Pytes

Creating Undertaking & Sharing

PYTES (USA) Energy Inc.
BATTERY EXPERT-GREEN ENERGY PROVIDER

LI-ION BATTERY FOR ENERGY STORAGE

CONTENTS

PYTES, a national high-tech enterprise founded in 2004, focuses on Lithium-ion battery solutions for e-bikes, 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.

$125M
Total Asset

19 Years
Industry experience

Pytes
Since 2004

1000+
Employee

$177M
Turnover in 2022

3.95Gwh
Annual capacity

Global Marketing & Service

Europe

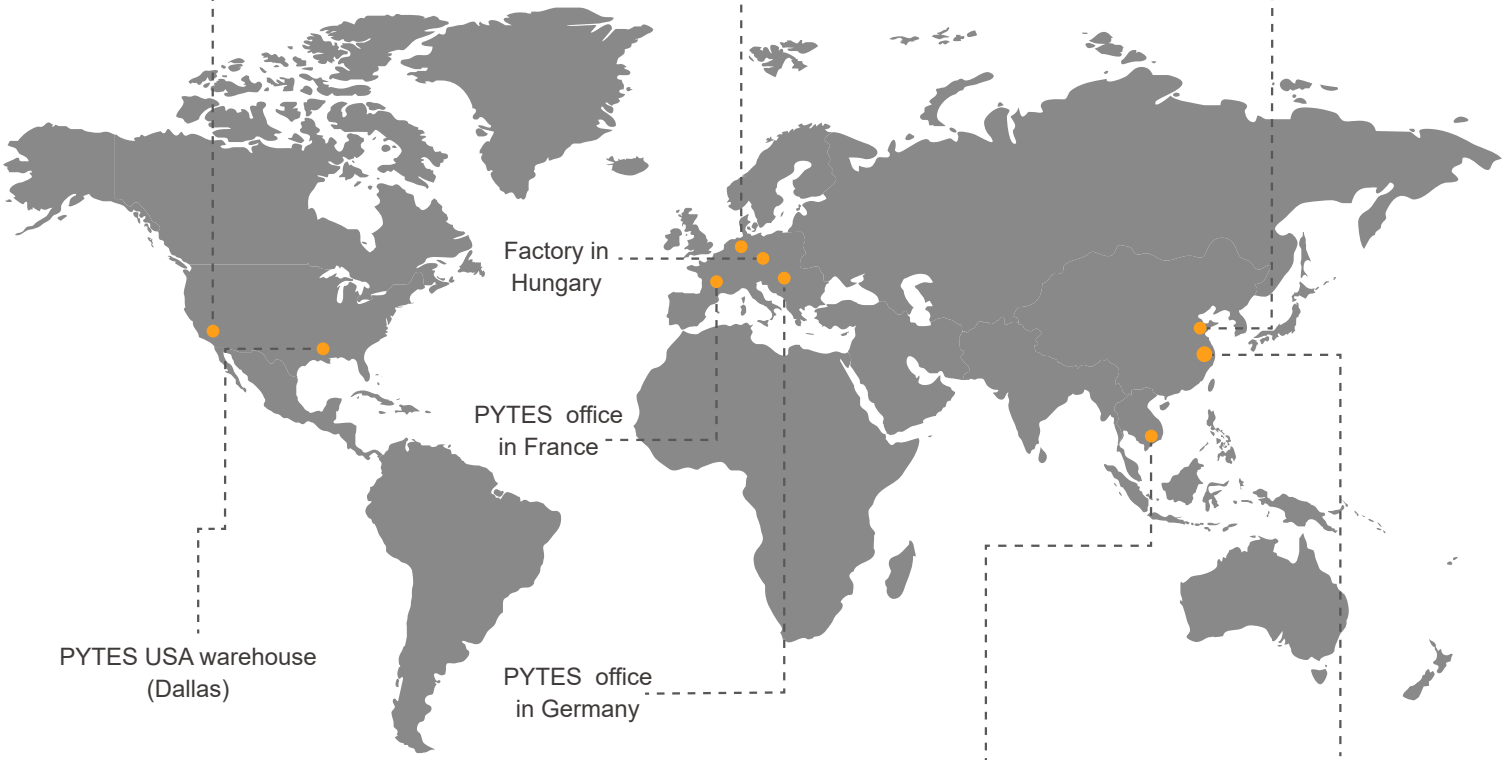
PYTES EU office
(The Netherlands)

