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RoyPow®
Get powered. Get inspired

LiFePO₄ battery for aerial work platforms

Drop-in lithium-ion
for lead-acid
alternatives

RoyPow Technology Co., Ltd.

Tel: +86 (0) 752 3888 690

Email: sales@roypowtech.com

Web: www.roypowtech.com

Add: RoyPow Industrial Park, #8, Huifeng 2nd East Road, Zhongkai High-Tech District, Huizhou, Guangdong, China

RoyPow (USA) Technology Co., Ltd.

Tel: (+1) 512 688 5555

Email: sales@roypowusa.com

Technical Support: (+1) 626 269 0547

Email: support@roypowusa.com

Web: www.roypowusa.com

California Office: 1267 Johnson Dr., City of Industry, CA 91745, USA

Florida Office: 3920 Anchuca Dr. #8, Lakeland, FL 33811, USA

Texas Office: 107 Halmar Cove #131, Georgetown, TX 78628, USA

RoyPow Technology UK Limited

Tel: +44 (0) 7592 198 258

Email: sales@roypow.co.uk

Add: Unit G25 Waterfront Studios, 1 Dock Road, London, E16 1AH, UK

RoyPow (Europe) Technology B.V.

Email: sales@roypoweuropa.com

Add: High Tech Campus 95656 AE Eindhoven, Netherlands

RoyPow 株式会社

Tel: (+81) 080 6561 0909

Email: info@roypow.co.jp

Web: www.roypow.co.jp

Add: 横浜市神奈川区ニッ谷町2-8加瀬ビル175 3F



LI-ION
technology

www.roypowtech.com

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RoyPow
your trusted partner



New technology.
Create 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 operator.



Benefits of lithium-ion batteries

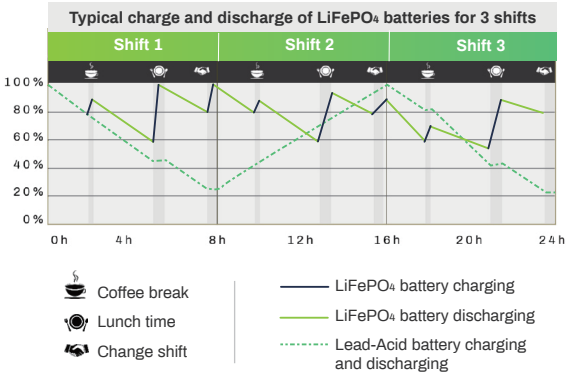


Lead-acid	LiFePO ₄ battery	
 3 years design life	 up to 10 years design life	Longer life 3 to 4 times lead-acid lifespan <ul style="list-style-type: none">✓ Reduces overall battery investment✓ Eco-friendly✓ Minimise the need for spares
 Frequent maintenance	 No maintenance	0 maintenance no need for regular filling of distilled water and electrolyte <ul style="list-style-type: none">✓ No regular filling of distilled water✓ Saving costs on labor and maintenance✓ Less unplanned downtime and improved productivity✓ No frequent battery replacements
 1-2 years warranty	 5 years warranty	Extended warranty bring you peace of mind <ul style="list-style-type: none">✓ Durable and reliable✓ Reduces maintenance and labor costs✓ Quality guarantee

Equipments always remain in service when needed

In the context of day-to-day operations, battery can be charged even during short breaks, such as taking a rest or changing shifts, effectively increasing productivity.

- ✓ Reduces the need for a full charge everytime.
- ✓ Eliminates the need for frequent time-consuming of battery swaps.
- ✓ Eliminates the risk of battery changing accidents.
- ✓ The battery in the truck can be charged directly during short breaks, and can be recharged at any time.



Rapid charging

Whether you have a single-shift or a large fleet working 24/7, fast charge is one of the most important advantages.



TIPS

Why choose LiFePO₄ batteries for Aerial work platforms?

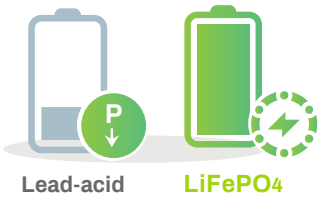
There are a lot of lithium-ion chemistries are for choices. RoyPow uses one of the most thermally stable and safe lithium-ion chemistries for industrial applications - lithium iron phosphate (LiFePO₄ or LFP).

