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ROYPOW

$LiFePO_4$ Batteries

for Industrial Applications

Drop-In Lithium-Ion
Replacement for
Lead Acid Batteries

ROYPOW

CE RoHS UL

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Forklifts:
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Clark Hyundai YALE
Linde Doosan Jungheinrich

AWPs:
JLG MEC CTE
SKYJACK Genie
Snorkel Mantall

Cleaning Equipment:
Tennant Nilfisk Karcher Hako
Clarke IPC ICE NSS Betco
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Li-ion

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Contents

Retrofit Your Fleet to Lithium-ion Batteries.

New Technology. Create Great Value for Your Business

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

Benefits of Lithium-ion Batteries

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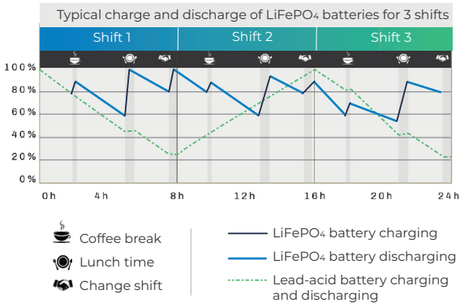
Lead-acid	LiFePO4 battery		
3 years design life	up to 10 years design life	**Longer life** 3 to 4 times lead-acid lifespan	✓ Reduces overall battery investment ✓ Eco-friendly ✓ Minimize the need for spares
Frequent maintenance	No maintenance	**0 maintenance** no need for regular filling of distilled water and electrolyte	✓ 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	✓ Durable and reliable ✓ Reduces maintenance and labor costs ✓ Quality guarantee

Reduce Downtime, Increase Equipment Availability

In day-to-day operations, the 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 every time.
- ✓ Eliminates the need for frequent time-consuming battery swaps.
- ✓ Eliminates the risk of battery-changing accidents.
- ✓ Opportunity charge during breaks, lunch and at shift changes. Charge anytime equipment is not in use.



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

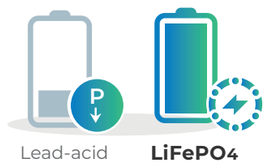
Why choose LiFePO4 batteries for industrial applications?

There are a few lithium-ion chemistries to choose from. ROYPOW uses LFP or Lithium Iron Phosphate, one of the most thermally stable and safe lithium-ion chemistries for industrial applications.

LFP offers longer life, is more energy-dense, more stable, is more compact, and weighs less than lead-acid. Our battery packs are sealed units requiring no daily or weekly watering and no maintenance. LFP is ideal for batteries used in industrial applications.

Consistent Power

Lithium-ion batteries deliver consistently high performance, which maintains greater productivity even toward the end of a shift.

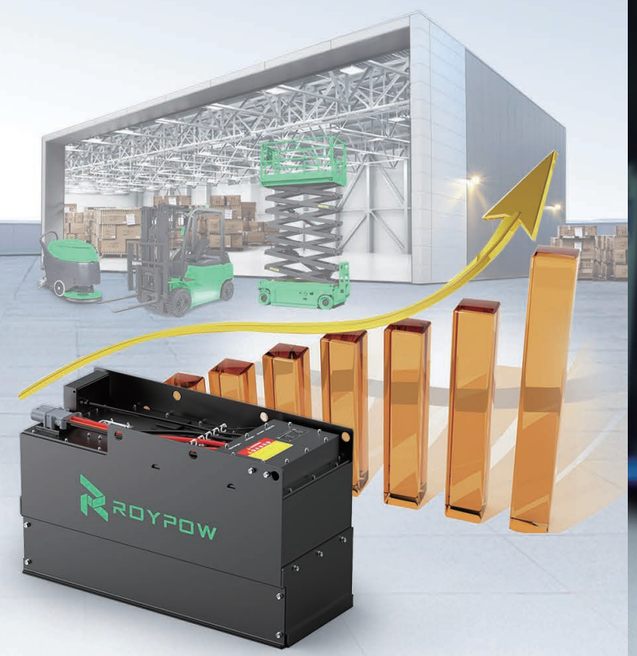


Eliminate the Need for a Dedicated Charging Area and Frequent Battery Swaps

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

Small Investment, Big Return

Converting your battery to lithium-ion may require a higher initial investment, but its ongoing savings on energy, equipment, labor and downtime will dramatically lower your total cost of ownership (TCO).



The $LiFePO_4$ 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.

Save Up to 70% Expenses in 5 Years

Below is the 5-year expenditure table comparing ROYPOW $LiFePO_4$ batteries with lead-acid batteries.

Purchases over 5 Years	Lead-acid Battery	LiFePO₄ 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

Provide exceptional performance to get the job done and improve your productivity, which means fewer hours of unplanned downtime and more productive hours on your work.

0 Maintenance

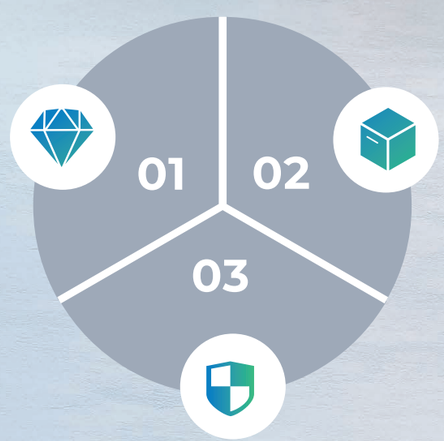
5 yr Warranty

Up to **3,500+** Cycle Life

Up to **10** yr Design Life

Durable

ROYPOW batteries have an IP65 ingress rating. They will provide fast lifting and travel speeds at all levels of discharge, under all-weather working conditions.



4G Modules (for Forklift Batteries)

4G modules are for remote monitoring of the battery SOC, temperature, as well as diagnosis and remote software upgrades. Solve software problems in real time.

Built-in Protection

Intelligent BMS is for automatic cell balancing and advanced battery management. The $LiFePO_4$ batteries have greater thermal and chemical stability.

Products

Retrofit Your Fleet to Lithium-ion Batteries.

For AGVs and AMRs

Durable, stable, and safe. Suitable for various operation applications and improve working efficiency.

For Forklifts

Specially designed, smart, cost-effective. Ideal for multi-shift operations.

For Aerial Work Platforms

High consistent performance and maintenance free for safe and easy aerial work.

For Floor Cleaning Machines

Hassle-free, cost-effective, and good for you and the planet.

Automotive-grade Battery Manufacturing

To build a world-renowned lithium-ion battery brand and provide better solutions for you.

Retrofit Your Fleet to Lithium-ion Batteries.

$LiFePO_4$ Batteries for AGVs and AMRs

Always sufficient power for your AGVs and AMRs.

Pairing your AGVs and AMRs with ROYPOW lithium batteries that are maintenance-free, safe, and high-performing is a great way to boost automation efficiency and productivity, whether in manufacturing, warehousing, or logistics operation.

Key Features

Longer Life
Durable and reliable with up to 10 years design life and 3,500 + cycle life

Safe Operation
Equipped with multiple built-in BMS protections for peace of mind

Zero Maintenance
No water filling, no frequent battery replacements, no acid, and no corrosion

High Performance
Support fast charging and high-power output to meet working needs

Eco-Friendly
Non-toxic, non-polluting, and environmentally friendly.

Specifications

ROYPOW

Model	Nominal Voltage	Nominal Capacity	Nominal Energy	Cycle Life	Dimensions (L × W × H)	Weight lbs. (kg)	Continuous Discharge Current	Peak Discharge Current	Casing Material	IP Rating
S5130A	51.2 V	30 Ah	≥1.536 kWh	>3,500 times	11.81 x 7.87 x 7.28 inch (300 x 200 x 185 mm)	36.38±2.2 lbs (16.5±1 kg)	30 A	60A (120 S)	Steel	IP67
S5130B		30 Ah	≥1.536 kWh		12.99 x 7.87 x 7.15 inch (330 x 200 x 181.5 mm)	28.66±2.2 lbs (13±1 kg)	30 A	60A (120 S)		IP67

