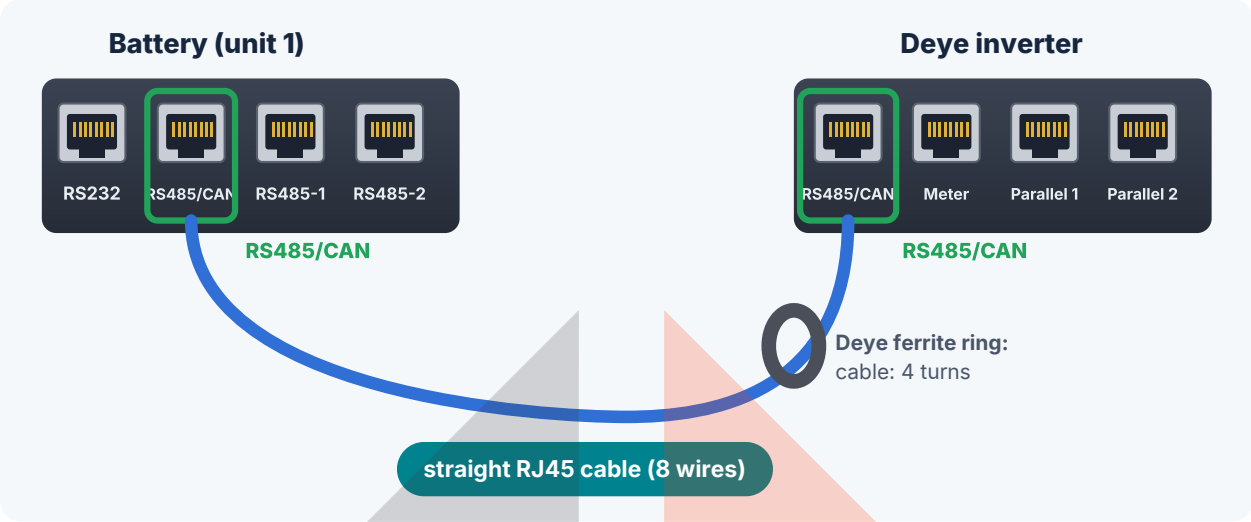
▲ **battery communication cable goes here only**

2.2 Port on the battery

Communication ports at the top of the panel: **RS232** (F) computer, **RS485/CAN** (G) to the inverter (it carries both RS485 and CAN), **RS485-1 / RS485-2** (H) only for linking batteries together.



2.3 Connection diagram



2.4 Pinout: why an ordinary straight-through cable fits

The pins in the battery port and in the Deye RS485/CAN port match one to one, so the cable must be **straight-through** (pin 1 to pin 1, 2 to 2 … 8 to 8). A crossover cable must not be used.

RJ45 pin	Battery, RS485/CAN port	Deye, RS485/CAN port
1	**RS485-B**	485_B
2	**RS485-A**	485_A
3	**GND**	GND_485
4	**CAN-H**	CAN-H
5	**CAN-L**	CAN-L
6	**GND**	GND_485
7	**RS485-A**	485_A
8	**RS485-B**	485_B

Working pins are marked green. “—”: the pin is not connected on this port. RJ45 pins are counted from left to right, looking at the socket with the latch down. On three-phase SG04LP3 models, pin 3 is not used by Deye; this does not affect operation.

IF YOU MAKE THE CABLE YOURSELF

In the battery’s RS485/CAN port, RS485 is on pins 1, 2, 7, 8, CAN on 4 and 5, ground on 3 and 6, the same as in Deye. Crimp both ends to the same scheme (T568B — T568B).

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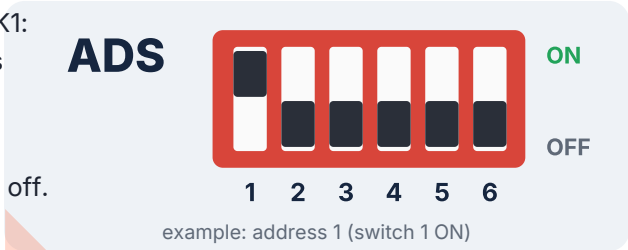
3 Step 1. Battery setup

3.1 Address (DIP Address)

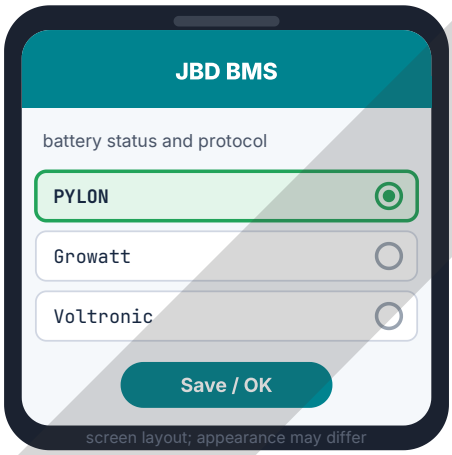
For **one** battery, set address **1:** switch 1 **ON,** 2–6 OFF (PACK1: single or master battery). All OFF means automatic address assignment.

