USER MANUAL · ENGLISH

Inverter EASUN SMT-6.2KW 48V

Hybrid solar inverter 6.2 kW / 48 V, model ISolar-SMT-6.2KW-Wifi: description, mounting, connection, modes, LiFePO4 settings, faults



This manual was prepared by the seller from the manufacturer's manual. Before installing, compare the label on the inverter case with this manual: values on the label and in the manufacturer's manual take precedence.

1. What this device is

Hybrid inverter for a 48 V system: a 6200 W pure sine inverter, an MPPT solar charge controller up to 8500 W and a grid charger in one housing. Works as a UPS for home or office and as a solar power station.

- Grid / generator input 230 V (AC IN)
- Solar panel input (PV), MPPT 60–500 V
- 48 V battery: LiFePO4 51.2 V or lead-acid (AGM, flooded)
- 230 V output to loads (AC OUT)
- BMS/RS485 port, current transformer (CT) input, Wi-Fi

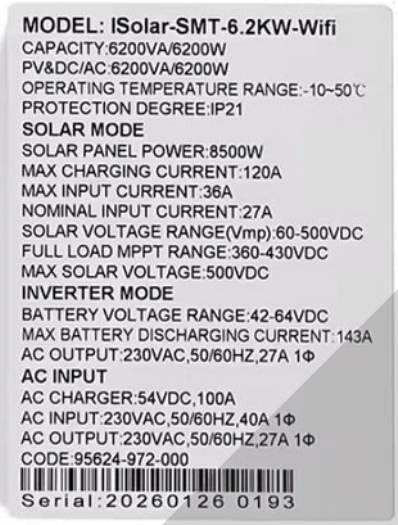
2. Technical specifications

Model	**ISolar-SMT-6.2KW-Wifi**
Rated power	**6200 W** (6.2 kVA), peak 12 400 VA
Battery voltage	**48 V DC** (LiFePO4 51.2 V 16S or lead-acid 48 V), operating range 42–64 V; recommended capacity from 200 Ah (per the manufacturer's table); CV charge 56.4 V, float 54 V (factory)
Output	220 / 230 / 240 V AC, 50 / 60 Hz, pure sine wave; output current up to 27 A
Grid / generator input	L + N + PE, 220–240 V AC, input current up to 40 A; 50 / 60 Hz
Solar panels (PV)	MPPT 60–500 V, best 360–430 V; **Voc no more than 500 V;** max. PV power **8500 W;** PV current 27 A (max. 36 A)
Charging current	solar up to 120 A; grid up to 100 A; total up to 120 A (programs 02 and 11)
Discharge	max. discharge current 143 A
Running without battery	yes, from solar (battery-free mode)
Parallel operation	no
Comms	BMS/RS485 port (RJ45: 1 — RS485-B, 2 — RS485-A, 3–8 not connected); current transformer (CT) input for limiting grid export; Wi-Fi board
Battery cable / protection	38 mm² or 2×25 mm², ring lugs 8.4 mm, torque 5 N·m; fuse 150 A

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AC / PV breakers and cables	AC: breaker 63 A, cable 6 mm², torque 1.4–1.6 N·m; PV: separate DC breaker 30 A, cable 4 mm²
Enclosure rating	IP21

Inverter rating plate



Label on the housing: 6200 VA / 6200 W, panels up to 8500 W, PV voltage 60–500 V (360–430 V at full power), PV current 27 A (max. 36 A), battery 42–64 V DC, max. discharge current 143 A, charge up to 120 A (from grid 54 V, 100 A), AC input 40 A, output 27 A, protection IP21.

