

SUNTECH PT3650s

LiFePO₄ Portable Power Station

Technical Datasheet



1. Product Overview

The SUNTECH PT3650s is a high-capacity LiFePO4 (lithium iron phosphate) emergency energy storage / portable power station with a 5222 Wh battery. It delivers 3650 W of rated pure sine wave AC power, supports simultaneous AC and MPPT solar charging, an entry-level UPS function, app (Bluetooth/Wi-Fi) control, and a full complement of AC, USB-A (QC3.0), USB-C, and DC output ports.

2. Key Specifications Summary

Product Model	PT3650s
Battery Capacity	5222 Wh (51.2 V, 102 Ah)
Cell Chemistry	LiFePO4 (Lithium Iron Phosphate)
AC Rated Output Power	3650 W
AC Peak Output Power	5000 W
AC Output Waveform	Pure Sine Wave
Cycle Life	5000+ cycles
Product Size	508 x 310 x 658 mm
Weight	~70 kg

3. Battery & Charging

3.1 Battery

Cell Type	LiFePO4 (Lithium Iron Phosphate) Battery
Battery Energy	5222 Wh (51.2 V, 102 Ah)
Cycle Life	5000+ charge/discharge cycles
Charging Temperature	0°C to 40°C
Discharge Temperature	-10°C to 40°C
Storage Temperature	-10°C to 40°C
Safety Protection	Temperature control, overload protection, short-circuit protection, and other safeguards

3.2 Charging Inputs

AC Charging Input	220 V, max. 3000 W
Solar (MPPT) Charging Input	12-100 V DC, max. 20 A (max. 1000 W)
EV Charging Pile Input	220 V, 10 A
Charging Input Port	XT60 input port

Supports AC and MPPT (solar) charging separately or simultaneously. When charging via AC, the screen shows the AC-charging icon; when charging via MPPT, the screen shows the solar-charging icon; when both are active at once, the screen shows total charging power with both icons lit. Built-in MPPT (Maximum Power Point Tracking) technology continuously compares solar panel output voltage against battery voltage to identify the optimum charging point and maximize charging efficiency.

4. Output Ports & Ratings

AC Output (x3 sockets)	220-240 Vac, 50 Hz / 60 Hz — Rated 3650 W / Peak 5000 W, Pure Sine Wave
QC3.0 Output (x2)	5 V (max. 100 W)
USB-C Output (x1)	5 V / 9 V / 12 V (max. 100 W)
DC Output	Via dedicated DC output key / port
Car Charging Output Port	12 V-style output for car-charged devices

4.1 Panel Layout

- LCD display — shows battery %, input/output power, and status icons
- Power switch button — long-press to power on/off
- Emergency stop switch button
- AC output socket(s) and AC input socket
- XT60 input port (AC/solar/EV charging)
- USB-C output port and USB-A output port(s)
- Car charging output port
- Direct current (DC) output key and communication output key

5. Power Delivery Features

5.1 Supercharge Technology

- No fast-AC-charging support (standard AC charging only)
- Built-in entry-level UPS function
- Intelligent inverter system
- High-power solar charging support, up to 1000 W
- 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 unit 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 — 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 & Operation

Power On	Long-press the power (main) switch button; also auto-powers-on when AC or MPPT charging begins
Power Off (non-charging)	Long-press the power switch button for 1 second
Power Off (while charging)	Long-press the power switch button (longer press required)
Output On	After power-on, short-press the AC / DC / USB output button to enable that output
Output Off	Long-press the corresponding output button
Auto-Shutdown (Hibernation)	Disabled by default; short-press power button to toggle. When enabled, unit auto-shuts-down after a set idle period with no load and not charging
LED Light	Long-press to turn on/off; short-press to cycle Lighting → Alarm → SOS → Lighting modes

7. LCD Display Indicators

The display shows: temperature alarm indicator (with fault code); remaining charge/discharge time; AC output indicator (with output frequency, flashes with fault code if abnormal); USB output indicator (flashes for USB-A or USB-C fault); DC output indicator (flashes if abnormal); battery percentage; current input power (W); current output power (W); Wi-Fi connection indicator; cooling fan status indicator; micro-inverter on-grid connection indicator; PV (solar) charging indicator; AC charging indicator (flashes when battery is low); alarm/fault code indicator; and LED light indicator.

8. App Control

The unit can be monitored and controlled remotely via the "Smart Life" app (or "ZHINENGSHENGHUO" app in China) over Bluetooth/Wi-Fi. After connecting the phone's Bluetooth and Wi-Fi, add the device (named "Outdoor Power-X") in the app; the first connection requires a working Wi-Fi network. Once connected and the power station is powered on, it will show as online in the app.

9. Physical & Environmental Specifications

Product Size	508 x 310 x 658 mm
Weight	~70 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 the product at least once every 3 months during long-term storage

10. Package Contents

- 1 x PT3650s Emergency Energy Storage Power Station
- 1 x AC Power Cord
- 1 x Cigarette Lighter Car Charging Cable
- 1 x MC4 Photovoltaic (Solar) Cable
- 1 x User Manual

11. Safety Instructions (Summary)

- Do not expose to strong static or electromagnetic environments, which may disrupt the battery management system.
- Do not disassemble or pierce the unit — risk of leakage, fire, or explosion.
- Keep away from liquids, rain, and damp environments; never immerse in water.
- Do not heat, microwave, pressurize, or expose to direct sun or open flame; avoid high-temperature environments.
- Battery use temperature: -10°C to 40°C; performance and safety degrade materially outside this range.
- Allow the unit to return to normal temperature before use; never cover the cooling air inlet/outlet during operation.
- Use only the manufacturer-paired adapter and accessories.
- Never use a swollen, leaking, or otherwise damaged battery — contact support immediately.
- If dropped in water, remove immediately, keep at a safe distance until fully dry, and do not reuse — dispose of properly.
- Do not insert foreign metal objects into the casing, sockets, or ports — risk of short circuit, overheating, explosion, or fire.
- Do not place heavy objects on the unit; avoid impacts or heavy bumps.
- Clean dirty AC sockets/connectors with a dry cloth only.
- In case of fire, use in this order: water/water mist, sand, fire blanket, dry powder, then CO2 extinguisher.
- If unused for extended periods, recharge at least once every 3 months; dispose of/recycle batteries per local regulations.

12. Warranty

Standard warranty period: 1 year (12 months) 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.