SETUP MANUAL · ENGLISH

JSDsolar J6500HC 6.5 kW 48 V hybrid inverter

Display menu (items 01–61), indicators, codes and Wi-Fi connection via the Wattseek app



Control panel

Front panel: display, four indicators (AC, INV, CHG, FAULT) and four buttons.

ESC	UP	DOWN	ENTER
exit the	previous item / value	next item / value	enter and confirm

How to change settings

1. Press and hold **ENTER** 2 seconds to open the settings menu.
2. Use **UP / DOWN** to select the item number (shown large at the top of the display).
3. Press **ENTER** and choose the value with **UP / DOWN**.
4. Press **ENTER** to save or **ESC** to exit.



Most important: battery type is item 17.

This inverter's menu differs from many others: item 05 here is the charge source priority. For a lithium iron phosphate battery (LiFePO4) select FEL in item 17; for lead-acid AGM select AGM.

LEDs

Indicator	Steady	Flashing	Off
AC (green)	Grid normal, inverter runs from grid	Grid normal, but the inverter has not switched to it yet	No grid or out of range
INV (yellow)	Output fed from battery or solar in battery mode	—	Other states
CHG (yellow)	Battery in float stage	Battery charging at constant voltage (CV)	Other states
FAULT (red)	Inverter fault	Warning	Working normally

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J6500HC-48 connections and technical data

Bottom panel: what goes where

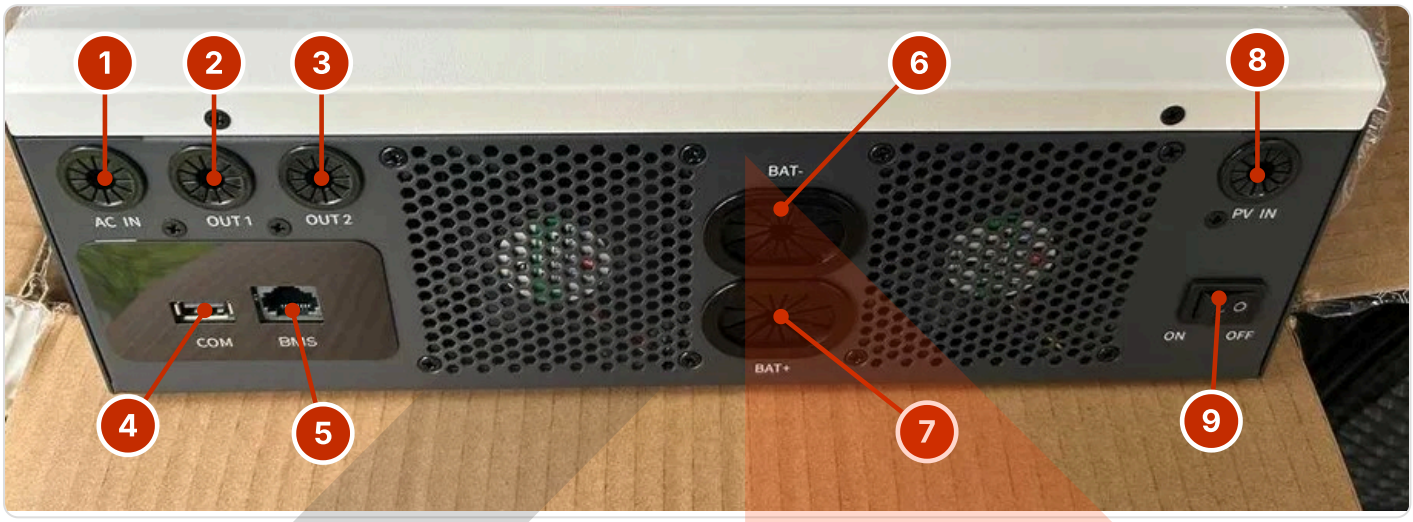
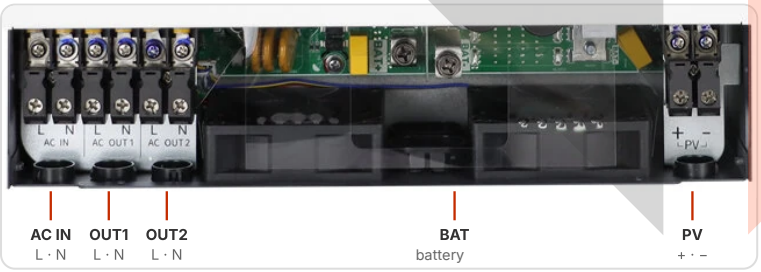


Photo of the actual JSDsolar J6500HC from below. The numbers in the photo match the numbers in the table.