North America

PYTES USA office
(Los Angeles)

China

Factory in Shandong



Vietnam

Factory in Ho Chi Minh City

China

Headquarter/
Factory in Shanghai

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

Testing Labs

SGS

BV

TUV

DEKRA

Mechanical Tests

Vibration Test

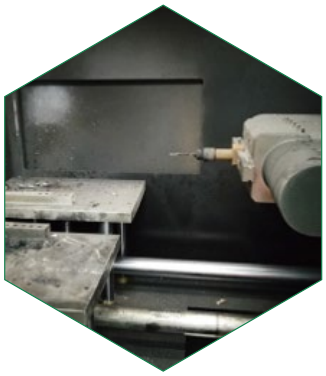
Drop Test

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

UL9540

IEC62619

UL1973

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. The battery pack is compact, easy to install, free of maintenance and can be installed in parallel in the energy storage system to increase its capacity. It is widely applied in residential 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

Long-lasting Battery Module
integrated with tier 1 automotive LFP cells lifespan ≥6000 cycles

Wide Compatibility
compatible with most of inverters in the market

10 Years Warranty

UN38.3

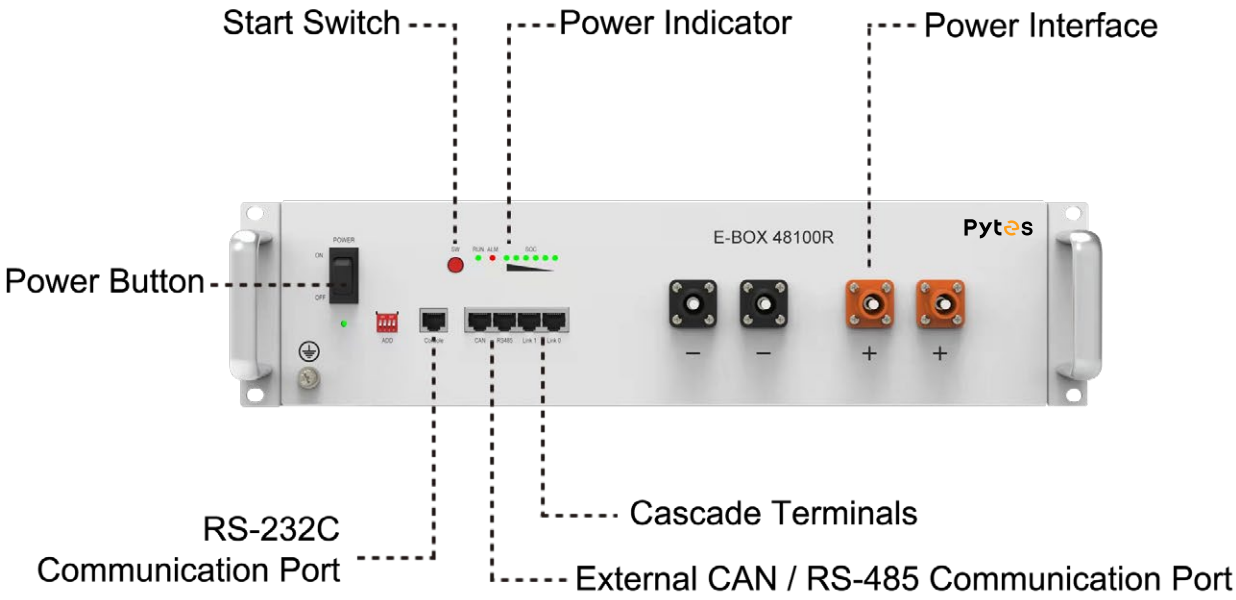
Batteries

110402100003

E-BOX-48100R

L440mm* W620mm * H117mm (2.6U)
L17.32" * W24.41" * H4.61" (2.6U)
51.2V 100Ah 5.12kWh