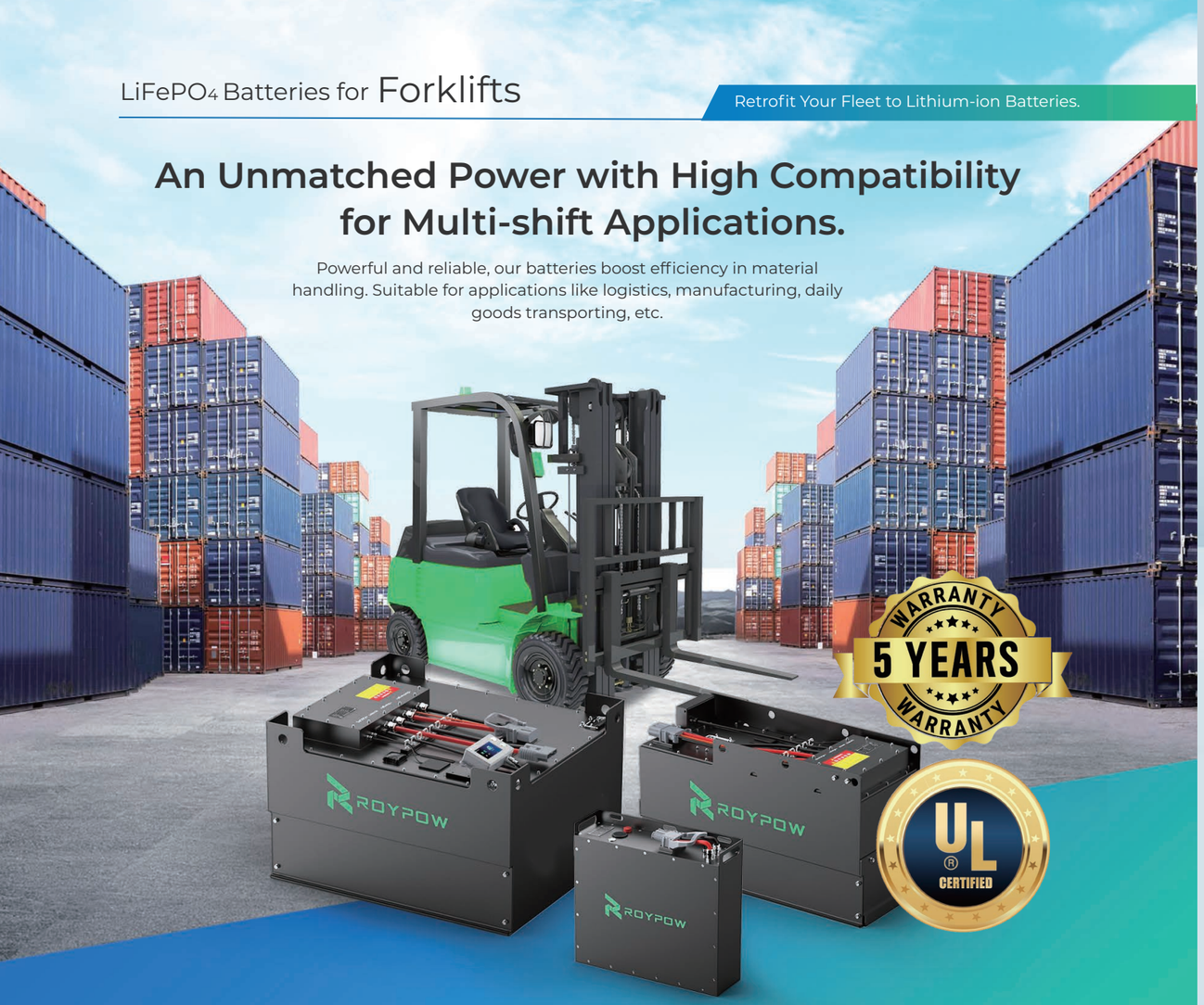
Working Temperature Range	Charge	Discharge	Storage (1 month)	Storage (1 year)
	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	32°F~95°F (0°C~35°C)

CE RoHS

Retrofit Your Fleet to Lithium-ion Batteries.

An Unmatched Power with High Compatibility for Multi-shift Applications.

Powerful and reliable, our batteries boost efficiency in material handling. Suitable for applications like logistics, manufacturing, daily goods transporting, etc.



ROYPOW delivers solutions for every brand and size of vehicle, they are generally applied in these famous forklift brands:

ROYPOW

Aisle Master	Columbia	Heli	Komatsu	Nissan	TCM
AutoGuide	Combilift	Hoist	Linde	Pack Mule	Toyota
Baoli	Crown	Hubtex	Manitou	Raymond	UniCarriers
Bendi/Landoll	Doosan (Daewoo)	Hyster	Mariotti	Rico	Utilev
Big Joe	Drexel	Hyundai	Mitsubishi	Schreck	White
Blue Giant	Elwell-Parker	Jungheinrich	Motrec	Steinbock	World
Caterpillar	Flexi	Kalmar	Multiton	Taylor-Dunn	Yale
Clark	HC Forklift				

Which LiFePO4 Battery is Suitable for Your Forklifts

We make 6 different voltages to cover all classes of equipment.

One Stop for All of Your Battery Needs!

For Class 1 Forklifts

36 V, 48 V, 72 V, 80 V, 90 V Battery Systems

For Counterbalance Forklifts

For Class 2 Forklifts

36 V Battery System

For Order Pickers, Reach Trucks

For Class 3 Forklifts

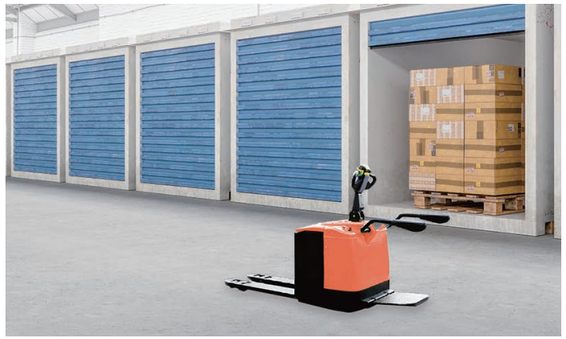
24 V Battery System

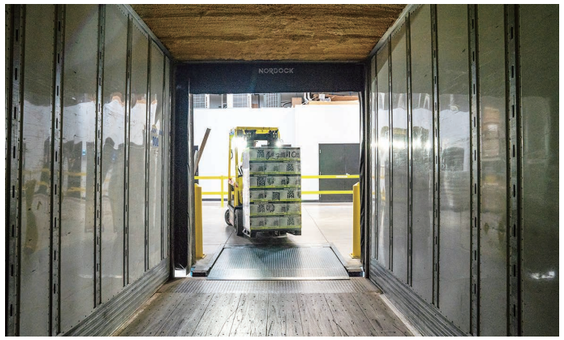
For Pallet Jacks, Stackers, Tugs

$LiFePO_4$ Batteries for Forklifts

Lithium drop-in replacements for lead-acid batteries.

- Retrofit your fleet to lithium-ion batteries and keep your equipment running all day long!
- Power your equipment up to 3 shifts a day!





An Ideal Lithium-ion Solution

Efficient

- High, consistent performance without the voltage drop at the end of the cycle.
- Reduce unplanned downtime with fast, efficient, opportunity charging.
- 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 swapping, reduce related accidents and resulting employee injuries.
- No need for specific charging room.

Save Up to 70% Expenses in 5 Years

Why ROYPOW LiFePO4 Batteries

5 Year Warranty
5 year warranty brings you hassle-free experience.

Steady Output
LiFePO4 batteries keep a steady power output, which will not dramatically drop like lead-acid batteries.

4G Module
For product position tracking, battery health monitoring, and life cycle management.

3,500+ Cycle Life
ROYPOW LiFePO4 batteries last so long that they outperform traditional batteries.

Built-in Battery Management System (BMS)
The smart and reliable BMS can ensure a better performance, and deliver longer battery run time and lifespan.

Fire Safety
Efficient and eco-friendly, the built-in hot aerosol fire extinguisher can quickly help with the fire fighting and reduce fire hazards for peace of mind.

Heating Function (Optional)
The optional heating function can warm up the battery for optimal charging even at a low temperature of -20℃.

SoC Meter
Display the battery's state of charge, status and malfunctioning information in real time.

Anti-walking Function
It can prevent your equipment from a sudden start or moving during charging.

IP65 Protection
Rated at IP65 protection grade, ROYPOW batteries are waterproof and dust-proof to maintain stable performance under all-weather working conditions.