1	**AC IN**	Grid (or generator) cable entry to the **AC IN L, N** terminals.
2	**OUT1**	Entry for the **main output** cable (AC OUT1 L, N terminals) to the load panel.
3	**OUT2**	Entry for the **second output** cable (AC OUT2 L, N terminals). It can be switched off automatically by voltage, time or battery SOC (items 38–40).
4	**COM**	COM communication port (USB connector).
5	**BMS**	RJ45 port for the lithium battery BMS communication cable. The protocol is selected in item 44.
6	**BAT–**	Battery “minus” cable entry.
7	**BAT+**	Battery “plus” cable entry.
8	**PV IN**	Solar panel cable entry to the **PV +, –** terminals.
9	**ON / OFF**	Inverter power switch.

Terminals under the bottom cover



Cables pass through the entries on the bottom panel to the terminals under the cover. From left to right: **AC IN** (grid), **AC OUT1** and **AC OUT2** (outputs), in the middle the **battery** terminals, on the right **PV + and –**. Check battery and panel polarity with a tester before connecting.

Cables and protection (per the manufacturer’s diagram for J6500HC)

Section	Cable	Protection	Note
AC input (grid / generator)	6 mm²	63 A breaker	input 220 V, max 280 V
Outputs AC OUT1 / OUT2	4 mm²	63 A breaker	230 V, up to 6500 W

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Battery	25 mm²	100 A fuse	48 V, lead-acid or lithium
Solar panels (PV)	6 mm²	—	up to 500 V open circuit; MPPT 60–450 V; charging starts from 80 V; panels are best connected in series

Technical specifications

AC output		AC input (grid)	
Rated power	**6500 VA / 6500 W**	Voltage range	**90–280 V**
Voltage	**230 V**	Frequency	**50 / 60 Hz**
Frequency	**50 / 60 Hz**	Max. bypass current	**40 A**
Rated current	**28.3 A**	Max. grid charge current	**120 A**
Battery		**Solar panels (PV)**	
Rated voltage	**48 V**	Max. power	**9000 W**
Voltage range	**40–60 V**	Max. open-circuit voltage	**500 V**
General		MPPT range	**60–450 V**
Enclosure rating	**IP21**	Max. input current	**27 A**
Operating temperature	**−10…+60 °C**	Max. PV charge current	**120 A**
Safety class	**I**	Parallel operation	**no** (NA on the label)

Data from the rating plate on the inverter case (Hybrid Solar Inverter J6500HC-48).

BATTERY SETTINGS

Default voltages for each battery type

When you select the type in item 17, the inverter fills in these values itself. For LIT, FEL and CUS they can be changed in the corresponding items (ranges are given below in the description of each item).

Item	AGM	FLD	LIT	FEL (LiFePO4)	CUS
15 switch to grid	46	46	47.6	49.6	47.6
16 return to battery	52	52	54.4	53.2	54.4
18 “low” warning	44*	44*	47.6	48	47.6
19 shutdown	42*	42*	46	42	46
20 CV charge	56.4*	58*	56.4	55.2	56.4
21 float	54*	54*	55.2	54.4	55.2
31 equalising	58.4	58.4	58.4	56	58.4

Default values in volts. * — not adjustable for AGM and FLD.

Type codes

AGM	lead-acid AGM (default)
FLD	flooded lead-acid
LIT	lithium ternary (NMC)
FEL	lithium iron phosphate (LiFePO4)
CUS	user settings

Lithium battery with BMS

For the inverter to receive charge data (SOC) from the BMS, select in item **44** the protocol supported by your battery’s BMS (PYL, GRO, VOL, CVT, IRO or PAR) and leave item **45** at **AtO**. Items 46–48 (SOC control) and item 40 then take effect.