Operation Panel



Technical Specifications

Battery Model	E-BOX-48100R
Chemistry	LFP
Nominal Voltage	51.2V
Voltage Range	47.5V-58V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
Unit Dimension (L*W*H)	17.32 * 24.41 * 4.61 inch (440 * 620 * 117 mm)
Unit Weight	112.5lbs
Peak Discharge Rate	102A (5.22kW@15s)
Maximum Continuous Charge/Discharge Rate	50A (2.56kW DC)
Standard Continuous Charge/Discharge Rate	50A (2.56kW DC)
Round-Trip Efficiency	≥95%
Communication Protocol	RS232, RS485, CAN
Cycle Life	≥6000cycle
Calendar Life	≥10years
Operating Temperature	14°F~122°F
Maximum Allowed Modules in Parallel	8 pcs (41kWh)
Storage Temperature	<1month: -4~131°F, 1-3months: 32~95°F, 3-12months: 68~77°F
Certificates	UL9540, UL9540A, UL1973, SGIP, CEC

Pytes

V5°

Introduction

V5°, 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 Telecommunication stations.Its rechargeable LFP battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Features

Below Freezing Temperature Charging
- designed for cold environment

Long-lasting Battery Module
- integrated with tier 1 automotive LFP cells
- lifespan ≥6000 cycles

Smart Energy Management
- field-proven sophisticated BMS to maximize reliability and longevity
- remote upgrading

Easy Connection
- Up to 300A confluence current in parallel

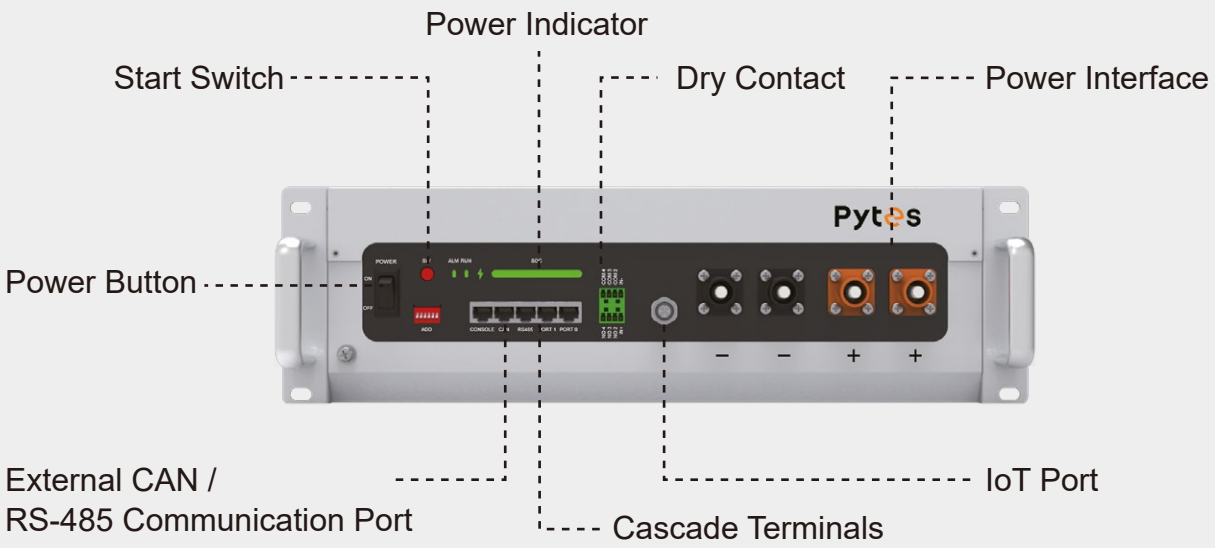
High Charge/Discharge Rate
- fully charged in 1 hour
- high power output (1C)

10 Years Warranty

Technical Specifications

Battery Model	V5°
Chemistry	LFP
Nominal Voltage	51.2V
Voltage Range	44.8V-57.6V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
Unit Dimension(L*W*H)	19*20.9*5.5 in
Weight	97 lbs
Standard Charge/Discharge	75A
Maximum Continuous Charge/Discharge	100A
Peak Charge/Discharge	150A(at 15s)
Round-Trip Efficiency	≥95%
Communication Protocol	CAN/RS485
Cycle Life	≥6000 cycles (@ 90%DOD)
Calendar Life	≥10years
Operating Temperature	14°F~131°F
Maximum Allowed Modules in Parallel	16 pcs (82kWh) in a group 7 groups (573kWh) in a system w/ a Hub
Heating system	14.4~18°F/h

