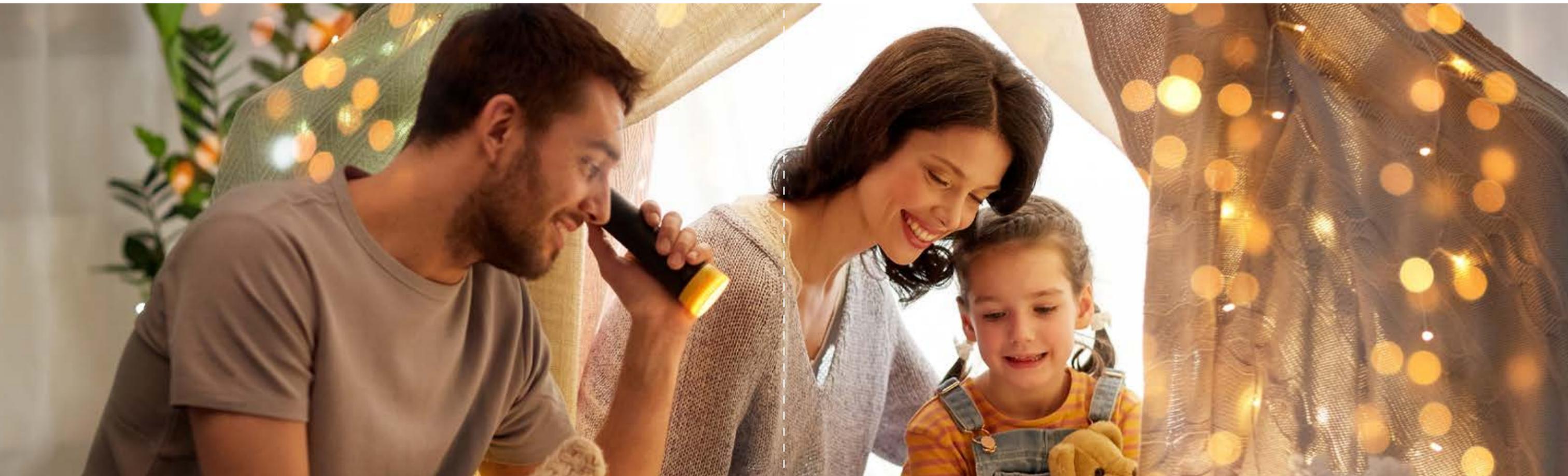


PytesB.V.

PytesB.V.

2022

COMPANY PROFILE



Pytes B.V.
Add: Molendijk-Zuid 23B, 5482 WZ Schijndel, Netherlands
Tel: 0086-21-5746 2022 Fax: 0086-21-5747 5827
E-mail: esseu@pytesgroup.com www.pytesgroup.com

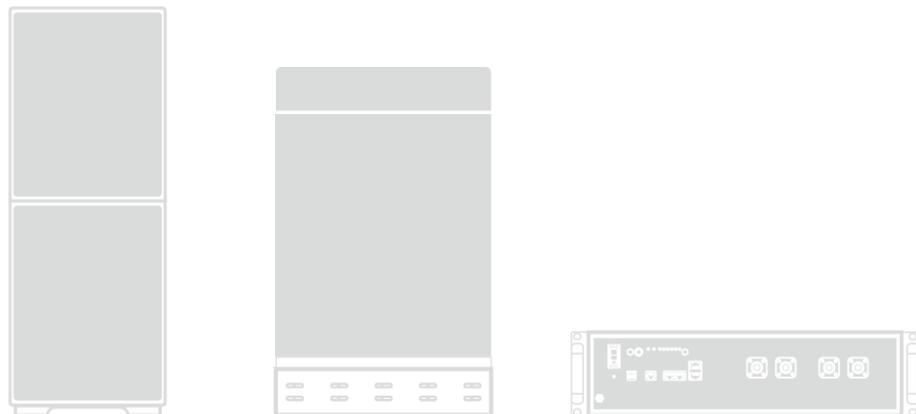
Pytes B.V.
BATTERY EXPERT-GREEN ENERGY PROVIDER

LI-ION BATTERY FOR ENERGY STORAGE



2022 COMPANY PROFILE

LI-ION BATTERY FOR ENERGY STORAGE



CONTENTS

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Pytes

PYTES, a national high-tech enterprise founded in 2004, focuses on Lithium-ion battery solutions for e-bikes, e-motorcycles, 3C products, vacuum cleaners and energy storage systems, etc. Headquartered in Shanghai, PYTES has been expanding globally, setting up three production bases in Shanghai (China), Shandong (China), and Vietnam, two marketing & service centers in Europe and North America. PYTES is strong in R&D, with advanced laboratories certified by TUV, DEKRA, SGS & BV, etc.