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SETTINGS MENU

All display menu items

The display image shows the default value as it appears on the inverter. Items 27, 28, 30, 41–43, 49–60 do not exist in the menu.

Output and operating modes



01 Output voltage

230 V by default. Options: 208, 220, 230, 240 V.



02 Output frequency

50 Hz by default. Options: 50 or 60 Hz.



03 Load supply source priority

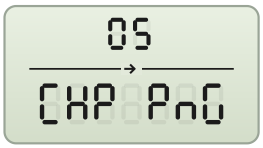
- **GPB: grid first** (default). The grid powers the load; solar charges the battery, and if solar is not enough, the grid charges the battery at the same time. Without grid, solar and battery power the load.
- **PGB: solar first.** Solar powers the load; if it is not enough, the grid is added at the same time. Surplus solar charges the battery. Without grid, solar and battery power the load.
- **PBG: solar, then battery, then grid.** If solar is not enough, the battery supplies energy; if both are not enough, the grid powers the load and solar charges the battery. When the battery is charged enough, the inverter returns to solar and battery.
- **MKS: generator first.** Generator + solar + battery: works like PBG. Generator + battery or generator + solar: works like GPB.

In all modes: if there is no grid and solar plus battery are not enough, the inverter goes to standby and charges the battery.



04 AC input mode

- **APP:** household appliances (default), transfer 10 ms.
- **UPS:** computers and sensitive equipment, 10 ms transfer.
- **GEN:** generator on AC IN, transfer 20 ms.



05 Battery charging source priority

- **PNG:** solar and grid charge together (default).
- **OPV:** solar charging only.
- **PVF:** solar first: if both solar and grid are present, solar charges; if only the grid is present, the grid charges.

> In this model item 05 is the **charge source**, not the battery type. Battery type is item 17.

Charging current



06 Grid charging current

60 A by default. Options: 2, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120 A.

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07 Maximum charge current (solar + grid)

100 A by default. Options: 2, 10, 20 ... 120 A in 10 A steps.

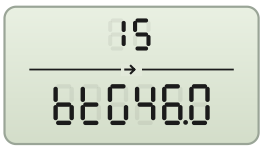
Battery



17 Battery type

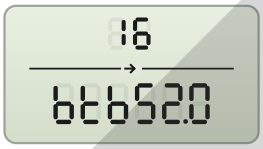
- **AGM:** lead-acid AGM (default).
- **FLd:** flooded lead-acid.
- **LIt:** lithium ternary (NMC).
- **FEL:** lithium iron phosphate (LiFePO4).
- **CUS:** user settings: you set the voltages manually.

The type determines the values of items 15, 16, 18–21 and 31 (table on p. 4). For AGM and FLD some voltages cannot be changed.



15 Battery voltage to switch to grid

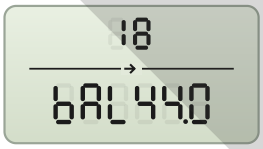
AGM / FLD	LIT	FEL (LiFePO4)	CUS
46 V 44–52 V	47.6 V 40–50 V	49.6 V 40–50 V	47.6 V 40–50 V



16 Battery voltage to return to battery mode

After a low-voltage shutdown, the battery must charge to this voltage before the inverter switches back to it. **FUL:** only after a full charge.

AGM / FLD	LIT	FEL (LiFePO4)	CUS
52 V 48–58 V	54.4 V 46–58 V	53.2 V 46–58 V	54.4 V 46–58 V



18 Warning: low battery voltage

AGM / FLD	LIT	FEL (LiFePO4)	CUS
44 V fixed	47.6 V 41.2–50 V	48 V 41.2–50 V	as LIT



19 Battery discharge cut-off

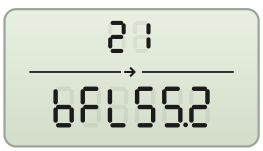
AGM / FLD	LIT	FEL (LiFePO4)	CUS
42 V fixed	46 V 40–48 V	42 V 40–48 V	as LIT



20 Constant voltage (CV) charge voltage

AGM / FLD	LIT	FEL (LiFePO4)	CUS
AGM 56.4 V FLD 58 V fixed	56.4 V 48–60 V	55.2 V 48–60 V	56.4 V 48–60 V

The CV voltage must always be higher than the float voltage (item 21).