Except providing longer life, it is more energy dense, more stable and compact than lead-acid.

The battery packs are sealed unit requiring no water filling and no maintenance. It is ideal for batteries used in Aerial work platforms.

Consistent power

Lithium-ion batteries deliver consistent high performance which maintain greater productivity even toward the end of a shift.



No specific charging room required and frequent battery swaps

- ✓ Minimise the need to buy, store and maintain spares.
- ✓ Eliminate the cost and storage space required for additional lead-acid batteries.
- ✓ No gas or acid spills, no ventilation system needed when charging.



Small investment, big return

Converting your battery to lithium-ion may require a higher initial investment, but its ongoing savings on energy, equipment, labour and downtime, can give you a more cost-effective bill in opposite.

The LiFePO₄ batteries can offer you...





























- ✓ Longer life reduces overall battery investment.
- ✓ No maintenance saves labor and maintenance costs.
- ✓ No gas or acid spills, avoids the space, equipment and running costs of a battery room and ventilation system.
- ✓ Energy saving and less downtime, improve productivity.



5-year cost comparison to increase your overall return on investments.

Below is the 5-year expenditure table comparing RoyPow LiFePO₄ batteries with lead-acid batteries.

Save **70%**
expenses in 5 years

Purchases over 5 years	Lead-acid battery					LiFePO ₄ battery	
Battery cost						5yr	
Maintenance						5yr	/
Electricity waste						5yr	/
Installation						5yr	
Shipping						5yr	

Remark: Actual costs may vary according to local conditions.

RoyPow batteries with smart & integrated systems

can provide exceptional performance to get the job done and improve your productivity, which means less hours of unplanned downtime and more productive hours on your working.

0 Maintenance
Up to **3,500+** Life cycles

5_{yr} Warranty
Up to **10**_{yr} Design life



Durable

RoyPow batteries are waterproof and dust-proof, they can always maintain excellent performance and stable discharge rate under all-weather working condition.

Inbuilt protection

- ✓ Intelligent BMS is automatically for cell balancing and advanced battery management.
- ✓ The LiFePO₄ batteries have greater thermal and chemical stability

LiFePO₄ batteries for aerial work platforms

Retrofit your fleet to lithium-ion batteries.

A reliable power for most aerial lift brands.

RoyPow lithium-ion batteries can be more reliable and sustained to provide unmatched power for the aerial lifting in different applications.



RoyPow
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Advanced battery solution for most leading brands of aerial work platforms.

They can be generally applied in these famous aerial work platform brands:
JLG, SKYJACK, snorkel, KLUBB, Genie, Nidec, Mantall, etc.



Which LiFePO₄ battery is suitable for your aerial work platforms?

To cover most of the aerial work platform ranges, our batteries are generally divided into 2 systems:

Do not be hesitate, your ideal batteries are definitely here.

24 V battery system

For minitype scissor lifts



48 V battery system

For large-scale scissor lifts



LiFePO₄ aerial work platform batteries - 24 V system

Retrofit your fleet to lithium-ion batteries.

Switch to new technology, lithium drop-in replacements for lead-acid batteries with existing equipments.

- ✓ A full range of lithium-ion battery to power your aerial lifts
- ✓ Maximum uptime and flexible lifting.

Solutions for minitype scissor lifts,



An ideal lithium-ion solutions



Efficient

- ✓ High consistent performance without sudden power sag.
- ✓ A fast and efficient charging can reduce a lot of unplanned downtime.
- ✓ 10 years design life - a worthwhile upgrade.

Green and stable

- ✓ No acid spills, no noxious gas emissions.
- ✓ More thermal & chemical stability.
- ✓ Good for you and the planet.

Flexible and worry-free

- ✓ Zero maintenance, no need for water top-ups or electrolyte checks.
- ✓ No battery frequent swapping which can reduce the accident risks greatly.
- ✓ No ventilation systems required.
- ✓ No need for specific charging room.

