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ROYPOW

YOUR ENERGY SAVING EXPERT

X250KT

DG + ESS Solution

Saving Up To

30% *In Fuel Consumption*

250 kW

sales@roypow.com
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Scan it!

ROYPOW
For One-stop New Energy Solutions

- R&D, manufacturing and sales of motive power systems and energy storage systems as one-stop solutions
- Fully automatic production lines, a full range of test equipment and an advanced MES
- Covering Low-Speed Vehicles' Batteries, Industrial Batteries, as well as Residential ESS, Commercial & Industrial ESS, and Mobile ESS
- Self-development of power electronics technologies, including PCS, BMS, and EMS

750+ Employees

190+ R&D People

105,000 ㎡ Headquarters Floor Area

2,500 ㎡ Testing Center

231 Patents

Quality Control Certificates:

- Environmental Management System: **ISO 14001:2015**
- Occupational Health and Safety Management System: **ISO45001:2018**
- Quality Management System: **ISO 9001:2015, IATF16949:2016**
- Information Security Management System: **ISO/IEC 27001:2022**
- Social Accountability Management System: **SA8000:2014**
- Hazardous Substance Process Management: **IECQ QC 080000**

Product Certifications:

UL 1973, UL 9540A, UL 9540, UL 2580, UL 2271, UL 1741	FCC, IEC/EN 61000-6, BS EN IEC 61000-6
IEEE 1547	IEC 60730, ISO 13849-1
IEC 62619	UN 38.3
EN 62477, EN 62040, (EU) 2023/1542, EN 62109-1, EN 62109-2	RoHS Directive 2011/65/EU & (EU) 2015/863

R&D and Manufacturing Highlights

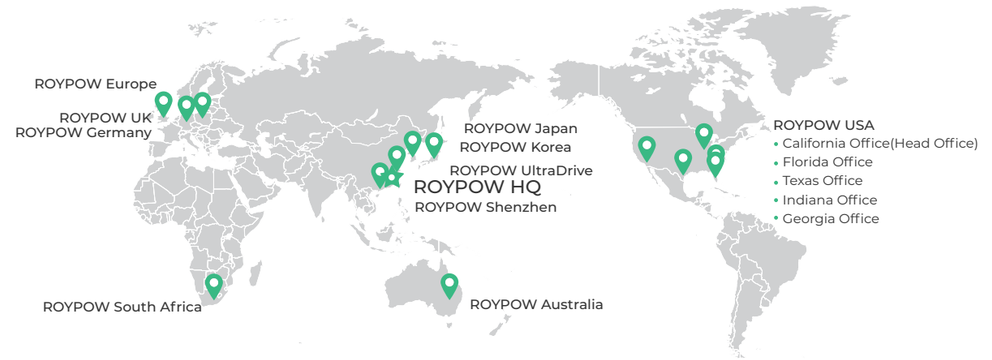
As a result of these investments, ROYPOW is capable of “end-to-end” integrated delivery, making our products out-perform the industry norms.

- Fully Automatic Production Lines
- BMS, PCS, EMS All Designed in House
- All-round Testing
- Advanced MES System

Global Sales and Service Network

- 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
- Battery Systems for Off-highway Applications
- Residential Energy Storage Systems
- Mobile Energy Storage Systems
- Industrial Batteries
- Battery Systems for Emerging Applications
- Commercial & Industrial Energy Storage Systems
- Motors, Controllers and Chargers

High Power Motors have been widely used in industries, such as construction, mechanical manufacturing, mining, rail transit, petrochemical, etc.

