

SUNTECH ST2000

LiFePO₄ Portable Power Station

Technical Datasheet



1. Product Overview

The SUNTECH ST2000 is a 2200 W-class LiFePO4 (lithium iron phosphate) portable power station with a 2074 Wh battery capacity. It combines pure sine wave AC output, wide-range solar/car MPPT charging, an entry-level UPS function, and a full complement of AC, DC, USB-A, USB-C, and QC fast-charge output ports, controlled via independent switch buttons and monitored through an LED status display.

2. Key Specifications Summary

Product Model	ST2000
Battery Capacity	2074 Wh (25.6 V, 60 Ah)
Cell Chemistry	LiFePO4 (Lithium Iron Phosphate)
Rated AC Output Power	2200 W
Peak AC Output Power	3000 W
AC Output Waveform	Pure Sine Wave
Cycle Life	2000+ cycles (remaining capacity above 80%)
Product Size	411 x 260 x 355 mm
Weight	26 kg

3. Battery & Charging

3.1 Battery

Cell Type	LiFePO4 Battery
Battery Energy	2074 Wh (25.6 V, 60 Ah)
Cycle Life	2000+ cycles, remaining capacity above 80% thereafter
Charging Temperature	0°C to 40°C
Discharge Temperature	-10°C to 40°C
Storage Temperature	-10°C to 40°C
Safety / Storage Recommendation	Recharge once every 3 months if not in regular use

3.2 Charging Inputs

AC Charge Input Voltage	220-240 Vac, 50 Hz / 60 Hz (max. 1200 W)
Fast Charge Time (AC, full charge)	Approx. 1.5 hours
Solar Charge Input	XT60 interface, 12-65 V DC, max. 20 A, max. 500 W
Car Charging Input	Via XT60 interface (car cigarette lighter / DC12-24V)
Charge Controller	Built-in MPPT (Maximum Power Point Tracking)
AC Overcurrent Protection	Input current continuously above 20 A trips a resettable protection switch

MPPT technology continuously compares solar panel output voltage against battery voltage to identify the optimum charging power point, maximizing charge efficiency from solar panels. Actual solar charging efficiency varies with weather, temperature, sunlight intensity, and panel angle.

4. Output Ports & Ratings

AC Output (x4 sockets)	220-240 Vac, 50 Hz / 60 Hz — Rated 2200 W / Peak 3000 W, Pure Sine Wave
Car Cigarette Lighter Output (x1)	12 V, 10 A (max. 120 W)
DC5521 Output (x4)	12 V, 10 A (max. 120 W)
USB-A / USB2.0 Output (x2)	5 V, 2.4 A (max. 12 W)
QC3.0 Output (x4)	5 V/3.6 A, 9 V/2.5 A, 12 V/2 A (max. 24 W)
USB-C Output (x2)	5 V/9 V/12 V/15 V/20 V, up to 3 A (max. 60 W, PD 60 W)

4.1 Port Notes

- DC5521 output ports and the car cigarette lighter output share the same DC switch button.
- QC3.0 port: supports QC2.0/3.0, FCP, AFC, BC1.2, Apple, Samsung, and VOOC fast-charge protocols when used alone; supports 5 V/2.4 A when used simultaneously with other ports. DC icon lights automatically when active.
- USB-C port: supports PD60W output, compatible with PD2.0/3.0, QC2.0/3.0, MTK PE+1.1, FCP, BC1.2/Apple/Samsung charging protocols. Automatically wakes the DC board on plug/unplug and supports firmware upgrade of the DC board. Not controlled by any switch button.
- USB-A port: ordinary USB output, supports BC1.2 and Apple charging protocols, 5 V/2.4 A.
- XT60 input port: dual-purpose input for car charging or solar panel charging; input voltage range 12-65 V, max. input current 20 A, max. input power 500 W.

5. Power Delivery Features

5.1 Super Fast Charging Technology

- Fast AC charging — full charge in approx. 1.5 hours
- High-power solar charging support, up to 500 W
- Built-in UPS function
- Intelligent inverter system
- Automatic frequency switching (50 Hz / 60 Hz); manual setting required for off-grid use

5.2 UPS (Uninterruptible Power) Function

UPS Switching Time	≤ 15 ms
Function Type	Entry-level UPS — supports simultaneous charge and discharge

When mains power is suddenly cut, the ST2000 automatically switches to supply power from the internal battery within 15 ms. This is a non-professional UPS function and does not support 0 ms switching — it is not recommended for equipment requiring high-level uninterrupted power (e.g. critical data services, workstations) without prior compatibility testing.