Operation Panel



Cabinets

R-BOX

110409100002：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

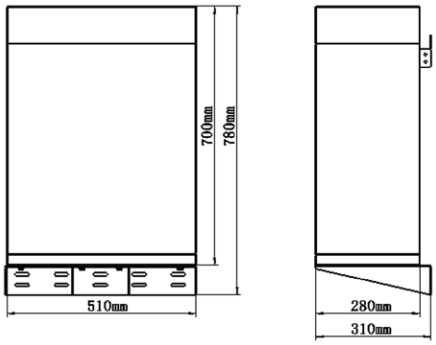
Model	R-BOX
Total capacity	10.24kWh
Usable capacity	9.22kWh
Chemistry	Lithium iron phosphate (LFP)
Nominal voltage	51.2V
Max. charge/ discharge current	100A
Communication	CAN, RS485
Operating Temperature	Charge: 32~113°F, Discharge: 14~122°F
Altitude	＜6562ft (2000m)

Mechanical Design	Parameter
Dimensions (L*W*H)	11.0 * 20.1 * 27.5 inch (30.8 inch H w/ holder) 280 * 510 * 700 mm (780 mm H w/ holder)
Weight	264lbs
Mount	Wall / Floor mount
Enclosure rating	IP20
Enclosure material	Cool-rolled steel
Cooling	Natural convection
Warranty	6000 cycles or 10 years

Designed for two E-BOX-48100R battery models

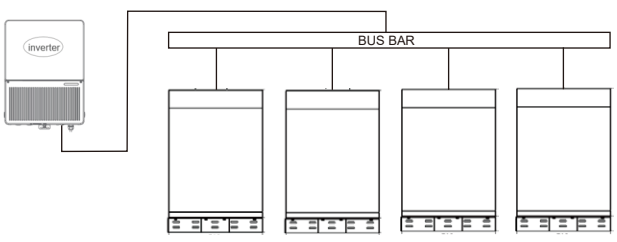
3D image

Mechanical Drawing



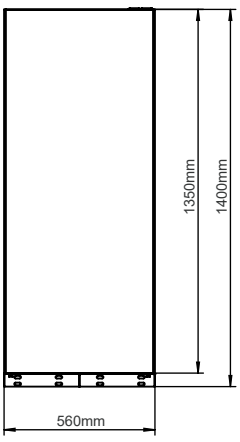
Battery Expansion

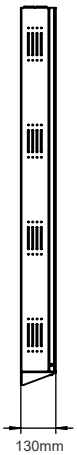
PYTES Home Energy Storage System can connect up to 4 pcs R-BOX directly. Please refer to a HUB solution for bigger expansion demands.

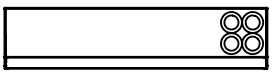


R-BOX-A

Mechanical Drawing







Introduction

The PYTES R-BOX-IP64 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-IP64 can provide smart configurable backup power during grid outages and power smart homes with solar energy, day and night.

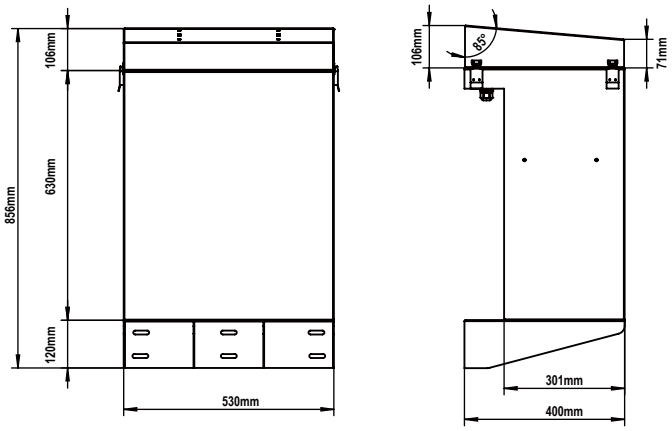
Technical Specifications

Model	IP64
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
Operating Temperature	Charge: 32~113°F, Discharge: 14~122°F
Altitude	＜6562ft (2000m)