Change the switch positions only with the battery switched off.



example: address 1 (switch 1 ON)

3.2 Communication protocol



screen layout; appearance may differ

1. This battery's factory protocol is Pylon. Deye understands exactly this one with Lithium Mode code 00 (CAN) or 12 (RS485), so usually nothing needs changing on the battery. If the battery was set up for another inverter, restore Pylon in
2. the **JBD BMS** app (Bluetooth) and restart the battery with the POWER button. The battery status (charge, cell voltages) is also visible in the JBD BMS app.
3.

BEFORE CONNECTING
The battery is charged to at least 20–30 %, the ALM indicator is not lit red. The inverter must be exactly 24 V.

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4 Step 2. Connecting the cables

CAUTION
Reversed polarity (“+” to “−”) damages the inverter and is not covered by the warranty. Check polarity with a multimeter before tightening the terminals. The battery weighs about 60 kg: hang it on the bracket with two people.

1. Switch off the Deye inverter (power button and the solar panels’ DC switch), open the DC breaker between the battery and the inverter, switch off the battery. Connect the “+” power cable to the battery “+” terminal
2. and through the DC breaker (fuse) to the inverter’s BATTERY “+” terminal. Connect the “−” power cable to the battery “−” terminal and the inverter’s BATTERY “−” terminal. Put the ferrite ring from the Deye kit on the
3. power cable near the inverter and wind the cable around it 2 times. Plug one end of the communication
4. cable into the battery’s **RS485/CAN** port and the other into the inverter’s **RS485/CAN** port (until it clicks). Near the inverter, wind it 4 times around the small ferrite ring. Tighten the terminal bolts, fit the protective
5. covers on the battery terminals and close the inverter covers.
6.

4.1 Power-on sequence

1. Switch on the battery breaker (I) and press the POWER button (L): the indicators light up. Close the DC
2. breaker between the battery and the inverter. Switch on the inverter with the power button. When the Deye
3. main page appears on the screen, go on to setup (step 3). Switch off in reverse order: inverter → DC breaker → battery.
4.

NOTE
For the first 1–2 minutes after switching on, the inverter may show a BMS communication warning until Lithium mode is set. This is normal.

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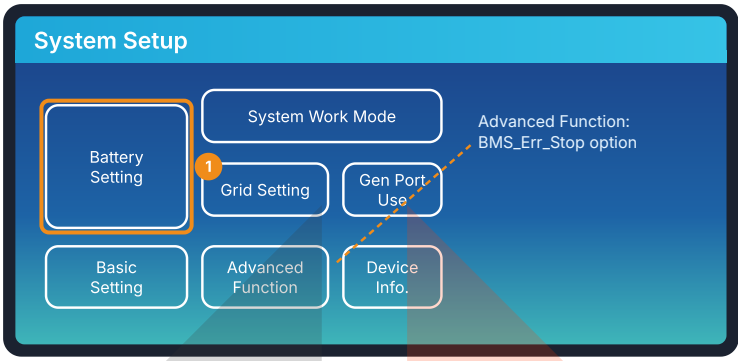
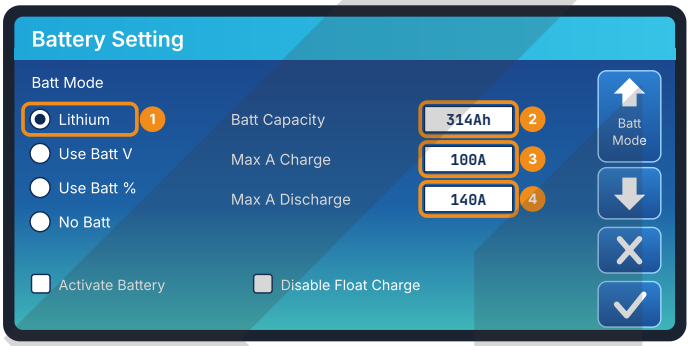
5 Step 3. Deye inverter setup

On the Deye main screen, tap the gear icon (settings) → **System Setup** opens → tap **Battery Setting**.