How to choose a DG

Assumed load: **Peak Power:** 530 kW, **Rated power:** 200 kW

Traditional Proposal

If a Diesel Generator is adopted as power source:

Initial Overpurchase for a high power DG is necessary to match the maximum starting current of the motors

High Fuel Consumption is certain because of frequent motor starts and long-term operation at low power

Capacity Expansion is not possible for the conventional diesel generators

High Maintenance Costs due to frequent motor starts and high inrush current

Not suitable due to the high starting current of the load

The All-New
ROYPOW X250KT System

Saves energy and
makes Diesel Gen Sets more efficient

ROYPOW Proposal

No need to purchase high capacity DG due to the mutual power output from X250KT

Hybrid Solution

Lower initial investment for a low-power DG

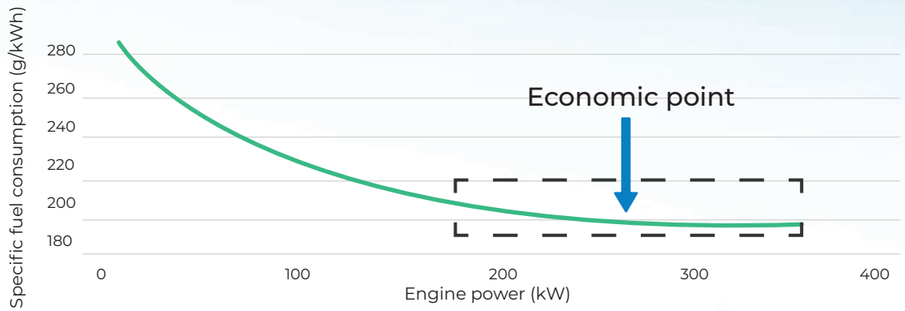
Lower fuel consumption

Support multiple DGs working in parallel

Lower maintenance costs

30% Savings on Diesel Fuel Consumption

ROYPOW X250KT intelligently and efficiently manages the output power of the engine at 50% to 70% of the rated power of the DG, ensuring that the DG operates at the lowest fuel consumption rate and helping achieve fuel consumption reduction.



Relationship between engine power and fuel consumption

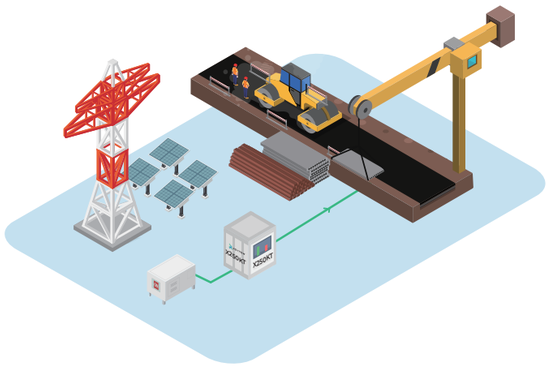
250 kW Output

ROYPOW X250KT supports up to 250 kW continuous power output for 30 seconds to address the issues of high motor startup currents and load impacts, extending the lifespan of diesel generators, reducing failure rates, and decreasing maintenance frequency and costs.

Two Working Modes

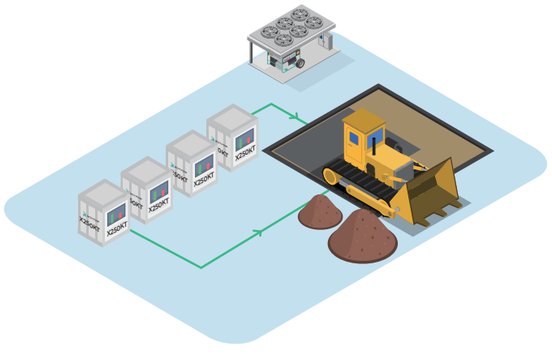
Hybrid Mode (X250KT + DG)

ROYPOW X250KT and diesel generator set work in parallel to power the load. Suitable for projects requiring high loads and extended power supply duration.