Mechanical Design	Parameter
Dimensions (L*W*H)	12.2 * 20.9 * 29 inch (33.7 inch H w/ holder) 400 * 530 * 736 mm (856 mm H w/ holder)
Weight	264lbs
Mount	Wall / Floor mount
Enclosure rating	R-BOX-IP64
Enclosure material	Cool-rolled steel
Cooling	Natural convection
Warranty	6000 cycles or 10 years

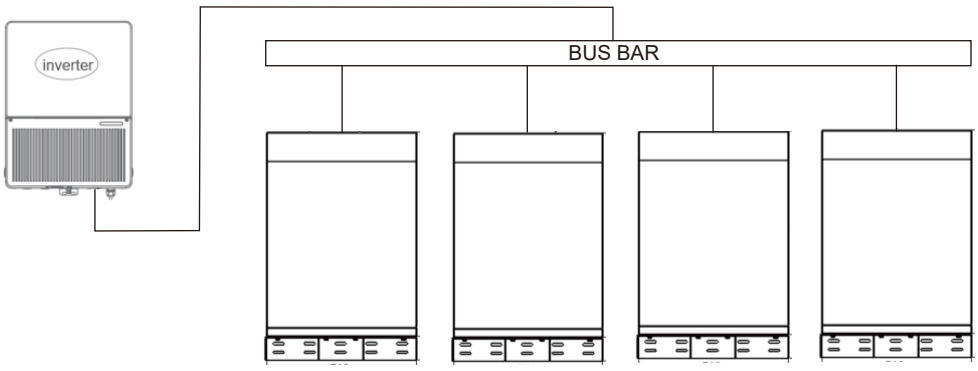
3D image

Mechanical drawing



Battery Expansion

PYTES Home Energy Storage System can connect up to 4 pcs R-BOX-IP64 directly. Please refer to a HUB solution for bigger expansion demands.



Pytes

R-BOX-OC

Introduction

R-BOX-OC series is an advanced energy storage system solution. The total available energy capacity of each unit can reach up to 20kWh, and up to 4 units (16 batteries, 80kWh) can be connected in parallel. Product features include quick and easy installation, strong scalability, and support for outdoor use. The R-BOX-OC Series provides smart configurable backup power during grid outages and uses solar energy to power smart homes during the day and night.

Features

- Built-in busbars and breakers
- Expandable up to 80kWh
- Support outdoor installation
- compatible with most of inverters in the market
- Easy to install