Specifications

Technical Specifications							Charge/Discharge Current			General		
Model	Nominal Voltage	Nominal Capacity	Nominal Energy	Cycle Life	Dimensions (L*W*H)	Weight lbs. (kg)	Charge Current	Continuous Discharge	Maximum Discharge	Casing Material	IP Rating	Certifcation
24 V System												
F24100	25.6 V	100 Ah	2.56 kWh	>3,500 times	25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	198.42 lbs (50 kg)	50 A	100 A	300 A (30 S)	Steel	IP65	/
F24100M		100 Ah	2.56 kWh		25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	198.42 lbs (50 kg)	50 A	100 A	300 A (30 S)			UL
F24150		150 Ah	3.84 kWh		25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	132.28 lbs (60 kg)	50 A	100 A	300 A (30 S)			/
F24150L		150 Ah	3.84 kWh		25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	132.28 lbs (60 kg)	50 A	100 A	300 A (30 S)			UL
F24160		160 Ah	4.10 kWh		24.57 x 8.27 x 24.69 inch (624 x 210 x 627 mm)	198.42 lbs (90 kg)	80 A	160 A	480 A (30 S)			/
F24200		200 Ah	2.69 kWh		28.35 x 8.27 x 24.80 inch (720 x 210 x 630 mm)	507 lbs (230 kg)	100 A	200 A	600A (30 S)			/
F24230		210 Ah	5.38 kWh		24.57 x 11.18 x 24.69 inch (624 x 284 x 627 mm)	220.46 lbs (100 kg)	115 A	230 A	600 A (30 S)			/
F24280		280 Ah	7.17 kWh		24.57 x 8.27 x 24.69 inch (624 x 210 x 627 mm)	242.5 lbs (110 kg)	140 A	280 A	600 A (30 S)			/
F24320		320 Ah	8.06 kWh		25.59 x 13.78 x 18.50 inch (650 x 350 x 470 mm)	286.60 lbs (130 kg)	160 A	315 A	600 A (30 S)			/
F24400		400 Ah	10.24 kWh		28.34 x 8.27 x 24.80 inch (720*210*630)	286.60 lbs (260 kg)	200 A	400 A	600 A (30 S)			/
F24420		420 Ah	10.75 kWh		30.94 x 8.27 x 24.80 inch (786 x 210 x 630 mm)	485 lbs (220 kg)	200 A	420 A	600 A (30 S)			/
F24560		560 Ah	14.34 kWh		30.71 x 16.73 x 18.50 inch (780 x 425 x 470 mm)	848.8 lbs (385 kg)	200 A	560 A	700 A (30 S)			/
F24560L		560 Ah	14.34 kWh		36.67x 12.8 x 22.48 inch (779 x 325 x 571 mm)	848.8 lbs (385 kg)	200 A	350 A	500 A (30 S)			UL
F24690		690 Ah	17.66 kWh		35.83x 12.6 x 31.89 inch (910 x 320 x 810mm)	1860 lbs (844 kg)	200 A	560 A	700 A (30 S)			/
F24840		840 Ah	21.50 kWh		38.80x 14.25 x 31 inch (985.5x 361.9 x 787.4mm)	1567 lbs (711 kg)	200 A	560 A	700 A (30 S)			/
36 V System												
F36420	38.4 V	420 Ah	16.13 kWh	>3,500 times	31.50 x 3.78 x 22.44 inch (800 x 350 x 570 mm)	617.29 lbs (280 kg)	200 A	420 A	700 A (30 S)	Steel	IP65	/
F36460		460 Ah	17.66 kWh		30.71 x 16.73 x 22.44 inch (750 x 425 x 570 mm)	617.29 lbs (280 kg)	200 A	420 A	700 A (30 S)			/
F36560		560 Ah	21.50 kWh		32.87x 16.73 x 22.44 inch (835 x 425 x 570 mm)	617.29 lbs (250 kg)	200 A	420 A	700 A (30 S)			/
		560 Ah	21.50 kWh		31.50 x 29.92 x 13.78 inch (800 x 760 x 350 mm)	551.16 lbs (250 kg)	200 A	420 A	700 A (30 S)			/
F36608		608 Ah	23.35 kWh		30.71 x 16.73 x 22.44 inch (780 x 425 x 570 mm)	617.29 lbs (280 kg)	200 A	420 A	700 A (30 S)			/
		608 Ah	23.35 kWh		31.50 x 24.61 x 16.54 inch (800 x 625 x 420 mm)	551.16 lbs (250 kg)	200 A	420 A	700 A (30 S)			/
F36690AJ		690 Ah	26.50 kWh		35.43 x 16.73 x 22.44 inch (900 x 425 x 570 mm)	683.43 lbs (310 kg)	200 A	420 A	700 A (30 S)			UL
F36690BC		690 Ah	26.50 kWh		38.19x 20.39 x 29.49 inch (970 x 518 x 749 mm)	683.43 lbs (1227kg)	200 A	420 A	700 A (30 S)			UL
F36690BC		840 Ah	32.26 kWh		34.64 x 29.92 x 18.11 inch (880 x 760 x 460 mm)	718.70 lbs (326 kg)	200 A	420 A	700 A (30 S)			/
		840 Ah	32.26 kWh		33.46 x 24.01 x 22.44 inch (850 x 610 x 570 mm)	749.57 lbs (340 kg)	200 A	420 A	700 A (30 S)			/
		840 Ah	32.26 kWh		33.46 x 16.93 x 28.34 inch (850 x 430 x 720 mm)	870.83 lbs (395 kg)	200 A	420 A	700 A (30 S)			/
		840 Ah	32.26 kWh		35.43 x 31.49 x 18.50 inch (900 x 800 x 470 mm)	683.43 lbs (310 kg)	200 A	420 A	700 A (30 S)			/
48 V System												
F48210	51.2 V	210 Ah	10.75 kWh	>3,500 times	31.50 x 14.37 x 16.14 inch (800 x 365 x 410 mm)	297.62 lbs (135 kg)	105 A	210 A	500 A (30 S)	Steel	IP65	/
F48230		230 Ah	11.78 kWh		38 x 11.81 x 21.65 inch (965 x 300 x 550mm)	815.71 lbs (370 kg)	200 A	350 A	500 A (30 S)			/
F48280		280 Ah	14.33 kWh		30.71 x 16.73 x 18.50 inch (780 x 425 x 470 mm)	396.83 lbs (180 kg)	140 A	280 A	500 A (30 S)			/
F48315		315 Ah	16.1 kWh		27.56 x 22.05 x 18.11 inch (700 x 560 x 460 mm)	507.06 lbs (230 kg)	157 A	350 A	500 A (30 S)			/
		315 Ah	16.1 kWh		31.5 x 13.78 x 22.44 inch (800 x 350 x 570 mm)	617 lbs (280 kg)	157 A	350 A	500 A (30 S)			/
F48420AG		420 Ah	21.50 kWh		37.40 x 13.78 x 22.44 inch (950 x 350 x 570 mm)	661.39 lbs (300 kg)	200 A	350 A	700 A (30 S)			UL
F48420CA		420 Ah	21.50 kWh		37.40 x24.8 x 22.5 inch (970 x 630 x 571.5 mm)	661.39 lbs (300 kg)	200 A	350 A	700 A (30 S)			UL
F48420BE		420 Ah	21.50 kWh		31.50 x 24.02 x 18.11 inch (800 x 610 x 460 mm)	617.29 lbs (280 kg)	200 A	350 A	700 A (30 S)			/
F48460		460 Ah	23.55 kWh		32.28 x 25.50 x 18.50 inch (820 x 650 x 470 mm)	639.34 lbs (290 kg)	200 A	350 A	700 A (30 S)			/
		460 Ah	23.55 kWh		31.50 x 16.73 x 22.44 inch (800 x 425 x 570 mm)	650.36 lbs (295 kg)	200 A	350 A	700 A (30 S)			/

