FALCON
POWER GENERATION

Discover more

Revolution Battery

High Power Battery Storage System



Revolution Battery

Cut Power System Costs

The Revolution Battery is an industrial high-power battery system capable of 300kW power peaks. It is designed for seamless integration with generators, other batteries, or direct mains connections.

When connected to a 16A, 32A, or 63A mains connection, the battery can power large dynamic equipment such as cranes, allowing for the complete removal of generators.

This innovative system enables the use of smaller, more efficient generators, resulting in lower fuel consumption, reduced emissions, and significant cost savings.



Significantly downsize generators



Enable power from small 3-phase sources



Huge CO_2 reduction



Improved fuel economy



Improved voltage and frequency stability



PRODUCT FEATURES

The Revolution Battery features intelligent system architecture that isolates battery charging from the high-power output, allowing it to handle transient load spikes seamlessly without overloading or stressing your charging supply. It's not just about raw power - it's built for real-world durability and reliability in the toughest conditions.

The Revolution Battery from Dumarey Green Power redefines the relationship between power and energy in industrial applications. It delivers an impressive 300kW of peak power from a compact 28kWh battery pack - a breakthrough that prioritises high bursts of power over massive energy storage. This allows you to deploy smaller, more efficient systems that handle demanding dynamic loads, such as tower cranes, hoists, and other heavy equipment. It's the ideal replacement for traditional diesel generators or bulky oversized battery setups - enabling you to run large cranes from a standard 32A mains connection or a 40kVA generator, while slashing fuel costs, emissions, and on-site footprint.

Constructed with rugged materials, including galvanised elements and premium C5-class corrosion protection powder coating, the Revolution Battery is engineered to deliver consistent, high-performance output in extreme environments - no matter the challenge.

This level of robust engineering draws directly from the same precision and endurance principles that powered our implementation in Formula One, where every component must withstand intense demands.



Silverstone Park, location of Dumarey Green Power



Features

- High power battery energy storage system
- Load acceptance equivalent to an 800kVA generator
- 16A / 32A / 63A charging sockets with passthrough capability
- Charge from grid or generator start on demand
- PowerSafe output (800A type connectors)
- 500A passthrough allows large generator or mains connection if required
- 4-point lift and fork pockets
- 10" touchscreen HMI with wizard-based setup and simple operation
- Bespoke telematics platform for remote asset management

User Interface

- Set-up wizard for fault-free and intuitive installation
- Animation and video set-up guides available
- Power, voltage and frequency data for plant, generator, and energy storage system
- Battery system data
- Alarm and alert management
- Event log management and diagnostics
- Communications: Cloud based telemetry tool using on board 3G/4G router







Fleet Management

Designed in-house, our Fleet Management System has been developed specifically to complement the Revolution Battery.

This cutting-edge system provides users with a holistic view of their entire fleet of Revolution Batteries, allowing for seamless monitoring and management across all deployed and non-deployed units.

With the Fleet Management System, you can effortlessly check the performance of your systems in real-time, identify and troubleshoot any issues, and even remotely commission new units.

The system also offers remote access to the HMI, enabling you to control and adjust settings from anywhere.

Additionally, you can assign contracts to specific systems, ensuring they are operating according to your needs, and track their exact location using integrated GPS technology.

This smart, intuitive system has been tailored to integrate with our diverse range of products, offering a comprehensive solution that enhances efficiency and operational oversight across your entire fleet.

ONE PRODUCT, NUMEROUS APPLICATIONS



Tower Cranes

Tower cranes demand high peak power, especially during motor starts. Large cranes, especially luffing cranes, may experience inrush currents of over 500A, requiring oversized generators.

Typical Supply:
500kVA diesel generator

With Revolution Battery:
32A mains or 40kVA generator



Hoists & Mast Climbers

DOL hoist motors require high starting currents, often forcing oversized power supplies. Revolution Battery delivers this peak power, running up to four hoists at once and eliminating multiple diesel units while cutting fuel, noise, emissions, and site clutter.

Typical Supply:
250kVA diesel generator

With Revolution Battery:
16A mains or 20kVA generator



Pumping

Float-switch operated pumps often run for just a few hours per day. The Revolution Battery is ideal for converting these from diesel to small mains, or significantly downsizing your diesel requirements.

Typical Supply:
200kVA diesel generator

With Revolution Battery:
32A mains or 40kVA diesel generator



Welders & Tools

Heavy duty welding equipment requires instant bursts of power, a profile poorly suited to generators. The Revolution Battery can power large stud welders from a small mains connection, eliminating the noise and emissions of a generator and saving significant costs.

Typical Supply:

500kVA diesel generator

With Revolution Battery:

16A mains or 20kVA generator



Events

The Revolution Battery easily synchronises with a microgrid, delivering exceptional load acceptance at a much smaller footprint and lower cost than alternative systems. It provides 300kW of instant power to handle flashing stage lighting and other instantaneous demands - reducing or eliminating the need for diesel generators and large batteries.