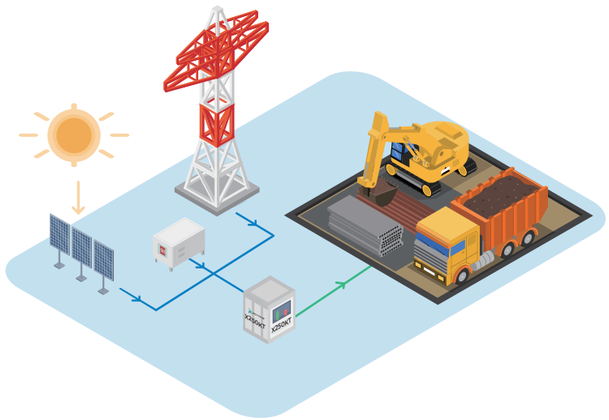
Off-Grid Mode

When the diesel generator fails, ROYPOW X250KT ensures continuous and uninterrupted power to the loads and improves the quality of the power supply.



AC-Coupling

X250KT can connect with PV, Grid or Diesel Generator for charge and discharge functionality.



Quality Design. Lasting Reliability.

All-In-One Modular Design

Integrates the powerful and efficient battery, SPCS, and SEMS into one unit

Plug & Play

Ensures easy installation, convenient maintenance, and flexible expansion of up to 4 units.

Rapid Deployment

Supports frequent lifting and forklift transportation for rapid deployment.

Adapt to Various Environments

Highly waterproof and dust-proof to maintain stable performance under various weather conditions.

Integrated Alert & Warning System

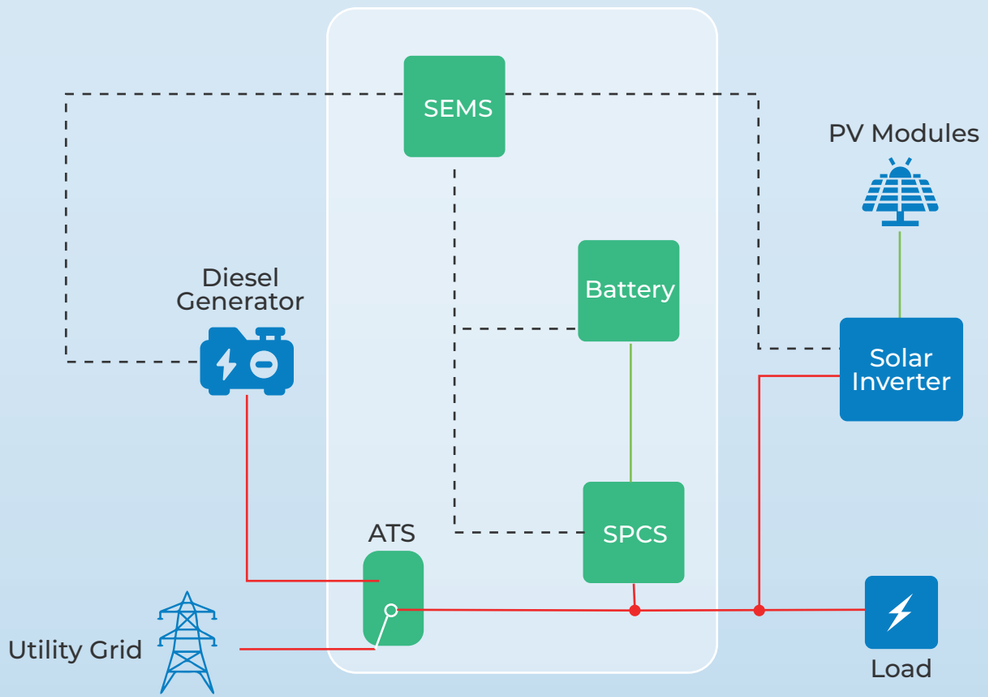
Equipped with a comprehensive safety package, including a fire extinguishing system, to ensure timely warnings and worry-free safety.

