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LiFePO4 BATTERY

For Material Handling Equipment

Support Customization

- Battery cells ----- 5 years or 10,000 hours (whichever occurs first).
- BMS system ----- 1 year
- Display screen ----- 1 year
- Charger ----- 1 year
- Other components and parts ----- 1 year

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Tianjin Enerbyte Electronics Co.,ltd



CONTENTS

• Lithium Battery VS Lead-acid Battery	01
• Cost Comparison.....	03
• Compatible Various Forklift Brands	06
• Application Scenarios	07
• ENERBYTE Lithium Battery Advantages	10
• ENERBYTE Battery Structure.....	11
• BMS & 4G Cloud Telemetry Function.....	12
• How to Charge?.....	13
• Battery Specifications.....	14
• About Us	15

ENERBYTE
Your Trusted Partner

New Technology Creates Great Value for Your Business

Converting from lead-acid to lithium-ion is easy & cost-effective and increases the productivity of the fleets and the operators.

Retrofit Your Fleet to Lithium-ion Battery



Difference between lead-acid batteries and lithium batteries



- Charging Time
- Service Life
- Opportunity Charging
- Multi-Shifts Operating

Need longer charging time, up to 8-10 hours, Charge efficiency is 60-70%.	Fast charging & Charge efficiency is 98% Charging 2 hours
2-3 years	8-10 years.
Have a memory effect, can not support opportunity charging .	No memory effect, the battery can be charged at any time.
1~2 Shifts	3~4 Shifts

Usage Environment

	LEAD-ACID BATTERY	LITHIUM BATTERY
Temperature	At minus 20 degrees, the discharge efficiency is only 50%	At minus 20 degrees, the discharge efficiency is about 80%. (Optional heating function for Sub-zero temperature charging)
Environmental and sustainable development	Acid mist is released during charging, polluting the environment. There is a safety hazard due to emission of hydrogen in use the discharge.	Lithium battery is Eco-Friendly energy. The mainstream environmental protection trend in the world. Zero emissions, no toxic gas. Batteries are completely sealed.
Safety	Toxic lead, corrosive acid, explosive gas could pose a safety hazard for staffs. The chemical stability of lead-acid batteries is good.	Zero emissions, no toxic gas.

Cost

	LEAD-ACID BATTERY	LITHIUM BATTERY
Material Maintenance Cost	Need to add distilled water and battery fluid regularly.	Maintenance-free, also reducing unnecessary losses caused by improper maintenance
Labor Management Cost	Require specialist for maintenance and battery replacement.	No labor management costs.
Power Consumption	When full charging, 80% charging efficiency, actual consumption is high.	When full charging, 97% charging efficiency Almost no actual consumption.
Cost of the Charging Room	Must be charged in separate battery room. Regular ventilation is required due to the release of toxic gases.	No battery room needed.



Small Investments Bring Long-lasting Returns

Although the current price of lithium forklift batteries is higher than that of lead-acid batteries, they provide a lot of benefits to save costs in the long run.

- ✓ Longer life reducing overall battery investment.
- ✓ No need to maintain, water or exchange, saving labor and costs.
- ✓ Energy savings and less downtime to increase productivity.
- ✓ Lower cost throughout the service life.



8 - year cost comparisons to improve your overall return on investment .
 Save up to **50%** Expenses in **8** years.

Below is the 8-year expenditure table comparing ENERBYTE LiFePO4 batteries with lead-acid batteries.

Item	Lead-acid Battery								LiFePO4 Battery
Battery Cost	\$	\$	\$	\$	\$	\$	\$	\$	8 years
Maintenance	\$	\$	\$	\$	\$	\$	\$	\$	8 years
Electricity Cost	\$	\$	\$	\$	\$	\$	\$	\$	8 years
Installation	\$	\$	\$	\$	\$	\$	\$	\$	8 years

