USER MANUAL

HYBRID ENERGY STORAGE SYSTEM

SunEnergyXT 500 PRO
SunEnergyXT 500 PRO AC Core
SunEnergyXT 500
SunEnergyXT B500

Manufacturer’s Warranty

Dear Customer,

Thank you for choosing our product.

The manufacturer provides a manufacturer’s warranty of ten (10) years for this product, starting from the date of purchase.
This product has been designed, manufactured, and tested in accordance with applicable legal quality and safety standards and is intended for use as specified.

This manufacturer’s warranty is provided voluntarily by the manufacturer and applies in addition to the statutory warranty rights.
Your statutory warranty rights remain fully unaffected by this manufacturer’s warranty.

In the event of a product malfunction, please contact the manufacturer or your dealer.

Notes on Use

Proper storage and use of the product in accordance with this User Manual can help extend the product’s service life and maintain its performance.
Please ensure that the product is operated only under the specified operating conditions.
The manufacturer assumes no liability for damage resulting from improper use, use outside the intended purpose, or failure to comply with this User Manual.

Detailed warranty terms are available at: https://www.sunenergyxt.com/en/warranty-terms

Disclaimer

Please read this User Manual carefully before using this product to ensure that you fully understand and correctly operate the product.
Keep this User Manual for future reference.
Improper use may result in serious personal injury to the user or others, damage to the product, or property damage.
By using this product, the user confirms that they have read, understood, and accepted all terms and contents of the operating instructions.
The user is responsible for any improper use and its consequences.
We assume no liability for damage resulting from failure to follow the operating instructions.
Within the scope of applicable laws and regulations, we reserve the right of final interpretation of this document and all product-related documents.
This document may be changed, updated, or revised without prior notice.

Safety Instructions

NOTICE

1. This manual is intended for both end users and qualified technical personnel.
   Basic installation and operation may be carried out by the user in accordance with the instructions provided.
2. Advanced operations, electrical work, or complex configurations must be carried out exclusively by qualified technical personnel in accordance with applicable local regulations.

DANGER

1. The Hybrid Energy Storage System has been designed and tested in accordance with relevant safety regulations.
2. Strictly observe the safety instructions in this User Manual during operation.
3. Before performing any work, carefully read and follow all safety instructions and warnings.
4. Use the device only in accordance with the instructions in this User Manual to avoid personal injury or property damage caused by improper use.

Environmental Protection

The symbol of the crossed-out wheeled bin indicates that:
Electrical and electronic equipment must not be disposed of as unsorted household waste.
Such equipment must be taken to designated collection points for proper recovery and recycling.

Table of Contents

1. Safety **01**
1.1 About This Manual 01
1.2 Unpacking 01
1.2.1 Inspection Before Installation 01
1.2.2 Checking the Package Contents 01
1.3 Explanation of Symbols Used in This Manual 01
1.4 Safety Instructions 02
1.5 Disposal 03

2. Specifications **04**
2.1 Technical Specifications of the Head Storage 04
2.2 Technical Specifications of the Expansion Storage 05

3. Product Overview **07**
3.1 Product Overview – Head Storage 07
3.2 Product Overview – Expansion Storage 07
3.3 Status Indicators (Overview) – Head Storage 08
3.4 Status Indicators (Overview) – Expansion Storage 09

4. Component List **10**
4.1 Hybrid Energy Storage System (Head Storage) 10
4.2 Expansion Storage 10
4.3 Optional Accessories 11

5. Installation Guide **11**
5.1 Installation Notes 11
5.1.1 Storage Requirements 11
5.1.2 Installation Environment Requirements 11
5.1.3 Mounting Support Requirements 12
5.1.4 Installation Tool Requirements 12
5.2 Installation Procedures 13
5.2.1 Inspection Before Installation 13
5.2.2 Installation of the Head Storage and Expansion Storage (if applicable) 15
5.2.3 Securing the Head Storage and Expansion Storage (if applicable) 19
5.3 Grounding Protection 22
5.4 Cable Connections 23
5.4.1 Grid Connection and PV Connection 23
5.4.2 Direct Connection of PV Modules 24
5.4.3 Parallel Connection of PV Modules 26
5.5 Off-Grid Parallel Operation 27
5.6 Steps for Removing Connectors 27
5.6.1 Removing the PV Connector 28
5.6.2 Removing the AC Connector 28

6. Operation Guide **28**
6.1 Smart Accessories 28
6.1.1 Installation of an Smart Energy Meter (Optional) 29
6.2 UPS Function 29
6.3 Battery Heating Function 29
7. Connecting the Device to the App **30**
7.1 Network Configuration Notes 30
7.1.1 Bluetooth Low Energy (BLE) Status 30
7.1.2 Description of Local Mode 30
7.2 SunEnergyXT App 31
8. Care and Maintenance **32**
8.1 Fault Types 32

1. Safety

1.1 About This Manual

This User Manual describes the unpacking, product overview, installation, electrical connections, button and indicator descriptions, customer service, and safety guidelines for the SunEnergyXT 500 PRO*, SunEnergyXT 500, and SunEnergyXT B500.

* The SunEnergyXT 500 PRO AC Core is based on the SunEnergyXT 500 PRO.
  The MPPT function is not activated by default.
  A paid upgrade service is required for activation of the MPPT function.

MPPT Function Activation:
Scan the QR code for activation instructions and further information.

1.2 Unpacking

1.2.1 Inspection Before Installation

Before unpacking the device, please check the outer packaging for any damage, such as holes or tears, and ensure that the device model is correct.
If any damage is found or the model does not match your order, do not open the package and contact SunEnergyXT dealer or SunEnergyXT Customer Service immediately.

1.2.2 Checking the Package Contents

After unpacking, please check that all delivered components are complete and undamaged.
If any parts are missing or damaged, please contact your SunEnergyXT dealer or SunEnergyXT Customer Service.

1.3 Explanation of Symbols Used in This Manual

⚠DANGER

Do not damage, cover, or remove any warning labels on the device.
After installation, all labels must remain clearly visible.

Symbol	Meaning	Symbol	Meaning
	Refer to the User Manual		DANGER: Risk of electric shock; time-controlled discharge of the energy storage system
	WARNING: Hot surface – risk of burns		Protective Earth (PE) connection point
	WARNING: General hazard	**IP65**	Degree of protection (Ingress Protection rating)

Definition of Warning Notices Used in This Manual:

Symbol	Meaning	Symbol	Meaning
DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.		Included in the package
WARNING NOTICE	Weist auf wichtige Informationen hin, die für den sicheren Betrieb oder den Schutz des Geräts relevant sind.		Optional (not included in the package)

1.4 Safety Instructions

1. Do not use the battery near heat sources (e.g. open flames, heaters, or furnaces).
2. Operate the battery only within the ambient temperature ranges specified in this User Manual.
   Excessively high temperatures may cause battery failure or even fire hazards.
   If the battery temperature is below −10 °C and the heating function is not activated, the discharge capacity will be significantly reduced.
3. In the event of a battery fire, immediately disconnect the input and output power supply.
   Recommended extinguishing agents (in the following order):
   Water or water mist, sand, fire blanket, dry powder fire extinguisher, or carbon dioxide (CO_2) fire extinguisher.
4. If water enters the battery or the battery falls into water, stop operation immediately and disconnect the power supply.
   Move the battery to a safe, well-ventilated area and keep a safe distance until it is completely dry.
   Take appropriate measures to prevent electric shock before touching the battery.
   A battery that has been exposed to water and dried must not be reused or disposed of improperly, and must be disposed of in accordance with applicable national and local regulations.