21 Float voltage

AGM / FLD	LIT	FEL (LiFePO4)	CUS
54 V fixed	55.2 V 50–58 V	54.4 V 50–58 V	55.2 V 50–58 V

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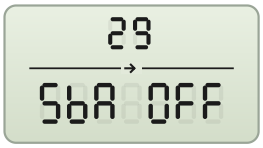


29 Battery disconnect signal

OFF by default: no alarm when the battery is disconnected. ON: the alarm is enabled.



61 Maximum battery discharge current

OFF by default: if current above 140 A lasts 1 min, fault 14 and the inverter enters fault mode. A numeric value is a current limit of 10–140 A in 5 A steps: exceeding it gives warning 60, and if it lasts 5 s, fault 14.

Grid and grid feed-in



22 Grid voltage lower limit

APP and GEN input modes: 90–154 V, default **154 V.** UPS mode: 170–200 V, default **185 V.**



23 Grid voltage upper limit

APP and GEN: 264–280 V, default **264 V.** UPS: always 264 V.



36 Grid feed-in

OFF: no export to the grid. **INT:** exports according to the priority in item 03:

- PGB, battery charged enough: solar feeds the maximum into the grid, the surplus charges the battery.
- PGB, battery not charged enough: solar charges the battery first, surplus goes to the grid.
- GPB and PBG: solar charges the battery as much as possible, the surplus goes to the grid.
- MKS: no export to the grid.



37 Maximum grid export power

6.5 kW by default, range 0–6.5 kW, step 0.5 kW.

Lithium battery: BMS link and state of charge (SOC)

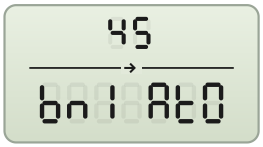


44 BMS communication

OFF by default. Select the protocol your battery's BMS supports, and the inverter will receive battery data from it:

CVT CVTE (485)	**PYL** PYLON (485, CAN)	**GRO** GROWATT (485, CAN)
VOL VOLTRONIC (485)	**IRO** China Tower (485)	**PAR** PACE RTU (485)

If the link fails, warning 56 appears and the inverter stops following BMS data.



45 BMS address (BMS ID)

AtO (auto) by default: the inverter tries addresses from lowest to highest and locks in the first that answers correctly. Can be set manually 0–15 (on the display A–F = 10–15).

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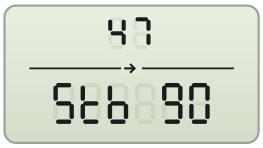
46 Low-SOC cut-off

Default **20 %**, range 5–50 %. When SOC drops to the set value in battery mode, the inverter shuts down with warning 68 (cleared at SOC = set + 5 %). From standby the inverter switches to battery only at SOC ≥ set + 10 %, otherwise warning 69. OFF: no action by SOC.



47 Grid to battery transfer at high SOC

Default **90 %,** range 10–100 %. In PBG mode the inverter switches from grid to battery when SOC is above the setting **and** battery voltage is above item 16. OFF: no SOC-based transfer.



48 Battery to grid transfer at low SOC

Default **50 %**, range 10–90 %. In PBG mode the inverter switches to grid when SOC is below the set value **or** battery voltage is below item 15. OFF: no switch by SOC. The value must be lower than item 47, otherwise after the next power-on items 47 and 48 stop working.

Second output (SECOND OUT)



38 Second output shutdown by battery voltage

In battery mode the second output switches off when the voltage drops below the set value and back on when it rises above the set value + 1 V per cell. Default **48 V**, range 44–60 V.



39 Second output run time on battery

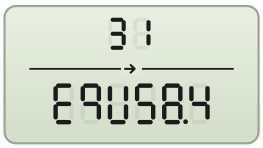
In battery mode the second output switches off when the set discharge time has elapsed: 5–900 min. **FUL:** no time limit.



40 Second output shutdown by SOC

In battery mode the second output switches off when SOC is below the setting and back on when it is 5 % higher. Default **20 %,** range 5–90 % or OFF.