\$41M
Total investment

17 Years
Industry experience

1000+
Staff

\$220M
Turnover in 2021

1.82Gwh
Annual capacity



Headquarter in Shanghai



Add: No. 3492 Jinqian Road, Fengxian District, Shanghai, China

Global Marketing & Service



PYTES EU office
(The Netherlands)

**Europe
Marketing center**



Factory in Shandong

China



Headquarter in Shanghai

Vietnam



Factory in Ho Chi Minh City

**North America
Marketing center**

PYTES USA office (USA)

- Global pre-sales & after-sales services
- 7*24H, Efficient feedback



Testing Labs



SGS



BV

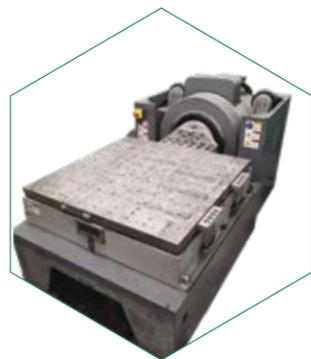


TUV



DEKRA

Mechanical Tests



Vibration Test



Drop Test



Shocking Test

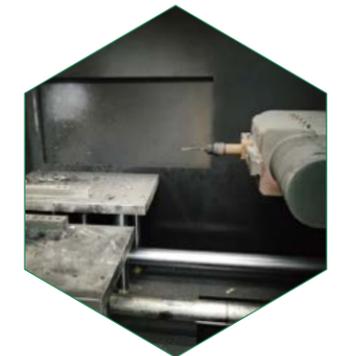
Safety Tests



Short circuit Test



Impact Test



Needle Test

Environmental Tests



Altitude Simulation



Thermal Shock

Electrical Tests



Qualification & Certification



ISO9001:2015



ISO14001:2015



RoHS



CB



UL



PSE



KC



REACH



UN38.3



GB31241



CU



IEC62133

Standard Products Introduction



E-BOX-48100R



Introduction

E-BOX series, the new generation LFP battery for home energy storage system. It provides safe, well-designed and high-performance standard LFP battery pack for you. The battery pack is compact, easy to install, free of maintenance, and could be deployed to the building block of energy storage system by being assembled in parallel. It is widely applied in home applications, small commercial and industrial energy storage system as well as Telecom stations.

Features

-  **Self-Consumption**
store excess energy generated by solar panels and use it whenever needed
-  **Back-Up Power Supply**
provide emergency power supply during grid outage
-  **Electricity Bills Reduction**
charge the battery during off-peak period and discharge the battery during peak period

-  **Smart Energy Management**
measure, monitor and manage the system in real-time
optimize the system life span by intelligent algorithms
-  **Longest Life and Highest Safety**
more than 6000 cycles @90%DOD
-  **Wide Compatibility**
compatible with 16 mainstream inverters in the market