5. If the battery terminals are contaminated, clean them with a dry cloth.
6. Do not use the battery in environments with strong static electricity or strong magnetic fields.
7. Do not place any objects on the battery.
8. Store the battery in a dry, well-ventilated location.
9. Keep the battery out of reach of children and pets.
10. Do not operate the battery in environments with extremely low air pressure, as this may pose a risk of explosion or leakage.
11. Do not disassemble the battery yourself or damage the enclosure in any way.
12. Do not touch the battery terminals with wires or other conductive objects.
13. Avoid impacts, drops, and strong vibrations during operation and transportation. In the event of severe impact, immediately switch off the battery and disconnect the power supply.
14. Do not use unauthorized components or accessories, as this may void the warranty.
15. Before connecting the battery to system components, ensure that the battery is switched off. Before switching on the system, verify that all components are connected correctly.
16. Do not insert foreign objects or body parts into the input or output ports.
17. Do not use damaged power cables, connectors, or non-compliant wiring.
18. To reduce the risk of electric shock, always switch off the power supply and unplug all connectors before performing any further actions, unless otherwise instructed by Customer Service.
19. Maintenance work may only be performed by qualified technical personnel using identical replacement parts.
20. Do not use damaged or modified energy storage devices, as this may result in fire, explosion, or personal injury.
21. For long-term storage, charge the battery to approximately 60 % every three (3) months. If no charging or discharging activity occurs for more than six (6) months, the warranty will become void.

1.5 Disposal

⚠WARNING

This product contains batteries with hazardous chemical substances and must not be disposed of with household waste.

1. Fully discharge the battery and dispose of it in accordance with applicable local regulations for battery collection and disposal.
2. If the product is no longer usable due to a defect, please contact Customer Service.

Please strictly observe these instructions !

2. Specifications

2.1 Technical Specifications of the Head Storage

Model		SunEnergyXT 500 PRO[1)]	SunEnergyXT 500
PV Input (PV)[2)]	PV Breakdown Voltage (V)	100	100
	MPPT Voltage (V)	20 ~ 60	20 ~ 60
	MPPT Power (W)	625 × 4 or 800 × 3	625 × 4 or 800 × 3
	Max PV Input Current (A)	22 (4 PV inputs; value per PV input)	22 (4 PV inputs; value per PV input)
	PV Isc (A)	25 (4 PV inputs; value per PV input)	25 (4 PV inputs; value per PV input)
Battery Parameters	Battery Type	LiFePO4	LiFePO4
	Rated Capacity (Ah)	314	314
	Rated Energy (Wh)	5024	5024
	Rated Charge / Discharge Power (W)	2400 / 2600	2400 / 2600
Backup Output (AC)	Rated Output Voltage (Vac)	230	230
	Output Waveform	Sine Wave	Sine Wave
	Output Voltage Range	± 1 %	± 1 %
	Output Frequency (Hz)	50 / 60	50 / 60
	Output Frequency Range (Hz)	± 0.1	± 0.1
	Rated Output Apparent Power (W)	2400	2400
Grid Output (AC)	Rated Output Voltage (Vac)	230	230
	Output Voltage Range (V)	184 ~ 253 V	184 ~ 253 V
	Output Frequency (Hz)	50 / 60	50 / 60
	Output Frequency Range (Hz)	47.5 ~ 51.5 / 57.5 ~ 61.5	47.5 ~ 51.5 / 57.5 ~ 61.5
	Rated Output Power (W)	2400	800
	Output Power Factor	0.8 lagging ~ 0.8 leading	0.8 lagging ~ 0.8 leading
	Anti-Islanding Protection	Supported	Supported
Grid Charging (AC)	AC Max Charging Power (VA)	2400	2400
	AC Max Charging Current (A)	12	12
Grid/Backup Switching	UPS Mode	≤ 10 ms	≤ 10 ms
	Non-UPS Mode	< 2 s	< 2 s
Certifications	Safety Standards	IEC 62109-1/2; IEC 62619; IEC 60730	IEC 62109-1/2; IEC 62619; IEC 60730
	EMC	IEC 61000	IEC 61000
	Cybersecurity Certification	EN 18031	EN 18031
	Grid Connection Certification	VDE 4105	VDE 4105
	Transport	UN38.3	UN38.3
Other Parameters	Cooling Requirements	Natural Cooling	Natural Cooling
	Ingress Protection	IP65	IP65
	Protective Class	Class I	Class I
	Operating Ambient Humidity (%)	95	95
	Operating Temperature (℃)	-20 ~ 55 ℃. Power derating above 45 ℃.	-20 ~ 55 ℃. Power derating above 45 ℃.

Model		SunEnergyXT 500 PRO	SunEnergyXT 500
Other Parameters	Storage Temperature (℃)	−20 ~ 45 ℃ (1 month); 0 ~ 35 ℃, suitable for long-term storage and beneficial to the service life of the device.	−20 ~ 45 ℃ (1 month); 0 ~ 35 ℃, suitable for long-term storage and beneficial to the service life of the device.
	Max Operating Altitude (m)	< 2000	< 2000
	Maintenance	Recommended: charge / discharge once every 3 months; at the latest, a charge / discharge cycle is required after 6 months.	Recommended: charge / discharge once every 3 months; at the latest, a charge / discharge cycle is required after 6 months.
	Head Storage Dimensions (L × W × H)	536 × 379 × 307 mm	536 × 379 × 307 mm
	Package Dimensions (L × W × H)	630 × 502 × 434 mm	630 × 502 × 434 mm
	Net Weight (kg)	58 ± 1	58 ± 1
	Gross Weight (kg)	60 ± 1	60 ± 1
	Cycle Life[3)]	≥ 10,000 cycles	≥ 10,000 cycles

1) The SunEnergyXT 500 PRO AC Core is based on the SunEnergyXT 500 PRO.
2) The MPPT function is not activated by default. A paid upgrade service is required for activation of the MPPT function.
3) 25 ± 2 ℃, 80 % DoD, 0.5C charge / 0.5C discharge, 70 % remaining capacity (EoL).

2.2 Technical Specifications of the Expansion Storage

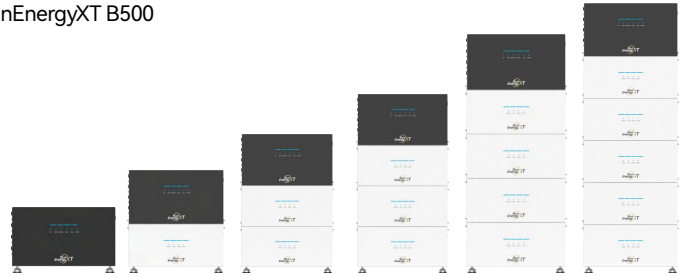
Model		SunEnergyXT B500
Battery Parameters (DC)	Battery Type	LiFePO4
	Rated Capacity (Ah)	314
	Rated Energy (Wh)	5024
	Rated Charge / Discharge Power (W)	2400 / 2600
Certifications	Safety Standards	IEC 62619; IEC 60730
	EMC	IEC 61000
	Cybersecurity Certification	EN 18031
	Grid Connection Certification	VDE 4105
	Transport	UN38.3
Other Parameters	Cooling Requirements	Natural Cooling
	Ingress Protection	IP65
	Protective Class	Class I
	Operating Ambient Humidity (%)	95
	Operating Temperature (℃)	-20 ~ 55 ℃
	Storage Temperature (℃)	−20 ~ 45 ℃ (1 month); 0 ~ 35 ℃, suitable for long-term storage and beneficial to the service life of the device.
	Max Operating Altitude (m)	< 2000
	Maintenance	Recommended: charge / discharge once every 3 months; at the latest, a charge / discharge cycle is required after 6 months.
	Dimensions (L × W × H)	536 × 314 × 242 mm
	Package Dimensions (L × W × H)	618 × 395 × 364 mm
	Net Weight (kg)	43.5 ± 1
	Gross Weight (kg)	45.5 ± 1
	Cycle Life[1)]	≥ 10,000 cycles

1) 25 ± 2 ℃, 80 % DoD, 0.5C charge / 0.5C discharge, 70 % remaining capacity (EoL).