Up to 4 Sets Parallel

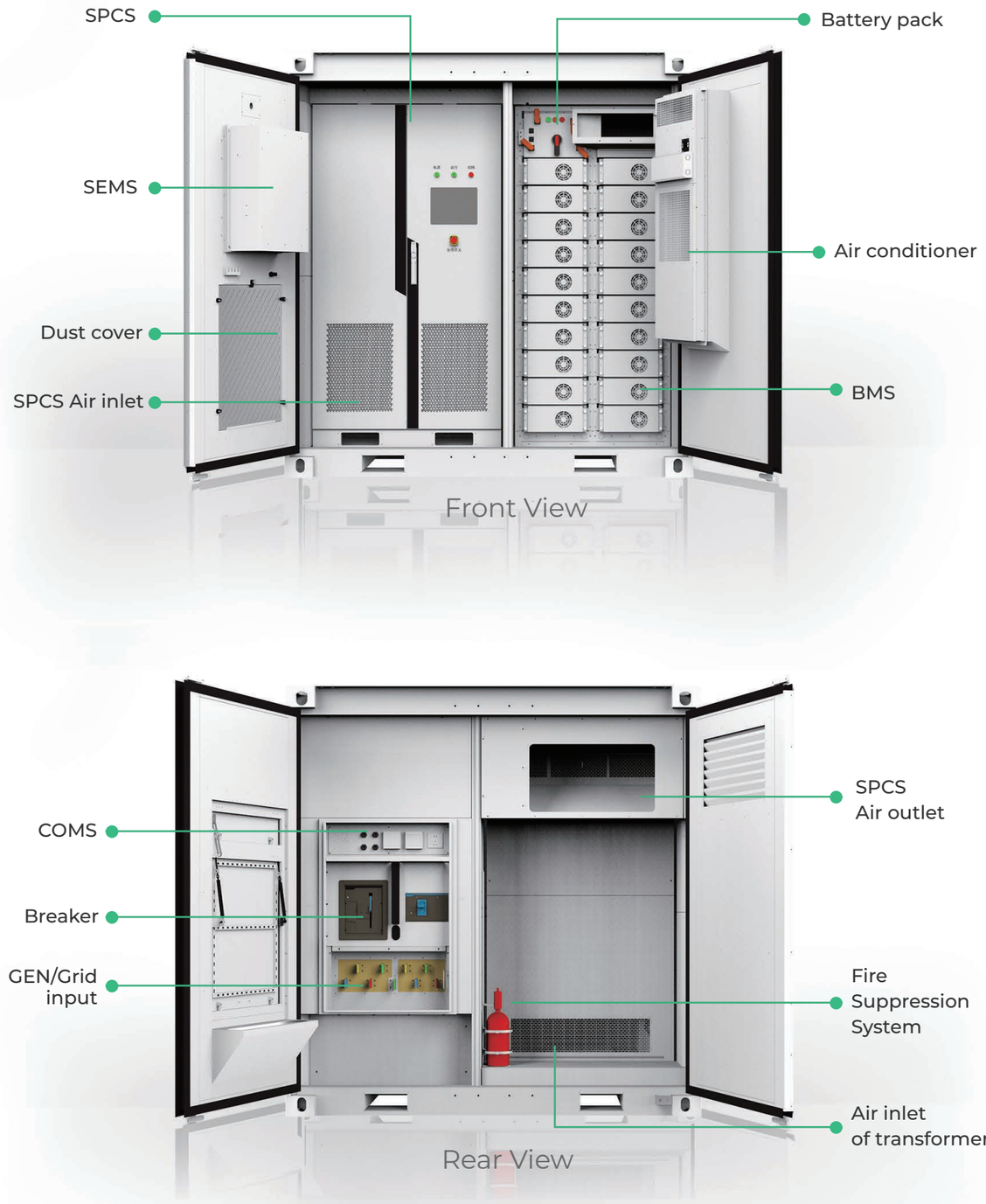
Supports up to 4 sets of units working in parallel, with the energy capacity reaching 1 MW/ 614.4 kWh, for high loads.

ROYPOW X250KT

System Topology



System Composition of ROYPOW X250KT



Special Power Conversion System (SPCS)

The SPCS controls the charge/discharge process of the battery pack. It can not only connect to the grid to achieve AC/DC conversion but also operate independently off the grid to directly supply power to AC load.