10 Years Warranty



Batteries

E-BOX-4850

440mm * 420mm * 89mm (2U)
48V50Ah 2.4kWh

05-024528-11



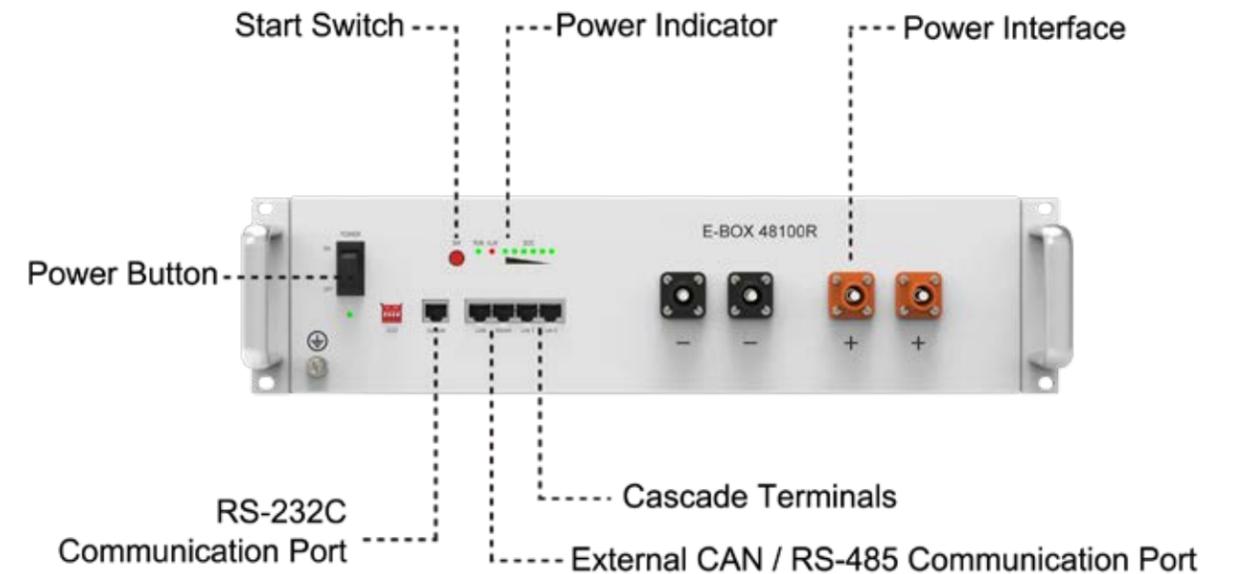
05-024527-11



E-BOX-48100R

L440mm* W620mm * H117mm (2.6U)
51.2V100Ah 5.12kWh

Operation Panel



Technical Specifications

Battery Model	E-BOX-48100R	E-BOX-4850
Chemistry	LFP	LFP
Nominal Voltage	51.2V	48V
Voltage Range	47.5V-57.6V	45V-54V
Nominal Capacity	100Ah	50Ah
Nominal Energy	5.12kWh	2.4kWh
Unit Dimension	L440mm* W620mm * H117mm (2.6U)	440mm* 420mm * 89mm (2U)
Unit Weight	51kg	25kg
Maximum Charge Current	100A	50A
Support Charge Current	50A	25A
Maximum Discharge	100A	50A
Support Discharge Rate	50A	25A
Round-Trip Efficiency	≥95%	≥95%
Communication Protocol	RS232, RS485, CAN	RS232, RS485, CAN
Cycle Life	≥6000cycles	≥6000cycles
Calendar Life	≥10years	≥10years
Operating Temperature	-10°C~50°C	-10°C~50°C
Connect style	Parallel	Parallel
Storage Temperature	Within 1month: -20~55°C, 1-3months: 0~35°C, 3-12months: 20~25°C	Within 1month: -20~55°C, 1-3months: 0~35°C, 3-12months: 20~25°C



Cabinets

R-BOX

05-041381-11: R-BOX



Introduction

The R-BOX is a state-of-the-art home energy storage system solution. It has a total usable energy capacity of 10kWh. Product features include quick and easy installation, a compact and elegant home style design and great extensibility. The R-BOX can provide smart configurable backup power during grid outages and power smart homes with solar energy, day and night.

Technical Specifications

Model	R-BOX
Total capacity	10.24kWh
Usable capacity	9.22kWh
Chemistry	Lithium iron phosphate(LFP)
Nominal voltage	51.2V
Max. charge/ discharge current	100A
Communication	CAN, RS485
Certificate	UL1973, IEC62619, CE, UN38.3
Operating Temperature	Charge:0~45°C; Discharge:-10~50°C
Altitude	Max.2000 meters
Compatibility	Deye, Solis, Victron, Voltronic, Sol-ark, Growatt, SRNE, Luxpower, Kelong, Goodwe, Studer, SMA,Sermatec, Megarevo etc.

Mechanical Design	Parameter
Dimensions(W*D*H)	280*510*700mm 310*510*780mm(including holder)
Weight	120kg
Mount	Wall/Floor mount
Enclosure rating	IP20
Enclosure material	Cool-rolled steel
Cooling	Natural convection
Warranty	6000 cycles or 10 years



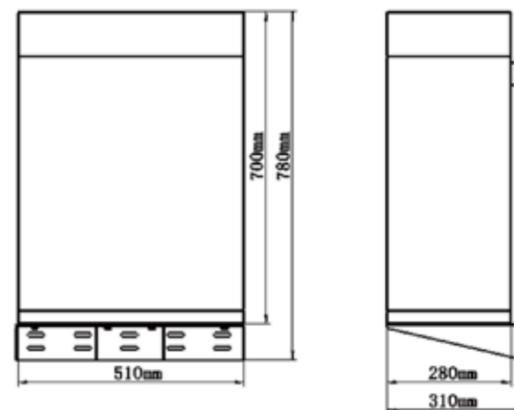
F-BOX

Battery Capacity	4.8kWh	7.2kWh	9.6kWh	14.4kWh
Protect Level	IP20			

3D image

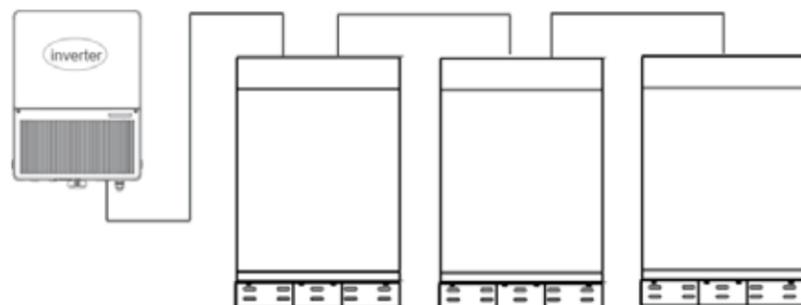


Mechanical drawing



Battery Expansion

Home Energy Storage System can connect R-BOX up to 3 pcs without additional kit. You can use our 1uHUB to get max 27 R-BOX connected in parallel.