5.1 “Batt Mode” page



1. **Batt Mode:** select Lithium. Only in this mode does the inverter read data from the BMS. **Batt**
2. **Capacity:** 314Ah for one battery; for several, 314 × quantity (2 pcs = 628Ah).

3. **Max A Charge:** 100A (recommended) per battery. **Max A Discharge:** 140A (recommended) per
4. battery.

Leave **Activate Battery** and **Disable Float Charge** unticked. Save with the ✓ button.

Number of batteries	Batt Capacity	Max A Charge	Max A Discharge
1	314Ah	100 A (up to 140 A)	140 A
2	628Ah	140 A (inverter maximum)	140 A (inverter maximum)
3	942Ah	140 A (inverter maximum)	140 A (inverter maximum)

The maximum of the SUN-3K-SG04LP1-24-EU is 140 A; Deye will not let you set more. The battery’s continuous current is 150 A. During operation the inverter also follows the limits sent by the BMS.

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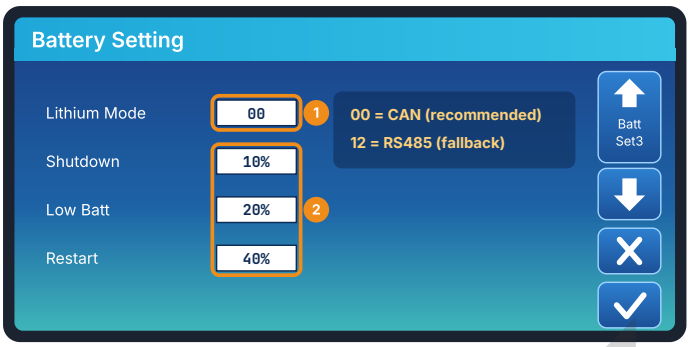
5.2 “Lithium Mode” page



1 **Lithium Mode:** 00: CAN link (pins 4–5 in the RS485/CAN port). **Shutdown** 10%, **Low Batt**
2 20%, **Restart** 40%: at 10 % the inverter cuts battery power to the loads, at 20 % it warns,

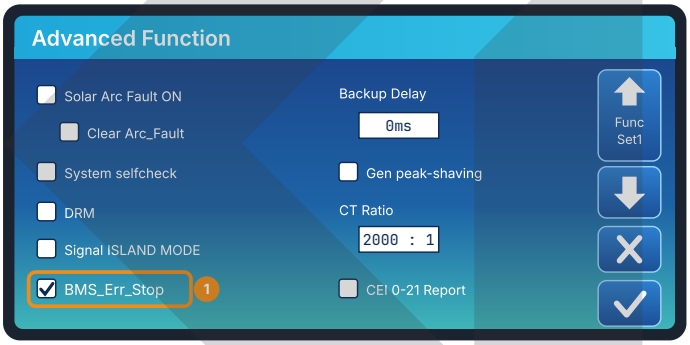
at 40 % it allows battery power again. You can adjust the values to suit you.

Save with the ✓ button.

Connection	Battery port	Battery protocol	Lithium Mode in Deye
CAN (recommended)	RS485/CAN	Pylon (factory setting)	`00`
RS485 (fallback)	RS485/CAN	Pylon	`12`

CODE SOURCE
Codes 00 (Pylon CAN) and 12 (Pylon RS485) are taken from Deye’s official list of compatible batteries. The battery uses the Pylon protocol, so exactly these codes fit. Do not use other codes with this battery: there will be no communication.

5.3 Stop on communication loss (BMS_Err_Stop)



System Setup → Advanced Function. We recommend ticking **BMS_Err_Stop:** if communication with the BMS is lost (cable unplugged, battery switched off), the inverter stops working with the battery and shows error **F58,** instead of running “blind”.

Without the tick the inverter keeps working, but without BMS data. Save with the ✓ button.