• Specifications of the Expansion Storage and Stacking Quantity

Head Storage: SunEnergyXT 500 PRO / SunEnergyXT 500

Expansion Storage: SunEnergyXT B500



Number of Head Storage Units	1	1	1	1	1	1
Number of Expansion Storage Units	0	1	2	3	4	5
Rated Energy	5024 Wh	10048 Wh	15072 Wh	20096 Wh	25120 Wh	30144 Wh
Rated Charging Power	2400 VA	2400 VA	2400 VA	2400 VA	2400 VA	2400VA
Rated Discharging Power	2400 W	2400 W	2400 W	2400 W	2400 W	2400 W

3. Product Overview

3.1 Product Overview – Head Storage

Front View 45°

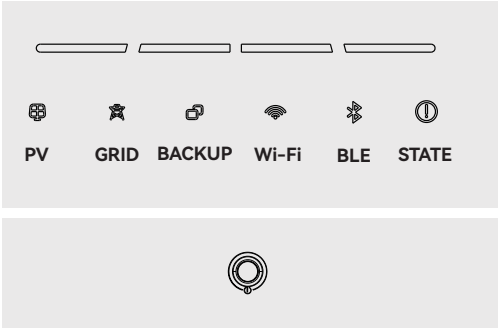
Rear View 45°

3.2 Product Overview – Expansion Storage

Front View 45°

Rear View 45°

3.3 Status Indicators (Overview) – Head Storage



• ⏻ Power Button

Power On: When the device is powered off, press and hold the button for 2 seconds.

Power Off: When the device is powered on, press and hold the button for 3 seconds.

Wake Up LEDs: Briefly press the button once.

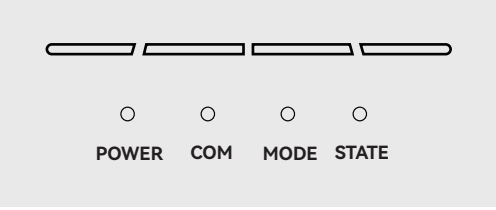
Network Configuration: When the device is powered off, press and hold the button for 10 seconds to enter configuration mode.

• LED-Indicators – Overview and Description

Indicator	Normal Status	Fault Status	Indication Pattern
PV	PV voltage normal: blue	If there is a voltage fault: off, if a fault occurs: blue flashing	Steady On
GRID	Grid voltage normal: blue	If there is a voltage fault: off, if a fault occurs: blue flashing	Steady On
BACKUP	Load voltage and frequency normal: blue	If there is a voltage or frequency fault: off; if a fault occurs: blue flashing	Steady On
Wi-Fi	Connected to the cloud server: blue; flashes during network configuration	No cloud connection: off	Steady On
BLE	Configuration mode active: blue; flashes during configuration"	Not in configuration mode: off	Steady On
STATE	Red: fault; Yellow: battery heating; Blue: maintenance (SOC calibration required)	Inverter or BMS fault: red; heating fault: red-yellow flashing	PV/GRID/ LOAD fault: steady red; other states: standby mode after 5 minutes
BATTERY	Discharging: Displays the total state of charge (SOC); Charging: LED running light; SOC = 0: The lowest LED indicator flashes; Upgrade: All LED indicators flash.	-	standby mode after 5 minutes
⏻	Device powered on: green	-	standby mode after 5 minutes

*** If a fault occurs, please refer to the Chapter 8.1 "Fault Types".**

3.4 Status Indicators (Overview) – Expansion Storage



- **Power Button**

Reset: Press and hold the button for 6 seconds to reset the Expansion Storage.

- **LED Indicators – Overview and Description**

* The Expansion Storage is sold separately. For further information, please contact your local dealer.

Indicator	Normal Status	Fault Status	Indication Pattern
POWER	Powered on: blue; powered off: off	Blue flashing	standby mode after 5 minutes
COM	Parallel connection successful: blue	Blue flashing	standby mode after 5 minutes
MODE	Cell balancing successful: blue	–	standby mode after 5 minutes
STATE	Yellow: battery heating active	BMS fault: red; heating fault: red-yellow alternating	standby mode after 5 minutes
BATTERY	Total SOC indicator	In case of a fault: individual SOC indicator	standby mode after 5 minutes

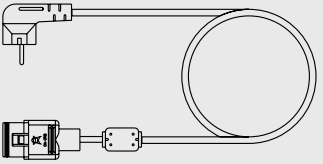
*** If a fault occurs, please refer to the Chapter 8.1 “Fault Types”.**

4. Component List

4.1 Hybrid Energy Storage System (Head Storage)

①Hybrid Energy Storage System (Head Storage), 1 pc

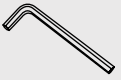
② AC grid connection cable with Schuko plug, 3 m, 1 pc.



③ User Manual, 1 pc

④ Grounding Screw, 1 pc

Internal hex combination screw, M4×10, 1 pc



Hex key, M4, 1 pc

⑤Device Feet, 4 pcs

D50-M8×30

⑥ Release Tools, 2 pcs

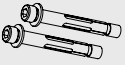
For unlocking the AC grid connection, 1 pc

For unlocking the PV connection, 1 pc

⑦ Wall-Mounting Kit

Internal hex combination screws, M5×10, 2 pcs

L-shaped wall-mounting brackets, 2 pcs



Wall plugs and screws, M5×50, 2 pcs

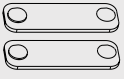
Hex key, M5, 1 pc

4.2 Expansion Storage

① Exparsion Storage, 1pc

② User Manual, 1 pc

③Expansion Mounting Kit



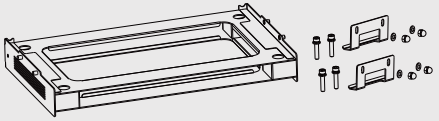
Expansion connection plates, 2 pcs

Internal hex combination screws, M5×10, 4 pcs

4.3 Optional Accessories

① Off-Grid 3-way parallel cable (3-to-1 cable) with CEE coupling (3-pole, 32 A), 3 m

② Parallel Mounting Kit for 500/500 PRO Head Storages



5. Installation Guide

5.1 Installation Notes

5.1.1 Storage Requirements

If the device is not installed or put into operation immediately, please ensure that the storage conditions meet the following requirements:

1. Do not open the original packaging.
2. Store the device in a clean and dry environment. Ensure that the temperature and humidity are appropriate and that no condensation occurs.
3. Stack the Hybrid Energy Storage System in accordance with the stacking instructions on the packaging, using the specified height and orientation to prevent it from falling.
4. For long-term storage, the Hybrid Energy Storage System must be inspected by qualified technical personnel before being put into operation.

5.1.2 Installation Environment Requirements

1. Safety: Keep the device away from flammable, explosive, or corrosive materials.
2. Accessibility: Install the device out of reach of children.
3. Protection from High Temperatures: The device may become warm during operation. Avoid direct contact to prevent burns.
4. Ventilation: Install the device in a well-ventilated location with sufficient clearance for operation and maintenance.
5. Ease of Maintenance: Place the device in a location that allows easy access to connections, indicators, labels, and maintenance operations.

6. Weather Protection: Install the device in a shaded location and protect it from direct sunlight, rain, and snow. If necessary, a protective canopy may be used.
7. Ingress Protection: Ensure that the device meets the requirements for indoor or outdoor installation and that appropriate temperature and humidity conditions are maintained.
8. Wall Safety: When drilling into walls, be aware of concealed cables and pipelines.
9. Altitude Limitation: The device must only be installed at an altitude of below 2000 m above sea level.
10. Electromagnetic Interference: Keep the device away from sources of interference.
    When radio equipment operating at frequencies below 30 MHz is used nearby, the following measures must be considered:
    a. Install ferrite cores or low-pass EMI filters at the DC input or AC output of the Hybrid Energy Storage System.
    b. Maintain a minimum distance of 30 m from the source of interference.

5.1.3 Mounting Support Requirements

1. Mounting Orientation: The device must be installed in a vertical position.
2. Mounting Restrictions: Inverted, forward-tilted, backward-tilted, or horizontal installation is not permitted.
3. Load-Bearing Capacity: The installation surface must be stable and capable of safely supporting the weight of the Hybrid Energy Storage System.