Save **70%** expenses in 5 years

Specifications for 24 V system



	Technical specification						Discharge current		General	
Model	Nominal voltage	Nominal capacity	Stored energy	Life cycles	Dimensions (L×W×H)	Weight lbs. (kg)	Continuous discharge	Maximum discharge	Casing material	IP rating
S2480-B (with heating)	25.6 V	80 Ah	2.04 kWh	>3,500 times	12.0×6.9×9.6 inch (305.5×175×244.5 mm)	49 lbs. (22kg)	120 A	180 A (20 S)	Steel	IP65
S24105C (no heating)		105 Ah	2.68 kWh		17.6×9.6×10.3 inch (448×244×261 mm)	56 lbs. (25.6 kg)	120 A	180 A (20 s)		
S24105 (with heating)		105 Ah	2.68 kWh		17.6×9.6×10.3 inch (448×244×261 mm)	56 lbs. (25.6 kg)	120 A	180 A (20 s)		
S24105P (with heating)		105 Ah	2.68 kWh		17.6×9.6×10.5 inch (448×244×267 mm)	60 lbs. (27 kg)	150 A	250 A (30 s)		
S24160 (with heating)		160 Ah	4.09 kWh		20.6×14.2×10.5 inch (524×360×267 mm)	86 lbs. (39 kg)	120 A	180 A (20 s)		IP65
S24160P (with heating)		160 Ah	4.09 kWh		20.6×14.2×10.5 inch (524×360×267 mm)	93 lbs. (42.3 kg)	150 A	250 A (30 s)		IP67
S24210B (with heating)		210 Ah	5.37 kWh		19.2×13.8×10.3 inch (488×350×261 mm)	105 lbs. (47.8 kg)	150 A	250 A (30 s)		IP65
S24210P (with heating)		210 Ah	5.37 kWh		20.6×14.2×10.5 inch (524×360×267 mm)	105 lbs. (47.8 kg)	150 A	250 A (30 s)		IP67
Environment temp. range		Charge -4°F~131°F (-20°C ~ 55°C)		Discharge -4°F~131°F (-20°C ~ 55°C)		Storage (1 month) -4°F~131°F (-20°C ~ 55°C)		Storage (1 year) 32°F~95°F (0°C~35°C)		



5 years warranty

5 years warranty and timely technical support.



Steady output

LiFePO₄ batteries keep a very steady power output .They are suitable for 24V applications.



Intelligent BMS

All time cell balancing and with multiple built-in protections including short circuit protection, high temperature protection, high voltage protection and so on, to get better performance and longer life.



Long life

3,500+ life cycles that outperforms traditional batteries.



Heating function (optional)

With heating function to warm up the battery at low temperature for charging and discharging.

LiFePO₄ aerial work platform batteries - 48 V system

Switch to new technology, drop-in replacements for lead-acid batteries.

- ✓ Power up your aerial lifts with lithium-ion technology.
- ✓ High sustained power in lifting!

Solutions for large-scale scissor lifts, Ideal for outdoor or indoor works, even in rough terrain.



Retrofit your fleet to lithium-ion batteries.



For better performance, put LiFePO₄ to your scissor lifts



Cost-effective

- ✓ Save 70% costs in 5 years.
- ✓ Zero maintenance, no need for water top-ups or electrolyte checks.
- ✓ Less energy losses throughout all service life.

Efficient

- ✓ No acid spills, no noxious gas emissions.
- ✓ No frequent battery swapping for multi-shifts operations.
- ✓ No specific charging room required.
- ✓ No charging memory, and can be charged rapidly.

Powerful

- ✓ Robust but safe in operation.
- ✓ 3,500+ life cycles at 80% depth discharge.
- ✓ Single battery can almost power much longer than traditional batteries.
- ✓ No power sag in a sudden.

Save 70% expenses in 5 years

Specifications for 48 V system



	Technical specification						Discharge current		General	
Model	Nominal voltage	Nominal capacity	Stored energy	Life cycles	Dimensions (L×W×H)	Weight lbs. (kg)	Continuous discharge	Maximum discharge	Casing material	IP rating
S51105B (with heating)	51.2 V	105 Ah	5.37 kWh	>3,500 times	20.6×14.2×10.3 inch (524×360×267 mm)	105 lbs. (47.8 kg)	150 A	250 A (30 s)	Steel	IP67
S51210A (with heating)		210 Ah	10.75 kWh		20.6×14.2×10.5 inch (524×360×267 mm)	212 lbs. (96 kg)	200 A	300 A (30 s)		
S51280 (with heating)		280 Ah	14.33 kWh		28.0×10.8×10.8 inch (712×275×275 mm)	243 lbs. (110 kg)	150 A	250 A (30 s)		IP65
S51304 (with heating)		304 Ah	15.56 kWh		28.0×10.8×10.8 inch (712×275×275 mm)	254 lbs. (115 kg)	150 A	250 A (30 s)		
Environment temp. range		Charge -4°F~131°F (-20°C ~ 55°C)		Discharge -4°F~131°F (-20°C ~ 55°C)		Storage (1 month) -4°F~131°F (-20°C ~ 55°C)		Storage (1 year) 32°F~95°F (0°C~35°C)		