Specifications

Technical Specifications							Charge/Discharge Current			General		
Model	Nominal Voltage	Nominal Capacity	Nominal Energy	Cycle Life	Dimensions (L*W*H)	Weight lbs. (kg)	Charge Current	Continuous Discharge	Maximum Discharge	Casing Material	IP Rating	Certifcation
48 V System												
F48560AY	51.2 V	560 Ah	28.67 kWh	>3,500 times	32.28 x 30.71 x 18.11 inch (820 x 780 x 460 mm)	683.43 lbs (310 kg)	200 A	350 A	700 A (30 S)	Steel	IP65	/
F48560		560 Ah	28.67 kWh		35.43 x 31.89 x 13.78 inch (900 x 810 x 350 mm)	683.43 lbs (310 kg)	200 A	350 A	700 A (30 S)			/
F48560X		560 Ah	28.67 kWh		35.43 x 16.73 x 22.44 inch (900 x 425 x 570 mm)	771.62 lbs (350 kg)	200 A	350 A	700 A (30 S)			UL
F48560BS		560 Ah	28.67 kWh		35.43 x 16.73 x 22.44 inch (970 x 831 x 571.5 mm)	3199 lbs (1451 kg)	200 A	350 A	700 A (30 S)			UL
F48690W		690 Ah	35.33 kWh		37.80 x 16.73 x 22.83 inch (960 x 425 x 580 mm)	837.76 lbs (380 kg)	200 A	350 A	700 A (30 S)			UL
F48690BD		690 Ah	35.33 kWh		35.43 x 16.73 x 22.44 inch (970 x 831 x 571.5 mm)	3199 lbs (1451 kg)	200 A	500 A	700 A (30 S)			UL
F48690U		690 Ah	35.33 kWh		34.65 x 29.92 x 18.50 inch (880 x 760 x 470 mm)	749.57 lbs (340 kg)	200 A	500 A	700 A (30 S)			/
F48840		840 Ah	43 kWh		34.84 x 32.68 x 18.50 inch (885 x 830 x 570 mm)	529.1 lbs (240 kg)	200 A	500 A	700 A (30 S)			/
		840 Ah	43 kWh		32.28 x 24.8 x 22.44 inch (820 x 630 x 570 mm)	1135 lbs (515 kg)	200 A	500 A	700 A (30 S)			/
F481120		1120 Ah	57.34 kWh		39.37 x 31.50 x 22.24 inch (1000 x 800 x 565 mm)	1256 lbs (570 kg)	200 A	500 A	700 A (30 S)			/
72 V System												
F72420	73.6 V	420 Ah	30.9 kWh	>3,500 times	31.50 x 14.57 x 22.44 inch (800 x 370 x 570 mm)	903.90 lbs (410 kg)	200 A	350 A	700 A (30 S)	Steel	IP65	/
F72460		460 Ah	33.86 kWh		27.56 x 16.73 x 22.44 inch (700 x 425 x 570 mm)	925.94 lbs (420 kg)	200 A	350 A	700 A (30 S)			/
		460 Ah	33.86 kWh		25.59 x 24.80 x 18.50 inch (650 x 630 x 470 mm)	947.99 lbs (430 kg)	200 A	350 A	700 A (30 S)			/
F72560		560 Ah	41.22 kWh		29.92 x 16.73 x 22.44 inch (760 x 425 x 570 mm)	1102.31 lbs (500 kg)	200 A	350 A	700 A (30 S)			/
		560 Ah	41.22 kWh		30.71 x 24.80 x 18.50 inch (780 x 630 x 470 mm)	1124.36 lbs (510 kg)	200 A	350 A	700 A (30 S)			/
80 V System												
F80280	80 V	280 Ah	22.4 kWh	>3,500 times	35.43 x 16.73 x 22.44 inch (900 x 425 x 570 mm)	661.38 lbs (300 kg)	200 A	300 A	500 A (30 S)	Steel	IP65	/
F80400		400 Ah	32.0 kWh		35.43 x 22 x 22.44 inch (900 x 560 x 570 mm)	925.95 lbs (420 kg)	200 A	300 A	700 A (30 S)			/
F80420G/ F80420H		420 Ah	33.6 kWh		35.43 x 24.80 x 22.44 inch (900 x 630 x 570 mm)	881.85 lbs (400 kg)	200 A	350 A	700 A (30 S)			/
F80460H/F80460G F80460I/F80460J		460 Ah	36.8 kWh		32.28 x 24.61 x 22.83 inch (820 x 625 x 580 mm)	881.85 lbs (400 kg)	200 A	350 A	700 A (30 S)			/
F80560		560 Ah	44.8 kWh		32.28 x 27.17 x 22.44 inch (820 x 690 x 570 mm)	1058.22 lbs (480 kg)	200 A	350 A	700 A (30 S)			/
		560 Ah	44.8 kWh		31.89 x 28.74 x 22.44 inch (810 x 730 x 570 mm)	1080.27 lbs (490 kg)	200 A	350 A	700 A (30 S)			/
F80608		608 Ah	48.64 kWh		35.43 x 31.89 x 22.44 inch (900 x 810 x 570 mm)	1102.31 lbs (500 kg)	200 A	420 A	700 A (30 S)			/
F80690		690 Ah	55.2 kWh		38.58 x 31.89 x 22.44 inch (980 x 810 x 570 mm)	1025.15 lbs (465 kg)	200 A	420 A	700 A (30 S)			/
F80690D		690 Ah	55.2 kWh		31.89 x 30.71 x 22.44 inch (810 x 780 x 570 mm)	1201.52 lbs (545 kg)	200 A	420 A	700 A (30 S)			UL
F80690K		690 Ah	55.2 kWh		39.72 x 32.76x 29.49 inch (1009 x 832 x 749 mm)	2705 lbs (1227 kg)	200 A	420 A	700 A (30 S)			UL
F80840		840 Ah	67.2 kWh		39.37 x 32.28 x 22.44 inch (1000 x 820 x 570 mm)	1444.03 lbs (655 kg)	200 A	420 A	700 A (30 S)			/
90 V System												
F90460	89.6 V	460 Ah	41.2 kWh	>3,500 times	39.37 x 24.41 x 23.62 inch (1000 x 620 x 600 mm)	1135.38 lbs (515 kg)	200 A	350 A	700 A (30 S)	Steel	IP65	/
F90608		608 Ah	54.48 kWh		35.43 x 27.17 x 22.44 inch (900 x 690 x 570 mm)	1212.54 lbs (550 kg)	200 A	200 A	700 A (30 S)			/
96 V System												
F961120A	96 V	1120 Ah	107.52 kWh	>3,500 times	55.90 x 24.21 x 30.9 inch (1420 x 615 x 785 mm A/B BOX)	9038.95 lbs (4100 kg)	200 A	350 A	700 A (30 S)	Steel	IP65	/
F961120B		1120 Ah	107.52 kWh		47.83 x 28.15 x 30.51 inch (1215 x 715 x 775 mm)	8950.77 lbs (4060 kg)	200 A	350 A	700 A (30 S)			/

Working Temperature Range	Charge	Discharge	Storage (1 month)	Storage (1 year)
	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	32°F~95°F (0°C~35°C)

1. All pictures shown are for reference only and data are based on ROYPOW standard test procedures.
2. Actual performance may vary according to local conditions. Only authorized personnel are allowed to operate or make adjustments to the batteries.
3.We reserve the right to make revisions as well as product alterations and improvements at any time without prior notice.

Reliable Power for Most Aerial Lift Brands

ROYPOW lithium-ion batteries deliver consistent, reliable power for Aerial Lifts.

ROYPOW

Advanced battery solution for most leading brands of aerial work platforms. They can be generally applied in these famous aerial work platform brands:

Zoomlion	Genie	Mantall	Noble
Xcmg	JLG	Runshare	Eastmanhm
Dingli	Sunward	Skyjack	Airman
LGMG	Sany	Manitou	Sivge
Sinoboom	Haulotte	Emis	More>
Snorkel/Xtreme	LiuGong		

Disclaimer: The information above is intended only to describe that products of ROYPOW are applicable to products of brands above under specific circumstances. It should not be regarded as any illegal use of third-party brands and trademarks. You should not infer that RoyPow has established or has any agency, employment, partnership or joint venture relationship with the companies above.

Which LiFePO4 Battery is Suitable for Your Aerial Work Platforms?

One Stop for All of Your Battery Needs!

We make 24, 48, and 72 volt systems to cover small and large platform Electric Scissor Lifts:

Small-platform

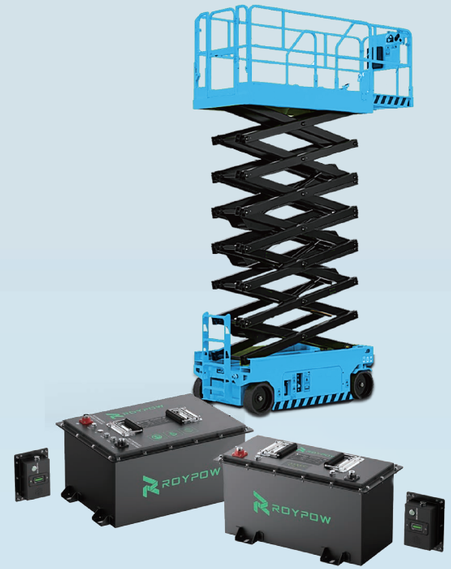
24 V Battery System

For small-platform electric scissor lifts

Large-platform

48 V / 72 V Battery System

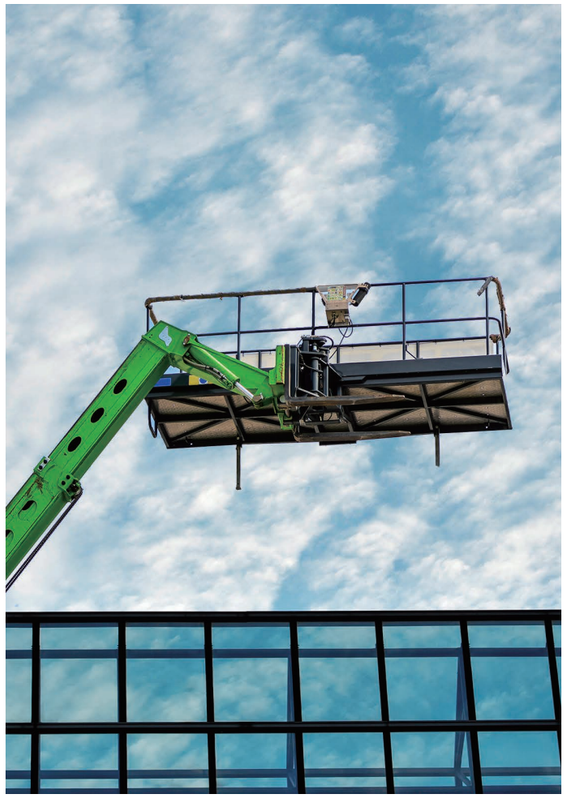
For large-platform electric scissor lifts