5.1.4 Installation Tool Requirements

The following tools are recommended for installation.
If necessary, additional auxiliary tools may be used on site:

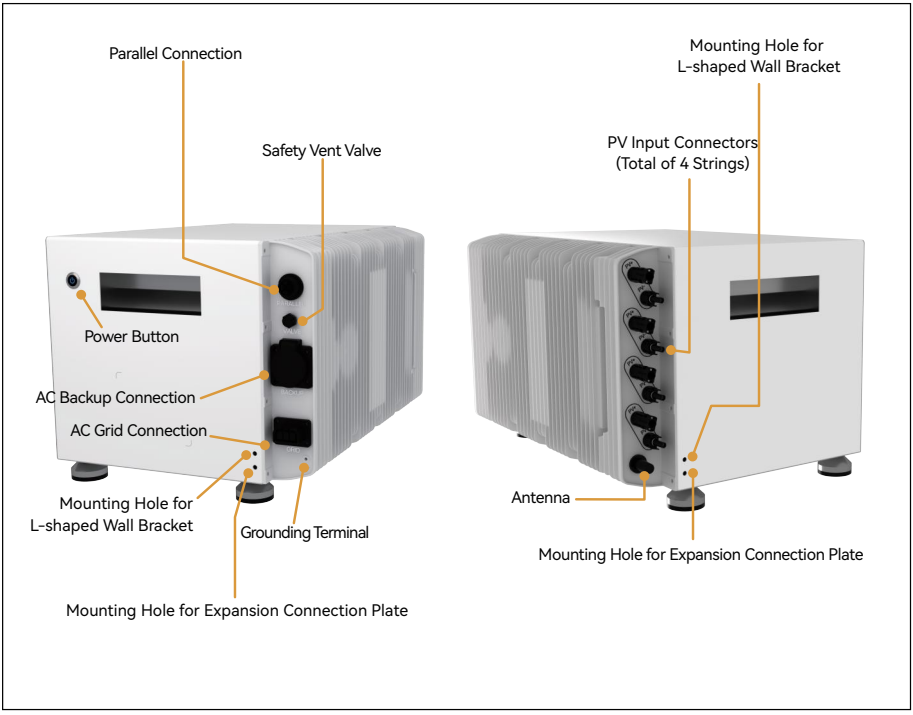
1. Safety goggles
2. Safety shoes
3. Protective gloves
4. Dust mask
5. Rubber mallet
6. Hot air gun
7. Vacuum cleaner
8. Marker pen
9. Spirit level
10. Hole punch / drilling tool

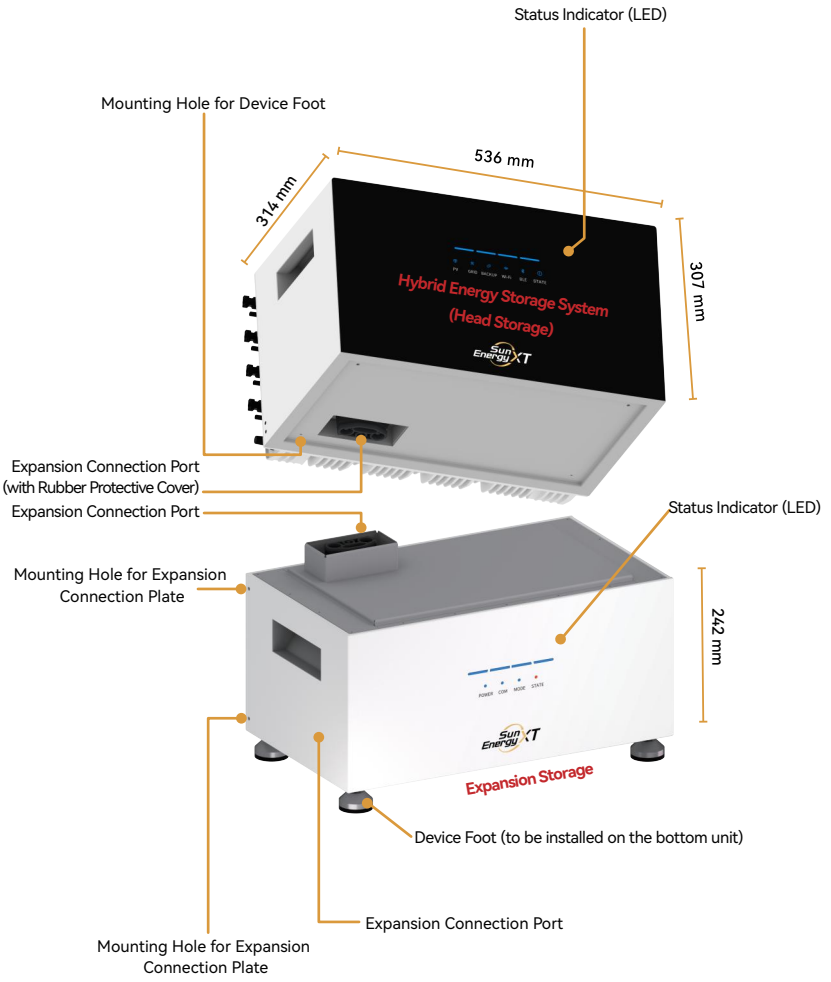
5.2 Installation Procedures

5.2.1 Inspection Before Installation

NOTICE

1. Before installation, check the Chapter 4 "Component List" to ensure that all accessories are complete.
2. Before installation, inspect the device itself: Ensure that all connection ports are undamaged and that the rubber protective cover on the bottom connection port of the Head Storage is properly installed.
3. The device has a protection rating of IP65 and can therefore be installed indoors or outdoors. It is recommended to install the device in a location that is not exposed to direct sunlight or direct water splashing, as this helps extend the product's service life and improves heat dissipation during long-term operation.





*** Expansion Storage units are sold separately. For further information, please contact your local dealer.**

⚠DANGER

Working on live equipment is strictly prohibited.

Before installation, inspect the device and ensure that the Hybrid Energy Storage System is switched off and that the power supply is completely disconnected.

5.2.2 Installation of the Head Storage and Expansion Storage (if applicable)

• Determining the Installation Position

1. Place the device within Wi-Fi coverage to ensure that the Hybrid Energy Storage System can connect to the network.
2. If Expansion Storage units are to be installed, ensure that the cooling fins on the rear side of the Expansion Storage face the wall, and that a minimum clearance of 88 mm from the wall is maintained. This clearance is required to allow the Head Storage to be stacked on top.

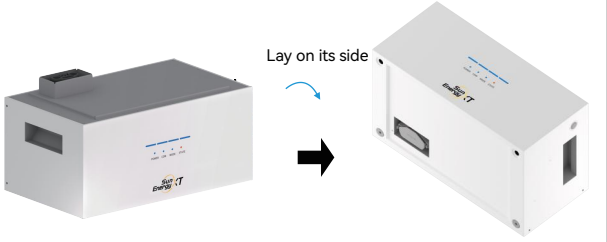
• Installing the Rubber Protective Cover

1. When installing expansion storage units, remove the rubber protective cover from the bottom connection port of the Head Storage and install it on the bottom connection port of the device at the very bottom.
2. When installing only the Head Storage, do not remove the rubber protective cover from the bottom connection port to prevent water ingress and damage to the device.

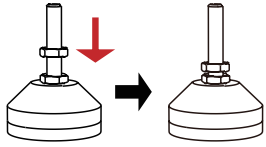
• Installing the Device Feet

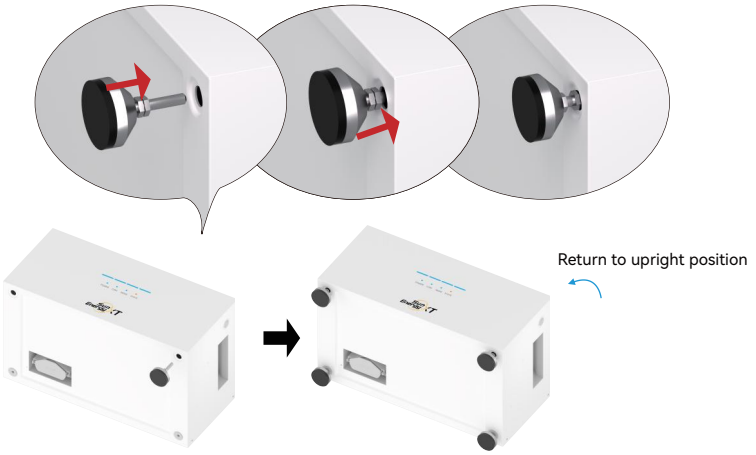
1. The device is heavy. Handle it with care during transportation and installation.
2. Prepare the device that will be positioned at the bottom, as well as four device feet.

1. Carefully lay the bottom unit on its side so that the four mounting holes for the device feet are visible. If no Expansion Storage units are used, the device feet only need to be installed on the Head Storage.