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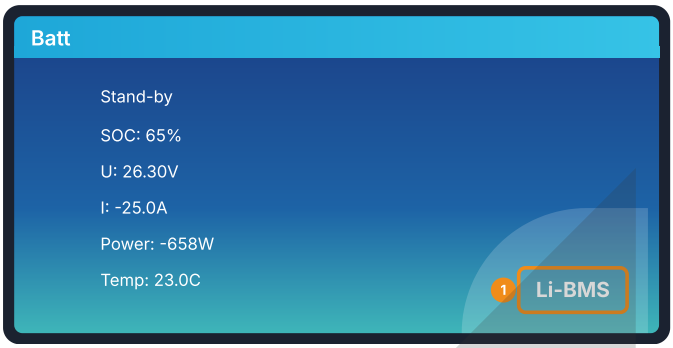
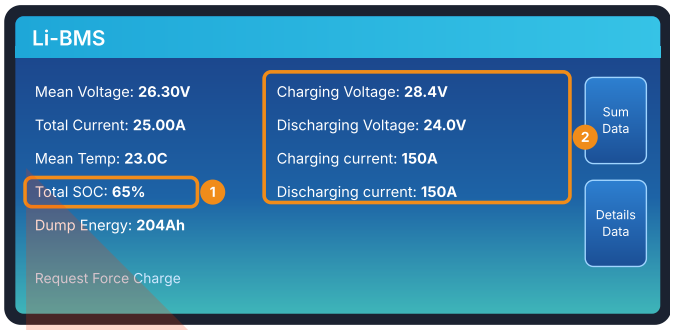
6 Step 4. Checking communication

30–60 seconds after saving the settings, tap the battery icon on the Deye main screen. The **Batt** page opens; if communication with the BMS works, a **Li-BMS** button appears in the bottom right corner.



Batt page: tap Li-BMS



Li-BMS: data sent by the BMS (sample values)

6.1 Communication works if all of these apply:

1. The Li-BMS page shows voltage, current, temperature and **Total SOC,** and the SOC matches the battery's charge indicator and the JBD BMS app (difference up to 1–2 %). **Charging Voltage** and **Discharging**
2. **Voltage, Charging current** and **Discharging current** are not zero: these are the limits the BMS allows the inverter. The **Details Data** button shows a line for each battery (for one, line 1). The inverter shows no **F58**
3. error, and the battery's ALM is not lit.
4.

6.2 Test run

- Switch on a 1–2 kW load: on the Deye, the battery current should have a "−" sign (discharge).
- Allow charging from the grid or the sun: the current has a "+" sign.
- The first time, charge the battery fully to 100 %: this way the BMS calibrates the state of charge accurately.

> **NOTE**
> The values in the Li-BMS picture are only an example. Real figures depend on the battery's charge and temperature.

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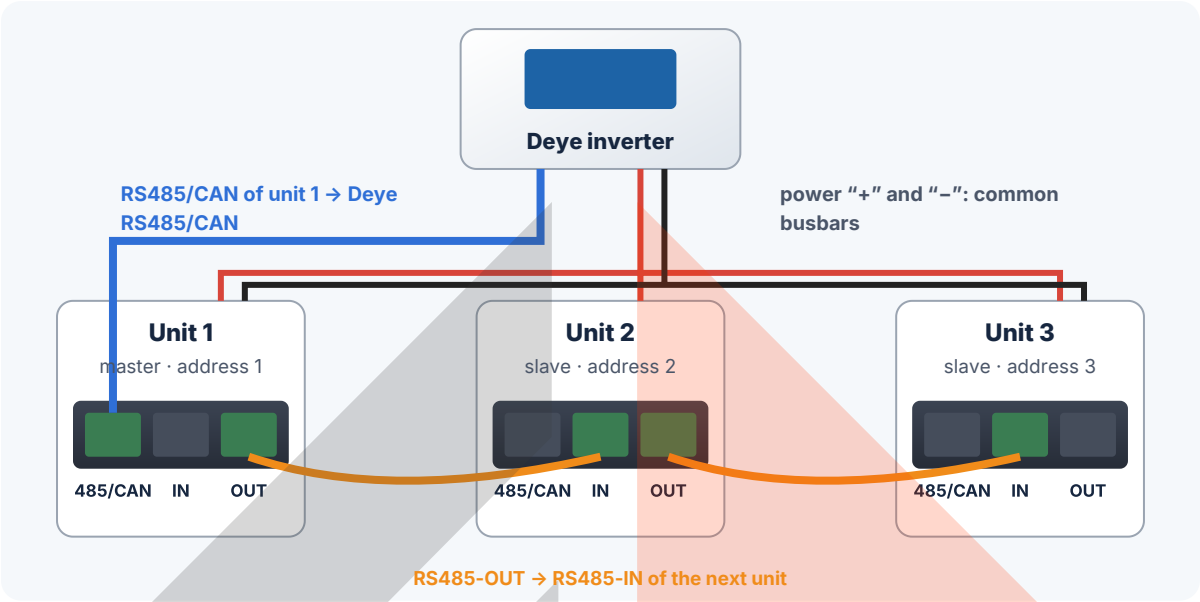
7 Several batteries with one Deye

Up to 15 such batteries can be connected to the inverter in parallel. The inverter is connected only to the **master** unit (address 1).