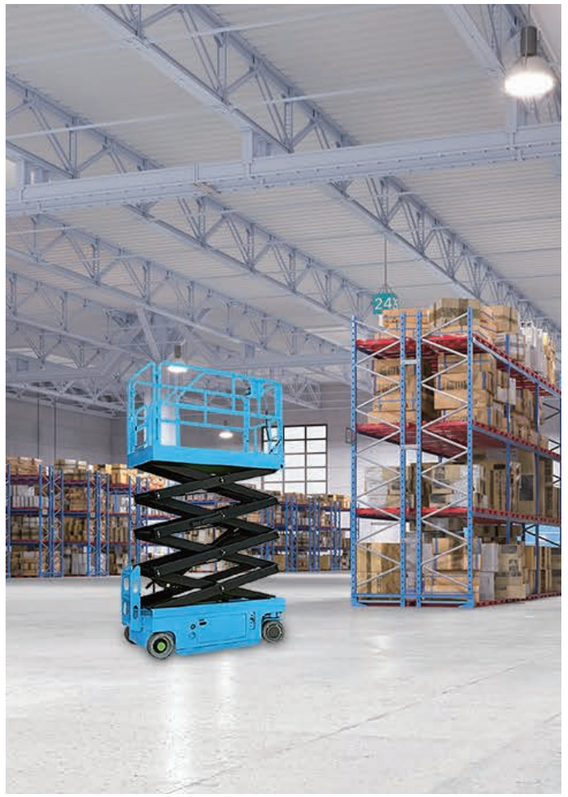


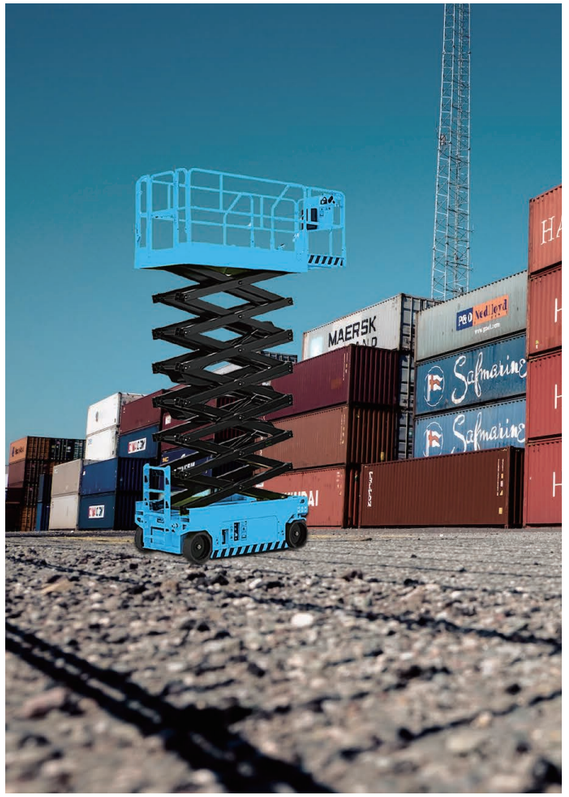
$LiFePO_4$ Batteries for Aerial Work Platforms

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

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







An Ideal Lithium-ion Solution

Efficient

- High, consistent performance without the voltage drop at the end of the cycle.
- Reduce unplanned downtime with fast, efficient, opportunity charging.
- 10 years design life - a worthwhile upgrade.

Flexible and Worry-free

- Zero maintenance, no need for water top-ups or electrolyte checks.
- No battery swapping, reduce related accidents and resulting employee injuries.
- No need for specific charging room.

Green and Stable

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

Save Up to 70% Expenses in 5 Years

Why ROYPOW LiFePO4 Batteries

5 Year Warranty

5 year warranty and timely technical support.

Steady Output

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

Key Features

Heating Function (Optional)

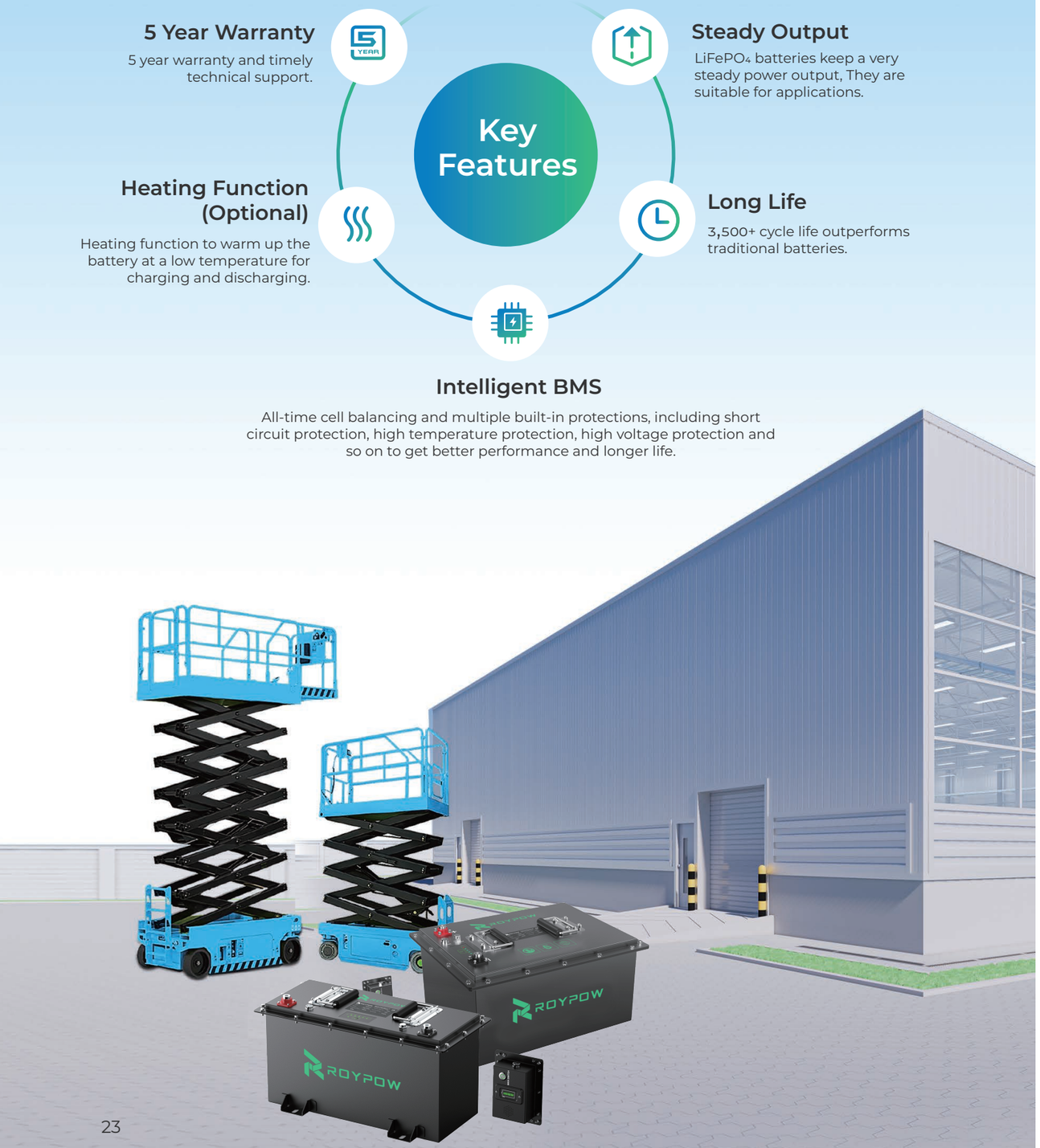
Heating function to warm up the battery at a low temperature for charging and discharging.

Long Life

3,500+ cycle life outperforms traditional batteries.