2. Turn the hexagonal locking ring of each of the four device feet to the lowest position.

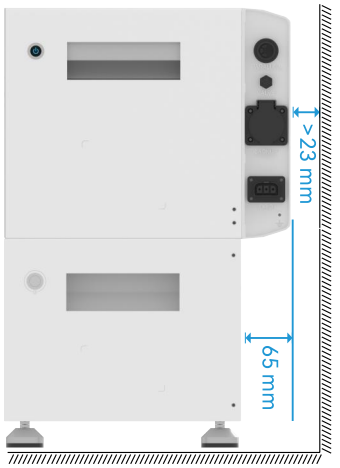




3. Align the screw with the mounting hole of the device foot and tighten it fully. Then turn the hexagonal locking ring back to secure the device foot. Install all four device feet one by one and ensure that all device feet are adjusted to the same height, so that the device stands securely.
4. After all four device feet have been installed, return the device to the upright position. The installation of the device feet is now complete. Adjust the nuts on the device feet to level the device horizontally.

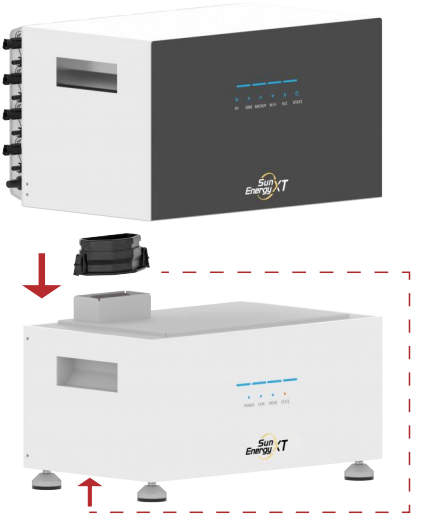
• Stacking the Devices

1. Stack the Expansion Storage units one by one, ensuring that the Head Storage is positioned on top.
2. Align the expansion interfaces and stack the devices vertically. As the devices are heavy, proceed with caution during stacking.
3. If no Expansion Storage units are installed, this step can be skipped.



When installing Expansion Storage units, ensure that a minimum clearance of 88 mm from the wall is maintained to allow the Head Storage to be stacked on top.

A minimum clearance between Headstorage and the wall must be 23 mm maintained.



Install the rubber protective cover on the bottom connection port of the device at the very bottom.

• A maximum of five (5) Expansion Storage units can be stacked.

⚠DANGER

For your personal safety and to protect the device, please ensure that the Hybrid Energy Storage System is completely switched off before installing or adding Expansion Storage units.

Damage caused by installing Expansion Storage units while the system is powered on is not covered by the warranty.

If an Expansion Storage unit is to be added (up to a maximum of five units), proceed as follows:

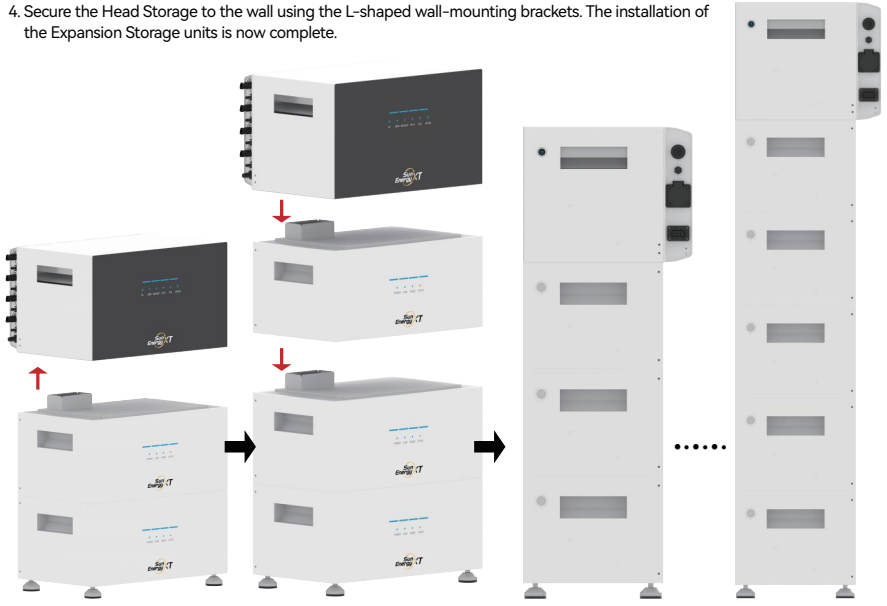
Work Steps – Step 1

1. Press and hold the Power button for 3 seconds to switch off the Head Storage.
2. Disconnect the Head Storage from the PV modules.
3. Disconnect the Head Storage from all connected loads.
4. Disconnect the Head Storage from the power grid.
5. If applicable, remove the L-shaped wall-mounting brackets from both sides of the Head Storage.
6. If applicable, remove the expansion connection plates from both sides of the Head Storage and any already installed Expansion Storage units.

Work Steps – Step 2

1. Align the expansion interfaces and place the Expansion Storage unit to be added below the Head Storage.
2. When adding multiple Expansion Storage units, stack them one by one.
   As the devices are heavy, proceed with caution and avoid pinch or crush injuries.
3. Secure the Head Storage and Expansion Storage units in pairs using the expansion connection plates.
4. Secure the Head Storage to the wall using the L-shaped wall-mounting brackets. The installation of the Expansion Storage units is now complete.

A maximum of five (5) Expansion Storage units can be stacked.



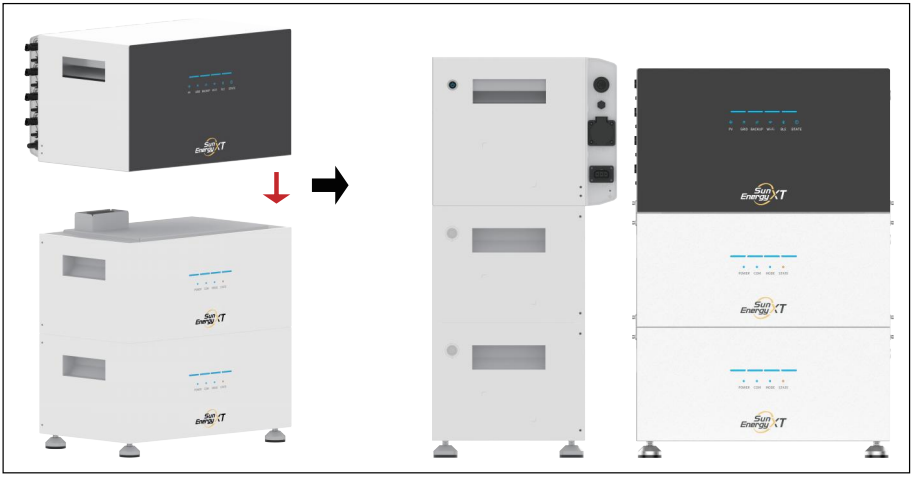
5.2.3 Securing the Head Storage and Expansion Storage (if applicable)

⚠DANGER

For your personal safety and to protect the device, please ensure that the Hybrid Energy Storage System is completely switched off before installing or adding Expansion Storage units.
Damage caused by installation while the system is powered on is not covered by the warranty.

- **Ensure that the Head Storage is positioned on top.**

* If no Expansion Storage units are used, the Head Storage may be placed directly on the floor.

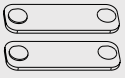


• Secure the Head Storage and Expansion Storage units in pairs.

* If no Expansion Storage units are installed, this step can be skipped.

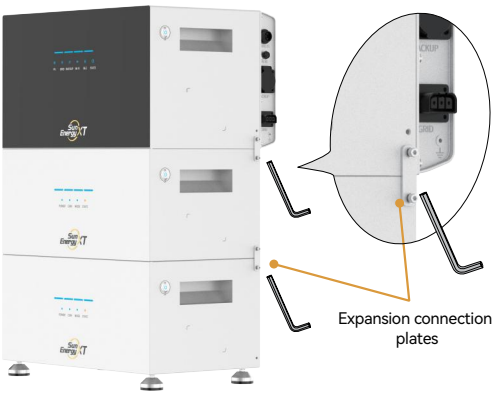
Connect the Head Storage to the Expansion Storage, and connect the Expansion Storage units to each other in pairs using the expansion connection plates (included with the Expansion Storage).
Secure them using M5×10 internal hex combination screws.