ENERBYTE Battery with Intelligent System

0
Maintenance

5 yr
Warranty

4,000+
Cycle Life

10 yr
Design Life

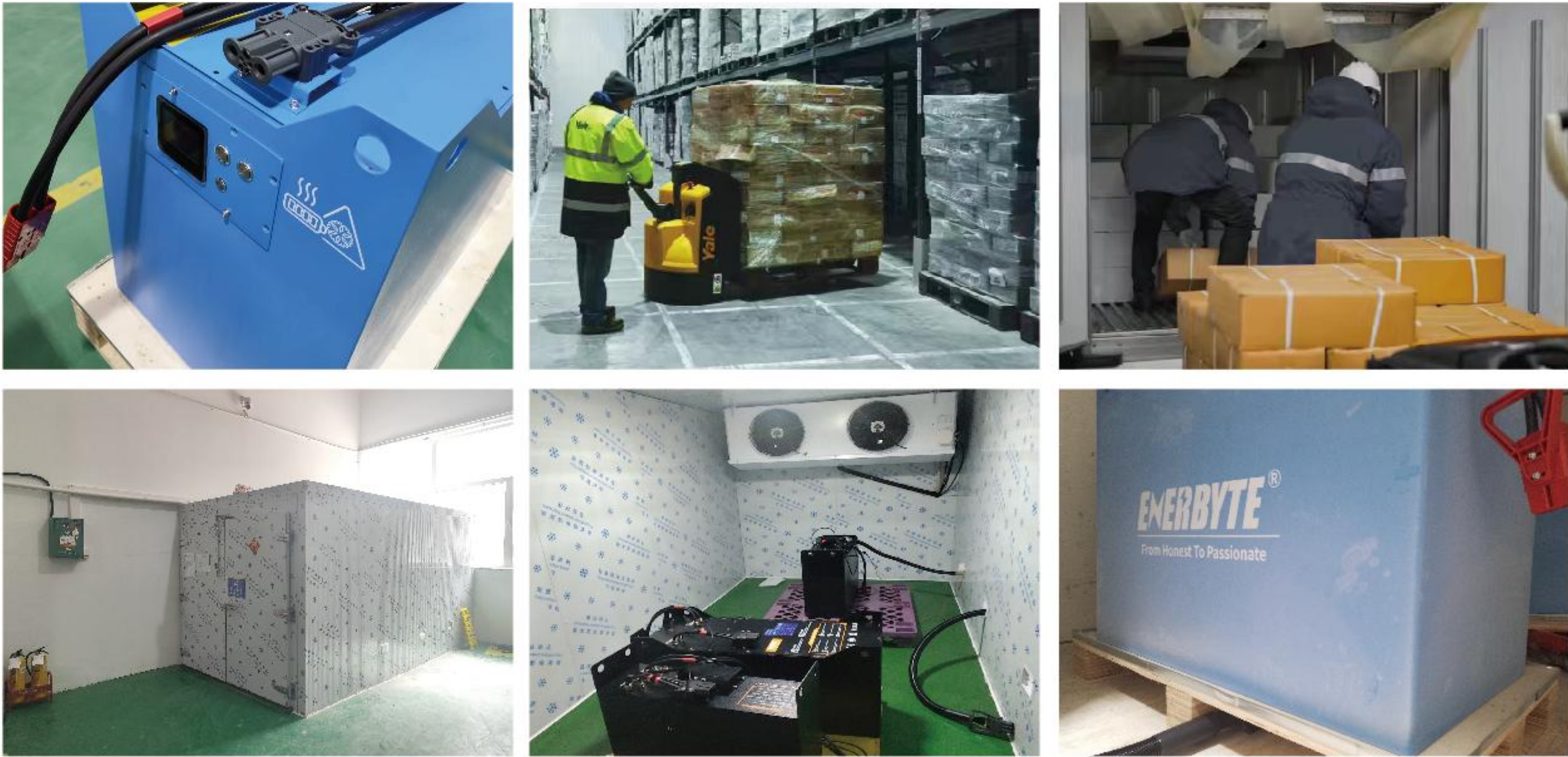


Independent research and development of BMS intelligent management system to monitor the use of battery at all times and protect the safety of battery cell.

- Temperature Protection
- Short Circuit Protection
- Overcharge Protection
- Overvoltage Protection
- PTC
- Anti Reverse Charging
- Balance Function
- Overdischarge Protection
- Overcurrent Protection

Heating function

Forklift lithium batteries are equipped with a heating function. In low-temperature environments, activating the heating system ensures the battery maintains normal power output, preventing issues such as power degradation and slow start-up caused by cold temperatures. This enables continuous, stable operation, significantly enhancing forklift efficiency in cold conditions while extending battery lifespan.



LiFePO4 Battery for Forklifts



ENERBYTE®
From Honest To Passionate

- High compatibility for multi-shifts applications.
- Suitable for applications such as logistics, manufacturing, daily commodity.

With many years of industry experience, ENERBYTE offers solutions for almost all brands and series of vehicle, which are typically applied to the following well-known forklift brands:



MITSUBISHI / CROWN / KOMATSU /
CAT / BOBCAT / TCM / HELI / TOYOTA /
DOOSAN / JUNGHEINRICH / HYSTER /
UNI CARRIERS / HOPE / CASE / LINDE /
COMBILIFT / YALE / HYUNDAI / BENDI
/ MANITOU / CLARK / AISLE MASTER /
RAYMOND / BAOLI

Which LiFePO4 Battery is Suitable for your forklifts ?