Intelligent BMS

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



Specifications

ROYPOW

Technical Specifications							Discharge Current		General	
Model	Nominal Voltage	Nominal Capacity	Stored Energy	Cycle Life	Dimensions (L*W*H)	Weight lbs. (kg)	Continuous Discharge	Maximum Discharge	Casing Material	IP Rating
24 V System										
S24105C-D (with heating)	25.6 V	105 Ah	2.69 kWh	>3,500 times	13.8×9.8×10.3 inch (350×250×262 mm)	56 lbs. (25.6 kg)	120 A	180 A (20 S)	Steel	IP67
S24105C-F (with heating)		105 Ah	2.69 kWh		17.6×9.6×10.5 inch (448×244×267 mm)	60 lbs. (27 kg)	120 A	180 A (20 S)		IP67
S24120A (with heating)		120 Ah	3.07 kWh		20.39×7.28×9.84 inch (518×185×250 mm)	66.14 lbs. (30 kg)	120 A	250 A (30 S)		IP54
S24160B (with heating)		160 Ah	4.09 kWh		20.6×14.2×10.5 inch (524×360×267 mm)	90.39 lbs. (41 kg)	150 A	250 A (30 S)		IP67
S24160B-A (with heating)		160 Ah	4.09 kWh		20.0×14.2×10.5 inch (504×360×267 mm)	90.39 lbs. (41 kg)	150 A	250 A (30 S)		IP67
S24160B-B (with heating)		160 Ah	4.09 kWh		15.75×12.99×10.24 inch (440×330×260 mm)	84 lbs. (38 kg)	150 A	250 A (30 S)		IP67
S24160G (with heating)		160 Ah	4.09 kWh		20.6×14.2×10.5 inch (517×257×260 mm)	84 lbs. (38 kg)	150 A	250 A (30 S)		IP67
S24210B (with heating)		210 Ah	5.38 kWh		19.2×13.8×10.3 inch (488×350×261 mm)	105 lbs. (47.8 kg)	150 A	250 A (30 S)		IP67
S24210C		210 Ah	5.38 kWh		28.0×10.2×10.5 inch (712×260×267mm)	100 lbs. (45kg)	150 A	250 A (30 S)		IP67
S24210D (with heating)		210 Ah	5.38 kWh		28.0×10.2×10.5 inch (712×260×267mm)	100 lbs. (45kg)	150 A	250 A (30 S)		IP67
S24210P-E (with heating)		210 Ah	5.38 kWh		20.6×14.2×10.5 inch (524×360×267 mm)	102 lbs. (46kg)	210 A	350 A (30 S)		IP67
S24420A (with heating)		420 Ah	10.75 kWh		26.0×17.4×15.1 inch (660×443×383mm)	243 lbs. (110 kg)	210 A	350 A (30 S)		IP67
48 V System										
S51105B-A (with heating)	51.2 V	105 Ah	5.38 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
S51210C (with heating)		210 Ah	10.75 kWh		20.6×14.2×10.5 inch (A/B BOX) (524×360×267 mm A/B BOX)	212 lbs. (96 kg)	200 A	350 A (30 S)		IP67
S48230A (with heating)		210 Ah	11.04 kWh		22.13×16.73×15.28 inch (562*425*388 mm)	205 lbs. (93 kg)	200 A	350 A (30 S)		IP67
S51230B (with heating)		230 Ah	11.78 kWh		23.4×11.69×10.9 inch (A/B BOX) (597×297×277 mm A/B BOX)	220 lbs. (100 kg)	200 A	350 A (30 S)		IP67
S51280C (with heating)		280 Ah	14.34 kWh		28.0×10.8×10.8 inch (A/B BOX) (712×275×275 mm A/B BOX)	243 lbs. (110 kg)	250 A	350 A (30 S)		IP67
72 V System										
S72280A (with heating)	76.8 V	280 Ah	21.54 kWh		29.52×13.78×13.7 inch (A/B BOX) (750×350×348 mm A/B BOX)	105 lbs. (47.8 kg)	250 A	350 A (30 S)	Steel	IP67

Working Temperature Range	Charge	Discharge	Storage (1 month)	Storage (1 year)
	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	32°F~95°F (0°C~35°C)

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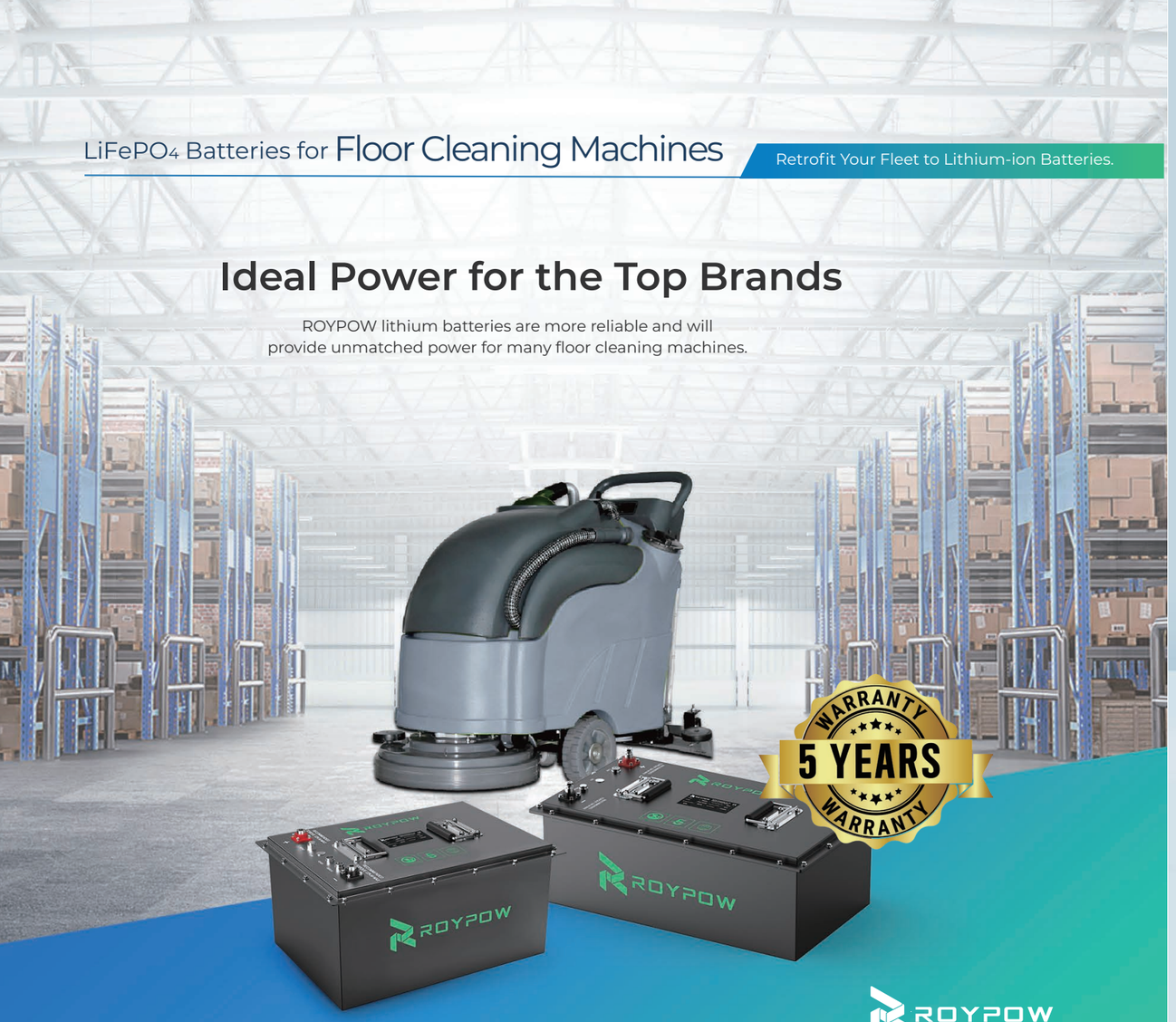
CE RoHS

Retrofit Your Fleet to Lithium-ion Batteries.

Ideal Power for the Top Brands

ROYPOW lithium batteries are more reliable and will provide unmatched power for many floor cleaning machines.



ROYPOW

Ideal battery solutions for most leading brands of floor cleaning machines. They can be generally applied in these famous floor cleaning machine brands:

Nilfisk/Advance	IPC	Viper	PowerBoss
Tennant	Comac	Clarke	Eureka
Nilfisk	FIMAP	ICE	Betco
Hako	Dulevo	NSS	More>
Kärcher	TVX	Minuteman	

Which LiFePO4 Battery is Suitable for Your Floor Cleaning Machines?

We make 24, 36, and 48 volt systems to cover most Floor Cleaning Machines.

One Stop for All of Your Battery Needs!