Expansion Mounting Kit



Expansion connection plates, 2 pcs

internal hex combination screws, M5×10, 4 pcs

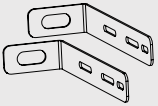


• Wall Mounting

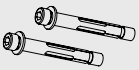
1. Secure the L-shaped wall-mounting brackets to the Head Storage using internal hex screws. Then determine the drilling positions on the wall and mark them using a marker pen.

Wall-Mounting Kit

Internal hex combination screws, M5×10, 2 pcs

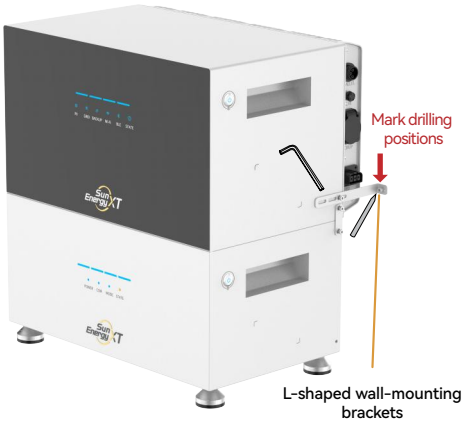


L-shaped wall-mounting brackets, 2 pcs

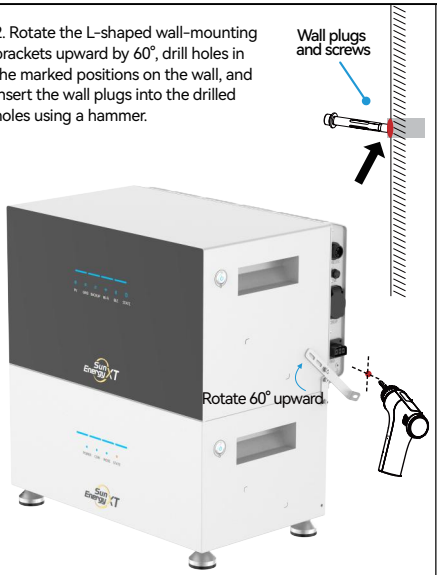


Wall plugs and screws, M5×50, 2 pcs

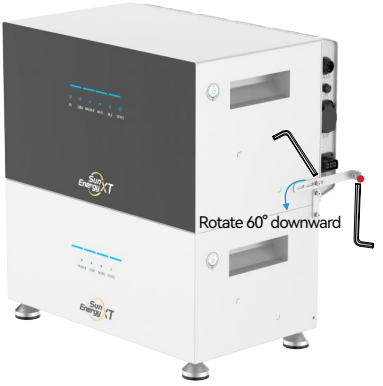
Hex key, M5, 1 pcs



2. Rotate the L-shaped wall-mounting brackets upward by 60°, drill holes in the marked positions on the wall, and insert the wall plugs into the drilled holes using a hammer.



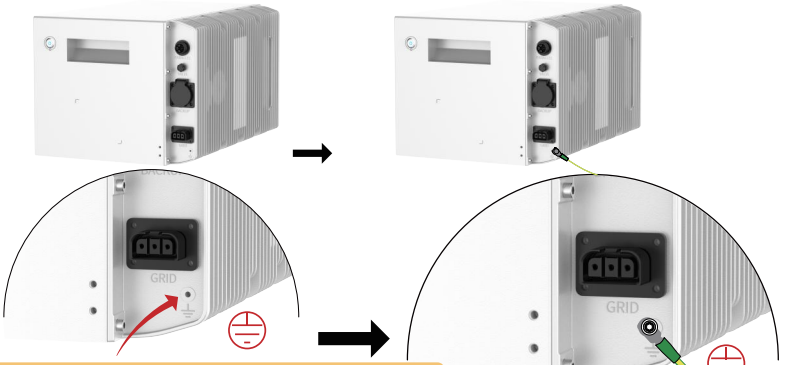
3. Turn the L-shaped wall mounting brackets 60° downward back to their original position. Then screw the fastening screws into the wall plugs and tighten them evenly. The installation is now complete.



5.3 Grounding Protection

⚠DANGER

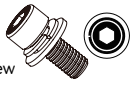
The Hybrid Energy Storage System must be connected to an external grounding system. Failure to do so may result in electric shock.



• Grounding Cable Connection – Head Storage

NOTICE

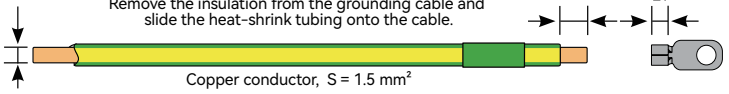
1. Ensure that the mains socket is accessible and the power supply is completely disconnected before starting the connection work.
2. The following tools and accessories are not included and must be provided on site:
   a. PE cable (copper conductor, 1.5 mm², yellow/green)
   b. Ring terminal (suitable for 1.5 mm² grounding cable and M4 screw)
   c. Heat shrink tubing (length 25 mm)
   d. Hot air gun
3. In accordance with applicable regulations, an internal grounding relay is activated when switching to off-grid operation, establishing a connection between the neutral conductor (N) and protective earth (PE).



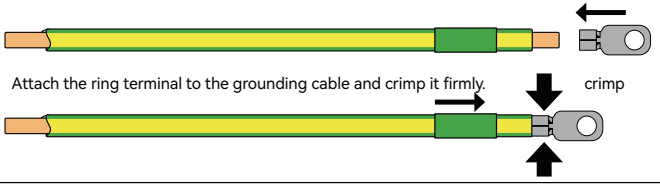
M4×10 internal hex screw

4 Align the grounding cable with the grounding hole, insert the screw, and tighten it using a hex key.

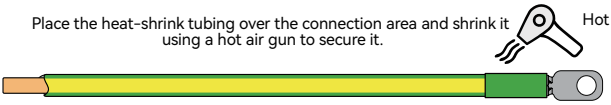
1



2



3

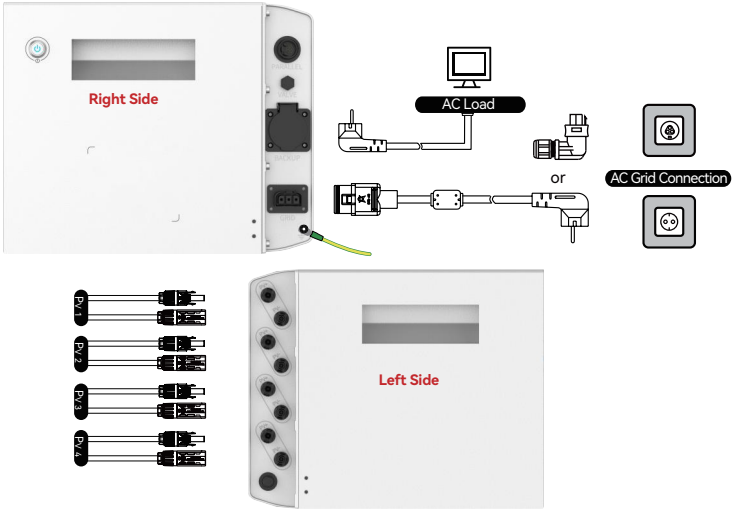


5.4 Cable Connections

⚠DANGER

Connecting or disconnecting connectors while the system is energized may cause damage to the device. Before connecting or removing any connectors, ensure that the device is switched off and that the power supply is completely disconnected.

5.4.1 Grid Connection and PV Connection



ⓘNOTICE

1. Ensure that unused PV connectors and Expansion Storage connectors are sealed with waterproof protective caps or otherwise properly protected to prevent water ingress and contamination.
2. If Expansion Storage units are to be installed, disconnect the power supply and switch off the device in advance before performing the expansion.
3. Place the Hybrid Energy Storage System in a dry environment. The device must not be switched on if it has been exposed to high humidity or water.
4. It is recommended to switch on the power supply only after all connection work has been completed and a safe installation environment has been confirmed.
5. For the SunEnergyXT 500 PRO AC Core, the MPPT function is not activated by default. The PV input can only be used after activation of the MPPT function.