- Supports up to 4 sets of parallel use
- Equipped with multiple fault protection mechanisms
- Works with the diesel generator to power the loads

$LiFePO_4$ Battery Energy Storage System (BESS)

Equipped with advanced $LiFePO_4$ BESS - safer, more stable, and more eco-friendly than other lithium chemistries, the ROYPOW X250KT system ensures quality power and energy reliability for worksites.

- High-Power & High-Efficiency Output
- Built-in Battery Management System (BMS) for Intelligent Control and Protections
- Long Cycle Life & Design Life
- 5 Years Warranty

Smart Energy Management System (SEMS)

The SEMS coordinates the battery pack, SPCS, BMS, and others into a complete system, responsible for data acquisition, monitoring and analysis, and energy scheduling for effiicient energy usage.

- Integrated Energy Scheduling Algorithms
- High Compatibility & Flexibility
- Improved System Reliability & Efficiency
- Intuitive Monitoring & Friendly Remote Control via Web and APP

Application Scenarios of ROYPOW X250KT

Temporary electricity usage

Emergency power supply

Micro-grid power supply

ROYPOW
X250KT System

10,361.72 lbs
(4,700 kg)

Technical Specifications

Model	X250KT-U/A	X250KT-E/A
AC Output Data (On-grid Mode)		
Rated Power	150 kW	150 kW
Max. Rated / Apparent Power	250 kW / 280 kVA[1]	250 kW / 280 kVA[1]
Rated Voltage	480 V (±15%)	400 V (±15%)
Rated Current	183 A	220 A
Grid Frequency	60 Hz	50 Hz
AC Connection	3 W + N	3 W + N
THDI	≤ 3%	≤ 3%
Power Factor	-1 ~ +1	-1 ~ +1
AC Output Data (Off-grid Mode)		
Rated Power	250 kW	250 kW
Max. Rated / Apparent Power	250 kW / 250 kVA[1]	250 kW / 250 kVA[1]
Rated Voltage / Frequency	480 V / 60 Hz	400 V / 50 Hz
THDV (Linear Load)	≤3%	≤3%
Battery Data		
Battery Chemistry	$LiFePO_4$	$LiFePO_4$
Nominal Energy	153.6 kWh	153.6 kWh
Working Voltage Range	600V ~ 876V	600 V ~ 876 V
Nominal Charging Current	100 A	100 A
Nominal Discharging Current	200 A	200 A
Max. Discharging Current	300 A	300 A
DOD	90%	90%
Compatible Diesel Generator		
Rated Power	≤400 kVA	≤400 kVA
Rated Voltage	480 V	400 V
Rated Frequency	60 Hz	50 Hz
General		
Parallel Capable	Yes (Up to 4)	Yes (Up to 4)
EMS	SEMS3000 12 inch LCD Touch Panel	SEMS3000 12 inch LCD Touch Panel
Ingress Rating	NEMA 3R	IP54
Topology	Transformer	Transformer
Working Temperature	-4 ~ 131°F (-20 ~ 55°C)	-4 ~ 122°F (-20 ~ 50°C)
Storage Temperature	-40 ~ 149°F (-40 ~ 65°C)	-40 ~ 149°F (-40 ~ 65°C)
Relative Humidity	5 ~ 95% (No condensing)	5 ~ 95% (No condensing)
System Noise	<65 dB	<65dB
Cooling	Intelligent temperature control (Battery room) Air cooling (Inverter room)	
Fire Suppression System	Included	Included
Altitude	5,000 (>3,000 derating)	5,000 (>3,000 derating)
Dimensions, LxWxH	90.55 x 68.90 x 94.49 inch (2,300 x 1,750 x 2,400 mm)	
Weight	10,361.72 lbs (4,700 kg)	

[1] Depends on the output power of the battery system.

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