Typical Supply:

Multiple 500kVA synchronised diesel generators

With Revolution Battery:

Remove 1 x 500kVA and replace with Revolution Battery



Mains Peak Lopping

The Revolution Battery can be easily synchronised with mains, and can peak-lop using its 500A passthrough connection. This can be useful for any site with a limited mains connection who need to exceed that rating for short periods. Examples include construction sites, recycling depots, quarries, and factories.

Typical Supply:

Hire additional power via diesel generator

With Revolution Battery:

500A passthrough, no generator required

SUCCESS STORIES

Case Study

London Tower Cranes Delivers a Generator Free Solution at the Royal Mint

The Challenge

The London construction boom continues to drive the use of heavy luffing cranes to support high rise buildings on small plots. The Sáez SL 730 is typical of such heavy cranes, with a 36 tonne maximum lift capacity. Heavy cranes require large power systems, and with a 123kW hoist and a 110kW luffing motor, 315kVA of mains or a 500kVA diesel generator would be needed to power the system.

This site had four challenges:

1. The Royal Mint site was highly compressed with electrified rail lines alongside and underneath. The site had no space for a diesel generator and fuel tank.
2. The availability of mains was very limited, and adding another 315kVA to the supply was not possible.
3. The site is in the Ultra-Low Emissions Zone (ULEZ) mandating the use of a Stage V generator. With a 500kVA this would require the use of a loadbank to increase engine loading, and this in turn would significantly increase fuel usage.
4. Fuel deliveries to central London are very challenging with time and size restrictions.





Read the full case study and
many more on our website
www.falconpowergeneration.co.uk/equipmet/dumarey-revolution

The Solution – Revolution Battery

To address these challenges, Dumarey Green Power and London Tower Cranes deployed the Revolution Battery energy storage system, a high powered battery capable of 300kW of power. It uses a small battery pack to save on costs and space.

Implementation

The Dumarey Revolution Battery was installed and connected to a 32A 3-phase supply for charging. The output of the battery was connected to the crane isolator. The battery was energised and remained running 24 hours per day. Compared to a 500kVA generator, loadbank and fuel tank, the footprint of the battery reduced the space requirement by 70%. As a result of removing the requirement, the site avoided the use of diesel generators completely.

Results

The introduction of the Revolution Battery delivered impressive savings in just the first month:

- **Cost Savings:** Net savings for the site resulted at ***£4,120*** a week. This includes hire savings on the generator and ancillaries as well as fuel.
- **Energy Cost:** Mains power use for the crane averaged 1100kWh per week, with a cost of just ***£290***.
- **Fuel Savings:** Over ***2,400 litres*** of diesel saved each week.
- **Emissions Reduction:** More than ***6.4 tonnes*** of CO_2 avoided each week (plus significant NOx and SOx reductions).



Conclusion

The load cycle of tower cranes is not well suited to Stage V generators. The high peak power demand combined with long periods at idle normally require large generators running at low average loads. These low loadings can result in reliability issues and downtime. The Revolution Battery, with its small high-power battery pack is ideal for crane applications. 32A of infeed may seem small, but even the most aggressive duty cycle allows for significant charging time as crane loads are connected and disconnected. The small size of the battery system makes it a great choice for a compressed construction site.

Eliminating the use of diesel generators on cranes, and from construction sites in general, has wide ranging benefits. Most obviously cost savings on generator rental and fuel, but also social and environmental benefits from CO_2 reduction, improved air quality, reduced noise and less deliveries to site. We would like to thank the teams at London Tower Cranes and JRL Group for their excellent work in making this case study possible.

TECHNICAL OVERVIEW

Configurations

On Grid

Revolution Battery can connect to grid connection and boost it when needed for site peaks.

Before Revolution Battery

Grid is insufficient to power site peaks, so a large generator is used.

After Revolution Battery

Battery charges when site load is low, then adds power to the grid peaks when needed.



Off Grid

Revolution Battery can form an island grid when no mains connection is available. System can be implemented with generator in a hybrid system.