• Connection Procedures

1. Perform the electrical connections in accordance with the illustrations.
2. Ensure that the PV modules are operating properly.
3. Fully connect all required components and loads before switching on the device.
4. When the PV modules are generating power and the Hybrid Energy Storage System is providing AC output voltage, the LED indicator lights up green.
5. Add the Hybrid Energy Storage System to the App and select the desired operating mode.

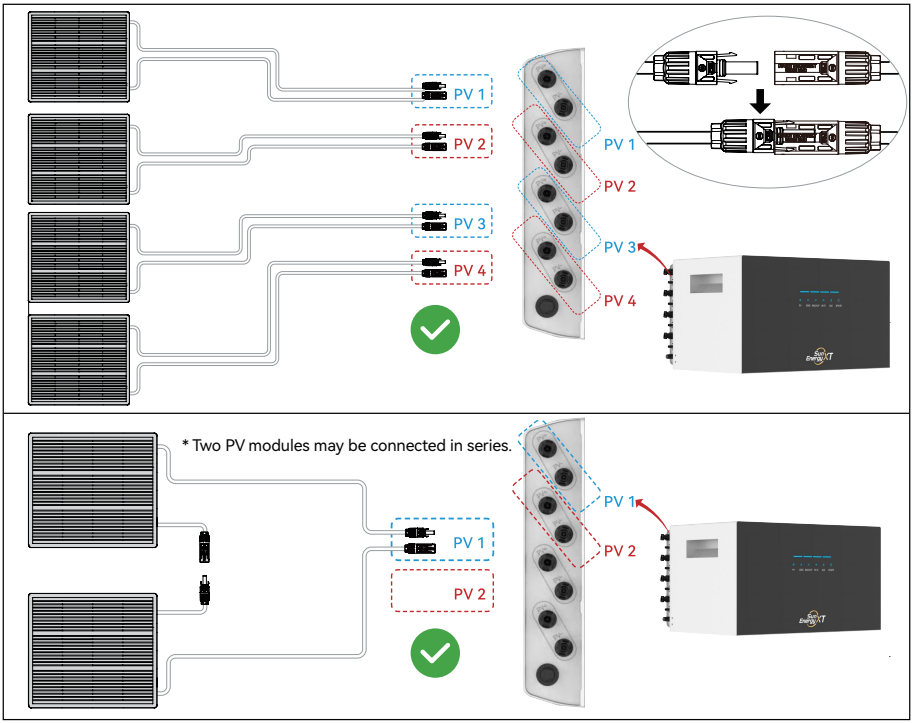
* For detailed information on App pairing, refer to Chapter 7 “Connecting the Device to the App”.

⚠DANGER

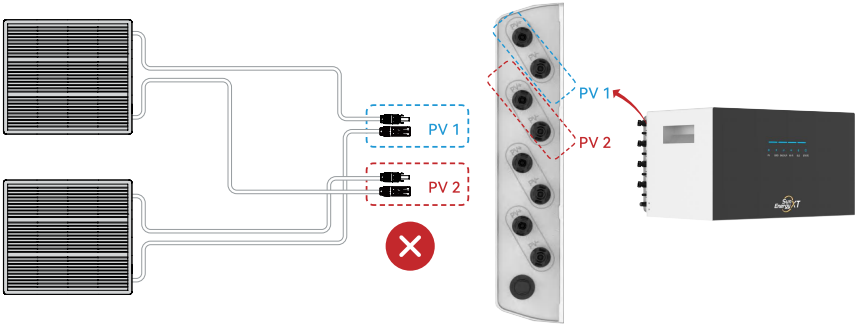
1. When used as a balcony PV storage system,the PV cable length is recommended not to exceed 3 m. When used as a permanently installed system,the installation must comply with local installati on regulations.
2. The PV modules connected to the Hybrid Energy Storage System must be properly grounded during installation.
3. The metallic cable trays must be properly grounded; the negative pole of the PV modules must not be grounded.

5.4.2 Direct Connection of PV Modules

1. PV modules can be directly connected to the same PV input group of the Hybrid Energy Storage System (see illustration). A maximum of four PV modules can be directly connected.
2. Check the technical specifications of the PV modules and ensure that the current at maximum power (Im) does not exceed 25 A.
3. Ensure that unused PV connectors are sealed with waterproof protective caps.
4. Select the connection method according to the PV module and battery specifications.



* It is not permitted to connect PV connectors of one group with PV connectors of another group.
For example, the positive terminal of PV module 1 must not be connected to the negative terminal of the PV2 input of the device.



NOTICE

When connecting the PV input cables of the Hybrid Energy Storage System, ensure that all connectors are fully and securely engaged.

Improperly connected connectors may cause the following issues:

- Heating of contact points, posing a fire hazard
- Reduced system efficiency, affecting power generation
- Malfunctions of the Hybrid Energy Storage System or even device damage

Connector Verification:

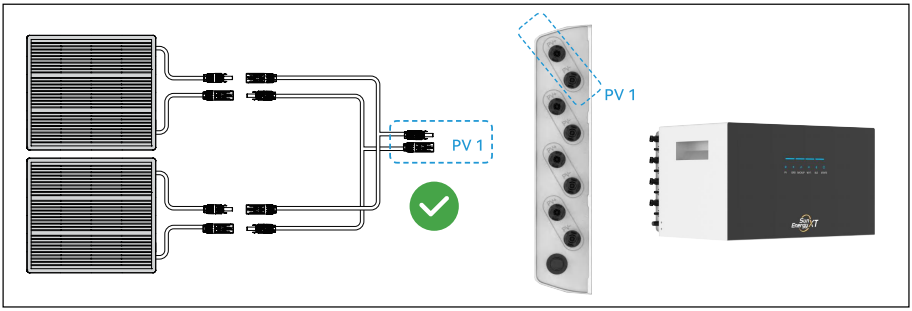
- Locking: Insert the connector straight until a clearly audible and tactile “click” is perceived.
- Pull Test: Gently pull the connector with a force of approximately 2 kg (equivalent to lifting a full 2-liter water container) to check whether the connection loosens.
- Inspection: If the connection loosens or any movement is detected, the connector must be fully reconnected.

DANGER

The PV modules connected to the Hybrid Energy Storage System must be properly grounded during installation.

5.4.3 Parallel Connection of PV Modules

1. Two PV modules may be connected in parallel to the same PV input group of the Hybrid Energy Storage System (see illustration).
   A maximum of two PV modules may be connected in parallel per PV input.
2. Check the technical specifications of the PV modules and ensure that the current at maximum power (Im) does not exceed 25 A.
3. Ensure that unused PV connectors are sealed with waterproof protective caps.
4. Select the connection method according to the PV module and battery specifications.



NOTICE

When connecting the PV input cables of the Hybrid Energy Storage System, ensure that all connectors are fully and securely engaged.

Improperly connected connectors may cause the following issues:

- Heating of contact points, posing a fire hazard
- Reduced system efficiency, affecting power generation
- Malfunctions of the Hybrid Energy Storage System or even device damage

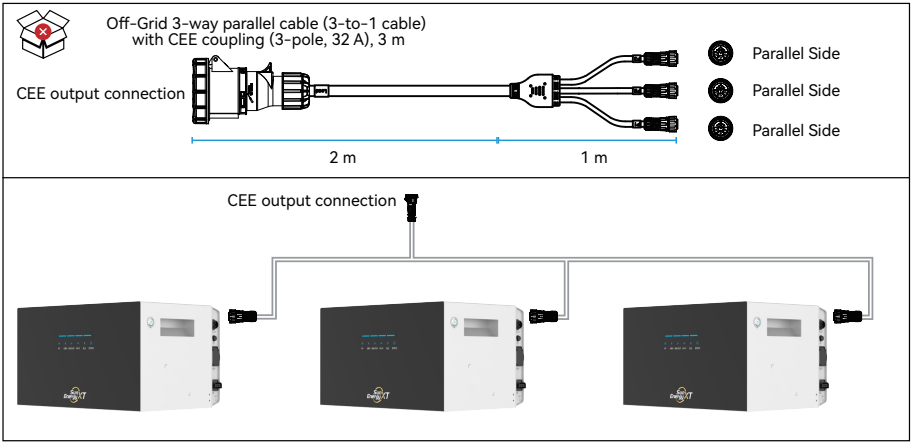
Connector Verification:

- Locking: Insert the connector straight until a clearly audible and tactile “click” is perceived.
- Pull Test: Gently pull the connector with a force of approximately 2 kg (equivalent to lifting a full 2-liter water container) to check whether the connection loosens.
- Inspection: If the connection loosens or any movement is detected, the connector must be fully reconnected.