5 years warranty

5 years warranty and timely technical support.



Steady output

LiFePO₄ batteries possess a steady power output .They are suitable for 48V applications.



Intelligent BMS

All time cell balancing and with multiple built-in protections including short circuit protection, high temperature protection, high voltage protection and so on, to get better performance and longer life.



Long life

3,500+ life cycles that outperforms traditional batteries.



Heating function (optional)

With heating function to warm up the battery at low temperature for charging and discharging.

To know more of RoyPow LiFePO₄ batteries

Quality and safety always come first. Except those benefits, we also have intelligent design from our professional R&D team.



Maintenance free



Fast charge



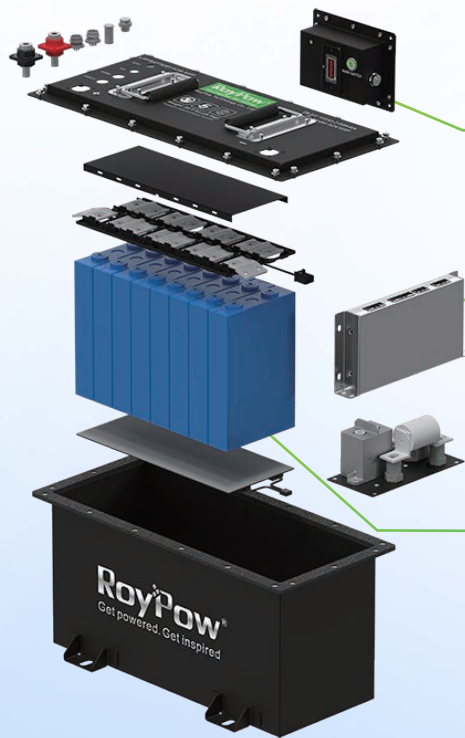
Long life



Ultra safe



Intelligent design



Control panel included

Showing all critical battery functions in real-time, voltage, current, and remaining charging time and fault alarm.

Built-in BMS

For cell balancing and advanced battery management.

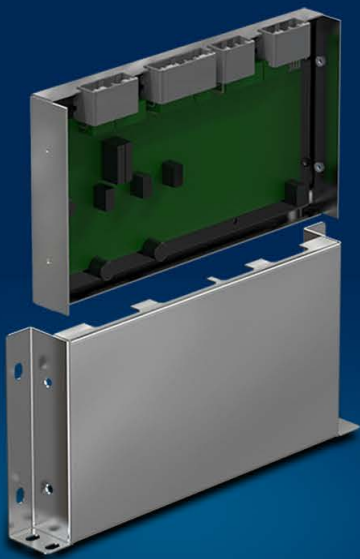
Battery pack module

Using LiFePO₄ cells to insure stable and safe battery performance.

Battery management system (BMS)

The built-in BMS is equipped with automotive-grade components assuring safe, top quality and high energy density. To provide a fully optimized solution for demanding industrial applications.

BMS software ensures the battery to provide peak performance when in operation, to deliver longer run time between charges, to maximize the total battery lifespan and to communicate well between the charger, battery and users.



The BMS can offer:

All-time cell balancing and battery management.