All batteries support customization

Class 1

For Counterbalance Forklifts

36V, 48V, 72V, 80V Battery Systems



Class 2

For Order Pickers, Reach Trucks

36V, 48V Battery System



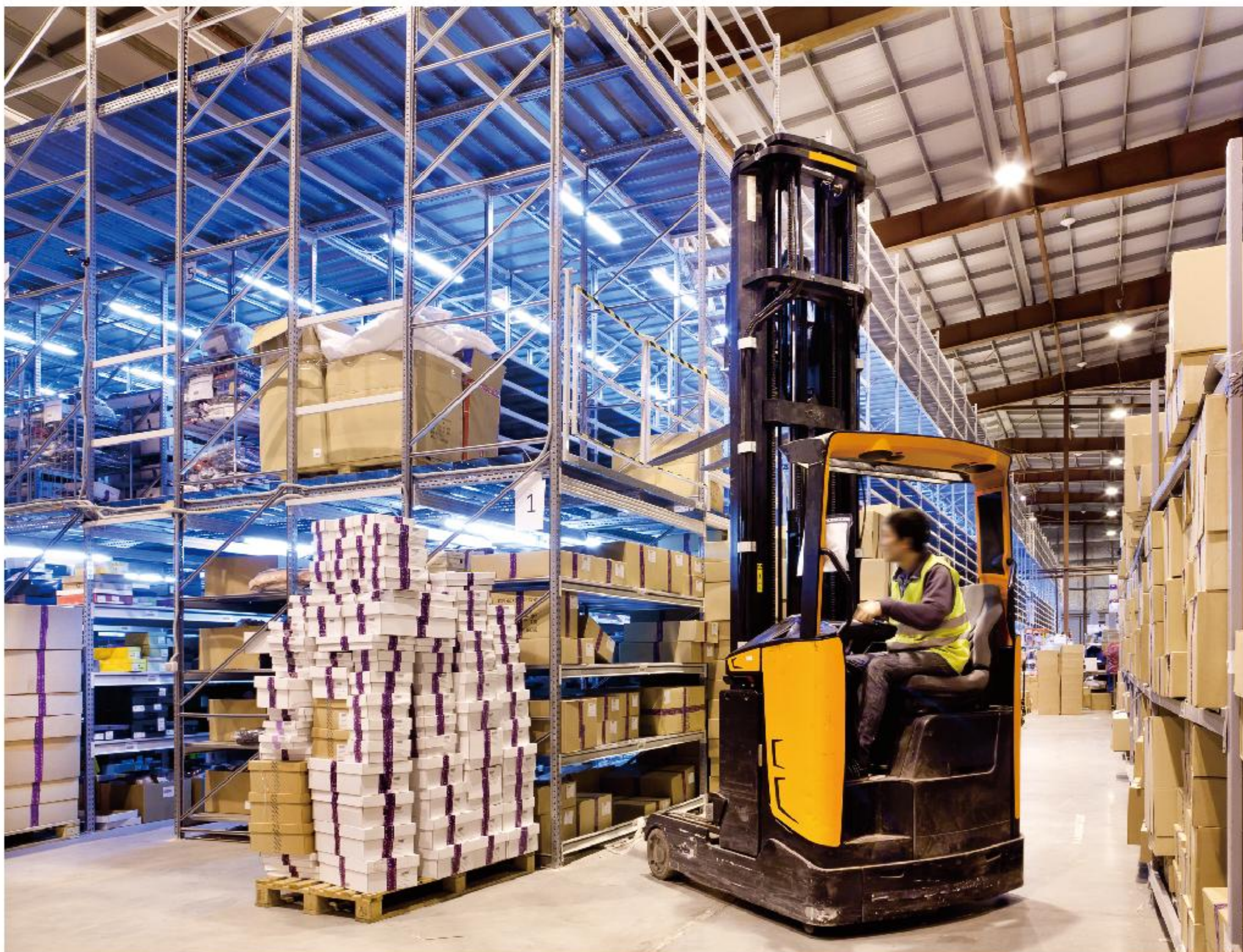
Class 3

For Pallet trucks, Stackers

24V Battery System



Replace the lead acid battery
with LiFePO4 Battery
for your Fleet.



Retrofit your fleet to lithium-ion batteries and keep your equipment running all day long!

Make your equipment more powerful;
Support heavy duty-3 shifts a day.



LiFePO4 battery,
a professional solution.



Longer Cycle Life
Warranty of 5 years or 10,000 hours



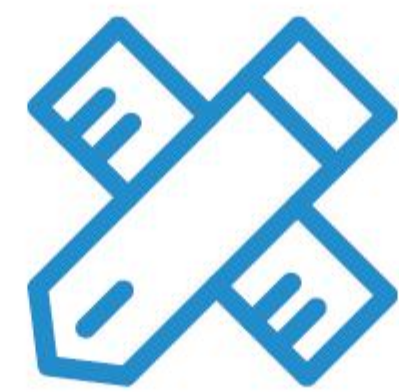
Convenience
Quick charging
Opportunity charging



Safety
Safe and environmental friendly



Maintenance Free
Free you from routine maintenance work



Customization
Customer's application for different models



Storage
Trouble free and low cost



Telematics
Battery monitor over Internet



Low Ownership
Total cost is low

- OEM ODM customized LiFePO4 battery solutions
- Without MOQ
- Case thickness 5mm with coating 0.25mm
- IP65 for outer box shell
- Brand new, A-grade LiFePO4 cells from TOP 5 Chinese Manufacturer
- Intelligent built-in BMS
- Unique PDU diagram design to protect battery cells safe enough
- Flexible copper bus bar connection
- TOP 3 Chinese brand for DCDC, Relay, Chargers and spare parts
- LCD screen showing data and trouble shooting
- 4G cloud telemetry function
- Heating function (Optional)
- High current discharging relay, allowing peak current 2000A (10S)



ENERBYTE LiFePO4 Battery Structure



PROFESSIONAL DESIGN

1. Upper Cover
2. Relay
3. DC-DC
4. Current Sensor
5. BMS
6. 4G Antenna
7. Safety Valve
8. Battery Pack

BMS (Battery Management System)

Independent research and development of intelligent BMS can monitor the use of battery at all times and protect the safety of battery cell.