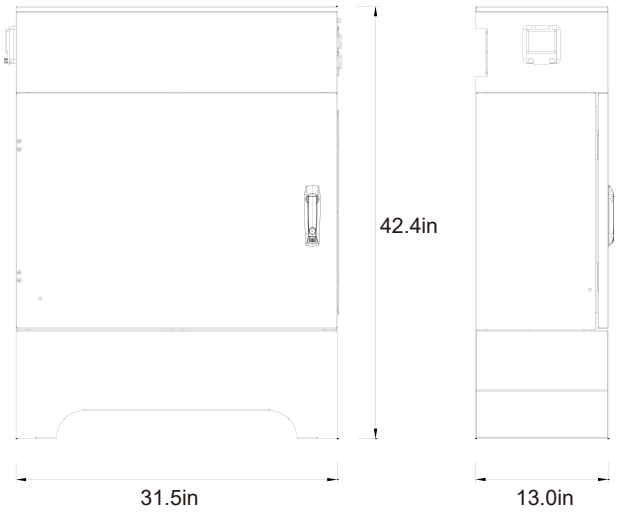
CE CLEAN ENERGY COUNCIL SAA UN38.3 IEC

Technical Specifications

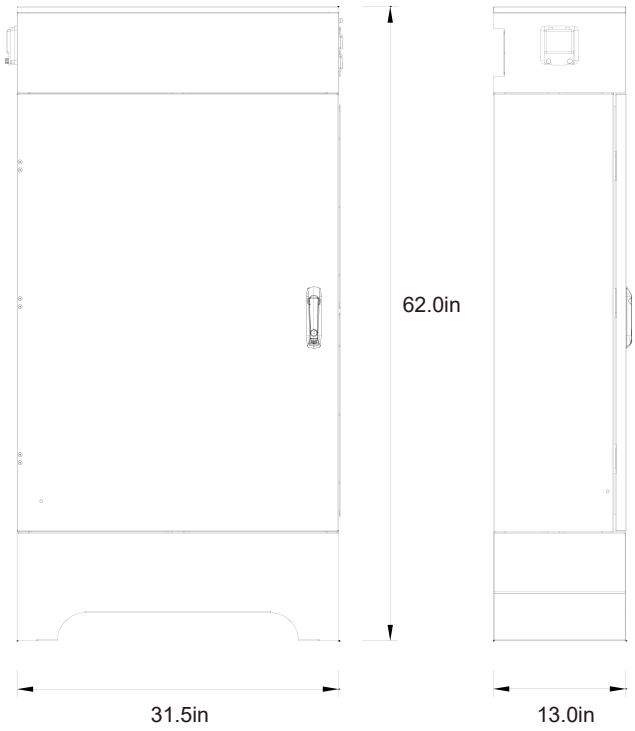
Model	R-BOX-OC(II)	R-BOX-OC(IV)
Total capacity	10.24kWh	20.48kWh
Normal voltage	51.2V	
Standard Charge/Discharge Current	100A	200A
Operating Temperature	Charge:32~113°F, Discharge:14~122°F	
Warranty	Cabinet: 2 years, Battery: 10 years	
Positive and Negative Battery Busbars	300A, 2*12 points, M8/M6 terminal rings	
Breaker	100A	
Weight	143.5 lb	176.4 lb
Dimensions (L*W*H)	31.5×13.0×42.4 in	31.5×13.0×62.0 in
Enclosure Protection	IP65/NEMA 3R	
Alltitude	＜6562ft (2000m)	

Mechanical drawing

R-BOX-OC(II)



R-BOX-OC(IV)



Forest 12K/15K

UL 9540 Certificated Residential BESS System

Sol-Ark 12K/15K

PYTES E-BOX 48100R(5kWh)

The integrated solution of Pytes storage batteries and Sol-Ark hybrid inverter is UL 9540 certificated and is ready to form a high-performance residential energy storage system, efficiently and cost-effectively.

- 6000 Cycle Battery
- 4ms Transfer Time
- Generator Support
- Parallel Stacking
- 10yr Warranty
- Excellent Technical Support

UL 9540 Certificated Models

Forest 12K includes:
Hybrid Inverter Sol-Ark-12K-P, Battery Pack E-BOX 48100R (Up to 6 battery packs in parallel)

Forest 15K includes:
Hybrid Inverter Sol-Ark Limitless 15K-LV, Battery Pack E-BOX 48100R (Up to 12 battery packs in parallel)

Specifications

Battery

Model	E-BOX-48100R
Nominal Capacity	100Ah (5.12kWh)
Standard Charge/ Discharge Rate	50A (25.6kW)
Max Charge/ Discharge Rate	50A (25.6kW)
Peak Current	102A@15s
Cycle Life	6000 cycles
Parallel Stacking	Up to 6
Operating Temperature	Discharge:-10℃-50℃; Charge: 0-45℃
Weight	112.5 lbs (51kg)
Dimensions (H * W * D)	17.32 * 24.41 * 4.61 inch (440 * 620 * 117 mm)

Inverter

Inverter	Sol-Ark-12K	Sol-Ark-15K
Solar output power	12000W	15000W
Max DC voltage	500V@18A, 450V@20A	500V@26A
MPPT voltage range	150~425V	150~425V
Start-up voltage	125V	125V
No.of MPPT trackers	2	3
Max DC current per MPPT (self limiting)	20A	26A
Rated AC output power	9000W 37.5A L-L (240V)	12000W 50A-L(240V)
Parallel stacking	Yes	Yes
Grid type	120/240/208V split phase	120/240/208V split phase