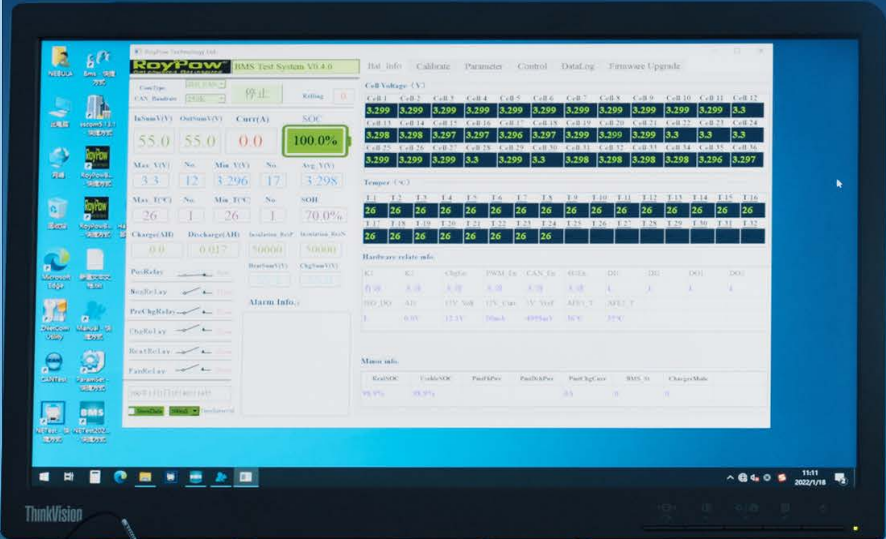
Through the intelligent balancing strategy, balancing between individual cells can be realized. The BMS can keep the battery's consistency at all times when in operation, maximizing the battery efficiency and improve the battery's working life.

Battery real-time monitoring and communication through CAN.

Monitoring cell voltage, electric current and battery temperature, so that any movement outside of normal range disconnects the cell or the entire battery.

Fault alarm and safety protection.

When the battery is less than 10%, it will beep to prompt for charging in case of stopping somewhere far away from charge station suddenly without notice. Over/under voltage, low/over temperature, over current or other faults will prompt to make the battery safe. Safety always comes first.



Original chargers for aerial work platforms

RoyPow has developed chargers specifically for each type of lithium batteries to maximize the battery performance, safeguard the driving experience, and keep the best communication between our LiFePO₄ batteries and the chargers.



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RoyPow charger

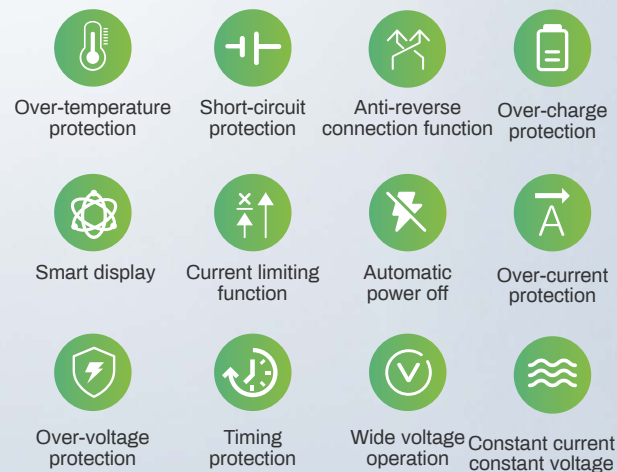
Intelligent charging management

To use RoyPow charger, the battery management system (BMS) can control the charging current according to different temperatures and SOC of the batteries.

RoyPow's intelligent BMS ensures the safety of the battery and improves the charging efficiency.

When the battery is at low voltage, the battery can be charged at low current to ensure battery safety.

When the battery is less than 10%, it will beep to prompt for charging.



Smart, durable and efficient



Waterproof

Get rid of AC adapter to realise the real IP66 rated, no need to worry about water or debris like dirt or mud.



Anti-walking function

During charging process, without disconnecting the plug, the equipments cannot be started.



Corrosion protection & vibration resistance

Aluminum alloy design, one body forming technology which is more corrosion protection and vibration resistance.



Safe charging

Advanced charge algorithm ensures the batteries to be charged correctly and safely.



Intelligent protection

With the advanced technology of arc resistance hot-swap to keep the charger safe and extend its lifespan.



Natural cooling

It is sealed but with natural cooling function without a fan, for better heat dissipation capacity and to extend the lifespan.

Compatible TIPS

Our chargers are compatible with the voltages in most countries and regions. And it's applied to cater for various charge modes and multiple AC plugs for choices.

Single phase:

China 220V 50Hz America 120V 60Hz
Europe 230V 50Hz Japan 100V 50Hz/60Hz



AC input port
can be compatible with plugs from different countries.