BMS with built-in high-current relay to instantly output 1000A current to ensure that the forklift has sufficient power. The lithium battery and the charger have CAN communication, and the BMS automatically controls the current and implements automatic charging management.

Our special BMS management system provides comprehensive management and monitoring of the battery and is equipped with a buzzer alarm function.

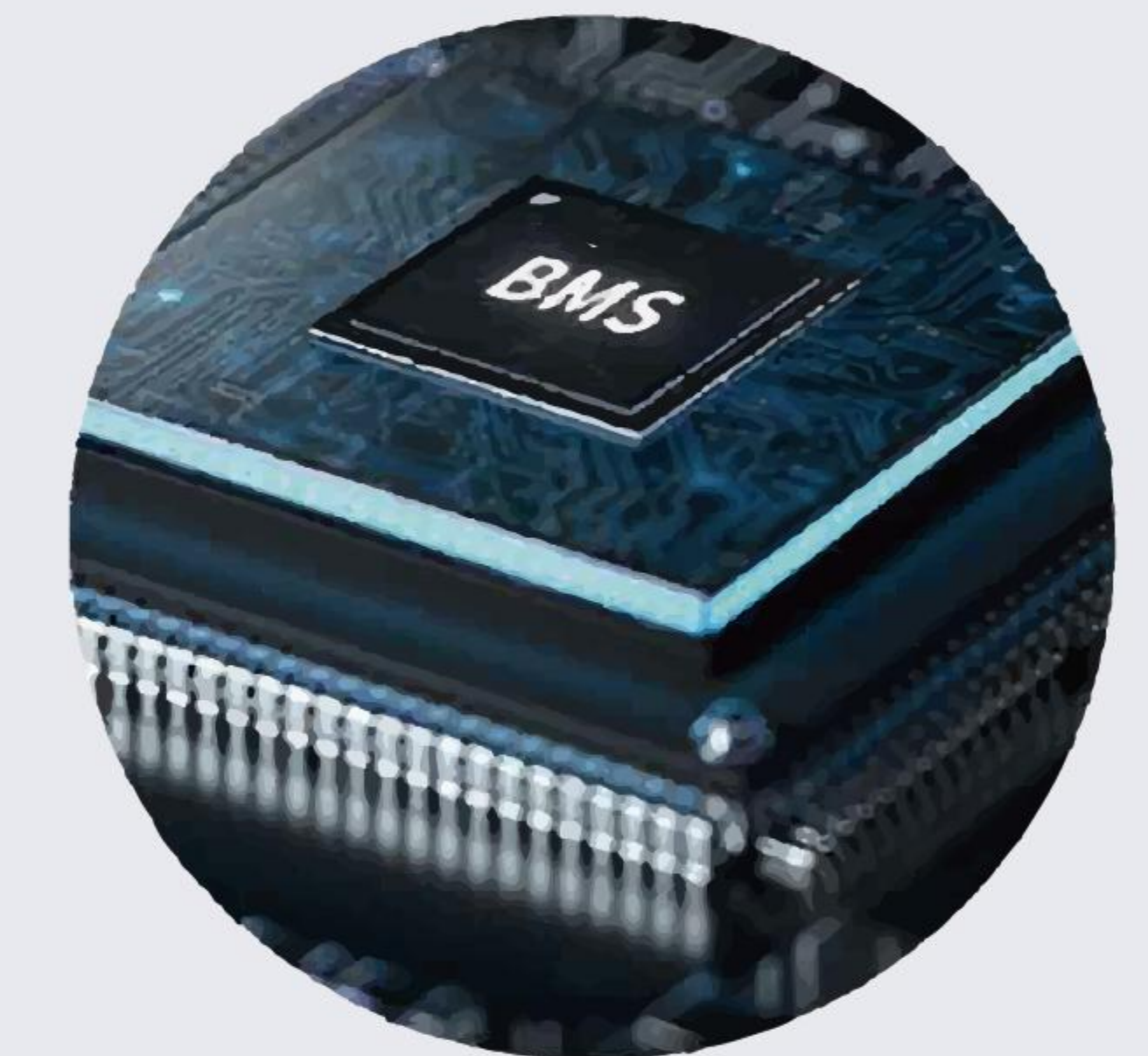
Such as: Lithium battery current management, voltage management, temperature management, alarm management.

Voltage management: overcharge voltage protection, overdischarge voltage protection, voltage equalization function, etc.

Current management: overcurrent protection, short circuit protection, reverse connection protection, etc..

Temperature management: Low temperature charging, protection is below 0°C, high temperature protection is above 65°C, and battery cell temperature difference protection exceeds 12°C.

Alarm management: current alarm, voltage alarm, temperature alarm, SOC low alarm, relay failure alarm, etc.