Recommended Packages

12kW / 20kWh

Sol-Ark 12K

+

R-BOX/R-BOX-IP64 x 2

or

R Bracket x 4

12kW / 25kWh

Sol-Ark 12K

+

R-BOX/R-BOX-IP64 x 3

or

R Bracket x 5

12kW / 30kWh

Sol-Ark 12K

+

R Bracket x 6

15kW / 20kWh

Sol-Ark 15K

+

R-BOX/R-BOX-IP64 x 2

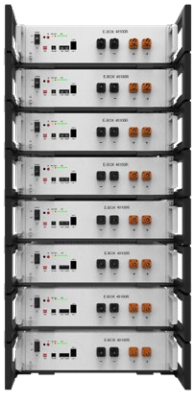
or

R Bracket x 4

15kW / 40kWh

Sol-Ark 15K

+



R Bracket x 8

15kW / 60kWh

Sol-Ark 15K

+

R Bracket x 12

R Bracket

Introduction

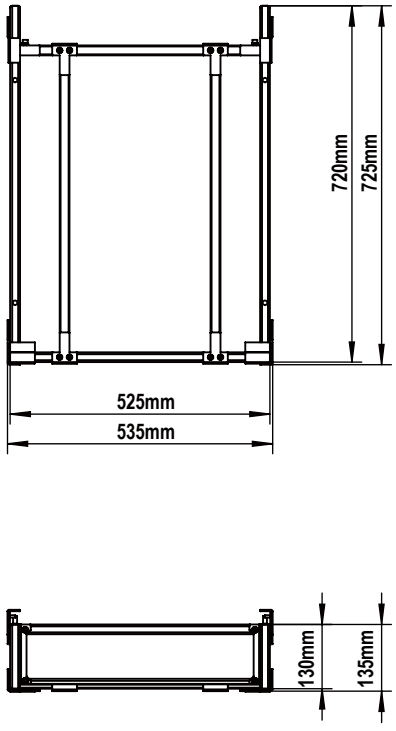
In order to install the E-BOX-48100R Battery more conveniently and reduce installation costs, PYTES has developed this battery bracket. You can use it on a single battery or on multiple battery packs. Compared with cabinet storage, besides taking up less space, the bracket can ventilate and reduce the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

Parameters

Unit Dimension (L*W*H)	20.9 * 28.5 * 5.3 inch (535 * 725 * 135 mm)
Unit Weight	17lbs
Installation	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.