R-BOX-IP65

Mechanical Design	Parameter
Dimensions(W*D*H)	310*530*736mm 310*530*856mm(including holder)
Weight	120kg
Mount	Wall/Floor mount
Enclosure rating	R-BOX-IP65
Enclosure material	Cool-rolled steel
Cooling	Natural convection
Warranty	6000 cycles or 10 years

Introduction

The PYTES R-BOX-IP65 is a state-of-the-art home energy storage system solution. It has a total usable energy capacity of 10kWh. Product features include quick and easy installation, a compact and elegant home style design and great extensibility. The PYTES R-BOX-IP65 can provide smart configurable backup power during grid outages and power smart homes with solar energy, day and night.

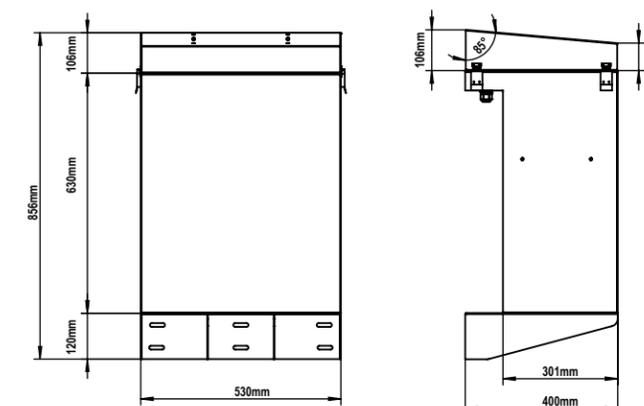
Technical Specifications

Model	IP65
Total capacity	10.24kWh
Usable capacity	9.22kWh
Chemistry	Lithium iron phosphate(LFP)
Nominal voltage	51.2V
Max. charge/ discharge current	100A
Communication	CAN, RS485
Certificate	UL1973, IEC62619, CE, UN38.3
Operating Temperature	Charge:0~45°C; Discharge:-10~50°C
Altitude	Max.2000 meters
Compatibility	Deye, Solis, Victron, Voltronic, Sol-ark, Growatt, SRNE, Luxpower, Kelong, Goodwe, Studer, SMA,Sermatec, Megarevo etc.

3D image

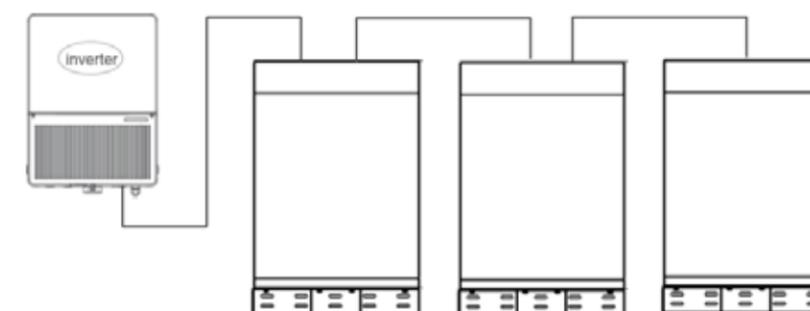


Mechanical drawing

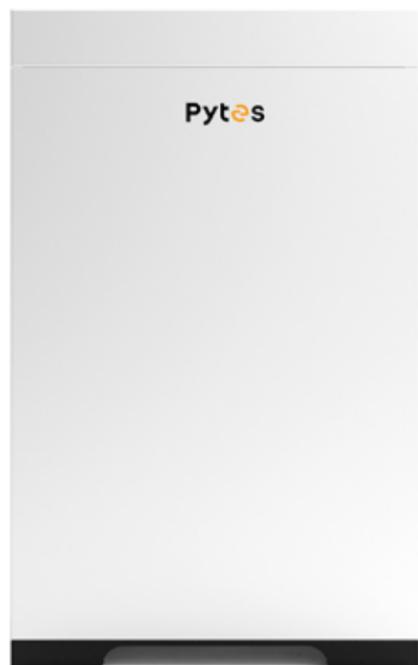


Battery Expansion

PYTES Home Energy Storage System can connect R-BOX IP65 up to 3 pcs without additional kit. You can use our PYTES 1uHUB to get max 27 IP65 connected in parallel.