4G Cloud Telemetry Function

The 4G network covering 120 countries, users can monitor the battery status globally.

• ENERBYTE lithium battery has the telemetry function and GPS GPRS remote tracking function by cloud platform.

• This function can be seamlessly connected with the BMS intelligent terminal module through the wireless data transmission network and the battery data cloud platform. It supports real-time information and status query of the battery system, remote alarm and early warning, and software and hardware information traceability, greatly improving the after-sales maintenance efficiency of the battery system.

• It reduces operation and maintenance costs, supports BMS program over-the-air upgrade and parameter re-calibration, realizes full life cycle management of battery system, and improves battery application working efficiency.

1. Project Information Management
2. Status Real-Time Monitoring
3. Remote Alarm and Early Warning
4. Product Information Traceability
5. Run Data Storage
6. Mobile Phone and WeChat Applet Cloud Monitoring Function
7. 4G Cloud Service Area Covering 120 Countries



- Battery fleet statistics curve
- Working status
- SOC status
- Alarm status
- 24 hour status

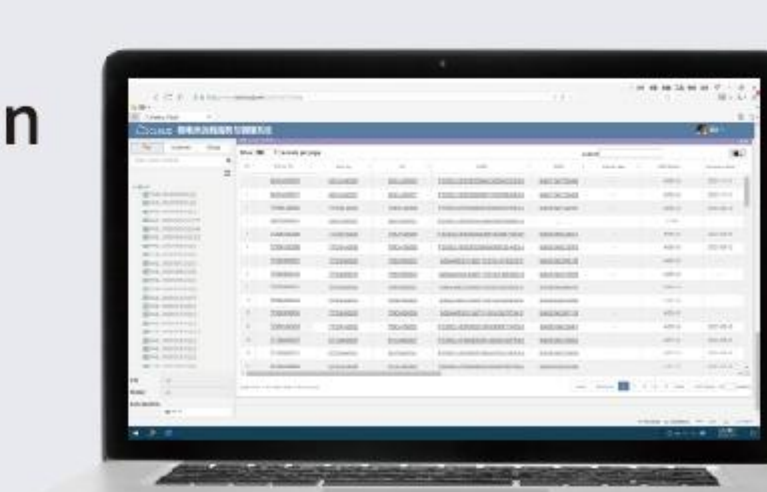


Statistical Analysis

- Service life
- Operating hours
- Cycles



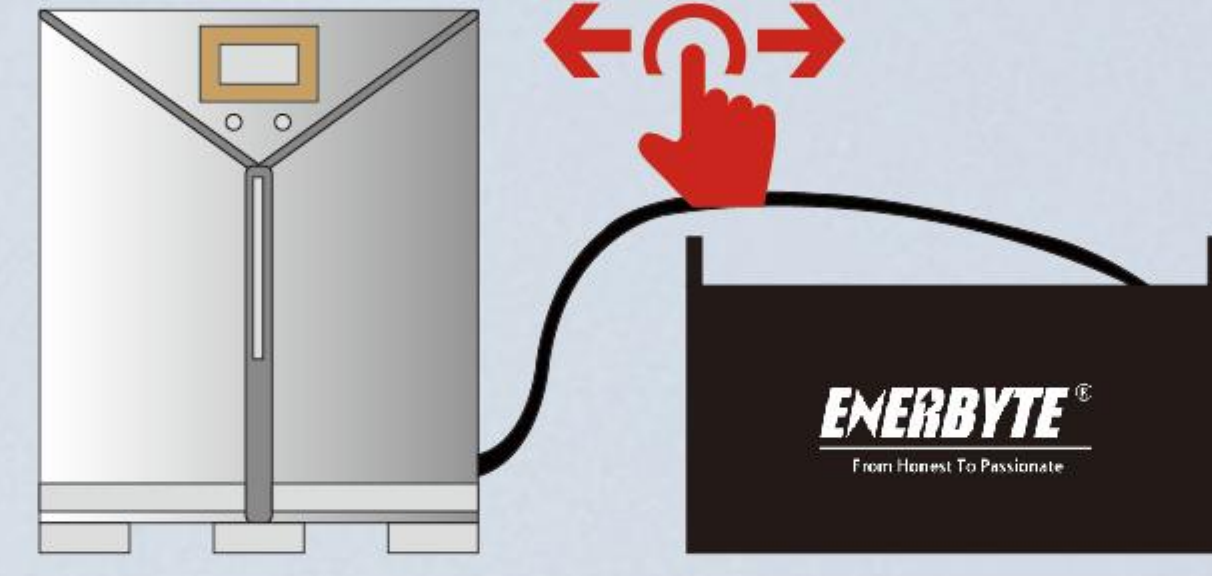
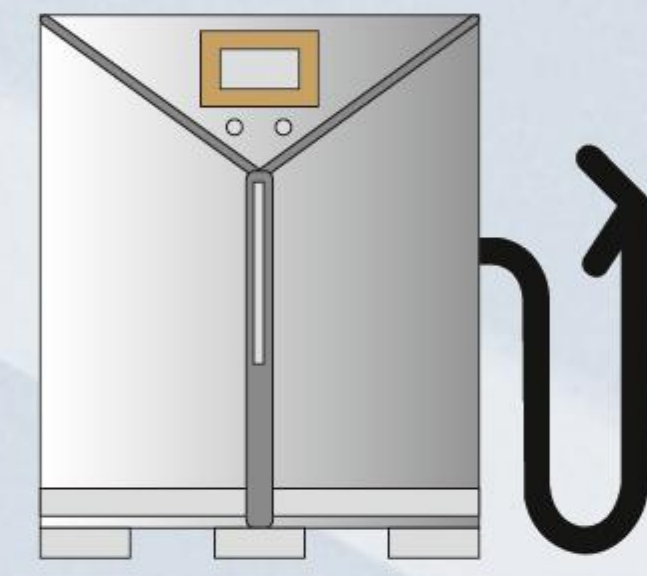
Map View / View All