Can bear more weight

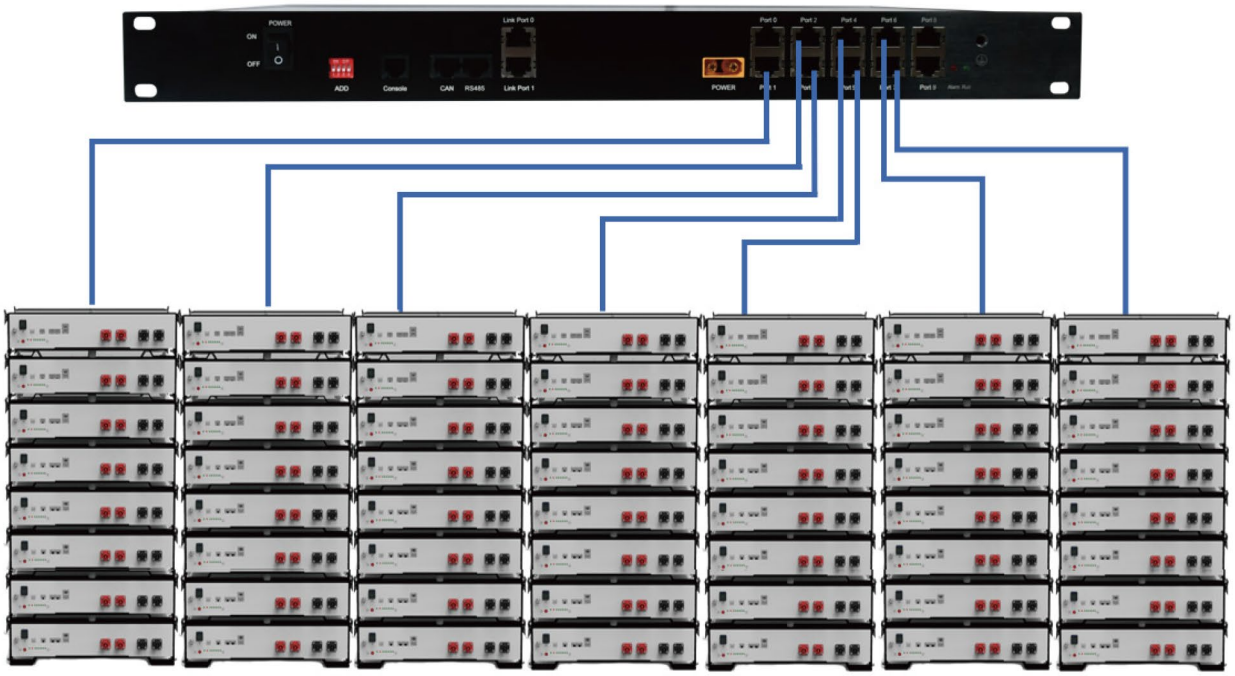
Mechanical drawing



HUB

110409100001： HUB

Each communication hub connects maximum 7 battery groups

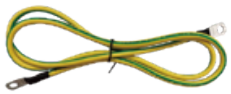


Each group supports maximum 8 pcs E-BOX-48100R in parallel

Accessories

Battery Accessories Package

Battery to Battery Comm Cable



1000mm Ground Wire

2000mm Battery to Inverter Power Cable

161412100244：2000mm Battery to Inverter Positive Power Cable (6'6.8")

161412100245：2000mm Battery to Inverter Negative Power Cable (6'6.8")

Battery to Battery

161412100251：160mm Positive Power Cable (6.30")

161412100252：160mm Negative Power Cable (6.30")

Battery to Inverter Communication

161412100229：Standard Comm Cable 3500mm (11′5.79")
Compatible:Sol-Ark、Growatt、SMA

161412100451：Custom Comm Cable 3500mm (11'5.79")
Compatible: Voltronic、Phocos、Mpp Solar

161412100700：USB-to-Console cable for firmware upgrade/monitor software

161506100001：Bus Bar 12+2 terminal 300A

Brackets For E-BOX-48100R (2.6U)

150215100012： Front Bracket

150215100011： Rear Bracket

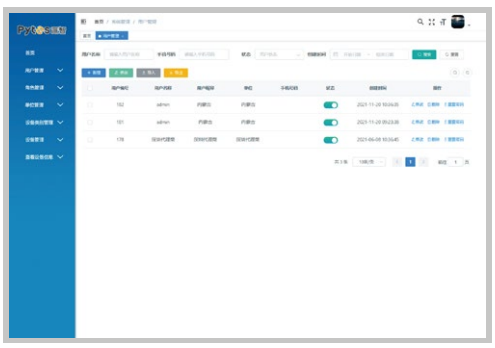
SMART MONITOR

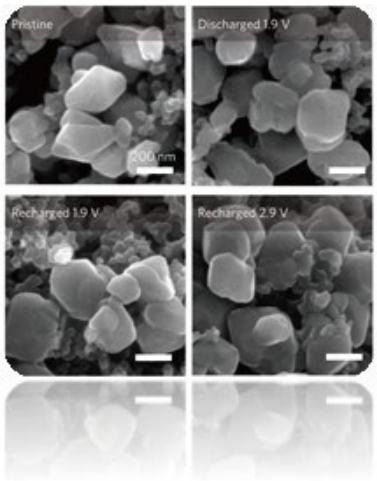
Smart Monitor feature

1. Battery remote upgrade;
2. Battery fault monitoring;
3. Historical fault inquiry;
4. Historical power inquiry;
5. Mobile APP and cloud monitoring;
6. Wireless and Bluetooth two ways of connection;
7.Multi-level management;

Diagram

WEB/APP





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
- 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.

24*7

Compatibility List of PYTES ESS and Inverters

Closed loop

Open loop

Pytes

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More Catalogs

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