Unit	DIP 1	DIP 2	DIP 3	DIP 4	Communication cables
1 (master)	ON	OFF	OFF	OFF	RS485/CAN → Deye, RS485-OUT → unit 2
2	OFF	ON	OFF	OFF	RS485-IN ← unit 1, OUT → unit 3
3	ON	ON	OFF	OFF	RS485-IN ← unit 2, OUT → unit 4
4	OFF	OFF	ON	OFF	RS485-IN ← unit 3 …

1. Set the addresses with the DIP switches on switched-off batteries. Addresses 5 and 6 are reserved on this model: skip them (1, 2, 3, 4, 7, 8 …). Daisy-chain the units with communication cables via the **RS485-1 /**
2. **RS485-2** ports (RS485-IN / RS485-OUT): OUT of the previous → IN of the next. Connect the inverter only to the **RS485/CAN** port of unit 1. The power cables of all units are of equal length and cross-section and join at
3. common "+" and "−" busbars. Before connecting, charge each unit separately to 100 % so the voltages are
4. equal. In Deye: **Batt Capacity =** 314 × number of units, currents up to 140 A (inverter maximum); Lithium
5. Mode
6. `00`.
7. In Deye, Li-BMS → Details Data should show a line for each unit.

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8 If something does not work

Symptom	Cause and what to do
F58 «BMS communication fault»	Cable in the wrong socket (Meter / Parallel instead of RS485/CAN) or not in the battery's RS485/CAN port (but in RS232 or RS485-1/2); cable crossover or damaged; address is not 1; Lithium Mode is not 00 (or not 12 for RS485). Check everything, then restart the battery and the inverter.
No Li-BMS button, SOC in Deye "jumps"	Batt Mode is not set to Lithium (it is on Use Batt V or Use Batt %). Select Lithium and save.
Li-BMS shows zeros	No communication: same as for F58. Try another straight-through cable.
The inverter does not see the battery at all	The inverter is 48 V: this battery works only with the 24 V SUN-3K-SG04LP1- 24-EU.
No communication with code 00	Try Lithium Mode 12 (Pylon over RS485) with the same cable: both interfaces are on the RS485/CAN port.
The battery does not charge	The battery is full (100 %): this is normal; temperature below 0 °C: the BMS blocks charging; in Li-BMS Charging current = 0: the BMS has limited charging for protection; Max A Charge in Deye = 0 or very low.
The inverter cuts power at 10–20 %	This is how Shutdown / Low Batt work (section 5.2). Change the values if needed.
SOC on the Deye and on the battery differs	No communication (see F58) or the battery has not been calibrated yet: charge it fully to 100 %.
The battery shuts down under load	The current is higher than the BMS allows (150 A continuous). Reduce Max A Discharge; check that the terminals are tight and the cable cross-section.
Only one unit is visible in parallel	The units have the same addresses or addresses 5–6 were used; the cable between units is not OUT → IN; the inverter is not connected to unit 1.

HELP

If there is still no communication after all checks, update the Deye inverter firmware to the latest version (via Deye service or your installer) and call us: 093 293 93 93, 099 054 40 38. We will help you set it up remotely.

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9 Cheat sheet: all settings on one page

Where	Parameter	Value
Battery	**DIP Address**	1 (switch 1 = ON): for a single or master unit
Battery	**Protocol**	Pylon (factory setting), no change needed
Cable	**Battery → Deye**	RS485/CAN port → RS485/CAN port, straight RJ45, 4 turns on the ferrite
Deye	**Batt Mode**	Lithium
Deye	**Batt Capacity**	314Ah × number of units
Deye	**Max A Charge / Discharge**	charge 100 A, discharge 140 A (inverter maximum)
Deye	**Lithium Mode**	00 (CAN); 12 if it does not connect over CAN
Deye	**Shutdown / Low Batt / Restart**	10 % / 20 % / 40 %
Deye	**Advanced Function → BMS_Err_Stop**	tick
Check	**Batt → Li-BMS**	data present, SOC as in the battery app, no F58



Deye is a trademark of its owner; it is mentioned only to indicate compatibility.

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