5.3 Simultaneous Charge / Discharge Behavior

- When input power exceeds output power: displayed input value = total input power minus total output power; displayed output value = power drawn by the connected appliance.
- When input power is less than or equal to output power: displayed input value = 0; displayed output value = power drawn by the connected appliance.

6. Controls & Switch Buttons

AC Switch — Power On	Long press 2 s. LED screen and AC indicator light simultaneously.
AC Switch — Power Off	Click once; AC indicator flashes, output shuts down after 5 s with an audible beep.
DC Switch — Power On	Long press 2 s. LED screen and DC indicator light simultaneously.
DC Switch — Power Off	With USB, AC and LED all off, short press to fully power down the unit.
USB Switch — Power On	Long press 2 s. LED screen and USB indicator light simultaneously.
USB Switch — Power Off	With DC, AC and LED all off, short press to power down the host.
LED Light Switch	Short press 1 s to turn on; long press 3 s to activate SOS mode; short press to turn off.
DC Car Cigarette Output	Long press DC switch 2 s to activate DC5521 output and cigarette lighter output simultaneously.

6.1 Combination Button Functions

- Hibernation mode toggle: hold USB switch, tap DC switch simultaneously and release DC switch immediately — hibernation icon toggles on/off.
- Hibernation mode behavior: AC output below 5 W auto-shuts-off after 8 hours; if USB/DC output is also off (or current < 200 mA) and AC is off, the unit fully shuts down after 10 minutes.
- Non-hibernation mode: AC and DC icons/outputs remain on indefinitely once activated, even without load, until turned off manually.
- Restart combination: hold LED switch while pressing DC switch, release DC switch first, then LED switch. Screen refreshes fully, then returns to displaying current status after 3 seconds.

7. LED Display Indicators

The LED display shows, depending on state: total charging input power (0 W when idle); solar charging status icon; AC power status icon; battery capacity (with scrolling animation while charging); connected-appliance input power; total DC/USB/LED output power icon; AC inverter output power icon (both icons lit together indicate combined total output power); remaining charging time; remaining battery runtime; LED-on indicator; hibernation-mode indicator; fault/abnormal-status indicator; low-temperature charge/discharge inhibit indicators; high-temperature charge/discharge inhibit indicators; inverter output frequency (50 Hz / 60 Hz); and inverter output voltage (110 V / 220 V).

7.1 Error Codes

dCOC	DC overcurrent or short-circuit fault (abnormal USB output does not display a fault code)
E + source + code	General fault format: source 1 = DC fault, source 2 = AC (inverter) fault
Code 1 / 2	Output short circuit or overcurrent
Code 3 / 4	Over-temperature
Code 5	Input overvoltage
Code 6	Input undervoltage
Code 7	Abnormal fan
Code a	AC power-on/off status unconfirmed (auto-clears)

. Physical & Environmental Specifications

Product Size	411 x 260 x 355 mm
Weight	26 kg
Operating Temperature (per safety instructions)	-10°C to 40°C
Charging Temperature	0°C to 40°C
Discharge Temperature	-10°C to 40°C
Storage Temperature	-10°C to 40°C
Recommended Storage Maintenance	Charge and discharge once every 3 months during long-term storage

9. Package Contents

- 1 x ST2000 LiFePO4 Portable Power Station
- 1 x AC Power Charging Cable
- 1 x Car Charger Cable
- 1 x MC4 Solar Charging Cable
- 1 x User Manual

10. Safety Instructions (Summary)

- Read all instructions before use; keep away from unsupervised children.
- Do not insert fingers/hands into the unit; keep away from rain and snow.
- Use only chargers/power supplies recommended by the manufacturer.
- Do not use if damaged or modified; do not disassemble — service only by qualified personnel with identical replacement parts.
- Turn off when not in use; store in a cool, dry place; avoid hot or humid environments.
- Operating temperature: -10°C to 40°C.
- If unused for extended periods, charge and discharge once every 3 months.
- Mild warmth during charging is normal; battery performance will gradually decline over years of use.
- Do not clean with harmful chemicals or detergents; avoid dropping or excessive force.
- When disposing of cells/batteries, keep different electrochemical systems separated.

11. Warranty

Standard warranty period: 1 year from date of purchase. The product is replaced free of charge under the terms of the manufacturer's warranty policy when used according to the manual and if it fails within the warranty period. Warranty does not cover failure from misuse, improper storage (complete discharge), non-designated power adapters, or unauthorized repair/disassembly/modification. Shipping costs for warranty returns are the customer's responsibility.