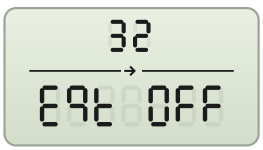
Equalization charge



31 Equalization charge voltage

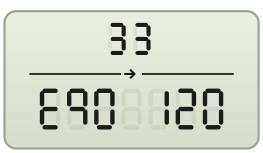
> Equalising charge is for lead-acid batteries. Do not enable it for lithium batteries.

FEL: **56 V**, range 48–60 V. AGM, FLD, LIT, CUS: **58.4 V**, range 48–60 V.



32 Equalization charge time

OFF by default (function disabled). Value 5–900 min, step 5 min: the inverter charges the battery to the voltage in item 31 and holds it for the set time.



33 Equalising charge extension

If the time has elapsed and the voltage of item 31 has not been reached, charging is extended by this time, then the battery switches to float. Default **120 min**, 5–900 min, 5 min step.

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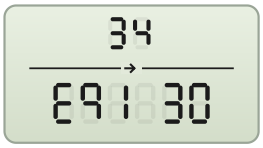


34 Equalization charge interval

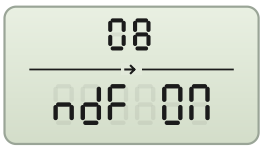
How often to run equalising: default **30 days,** 1–90 days.



35 Start equalising now

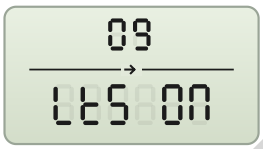
OFF by default. ON: equalisation starts immediately (when it is enabled, the battery is connected and charging is at the float stage).

Display, buzzer and protections



08 Return to main screen

ON: after 1 min without presses the display returns to the first page. OFF: stays on the current one.



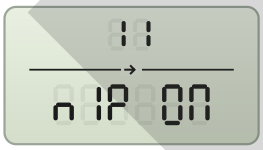
09 Auto restart after overload

ON by default: after an overload the inverter restarts by itself.



10 Auto restart after overheating

ON by default: after overheating the inverter restarts by itself.



11 Alarm on grid or solar loss

ON: when the grid fails, the buzzer sounds for 5 s. OFF: silent.



12 Power saving mode

OFF by default. ON: in battery mode with a load under 25 W the output switches off periodically; above 35 W it runs continuously.



13 Switch to bypass on overload

OFF by default. ON: in PBG and MKS modes on overload the inverter immediately switches the loads to grid (bypass).



14 Silent mode

OFF by default. ON: the buzzer stays silent on any warnings and faults. Button sounds remain.



24 Backlight auto-off

ON: the backlight goes off after 1 min without key presses.

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25 Soft start

OFF by default. ON: the output voltage rises smoothly from 0. Only for a single inverter (not in parallel).



26 Reset to factory settings

Set ON: all settings return to factory defaults, then the item shows OFF again. Works on grid and in standby; not in battery mode.

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Faults and warnings

Faults (Err): the red FAULT indicator is lit

The inverter enters fault mode and the display shows a code, e.g. **Err 18**. The inverter tries to restart by itself; if it does not work after six attempts, switch it off completely (until the display goes dark) or wait 30 minutes and it will restart.

Code	Meaning	When it occurs	When it clears
1	**Bus boost error**	During grid soft start the bus voltage does not reach the set value	15 s after the voltage is restored
2	**Bus overvoltage**	Bus voltage above the set value	15 s after the voltage is restored
3	**Bus low voltage**	Bus voltage below the set value	does not recover
4	**Battery overcurrent**	Battery current above the set value	does not recover
5	**System overheating**	Power stage temperature above the set value or fan not connected	15 min after cooling and connecting the fan
6	**Battery overvoltage**	Battery voltage above the set value	15 s after the voltage is restored
7	**Bus soft-start error**	During start from battery the bus voltage did not reach the set value	after 15 s
8	**Bus short circuit**	Bus voltage below the set value	does not recover
9	**Inverter soft-start error**	During start the output voltage did not reach the set value	after 15 s
11	**Low output voltage**	In battery mode the output voltage is below the set value	after 15 s
12	**Output short circuit**	Output voltage below and current above the set values	after 15 s
13	**Inverter reverse power**	Inverter power is negative and exceeds the set value for some time	after 15 s
14	**Overload**	Load current above the set value (see also item 61)	after 15 s
17	**Firmware update**	The inverter firmware is updating (including over the internet)	after the update
18	**PV polarity reversed**	Solar panels connected with reversed polarity	15 s after correct connection
26	**BMS fault**	The BMS message contains an error code	after the BMS fault is cleared
29	**Abnormal load**	An abnormal load causes abnormal output voltage	15 s after voltage is back to normal

Warnings (ALA): the red FAULT indicator flashes

The inverter keeps working, the display shows a code, e.g. **ALA 52.** The buzzer sounds every second for 1 minute.