Forest RB



- Easy to install
- Expandable up to 6 units E-BOX-48100R (30kWh in total)
- Long usage life
- Adapt to multiple inverters

Application Scenario



Villa



Communication base station



Residential electricity

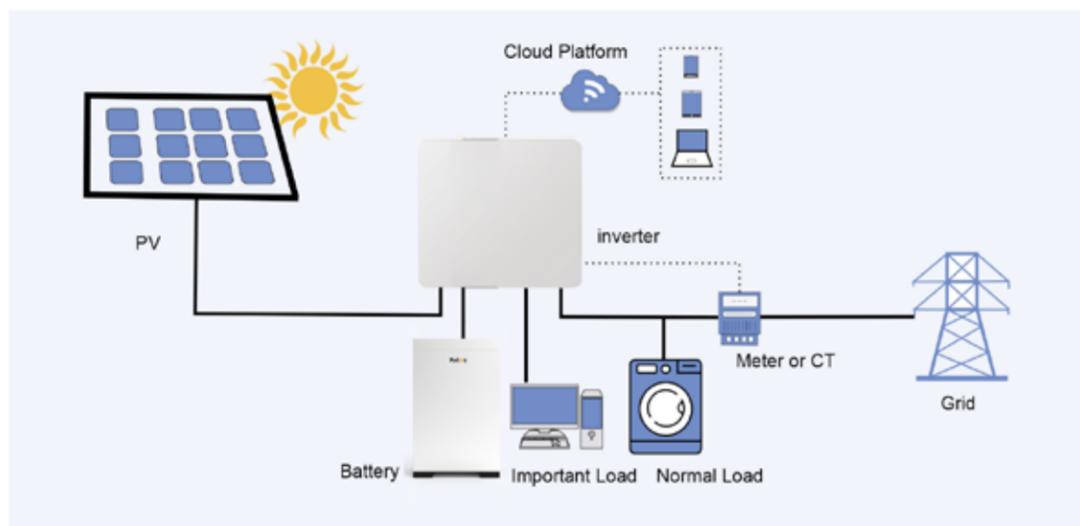


Farm

Introduction

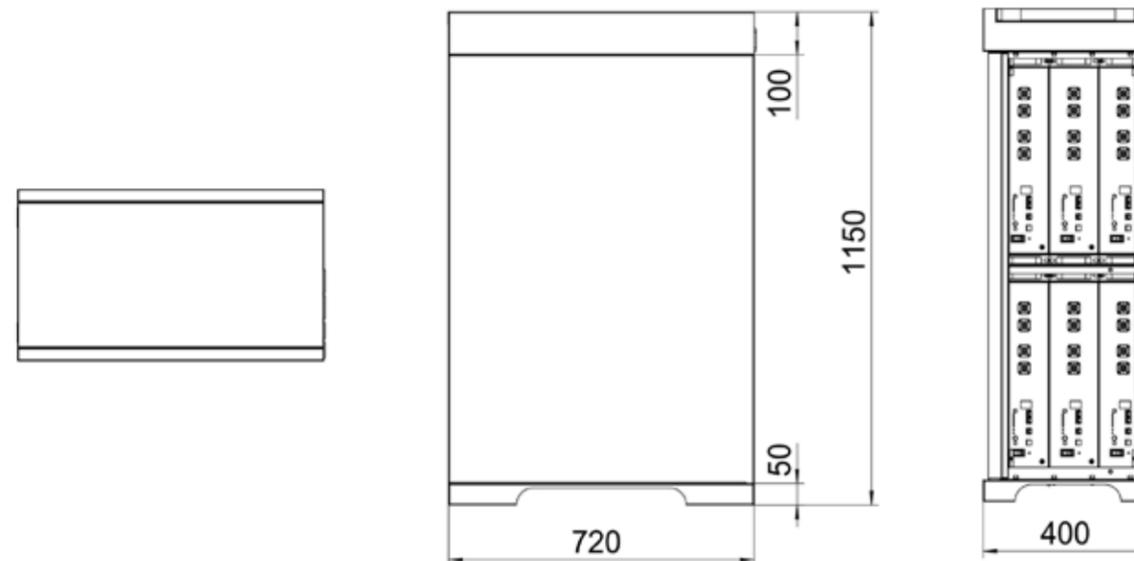
Expand your energy storage with the Forest RB Cabinet! This iron enclosure stores up to 6 E-BOX-48100R batteries. The Forest RB Cabinet paired with multiple batteries can build a 48V UPS server rack or provide storage capacity to home solar arrays.