Before Revolution Battery

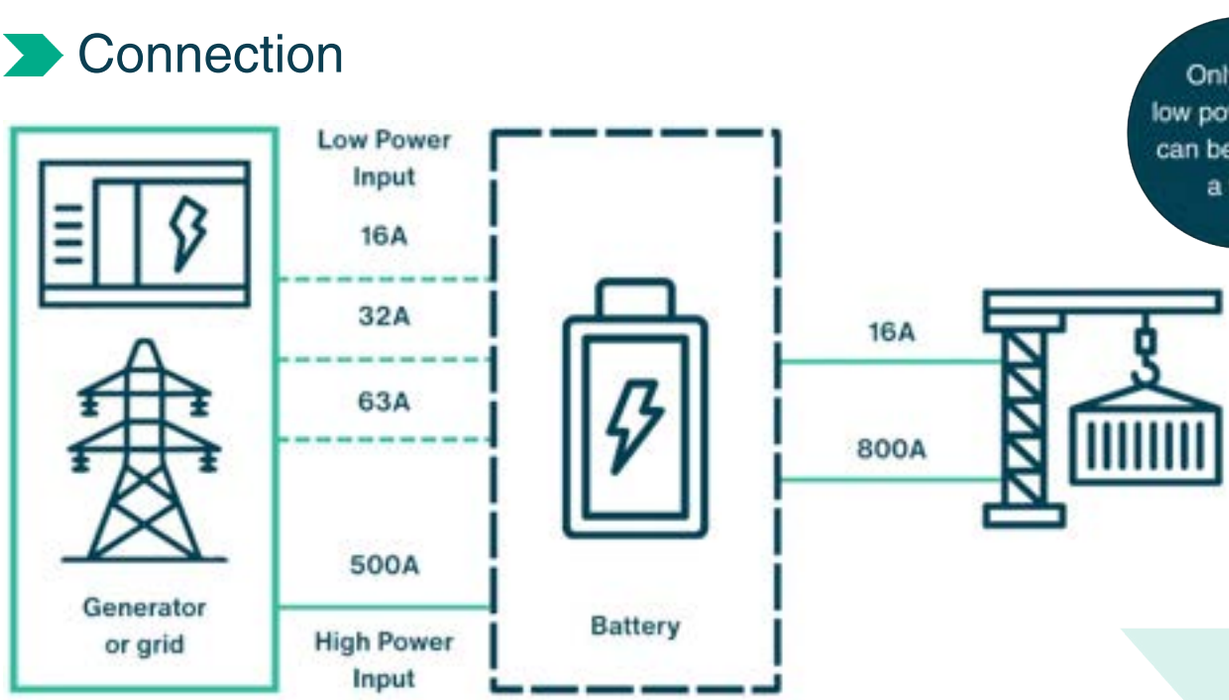
Generator runs 24/7 to power site, even when on very low loads.

After Revolution Battery

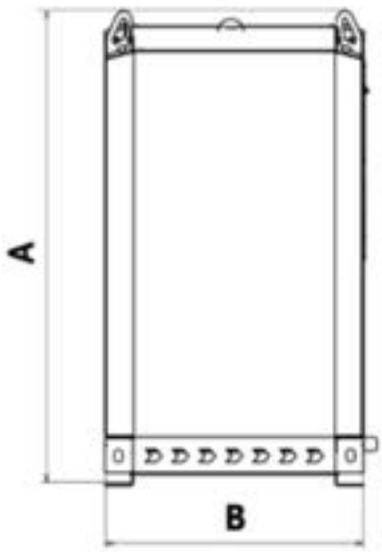
Generator is now controlled by the battery and runs less than 1/3 of the time.

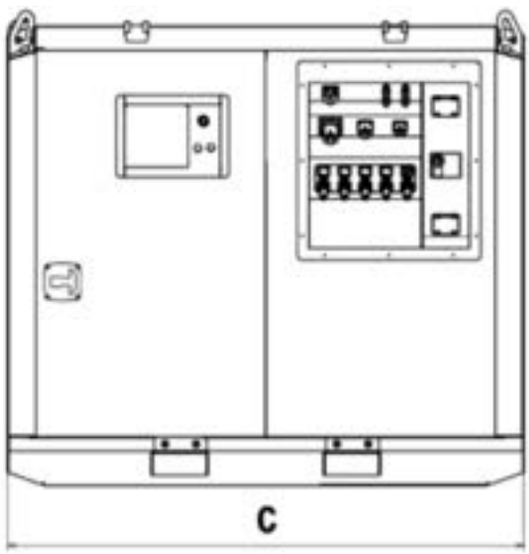


Connection



Dimensions & Weight





Revolution Battery	
A	2,200mm
B	1,200mm
C	2,400mm
Mass	2,800kg

Specifications

SPECIFICATIONS	VALUES	COMMENTS
Max Continuous System Output	140kW	Includes 40kW from mains
System Output for 3 Minutes	160kW	Includes 40kW from mains
System Output for 1 Minute	200kW	Includes 40kW from mains
System Output for 10 Seconds	300kW	
Charging Power	40kW*	16/32/63A Sockets
Battery Capacity Maximum Usable	28kWh	
Battery Usable Energy @ 25°C	19kWh	
Battery Usable Energy @ 0°C	10kWh	
Nominal Grid Voltage Range	± % of UAC nom	
Frequency	50Hz	± 5Hz
Grid Configuration (On-Grid)	3 ~ 400 VAC (Phase to Phase) + Neutral + PE	TN Grid
Grid Configuration (Off-Grid)	3 ~ 400 VAC (Phase to Phase) + Neutral + PE Coupled	TN-S Grid
Protection Devices	Earth Leakage and MCCB	
Other Interfaces	Generator Start Command	
Battery Cycles	20,000 Cycles	Full Discharge Cycles
Colour	RAL 9003	As Standard, Others on Request

***Higher connection power available from passthrough connection**