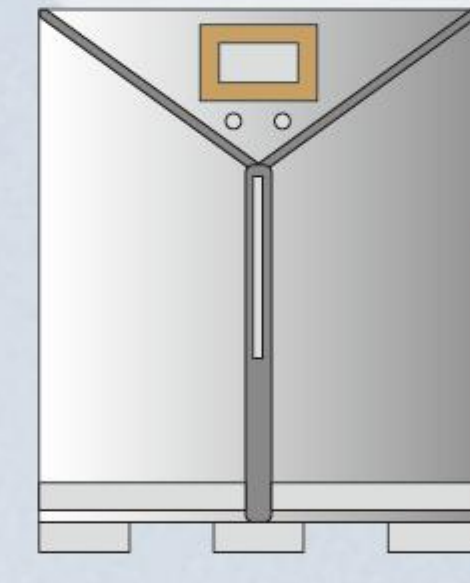
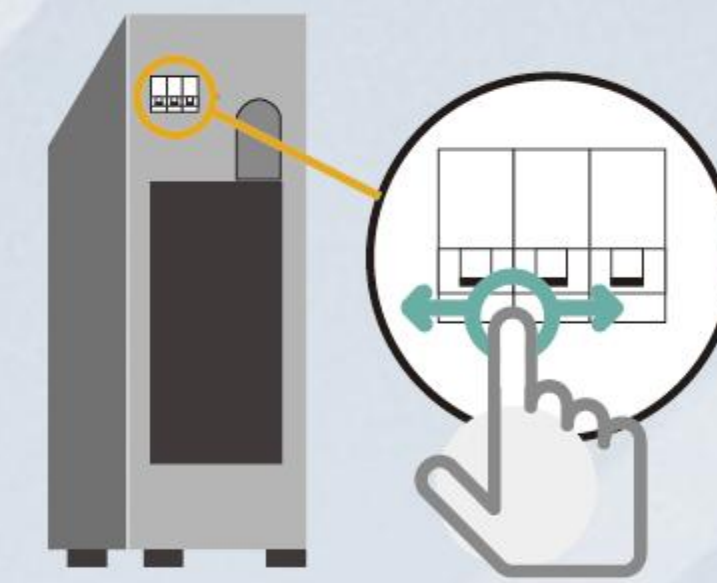
Real-time Status and History of Battery Operation

Usage and Operation

Charging operation steps



- 1 Make sure the forklift is in the parking status. Please note that the forklift cannot be parked on a sloped site while charging.
- 2 Make sure the charger is installed correctly.
- 3 Connecting the battery and charger, then turn on the battery switch.



- 4 Turn on the charger switch, check it properly and push the button to start charging.
- 5 Battery cannot supply the power to forklift when charging, so forklift cannot work.
- 6 Do not unplug the charging connector directly during charging.

ENERBYTE professional matching charger, can communicate with the battery, realizing intelligent charging management.

- Temperature protection
- Short circuit protection
- Overcharge protection
- Overvoltage protection
- Undervoltage protection
- Anti reverse charging protection
- Overdischarge protection
- Overcurrent protection
- Smart display



What is the difference in charging between lithium batteries and lead-acid batteries?

- ✔ Lithium batteries can be charged on the forklift or removed for charging, which is flexible.
- ✔ Lithium batteries can be charged at anywhere convenience for operating, so no separate charging room is required.
- ✔ Lithium batteries can be charged opportunistically, such as during lunch breaks, shift changes, or meals.