Product Topology



Product Topology

	B2	B3	B4	B5	B6
Battery capacity	10.24kWh	15.36kWh	20.48kWh	25.6kWh	30.72kWh
Nominal voltage	51.2V				
Standard Charge/Discharge Current	100A	150A	200A	250A	300A
Maximum Charge/Discharge Current	100A	150A	200A	250A	300A
Operating Temperature	Charging:0~45°C; Diacharge:-10~50°C				
Warranty	Cabinet: 3 years Battery: 10 years				
Positive and Negative Battery Busbars	2*8 points; M8 terminal rings				
Weight	120kg	170kg	220kg	270kg	320kg
Dimensions(W*D*H)	720mm*400mm*1150mm				
Enclosure Protection	IP20 (indoor)				
Altitude	<4000m				
Certificate	UL1973, IEC62619, CE, UN38.3				



Pytes

Forest R



Technical Specification

	R2	R3	R4	R5	R6
Capacity	10.24kWh	15.36kWh	20.48kWh	25.6kWh	30.72kWh
Nominal voltage	51.2V				
Weight (approximate)	180kg	230kg	280kg	330kg	380kg
Dimensions W"/H"/D" (approximate)	720*400*2000mm				
Inverter	8K		10K		12K
PV input power	10400W		13000W		15600W
PV input voltage	550V(150V~800V)				
MPPT voltage range	200V~650V				
Start-up voltage	160V				
No.of MPPT trackers	2				
No.of strings per MPPT tracker	1+1		2+1		2+1
Rated AC output power	8000W		10000W		12000W
AC output rated current	12A		15A		18A
Grid type	Three Phases				

Introduction

The Forest R, a new generation of energy storage products that integrate inverters and batteries, and is a landmark "New Home appliance". Forest R can manage your energy usage throughout the day, provide smart configurable backup power during grid outages and power smart homes with solar energy, day and night.

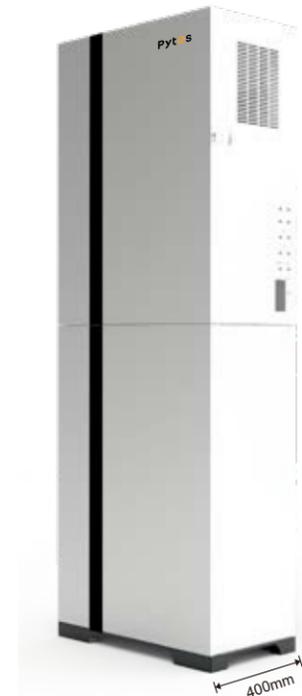
Specification

General Specification

Capacity	5.12kWh per battery module, up to 6 modules
Transfer switch	Automatic, integrated
Listed and recognized certificates	Battery modules: UL1973, IEC62619, CE, UN38.3 Inverter : IEC62109, IEC61727, TOR, IEC62116, IEC60068, IEC61683, NRS 097-2-1
Warranty	Battery: 10 years or 6,000 cycles Inverter: 5 years Cabinet: 10 years
Temperature range	Charge: 0~45°C Discharge: -10~50°C

Battery Module Specification

DC battery input voltage	47.5~57.6V
Max charge current	50 A per module
Cell discharge	5.12kWh with 90% DoD
Overcharge Protection	MOSFET & Fuse protection



Brackets

Pytes



E-BOX PLUS

Introduction

The E-BOX PLUS is a state-of-the-art wall-mounted home energy storage system solution. It has a total usable energy capacity of 5.12KWh. Product features include quick and easy installation, a compact and elegant home style design and great extensibility. The E-BOX PLUS can provide smart configurable backup power during grid outages and power smart homes with solar energy, day and night.

Product Display



Installation Steps

Step 1

Fix the square wall mount bracket in place on the wall by screws.

Step 2

Fix the battery bracket on the battery by screws.

Step 3

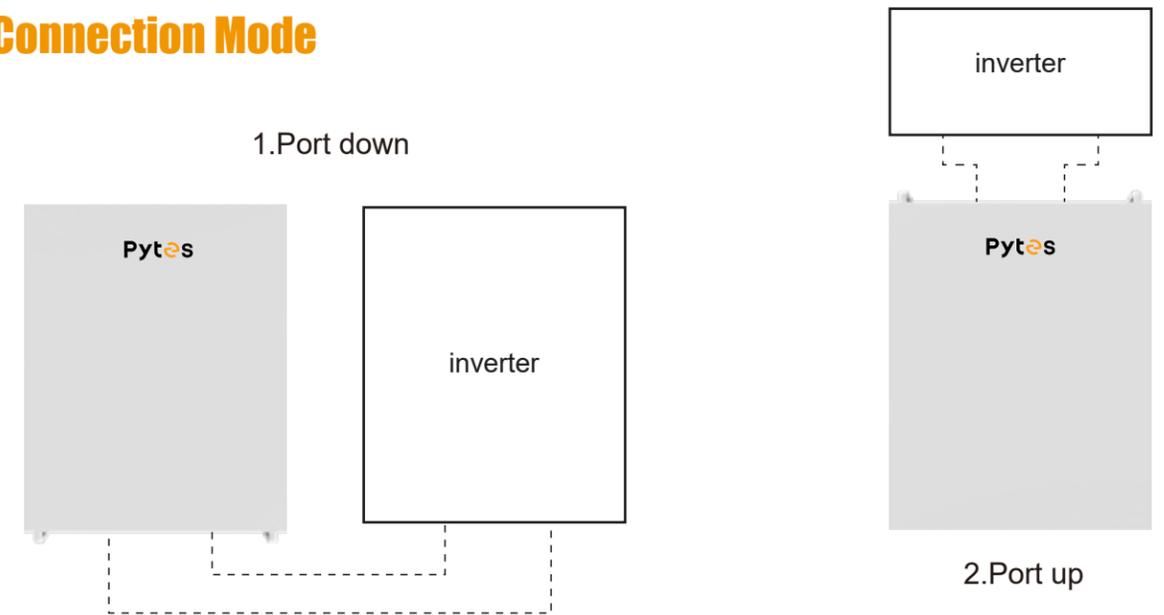
Hang the battery with battery bracket and cabinet on the square wall mount bracket.