DC output port
is configured as RoyPow exclusive charging adaptor.



LED displays

Charger program upgrade USB port

AC input port



DC output

Anti-movement wire harness port



RoyPow charging base

RoyPow, your trusted partner for one-stop energy solutions

RoyPow is founded in Huizhou City, Guangdong Province, China, with manufacturing center in China and subsidiaries in the USA, Europe, Japan, the UK, Australia, South Africa, etc., to settle global sales and service network.

We have specialized in the R&D and manufacturing of lithium replacements for lead-acid batteries for years, and we have developed a portfolio of intellectual property and an integrated design and manufacturing capability that spans all aspects of the business from electronics and software design to module and battery assembly and testing. We are vertically integrated, and this gives us the ability to provide a wide range of application specific solutions to our customers.

R&D and manufacturing highlights

- Persistent technology innovation.
- All-round testing.
- Integrated design.
- Advanced MES system.
- Fully automatic production line.
- IATF16949 system.
- QC system.

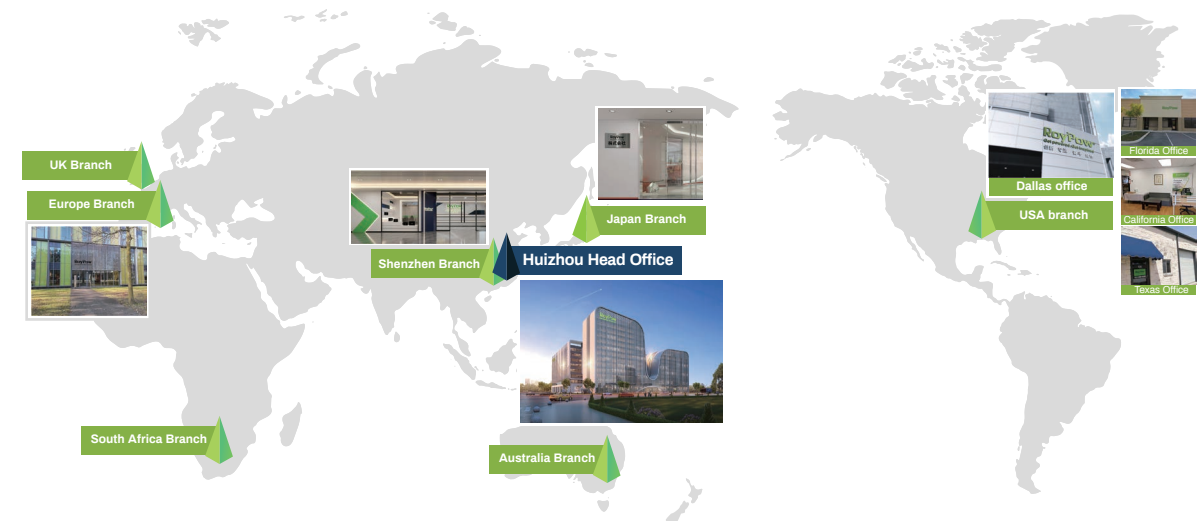
By virtue of all this, RoyPow is capable of “end-to-end” integrated delivery, and makes our products out-performing industry norms.



Global sales and service network system

- Timely delivery.
- Hassle-free after-sale service.
- Fast response technical support.

RoyPow has comprehensively unfolded its overseas market layout to realize the localization of R&D, manufacturing, marketing and service, then become your most reliable partner.



Upgrading to new technology, with our turnkey solutions.

Years of dedication on lithium-ion battery solutions.
we are proud to offer customers professional battery solutions for:



- ✓ **Low speed vehicles (LSVs)** including golf carts and sightseeing cars;
- ✓ **Industrial applications** including forklifts, aerial work platforms and floor cleaning machines;
- ✓ **Residential energy storage & portable power unit** including home storage and portable energy storage products, as well as off-grid energy storage (for forest cabin, island villa without electricity, etc.);
- ✓ **Marine** including trolling motors, fish finders, other off-grid energy storage systems for marine, and marine power system;
- ✓ **Corresponding original chargers** for forklifts, aerial work platforms, floor cleaning machines, golf carts and various marine batteries.
- ✓ **Vehicle-mounted energy storage & HVAC system** including RV and truck energy storage and air conditioning system, as well as off-grid solar system for RV;

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