Specifications

Model	Nominal Voltage	Nominal Capacity	Nominal Energy	Cycle Life (DOD 80%)	Dimensions (L*W*H)	Weight lbs.(kg)	Charge Current	Continuous Discharge Current	Peak Discharge Current	Casing Material	IP Rating
24 V System											
ENBY-24-01	25.6V	150 Ah	3.84 kWh	>4,000 times	25.98 x 5.51 x 27.17 inch (660 x 140 x 690 mm)	429.00 lbs (195 kg)	50 A	150 A	250 A (300 S)	Steel	IP65
ENBY-24-02		206 Ah	5.27 kWh		24.80 x 8.27 x 24.80 inch (630 x 210 x 630 mm)	418.00 lbs (190 kg)	100 A	200 A	250 A (300 S)		
ENBY-24-03		306 Ah	7.83 kWh		32.68 x 12.87 x 17.64 inch (830 x 327 x 448 mm)	220.00 lbs (100 kg)	150 A	300 A	350 A (300 S)		
ENBY-24-04		412 Ah	10.55 kWh		28.27 x 8.27 x 24.33 inch (718 x 210 x 618 mm)	297.00 lbs (135 kg)	200 A	300 A	350 A (300 S)		
ENBY-24-05		560 Ah	14.34 kWh		35.04 x 11.81 x 30.31 inch (890 x 300 x 770 mm)	1685.20 lbs (766 kg)	200 A	300 A	350 A (300 S)		
ENBY-24-06		612 Ah	15.67 kWh		38.19 x13.39 x 29.49 inch (970 x 340 x 749 mm)	1647.80 lbs (749 kg)	200 A	300 A	350 A (300 S)		
ENBY-24-07		690 Ah	17.66 kWh		31.14 x14.02x32.01 inch (791 x 356 x 813 mm)	1003.20 lbs (456 kg)	200/300 A	300 A	350 A (300S)		
ENBY-24-08		920 Ah	23.55 kWh		36.22 x 13.98 x 30.51 inch (920 x 355 x 775 mm)	1452.00 lbs (660 kg)	200/300 A	300 A	350 A (300 S)		
36 V System											
ENBY-36-01	38.4V	306 Ah	11.75 kWh	>4,000 times	38.19 x 15.59 x 29.49 inch (970 x 396 x 749 mm)	2096.60 lbs (953 kg)	100/150A	300 A	350 A (300 S)	Steel	IP65
ENBY-36-02		412 Ah	15.82 kWh		38.19 x 15.59x 29.49 inch (970 x 396 x 749 mm)	2096.60 lbs (953 kg)	150/200A	300 A	350 A (300 S)		
ENBY-36-03		460 Ah	17.66 kWh		38.19 x 15.59x 29.49 inch (970 x 396 x 749 mm)	2096.60 lbs (953 kg)	150/200A	300 A	350 A (300 S)		
ENBY-36-04		560 Ah	21.5 kWh		36.97 x 12.99 x 30 inch (939 x 330 x 762 mm)	1474.00 lbs (670 kg)	200 A	300 A	350 A (300 S)		
ENBY-36-05		690 Ah	26.5 kWh		38.19 x 20.39 x 29.49 inch (970 x 518 x 749 mm)	2596.00 lbs (1180 kg)	200/300A	300 A	350 A (300 S)		
ENBY-36-06		840 Ah	32.26 kWh		36.22 x 16.14 x 30.71 inch (920 x 410 x 780 mm)	2090.00 lbs (950 kg)	200/300A	300 A	350 A (300 S)		
ENBY-36-07		920 Ah	35.33 kWh		37.99 x 16.14 x 29.92 inch (965 x 410 x 760 mm)	1823.80 lbs (829 kg)	200/300A	300 A	350 A (300 S)		
48 V System											
ENBY-48-01	51.2V	230 Ah	11.78 kWh	>4,000 times	31.50 x 11.81 x 14.72 inch (800 x 300 x 374 mm)	299.20 lbs (136 kg)	100 A	230 A	300 A (300 S)	Steel	IP65
ENBY-48-02		280 Ah	14.34 kWh		24.02 x 16.14 x 14.72 inch (610 x 410x 374 mm)	314.60 lbs (143 kg)	100/150A	280 A	350 A (300 S)		
ENBY-48-03		306 Ah	15.67 kWh		27.76 x 16.14 x 14.72 inch (705 x 410 x 374 mm)	354.20 lbs (161 kg)	100/150A	300 A	350 A (300 S)		
ENBY-48-04		412 Ah	21.09 kWh		47.64 x 10.83 x 30.31 inch (1210 x 275 x 770 mm)	2096.60 lbs (229 kg)	150/200A	300 A	350 A (300 S)		
ENBY-48-05		460 Ah	23.55 kWh		40.55 x 20.47 x 24.69 inch (1030 x 520 x 627 mm)	1991.00 lbs (905 kg)	150/200A	300 A	350 A (300 S)		
ENBY-48-06		560 Ah	28.67 kWh		38.58 x 21.18 x 29.92 inch (980 x 538 x 760 mm)	2200.00 lbs (1000 kg)	200 A	300 A	350 A (300 S)		
ENBY-48-07		690 Ah	35.33 kWh		48.15 x 19.65 x 30.87 inch (1223 x 499 x 784 mm)	2873.20 lbs (1306 kg)	200/300A	300 A	350 A (300 S)		
ENBY-48-08		840 Ah	43.01 kWh		38.39 x 29.92 x 22.44 inch (975 x 760 x 570 mm)	2068.00 lbs (940 kg)	200/300A	300 A	350 A (300 S)		
ENBY-48-09		920 Ah	47.10 kWh		48.03 x 19.69 x 30.71 inch (1220 x 500 x 780 mm)	3020.60 lbs (1373 kg)	200/300A	300 A	350 A (300 S)		
72 V System											
ENBY-72-01	76.8V	360 Ah	27.65 kWh	>4,000 times	40.55 x 35.83 x 17.32 inch (1030 x 910 x 440 mm)	2644.40 lbs (1202 kg)	100/150A	300 A	350 A (300 S)	Steel	IP65
ENBY-72-02		460 Ah	35.33 kWh		40.55 x 35.83 x 17.32 inch (1030 x 910 x 440 mm)	2644.40 lbs (1202 kg)	150/200A	300 A	350 A (300 S)		
ENBY-72-03		560 Ah	43.01 kWh		40.55 x 35.83 x 17.32 inch (1030 x 910 x 440 mm)	2644.40 lbs (1202 kg)	200/300A	300 A	350 A (300 S)		
ENBY-72-04		690 Ah	52.99 kWh		33.46 x 40.00 x 36.97 inch (850 x 1016 x 939 mm)	4180.00 lbs (1900 kg)	200/300A	300 A	350 A (300 S)		
80 V System											
ENBY-80-01	83.2V	230 Ah	19.14 kWh	>4,000 times	38.39 x 16.73 x 20.28 inch (975 x 425 x 515 mm)	462.00 lbs (210 kg)	100 A	230 A	300 A (300 S)	Steel	IP65
ENBY-80-02		280 Ah	23.30 kWh		24.02 x 20.47 x 27.56 inch (610 x 520 x 700 mm)	924.00 lbs (420 kg)	100/150A	280 A	350 A (300 S)		
ENBY-80-03		306 Ah	25.46 kWh		40.28 x 33.43 x 24.69 inch (1023 x 849 x 627 mm)	3212.00lbs (1460 kg)	100/150A	300 A	350 A (300 S)		
ENBY-80-04		460 Ah	38.27 kWh		38.58 x 18.90 x 28.35 inch (980 x 480 x 720 mm)	2211.00 lbs (1005 kg)	150/200A	300 A	350 A (300 S)		
ENBY-80-05		560 Ah	46.59 kWh		40.94 x 28.35 x 31.69 inch (1040 x 720 x 805 mm)	3432.00 lbs (1560 kg)	200/300A	300 A	350 A (300 S)		
ENBY-80-06		690 Ah	57.41 kWh		33.54 x 40.31 x 24.80 inch (852 x 624 x 630 mm)	3366.00 lbs (1530 kg)	200/300A	300 A	350 A (300 S)		
ENBY-80-07		920 Ah	76.54 kWh		45.39 x 39.17 x 24.49 inch (1153 x 995 x 622 mm)	3394.60lbs (1543 kg)	300A	300 A	350 A (300 S)		
ENBY-80-08		1120 Ah	93.18 kWh		40.35 x 39.21 x 30.87 inch (1053 x 996 x 784 mm)	4796.00 lbs (2180 kg)	300A	300 A	350 A (300 S)		
High voltage system System											
ENBY-400-01	410V	228 Ah	93.48 kWh	>4,000 times	47.24 x 30.55 x 23.43 inch 1200x776x595	1628.00 lbs (740 kg)	40 A	250 A	300 A (300 S)	Steel	IP65