Battery Expansion

E-BOX PLUS can be parallel up to 8 pcs without additional kit.

Connection Mode





Parameters

Unit Dimension	532mm*725mm*135mm
Unit Weight	8kg
Installation	<ol style="list-style-type: none"> 1. Install the parts by following the guide of the installation manual; 2. Screws are needed to assemble single battery and rack; 3. Multi-layer battery rack: after assembling all the single batteries and racks, stack them up vertically. Connection board is needed to install in between each two layers of battery racks; 4. Secure multi-layer battery rack with accessories to the wall; 5. Connect multi-layer battery rack to the distribution box.

Introduction

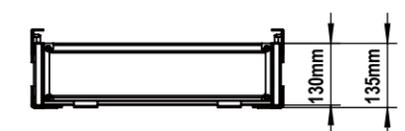
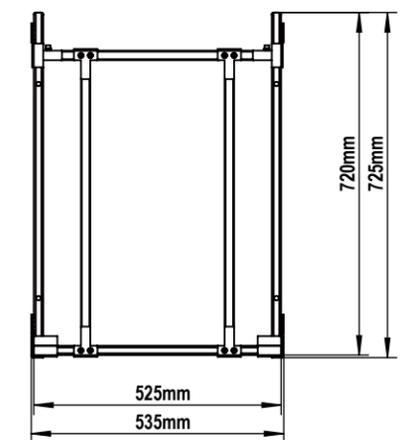
In order to install the E-BOX-48100R Battery more conveniently and reduce installation costs, PYTES has developed this battery bracket. You can use it on a single battery or on multiple battery packs. Compared with cabinet storage, besides taking up less space, the bracket can ventilate and reduce the heat much more easily.



Can bear more weight



Mechanical drawing



HUB

05-041380-11: HUB

For E-Box-4850 (2U)



22-ABUJ00390: Front Bracket
22-ABUJ00389: Rear Bracket

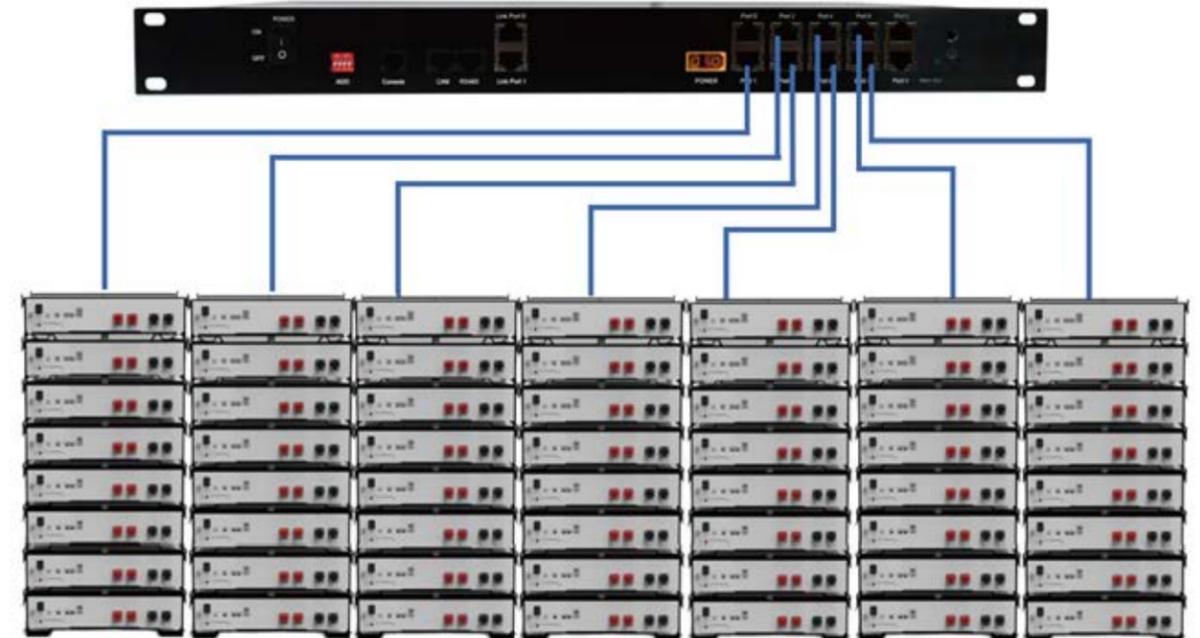
For E-Box-48100R (2.6U)