3. Contents and location

In the box

- Inverter
- Manufacturer’s manual

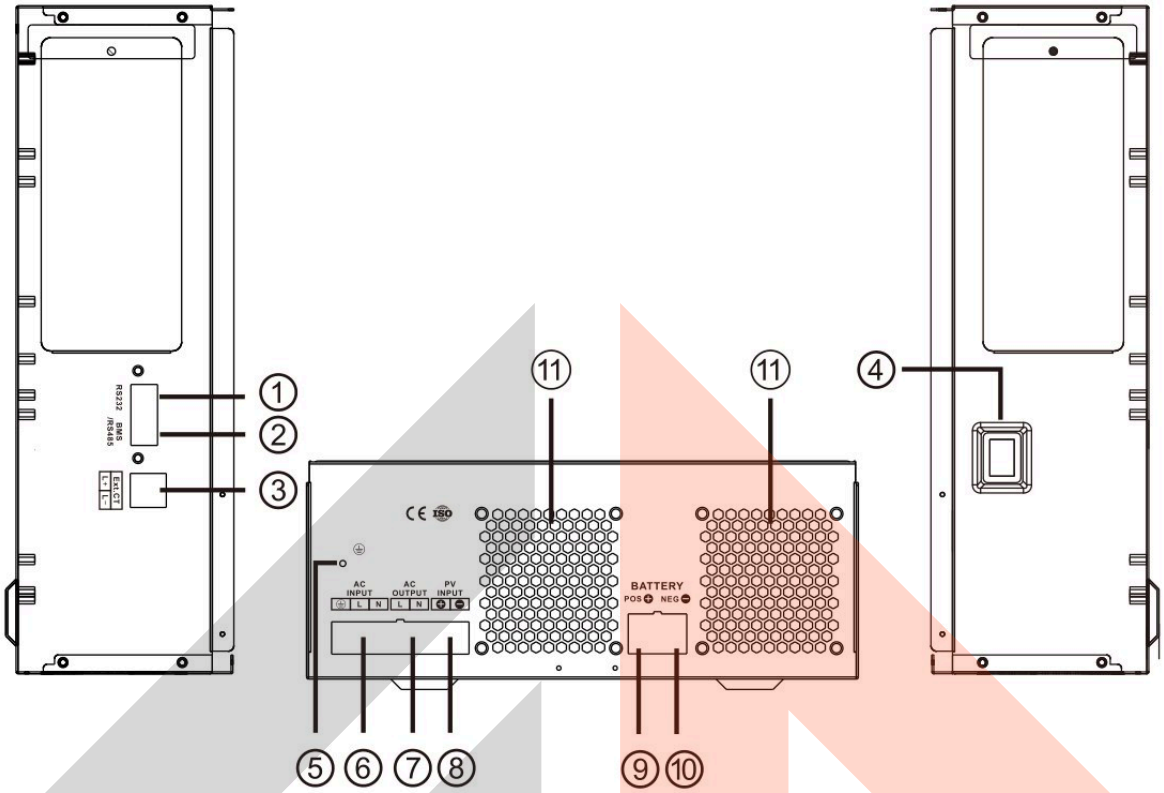
Prepare cables, battery fuse or breaker, AC and PV breakers and expansion bolts separately.

Where to install

- Vertically on a concrete or other non-combustible wall, at eye level
- About 20 cm free space at the sides, 50 cm above and below
- Dry, out of direct sun, with free airflow
- Close to the battery (short battery cables)

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Inverter connectors: bottom and side panels



№	Connector	What it is	What connects where
1	**RS232**	RS232 communication port (side panel)	For service; not connected in normal operation
2	**BMS / RS485**	RJ45 port for communication with the lithium battery BMS	Battery communication cable; pinout: 1 — RS485- B, 2 — RS485-A, 3–8 not connected. Then program 05 = battery protocol, 37 = ON
3	**Ext. CT (L+ · L–)**	Current sensor (current transformer) input	Only for limiting export to the grid: red wire — L+, black wire — L–
4	**ON / OFF**	Power switch (side panel)	Switch on after the battery is connected and the polarity checked
5	**Grounding**	Case earthing screw	Protective PE wire (yellow-green)
6	**AC INPUT (⏚ · L · N)**	Grid or generator input	Via a 63 A breaker, 6 mm² cable, torque 1.4–1.6 N·m. PE first, then L and N
7	**AC OUTPUT (L · N)**	Output to loads (load panel)	Same cable as on the input. Do not confuse with AC INPUT
8	**PV INPUT (+ · –)**	Solar panel input	Via a separate DC breaker, 4 mm² cable. String Voc up to 500 V, operating 360–430 V
9	**BATTERY POS (+)**	Battery positive terminal	38 mm² or 2×25 mm² cable , 8.4 mm ring lug, torque 5 N·m; a fuse or DC breaker in the “+”
10	**BATTERY NEG (–)**	Battery negative terminal	Same cable; check the polarity before connecting
11	**Fans**	Cooling vents	Do not cover; 20 cm of free space at the sides, 50 cm above and below

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Figure and numbers from the manufacturer's manual (section "Connector panels").

4. Wiring sequence

1. All breakers off, inverter switch OFF. Remove the bottom cover.
2. **Battery.** Cable 38 mm² or two cables 2×25 mm² with ring lugs, via a fuse or DC breaker 150 A in "+". Red "+" to "+", black "−" to "−"; reversed polarity damages the inverter. Tightening torque 5 N·m.
3. **Grid and load.** Strip 10 mm of insulation, shorten L and N by 3 mm. PE first (green-yellow), then L and N. Input to the "IN" terminals via a 63 A breaker, load to the "OUT" terminals; do not mix up IN and OUT. Cable 6 mm², torque 1.4–1.6 N·m.
4. Solar panels via a separate DC breaker to PV+ / PV−, cable 4 mm², torque 1.4–1.6 N·m. Check polarity with a multimeter. String Voc including frost up to 500 V, operating voltage preferably 360–430 V, power up to 8500 W.
5. **BMS link** (if the battery has RS485): cable into the BMS/RS485 port: 1 — RS485-B, 2 — RS485-A. Then program 05 = battery protocol, program 37 = ON.
6. Current transformer (CT), if grid export must be limited: red wire L+, black L−; CT installation per the figure in the "Original manufacturer's manual".
7. Refit the cover, switch on the battery, then the inverter switch, set up the menu (section 6), then grid, PV and load.