Code	Meaning	When it occurs	When it clears
50	**Battery disconnected**	Battery disconnected (up to 10 min)	after battery connection and 2 min of charging
51	**Battery discharged to shutdown**	Battery voltage below item 19: shutdown or cannot switch on	when voltage is above item 19 by 2 V
52	**Low battery voltage**	Battery voltage below item 18	when voltage is above item 18 by 2 V
53	**Short circuit while charging**	Battery voltage below 24 V with charge current present; not charging	up to 1 min after the short is cleared
56	**No BMS link**	BMS link lost (item 44 enabled)	after the link is restored or the function is off

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58	**Fan fault**	No fan speed signal; fan runs at full speed	when the signal returns
59	**EEPROM memory error**	Memory read or write error	does not recover
60	**Overload**	Grid current, battery discharge current or load power above rated	when values are below rated
62	**Weak sun, no battery**	Battery not connected, bus voltage below the set value: solar output to the load switches off, battery charging continues	after battery or grid is connected, or after 10 min
68	**Low-SOC cut-off**	BMS reports SOC below item 46; the inverter goes to standby	SOC 5 % above the setting or item 46 or 44 off
69	**Low SOC**	SOC below setting +5 % (grid or battery) or +10 % (standby)	SOC 10 % above the setting or item 46 or 44 off
72	**Battery cannot start the inverter**	In standby the battery voltage is below the start threshold	when voltage is above the threshold
77	**Unstable grid**	Grid lost 3 times in 5 minutes	after 5 min

The code tables are from the manufacturer's manual for inverters on this platform; codes 14, 56, 60, 68, 69 and the menu items in them match the J6500HC booklet.

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Connecting the inverter to Wi-Fi

Per the Quick Configuration Guide v1.0 supplied with the inverter

Step 1 Switch on the inverter

Switch on the inverter and make sure all its parts are working normally.

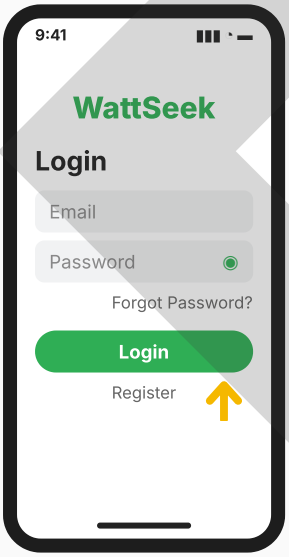
Step 2 Install the Wattseek app

Open the App Store (iPhone) or Google Play (Android), search for **Wattseek** and install the app.

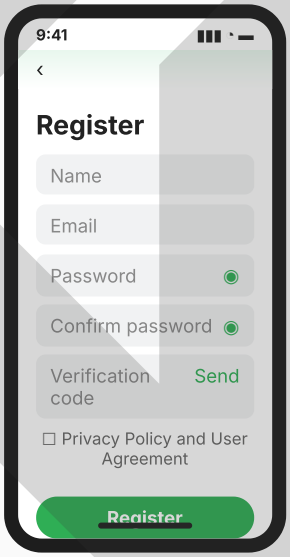
> **Important:** the inverter works only with **2.4 GHz** Wi-Fi; 5 GHz is not supported. Allow the Wattseek app access to **Bluetooth** and **location**, otherwise network setup will fail.