14-171385-31: Front Bracket
14-171384-31: Rear Bracket



Each communication hub connects maximum 7 battery groups



Each group supports maximum 8 pcs E-BOX-4850 or E-BOX-48100 in parallel

Accessories



Battery to Battery

- 18-041343-31: 160mm Positive Power Cable
- 18-041344-31: 160mm Negative Power Cable
- 18-041341-31: 560mm Positive Power Cable
- 18-041342-31: 560mm Negative Power Cable



05-070000-11: RS 232 communication cable



Battery to Inverter

- 18-041339-31: 500mm Positive Power cable
- 18-041340-31: 500mm Negative Power cable
- 18-041336-31: 2000mm Positive Power cable
- 18-041337-31: 2000mm Negative Power cable



18-041317-31: 1000mm Earth Cable



Battery to Battery

- 18-041315-31: 220mm Standard communication cable
- 18-041318-31: 350mm Standard communication cable
- 18-021080-31: 500mm Standard communication cable



05-041382-11: Smart Meter



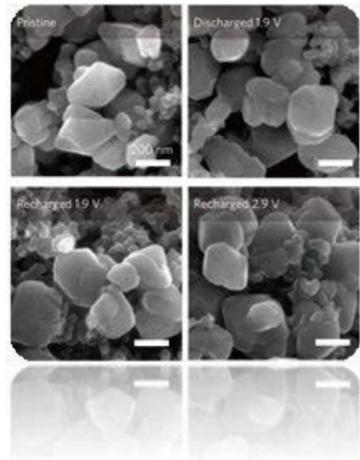
Battery to Inverter

- 18-021080-31: B Class 500mm
Compatible:solark、 solis、 growatt RS485/can SMA、 goodwe can SRNE RS485
- 18-061206-31: B Class 2000mm
Compatible:solark、 solis、 growatt 485/can SMA、 goodwe can SRNE RS485
- 18-041316-31: B Class 3500mm
Compatible:solark、 solis、 growatt 485&can、 SMA、 goodwe can、 SRNE RS485
- 18-061224-31: B Class 3500mm
Compatible: Victron can
- 18-061231-31: B Class 3500mm
Compatible: Voltronic Off-grid RS485
- 18-061234-31: B Class 3500mm
Compatible: Voltronic On-grid RS485



81-155876-61: 48V 300A Bus Bar

Case Study



Cells & Packs

- The olivine structure and the stability of P-O bond of LFP cells guarantee much higher safety than those of NCM cells.
- 17 years experiences of pack R&D ensure longer cycle life of the battery.

Self-designed BMS

- Equipped with automotive grade chips by TI® system.
- Double protection by master chips. When the main chip fails, the back-up chip keeps protecting the system.
- Real-time temperature, current, voltage measuring and monitoring.
- Accurate SoC and SoH calculation.

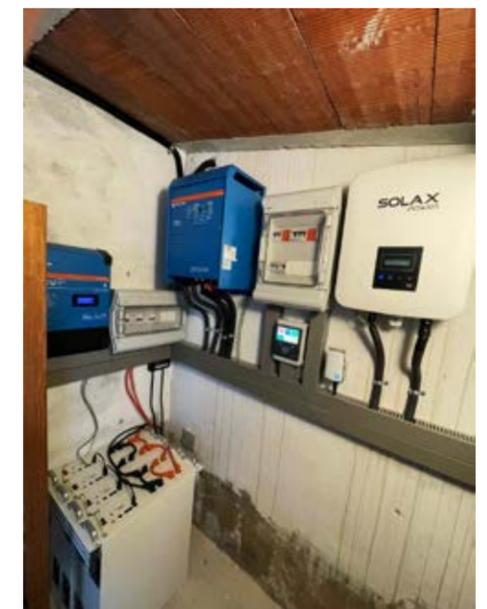


Quality Assurance

- UL1973/ IEC62619/ CE/ UN38.3 Certificates
- TÜV, SGS, BV International Certified Cooperative Testing Laboratories.

Quick Response

Quick local after-sales response/ 24hours*7days.



Compatibility List of PYTES ESS and Inverters

Pytes



More Catalogs



Scan to follow us



www.pytesgroup.com
Pytes