24 V Battery System

For Walk Behind Sweepers & Scrubbers

36 V / 48 V Battery System

For Ride-On Sweepers and Scrubbers

$LiFePO_4$ Batteries for Floor Cleaning Machines

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

- Superior performance from these safe, durable batteries.
- Keep your machines always ready to go!

More Time Cleaning, Less Time Worrying

Flexible and Worry-free

- Much lighter than the traditional battery.
- No frequent battery swapping.
- No Memory Effect, opportunity charge anytime.

Stable and Sustained

- No acid spills, no noxious gas emissions.
- More thermal & chemical stability.
- High consistent performance without sudden power sag.

A Good Investment

- Zero maintenance, to save labor and maintenance costs.
- Reduce unplanned downtime with fast, efficient, opportunity charging.
- No battery swapping, reduce related accidents and resulting employee injuries.
- Up to 10 years design life reduces overall battery investment.

Save Up to 70% Expenses in 5 Years

Why ROYPOW LiFePO4 Batteries

Key Features

5 Year Warranty

5 year warranty and timely technical support.

Steady Output

LiFePO4 batteries keep a very steady power output. They are intended for applications.

Heating Function (Optional)

Heating function to warm up the battery at a low temperature for charging and discharging.

Long Life

3,500+ cycle life outperforms traditional batteries.

Intelligent BMS

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

Specifications

ROYPOW

Technical Specifications							Discharge Current		General	
Model	Nominal Voltage	Nominal Capacity	Stored Energy	Cycle Life	Dimensions (L*W*H)	Weight lbs. (kg)	Continuous Discharge	Maximum Discharge	Casing Material	IP Rating
24 V System										
S2460A (with heating)	25.6 V	60 Ah	1.54 kWh	>3,500 times	12.1×6.6×8.9 inch (307×168×226 mm)	33 lbs. (15 kg)	60 A	180 A (20 S)	ABS	IP65
S2460D (with heating)		60 Ah	1.54 kWh		13.3×12.1×9.3 inch (338×307×235 mm)	55 lbs. (25 kg)	60 A	180 A (20 S)	Steel	IP65
S24100A (with heating)		100 Ah	2.56 kWh		13.3×12.1×10.5 inch (338×307×235 mm)	56 lbs. (25.3 kg)	100 A	180 A (20 S)		IP67
S24150A (with heating)		150 Ah	3.84 kWh		15.75×12.99×10.24 inch (440×330×260 mm)	85.5 lbs. (38.8 kg)	100 A	180 A (20 S)		IP67
S24160D		160 Ah	4.09kWh		17.32×12.99×10.24 inch (660*180*205 mm)	85.5 lbs. (38.8 kg)	100 A	180 A (20 S)		IP65
S24160E (with heating)		160 Ah	4.09 kWh		15.98×13.58×10.75 inch (406*345*273.1 mm)	86 lbs. (38.8 kg)	100 A	180 A (20 S)		IP67
S24160F		160 Ah	4.09 kWh		15.98×13.58×10.75 inch (406*345*273.1 mm)	86 lbs. (38.8 kg)	100 A	180 A (20 S)		IP67
S24210G (with heating)		210 Ah	5.38 kWh		19.2×13.8×10.3 inch (488×350×261 mm)	101 lbs. (46 kg)	100 A	180 A (20 S)		IP67
S24210H		210 Ah	5.38 kWh		19.2×13.8×10.3 inch (488×350×261 mm)	101 lbs. (46 kg)	100 A	180 A (20 S)		IP67
S24315C (with heating)		315 Ah	8.06 kWh		23.6×13.8×10.3 inch (600×350×262 mm)	143 lbs. (65 kg)	100 A	180 A (20 S)		IP65
S24315D		315 Ah	8.06 kWh		23.6×13.8×10.95 inch (600×350×278.2 mm)	143 lbs. (63.2 kg)	100 A	180 A (20 S)		IP65
36 V System										
S38105L	38.4V	100 Ah	3.84 kWh	>3,500 times	15.2×13.3×9.6inch (385×338×245 mm)	75 lbs. (34 kg)	80 A	180 A (20 S)	Steel	IP67
S38150A (with heating)		150 Ah	5.76 kWh		19.7×16.1×8.9inch (500×410×226 mm)	128 lbs. (58 kg)	80 A	180 A (20 S)		IP67
S38160B (with heating)		160 Ah	6.144 kWh		21.7×16.7×9.1 inch (550×425×232 mm)	128 lbs. (58 kg)	80 A	180 A (20 S)		IP67
S38160A-B (with heating)		160 Ah	6.14 kWh		23.6×13.8×9.1 inch (600×350×232 mm)	128 lbs. (58 kg)	80 A	180 A (20 S)		IP67
S38210B (with heating)		210 Ah	8.06 kWh		23.6×13.8×10.3 inch (600×350×262 mm)	143 lbs. (65 kg)	80 A	180 A (20 S)		IP67
S38210C (with heating)		210 Ah	8.06 kWh		23.03×13.8×10.3 inch (585×350×262 mm)	143 lbs. (65 kg)	80 A	180 A (20 S)		IP67
S38280A (with heating)		280 Ah	10.75 kWh		23.03×13.8×10.3 inch (585×350×262 mm)	143 lbs. (65 kg)	80 A	180 A (20 S)		IP67
S38315A (with heating)		315 Ah	12.09 kWh		31.2×12.6×20.9 inch (793×320×530 mm)	255.3lbs. (115kg)	150 A	250 A (30 s)		IP65
S38315P (with heating)		315 Ah	12.09 kWh		28.26×19.53×10.31 inch (718×496×262 mm)	255.3lbs. (115kg)	150 A	250 A (30 s)		IP65
S38420A (with heating)		420 Ah	16.13 kWh		31.2×12.6×20.9 inch (793×320×530 mm)	311 lbs. (141 kg)	150 A	250 A (30 s)		IP65
S38560A (with heating)		560 Ah	21.50 kWh		38.7×18×27.1 inch (982×456×690mm)	421.8 lbs. (190kg)	150 A	250 A (30 s)		IP65
S38608A-A (with heating)		608 Ah	23.35 kWh		36.7×15.7×23.2 inch (933×400×590 mm)	444 lbs. (200kg)	150 A	250 A (30 s)		IP65
S38690A (with heating)		690 Ah	26.49 kWh		37.4×15.7×25.2 inch (950×400×640 mm)	548.3 lbs. (247kg)	150 A	250 A (30 s)		IP65
S38690B (with heating)		690 Ah	26.49 kWh		35.4×16.5×25.2 inch (900×420×640 mm)	541.7 lbs. (244kg)	150 A	250 A (30 s)		IP65
48 V System										
S48460A (with heating)	51.2V	460Ah	23.55 kWh	>3,500 times	38.19×16.14×17.13 inch (970*410*435 mm A/B BOX)	242.4 lbs. (110kg)	150 A	250 A (30 s)	Steel	IP67
S51200C (with heating)		200Ah	10.24 kWh		28.90×14.96×9.84 inch (734*380*250 mm)	185.19 lbs. (84kg)	150 A	250 A (30 s)		IP67

Working Temperature Range	Charge	Discharge	Storage (1 month)	Storage (1 year)
	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	-4°F~131°F (-20°C ~ 55°C)	32°F~95°F (0°C~35°C)

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CE RoHS

More about ROYPOW Lithium-ion Batteries

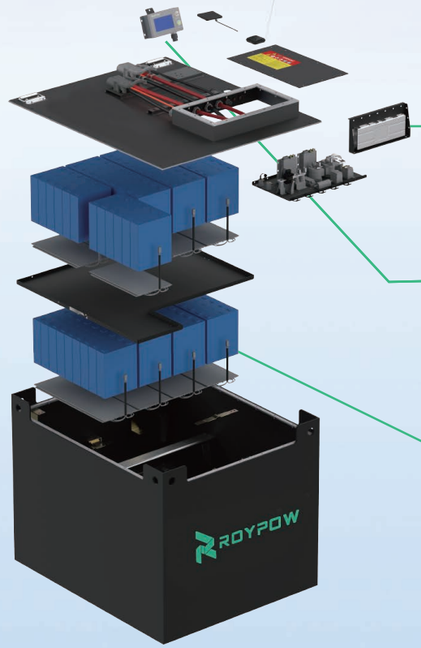
Quality and safety always come first. We also offer intelligent design from our professional R&D team.

Maintenance free

Fast charge

Long life

Ultra safe



Intelligent Design

Built-in BMS

For cell balancing and advanced battery management.

Control Panel Included

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

Battery Pack Module

Using $LiFePO_4$ cells to insure stable and safe battery performance.

Battery Management System (BMS)

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

BMS software ensures the battery provides peak performance when in operation, delivers longer run time between charges, maximizes 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 improving 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 the 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 the 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.