Step 3 Register

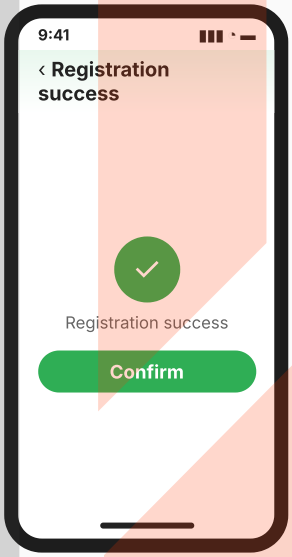
Open Wattseek and tap **Register**. Fill in the details as prompted and tap **Register**, then **Confirm**.



3.1 Tap Register



3.2 Fill in the form



3.3 Tap Confirm

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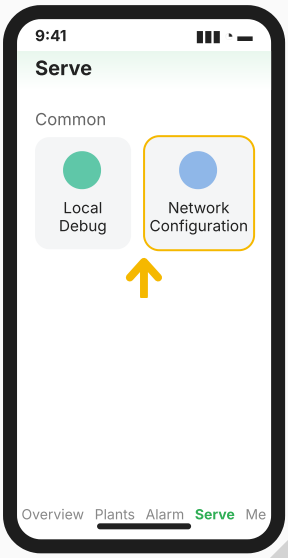
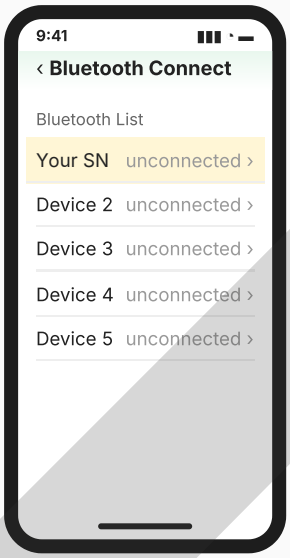
Step 4 Connect the inverter to Wi-Fi

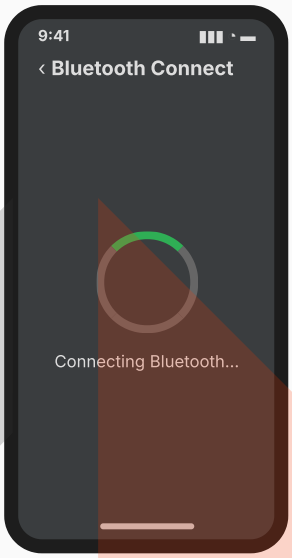
1. Open the **Serve** section and tap **Network Configuration**.
2. In **Bluetooth Connect**, tap the name that matches the inverter's serial number (SN).
3. Wait for the connection: the network settings will open.
4. In **WiFi Information**, select the network, enter the password and tap **Connect**.



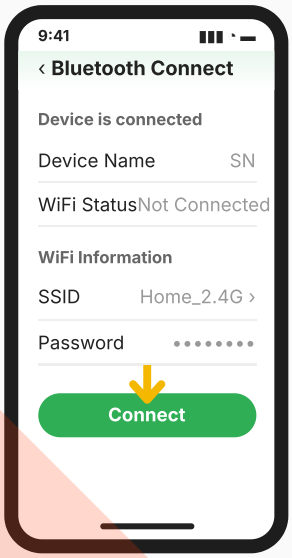
4.1 Serve → Network Configuration



4.2 Your inverter by SN



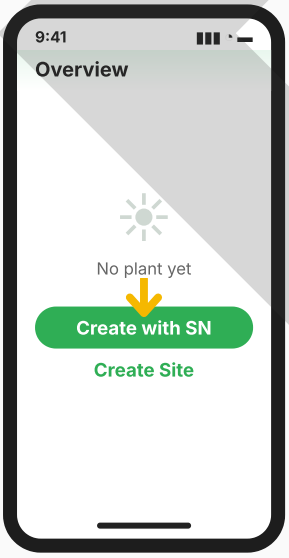
4.3 Bluetooth connection



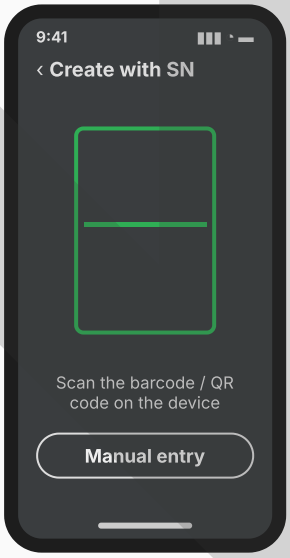
4.4 Network, password, Connect

Step 5 Create a station by serial number (quick way)