ENERBYTE From honest to passionate.

Quality first, Customer first, Honesty first.

Tianjin Enerbyte Electronics Co., Ltd. is a professional manufacturer of Lithium Battery, Lithium Ion Battery, Lithium Iron Phosphate batteries in China. We are located in the beautiful North largest seaport city of Tianjin.

ENERBYTE was established in 2015 and certificated by ISO9001, CE, and RoHS. Enerbyte will bring delightful, customer based solutions for power battery packs. The company's existing lithium battery customized solutions and products are widely used in aerospace, AGV, robots, electric forklifts, medical electronics, transportation logistics, solar photovoltaic, home energy storage, special equipment, outdoor electronics, instrumentation, car startup, electric wheelchairs, cleaning equipment, rail transit and other fields. ENERBYTE provides professional and customized solutions, and our integrity, strength and product quality have been recognized by the industry.

ENERBYTE Highlights

1. PROFESSIONALIZATION

- 12 years of R&D experience
- Professional customized solutions
- Strict construction standards

2. TECHNOLOGICAL PROCESS

- ISO9001 Quality Management Systems
- High Technology Expertise
- 80 major manufacturing processes

3. AFTER-SALE SERVICE

- Online and on-site service
- 5 years warranty
- Tracking and technical service for the whole lifespan



Our products have received lots of positive reviews and are widely recognized by the market.



ENERBYTE Worldwide Distributors

The United States, Mexico, Brazil, Chile, Argentina, Russia, Spain, France, Australia, Vietnam, South Korea, Thailand, South Africa, Israel and so on.



Product Series

1. Forklift Battery
2. Golf Cart Battery
3. LiFePO4 Battery Packs
4. Telecom Lithium Battery
5. UPS Lithium Battery
6. AGV Battery
7. GPU LiFePO4 Battery
8. Portable Power Bank
9. Home Energy Storage