Safety. Make connections with battery, grid and PV off; cover the panels in daylight. Battery short-circuit current is very high. Installation is best left to an electrician. Air conditioners and fridges need a 2–3 minute restart delay.

5. Output and charging priorities

Program 01	How it works
SUb	Sun first; if sun is not enough, the grid adds. The battery is kept full as backup.
SbU	Solar first, then battery; switches to grid when the battery voltage falls to program 12, back to battery per program 13. Maximum self-consumption.
SUF	Solar first, surplus exported to the grid (only if export is allowed; limit via CT, programs 58–59)
PEC	Scheduled mode (time programs 45 to 72)

Program 16	How the battery charges	Code	How the battery charges
SNU	Sun and grid together (factory)	CSO	Sun first, grid when there is no sun
OSO	Sun only	SOt	Scheduled

In battery mode only the sun charges.

6. Settings for LiFePO4 51.2 V

Hold **ENTER** for 3 seconds to enter the menu; **UP / DOWN:** select, **ENTER:** confirm, **ESC:** exit. Set the battery type first (05): voltages 26, 27, 29 are adjustable only for type USE.

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№	Program	What to set
05	Battery type	**USE:** LiFePO4 without comm cable (factory AGn = AGM). If the battery has an RS485 port and comm cable, its protocol: PYL (Pylontech) or GrO; FEL, LIA, LIb, tqF, LIC also exist
37	BMS communication	OFF without comm cable; **ON:** with cable in the BMS/RS485 port (then SOC programs 38–41 apply)
02	Max. charge current (solar + grid)	per battery data sheet: 5 kWh (100 Ah): **50 A;** 16 kWh (314 Ah): **100 A;** 32 kWh: **120 A** (factory 60 A, step 10 A, maximum 120 A)
11	Grid charging current	not above program 02 and not above 100 A
26	Charge voltage (CV)	**56.8 V** (factory 56.4 V)
27	Float voltage	**54.4 V** (factory 54 V)
24	Low-voltage warning	**49.0 V** (factory 44 V, range 40–54 V)
29	Low-voltage cut-off	**48.0 V** (factory 42 V); the factory 42 V is too low for LiFePO4
12	Switch to grid (SbU)	**50 V** (factory 46 V, range 44–51 V)
13	Back to battery (SbU)	**54 V** or FUL: after full charge (range 48–58 V)
30	Equalization charge	EdS: off (not used for LiFePO4)
03	Input range	APL: household appliances and generator; UPS: computers
09 / 10	Output frequency / voltage	50 Hz, 230 V
50	Grid interaction mode	U2b (factory): no grid export

7. Wi-Fi monitoring

Install the Wi-Fi collector app, register, set the collector to your 2.4 GHz home Wi-Fi and add the device by the ID on the collector sticker. Step by step with figures: in the “Original manufacturer’s manual” on the product page.

Display codes

Red LED steady: fault (code with ERROR icon); flashing: warning (code with ⚠ icon).

Code	Meaning	What to do
01	Fan fault	Check the fan; if it recurs, go to a service centre
02, 05	Overheating / output short circuit	Free airflow (20 cm at the sides, 50 cm above and below), check output wiring
03	High battery voltage	Check battery type (05) and charge voltage (26)
04	Low battery voltage	Charge the battery
07	Overload	Reduce the load (to 6200 W)
59	PV voltage above the limit	Use fewer panels in series (Voc up to 500 V)
bP	Battery not connected	Check the battery fuse and terminals
15	Low PV energy	Normal in the evening or cloudy weather
27	Max. discharge current exceeded	Reduce the load or check the BMS discharge limit
61	Lost link with BMS	Check the cable in the BMS/RS485 port, protocol in item 05 and item 37
69 / 71	BMS blocks charge / discharge	Check the battery status in its app

Full code table: see the “Original manufacturer’s manual” on the product page.

8. Troubleshooting

What you see	Cause	What to do
Turns on and goes off after 3 s	Battery voltage too low	Charge the battery, check fuse and terminals
No response	Battery deeply discharged or internal fuse blown	Charge the battery; if that fails, contact service
Grid is on, but runs from battery	Input breaker tripped, poor grid or generator quality, SbU priority	Check the breaker and AC wiring; for a generator set item 03 = APL, check item 01
Relay clicks, display flashes	Battery disconnected	Check battery cables
No solar charging	PV voltage out of range, PV breaker off	Check string voltage and polarity
Warning 61	No BMS link	Check the RJ45 cable (pins 1 and 2), programs 05 and 37

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