4G Module (for Forklift Batteries)

ROYPOW smart 4G module offers remote monitoring in real time, even in different countries. If faults occur, you can get an alarm. If the faults cannot be solved in person, you can get a remote diagnosis online from us to solve the problems as soon as possible.

With OTA (over the air) connectivity, remote software upgrades can solve software many problems in time and remote GPS can lock the forklift automatically if necessary.

Smart On-line Cloud Platform

TIPS

It provides integrated battery system management information, including battery quantities, real-time data and status, positions and trajectories, alarm record, etc. One phone or one computer can monitor all the batteries, no matter where you are, very easy and convenient to manage.

Original Chargers for Forklift

ROYPOW professional charger enables optimal battery performance and the best communication between the charger and the battery.

Intelligent Charging Management

To use the 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 a 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.

- Over-temperature protection
- Short-circuit protection
- Anti-reverse connection function
- Over-charge protection
- Smart display
- Current limit function
- Automatic power off
- Over-current protection
- Over-voltage protection
- Timing protection
- Wide voltage operation
- Constant current constant voltage

How to Charge?
Easy and safe

During the charging process, power to the lift is disconnected to prevent drive off.

01 Drive to the forklift battery station

Drive to the forklift battery station, switch off, plug in the charging cable and apply the parking brake.

02 Automatically monitor

The charger and forklift will automatically monitor whether the safe environment and battery condition are suitable for charging, and if ok, the charger and forklift will automatically start charging.

03 Fully charged

When the battery is fully charged, charging will stop automatically.

Smart Display

Once the charger is connected, it will show the battery status, and the operator can leave the truck between shifts and have a rest.

Where do ROYPOW lithium-ion batteries charge?
Flexible

- The batteries can be charged in the truck. No frequent battery swaps or battery storage room are required.
- The charging stations can be located anywhere in the facility that will promote proper charging by the operator. Eliminate charging room and related ventilation equipment.

TIPS

Compare to the charging location for lead-acid batteries:

Lead-acid batteries need extra batteries and battery storage room for swapping.
And they also need a specific charging room with a ventilation system to avoid noxious gas when charging.

Original Charger for
Aerial Work Platforms and Floor Cleaning Machines

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

Intelligent Charging Management

To use the 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 a 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.

- Over-temperature protection
- Short-circuit protection
- Anti-reverse connection function
- Over-charge protection
- Smart display
- Current limit function
- Automatic power off
- Over-current protection
- Over-voltage protection
- Timing protection
- Wide voltage operation
- Constant current constant voltage

Anti-walking Function

During the charging process, power to the lift is disconnected to prevent drive off.

Waterproof

Get rid of the AC adapter to take full advantage of IP66 rating, no need to worry about water, dirt or mud.

Natural Cooling

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

Safe Charging

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

Corrosion Protection & Vibration Resistance

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

Intelligent Protection

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

Compatibility

TIPS

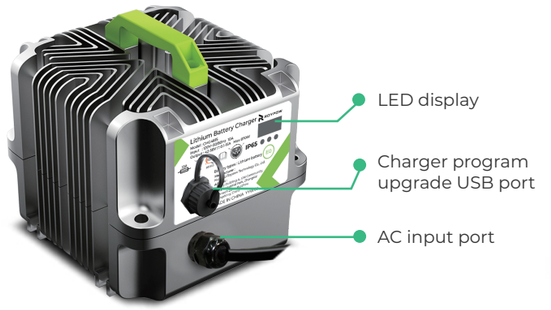
Our chargers are compatible with the voltages in most countries and regions. And it's applied to cater to various charge modes and the multiple AC plugs for choices.

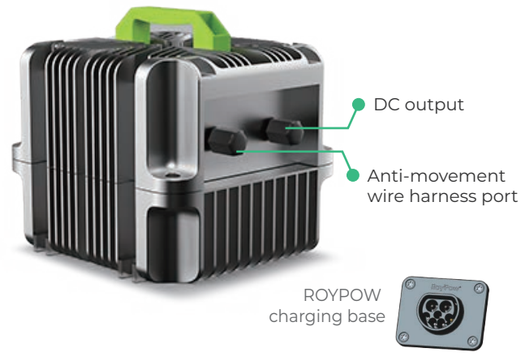
Single phase:

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.





ROYPOW,
For One-stop New Energy Solutions

ROYPOW TECHNOLOGY is dedicated to the R&D, manufacturing and sales of motive power systems and energy storage systems as one-stop solutions.

With more than 20 years of combined experience in manufacturing renewable energy and battery systems, ROYPOW provides Lithium-ion Batteries covering most daily living and working fields: for Low-Speed Vehicles such as golf carts, personnel carriers; Industrial Batteries for use in Material Handling Equipment such as forklifts, aerial work platforms and floor cleaning machines as well as renewable Energy Storage Systems for residential, commercial, industrial, vehicle-mounted and marine applications.

ROYPOW has established a worldwide network to serve customers with a manufacturing center in China and subsidiaries in the USA, the UK, Germany, the Netherlands, South Africa, Australia, Japan and Korea to date. ROYPOW owns and operates fully automatic production lines, a full range of test equipment and an advanced MES that collectively address all aspects of its manufacturing process, from electronics, software design to module assembly, battery assembly as well as initial and final testing. ROYPOW focuses on the self-development of power electronics technologies, including PCS, BMS, and EMS as the core competence.

As a renewable energy innovator, ROYPOW is committed to the mission of achieving energy sustainability while creating a better life for human beings.

R&D and Manufacturing Highlights

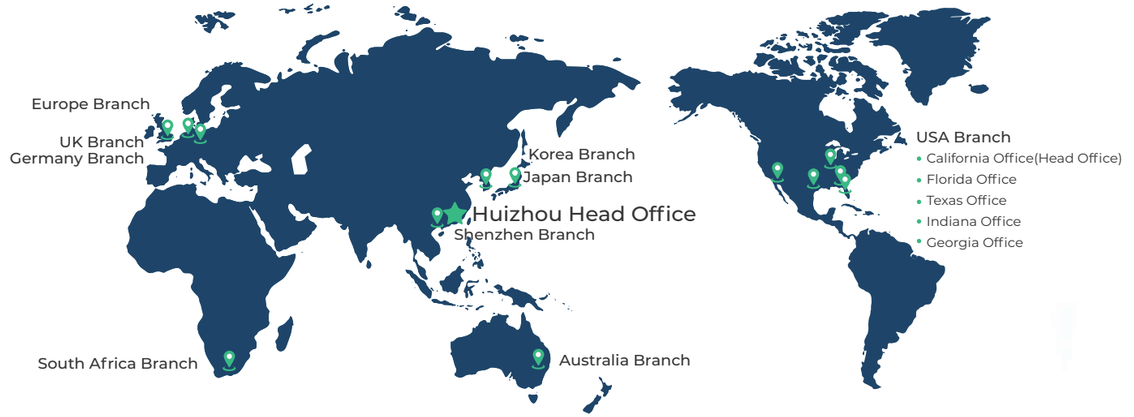
As a result of these investments, ROYPOW is capable of "end-to-end" integrated deliver y makeing our products out-perform the industry norms.

- All-round testing.
- Integrated design.
- Advanced MES system.
- IATF 16949 automotive quality management system certification
- QC system.
- Persistent technology innovation.
- Fully automatic production line.
- ISO12405-2 vibration performance and safety testing of automotive lithium batteries

Global Sales and Service Network System

- Timely Delivery.
- Hassle-free After-sales Service.
- Fast Response Technical Support.

ROYPOW has comprehensively unfolded its overseas market layout to ensure the localization of R&D, manufacturing, marketing and service, becoming one of your most reliable and valuable partners.



Upgrading to New Technology, with Our Turnkey Solutions.

With years of dedication to new energy solutions, we are proud to offer customers professional solutions for:

- **Low-speed Vehicle Batteries** including golf carts and sightseeing cars;
- **Vehicle-Mounted Energy Storage Systems & Batteries** including RV and truck energy storage and air conditioning systems, off-grid solar systems for RV, as well as power batteries for electric motorcycles;
- **Residential Energy Storage Systems** including home storage as well as off-grid energy storage (for forest cabin, island homes without electricity, etc.);
- **Industrial Batteries** including forklifts, aerial work platforms and floor cleaning machines;
- **Marine Energy Storage Systems & Batteries** including trolling motors, fish finders, other off-grid energy storage systems for marine, and marine power systems;
- **Commercial & Industrial Energy Storage Systems** including diesel generator power micro-grid energy storage systems (for tower cranes, air compressors, mixers, crushers, etc);
- **Chargers** for forklifts, aerial work platforms, floor cleaning machines, golf carts and various marine batteries.