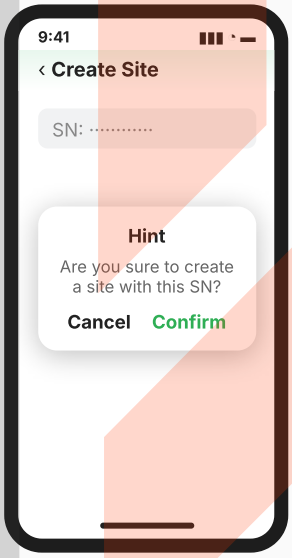
Open **Overview** and tap **Create with SN**. Scan the inverter's QR code or barcode, or enter the SN manually and tap **Confirm**, then **Confirm** again. The station is created; step 6 can be skipped.



5.1 Create with SN



5.2 Scan the code or Manual entry



5.3 Confirm

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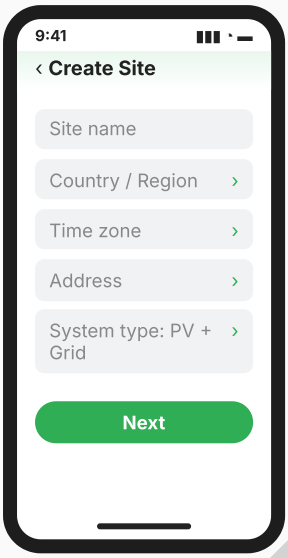
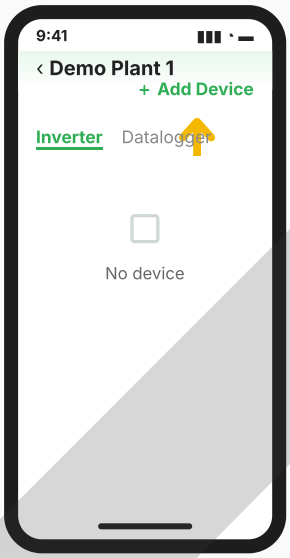
Step 6 Or: create a station manually and add the inverter

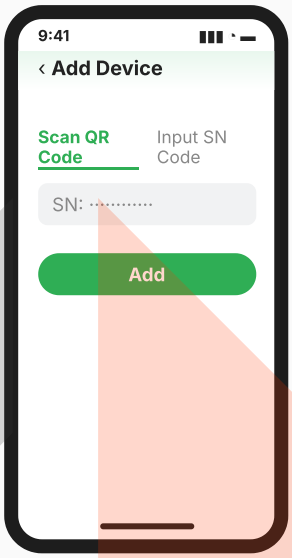
1. On **Overview**, tap **Create Site** and fill in the station details, then **Next** and **Create**.
2. Open the created station, the devices tab, and tap **Add Device** in the top right corner.
3. Scan the QR code or enter the SN manually and tap **Add**.
4. Refresh the list: datalogger status **Normal** means the inverter is linked.



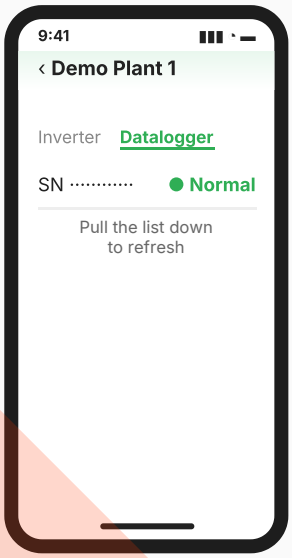
6.1 Station details



6.2 Add Device



6.3 QR code or SN, Add



6.4 Normal status

Step 7 FAQ

Which Wi-Fi does the inverter support?
Only 2.4 GHz; 5 GHz is not supported. Check that the router broadcasts a 2.4 GHz network.

Why can't the network be set up?
Most often the phone has not allowed the Wattseek app access to location and Bluetooth.

The app screens are redrawn schematically from the manufacturer's sheet; your version of Wattseek may look slightly different. This manual is based on the manufacturer's original manual (section 4.2.2 LCD Setting, indicator table, Quick Configuration Guide v1.0).

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