5.5 Off-Grid Parallel Operation

⚠DANGER

1. Connecting or disconnecting cables while the system is energized may cause damage to the device. Before connecting any cables, ensure that the device is switched off and that the power supply is completely disconnected.
2. Tighten the protective caps on unused parallel connectors to prevent electric shock.
3. The Off-Grid 3-way parallel cable may only be used for the parallel connection of multiple devices in off-grid mode.
   Use for parallel connection during grid-connected operation is not permitted.



* 1. The parallel cable is sold separately.
  2. The CEE output connection must be connected only to loads equipped with compatible CEE plugs.

5.6 Steps for Removing Connectors

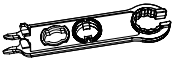
⚠DANGER

Connecting or disconnecting connectors while the system is energized may cause damage to the device.

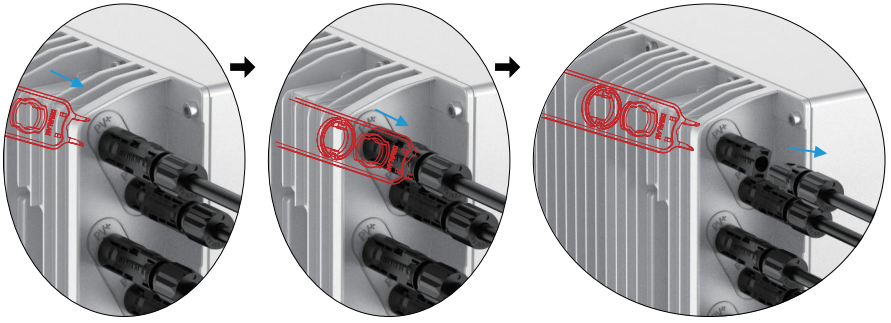
Before removing any connectors, ensure that the device is switched off and that the power supply is completely disconnected.

5.6.1 Removing the PV Connector

* To remove a locked PV connector, insert the release tool into the locking opening of the connector and press it firmly downward until a clearly audible “click” is heard. The connector can then be unlocked and pulled out.



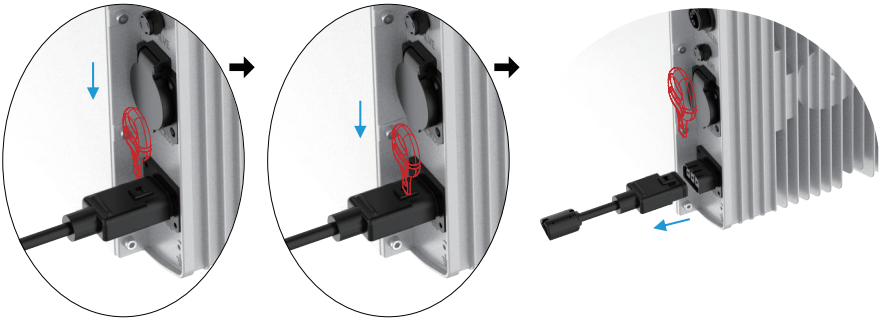
For unlocking the PV connector.



5.6.2 Removing the AC Connector

* To remove a locked AC connector, insert the release tool into the locking opening of the connector and press it firmly downward until a clearly audible “click” is heard.
The connector can then be unlocked and pulled out.

For unlocking the AC grid connector.



6. Operation Guide

6.1 Smart Accessories

NOTICE

If input power is still present at the Head Storage or one or more Expansion Storage units, even

when the system is switched off, the corresponding storage system will start automatically. Therefore, before making any configuration changes or before connecting or disconnecting Expansion Storage units, disconnect all input and output cables.

6.1.1 Installation of a Smart Energy Meter (Optional)

⚠DANGER

Connecting or disconnecting connectors while the system is energized may cause damage to the device.

Before connecting any smart accessories, ensure that the device is switched off and that the power supply is completely disconnected.

ⓘNOTICE

The Hybrid Energy Storage System can be operated in combination with a smart energy meter (sold separately).

For further information, please contact your local dealer.

A list of compatible smart energy meters is available at:

https://www.sunenergyxt.com/en

6.2 UPS Function

1. Normal Grid Operation:

The load is normally supplied by the battery / PV system.

If battery or PV power is insufficient, the supply is supplemented by the public grid.

2. Grid Outage:

The load is automatically switched to battery / PV supply within 10 ms;

the connected loads continue to operate without interruption.

3. Grid Recovery:

The system automatically switches back to grid operation, and the load continues to be supplied normally.

6.3 Battery Heating Function

ⓘNOTICE

1. This function is automatically controlled by the system and does not require user intervention.
2. Increased energy consumption during the heating process is normal.
3. This function is designed to protect battery performance at low temperatures and does not indicate a device malfunction.

7. Connecting the Device to the App

7.1 Network Configuration Notes

7.1.1 Bluetooth Low Energy (BLE)-Status

NOTICE

During the BLE configuration process, please ensure that the network environment is stable and follow the instructions to complete the setup correctly.

BLE Status:

If the device has not yet been connected to a network, Bluetooth Low Energy (BLE) transmission will be automatically activated, and the BLE service will start to enable network configuration via Bluetooth.

7.1.2 Description of Local Mode

Functional Description:

The device supports activation of Local Mode.

Using the mDNS protocol, zero-configuration network discovery is implemented within the local area network (LAN).

In this mode, the device functions as a server and provides a TCP interface to establish a stable data communication connection.

Features of the mDNS Protocol:

mDNS is based on UDP multicast transmission and uses port 5353 by default.

The packet structure is compatible with the standard DNS query format and is used to resolve . local domain names within the local network without requiring a conventional DNS server.

Application Scenarios:

Client applications that support mDNS (e.g. Home Assistant) can automatically discover devices on the local network and resolve their broadcast information to obtain the IP address and service port of the device.

The client can then establish a TCP connection via the resolved address for data transmission and control.

7.2 SunEnergyXT App

The SunEnergyXT 500 / 500 PRO Hybrid Energy Storage System can be managed via the SunEnergyXT App.

Using the App, the following functions are available, among others:

1. Network configuration of the Hybrid Energy Storage System can be easily performed via Bluetooth.
2. The status of the Hybrid Energy Storage System can be monitored anytime and anywhere.
3. The power supply mode of the Hybrid Energy Storage System can be adjusted according to user requirements.

Please scan the QR code to download the SunEnergyXT App.

Alternatively, the App can be downloaded from the Apple App Store or Google Play Store by searching for “SunEnergyXT”.

SunEnergyXT App
–Download for Android –

SunEnergyXT App
– Download for iOS –

For more information and support regarding the App, please visit:
https://www.sunenergyxt.com/en/download-app

Adding Your Hybrid Energy Storage System

SunEnergyXT 500/500 PRO

Scan the QR code to access the device setup guide.

8. Care and Maintenance

8.1 Fault Types

⚠DANGER

If the LED indicator lights up red, this indicates a warning or fault.

Please follow the instructions provided in the App or on the website below.

If the fault cannot be resolved, please contact customer service or your local dealer.

https://www.sunenergyxt.com/en/sunenergyxt-500-series/troubleshooting

⚠DANGER

1. Do not attempt to repair the Hybrid Energy Storage System by disassembling it.
2. If necessary, please contact your local dealer so that qualified technical personnel can be assigned to perform troubleshooting.

The certificates, EU Declaration of Conformity, and other related documents are available at:
https://www.sunenergyxt.com/en/download-product-data-sheets

Importer: Safety Tax Free GmbH
Address: Zeppelinstr. 33, 85748 Garching b. München, Germany
Website: www.sunenergyxt.com
E-mail: support@sunenergyxt.com
Manufacturer: SunEnergyXT Holdings S.à r.l.
Address: 1. Rue Jean Piret, L-2350 Luxembourg

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