

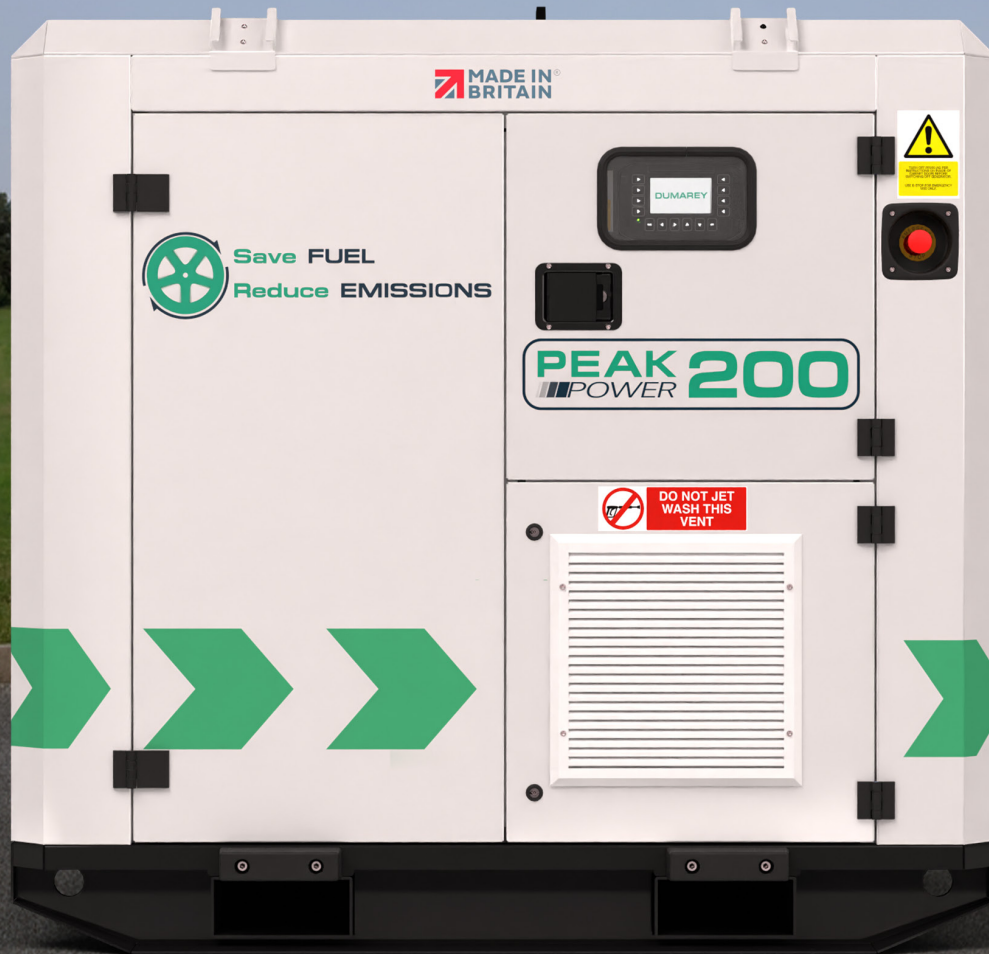
DUMAREY

➤ Discover more



Peak Power 200

Flywheel Energy Storage System



Peak Power 200

Cut Costs, Reduce Emissions

The Peak Power 200 is an industrial flywheel energy storage system, designed for plug-and-play use alongside generators, batteries or mains connections.

The system provides a high-power boost of electrical energy exactly when needed and with a fast response time. This peak lopping effect reduces the required size of your primary power source.

As a result, this allows significantly smaller generators, reduces fuel consumption, CO₂ and saves you money.



Significantly
downsize
generators



Enable power
from small
3-phase
supplies



Huge CO₂
reduction



Improved fuel
economy



Improved
voltage and
frequency
stability



PRODUCT FEATURES

Energy is stored in a flywheel rotating at high speed, and the Peak Power 200 releases it instantly to provide up to 85kW / 133kVA during short load spikes.

Industrial applications require instant high power to start motors. This occurs with frequency controlled motors and is amplified with direct-on-line motors. As a result, generators need to be sized for the very short start-up requirements and therefore are oversized for the normal running.

This effect is most pronounced on highly dynamic applications which are starting and stopping motors regularly. Examples of highly dynamic applications include tower cranes, rock crushers, pumps and many more. Using a flywheel allows you to downsize your generator, often by a factor of 2 or 3. This results in huge fuel savings and reduces your carbon footprint.



- Electrically connected flywheel energy storage system
- Enables generator downsizing with subsequent fuel and CO₂ savings
- 85kW of real power and up to 133kVA available to support the generator for around 5 seconds
- Power monitoring with external CT clamps
- Designed for 80,000h of life and over 15 million full charge-discharge cycles
- System response time less than 0.03 seconds
- Connection terminal 125A IEC or 800A Powersafe options
- Remote communication, monitoring, control & diagnostics
- There are 4 modes available:
 1. Power Capping
 2. Frequency Control
 3. Voltage Control
 4. Power Factor Correction (continuous 125A reactive current)
- Single point central lifting eye and fork pockets
- HMI with user-friendly interface
- CE & UKCA certified

Three savings are made when deploying the Peak Power 200:



The lower fuel costs associated with a smaller generator



Saving on the rental cost of a smaller generator



Saving CO₂ emissions due to lower fuel usage

The combination of these factors makes the Peak Power 200 environmentally friendly and economically attractive.

➤ User Interface



- 4.3" display complete with a custom interface to provide intuitive and robust operation
- Power, voltage and frequency data for plant, generator and energy storage system
- Flywheel module parameters: state of charge (%), oil pressure, oil temperature, vacuum level
- Event log management and diagnostics
- Integrated start / stop based on schedule timing
- Communications: Cloud based telemetry tool using on board 3G / 4G router



ONE PRODUCT, NUMEROUS APPLICATIONS



HVAC & Chillers

HVAC and chillers often require regular motor starts for compressors and chiller units.

This frequent start-up demand makes them excellent candidates for generator downsizing using the Peak Power 200.



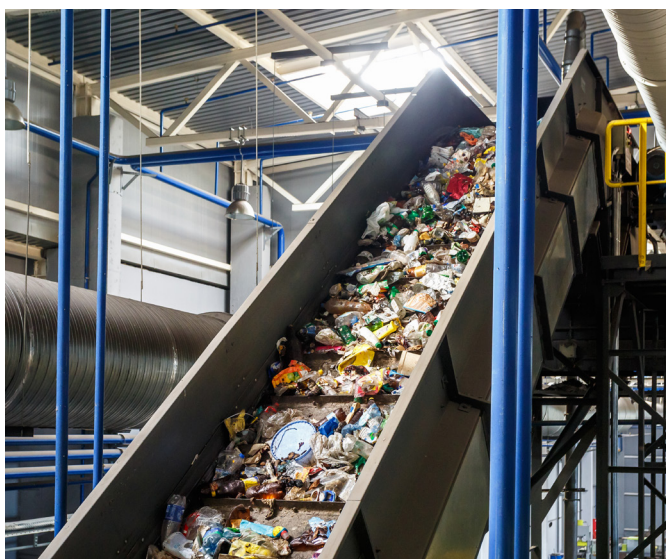
Mining & Excavation

The Peak Power 200 system works seamlessly with dynamic, heavy-duty equipment such as rock crushers, graders, washers, conveyors, and more, delivering reliable performance in demanding environments.



Construction

The Peak Power 200 system smooths dynamic duty cycles across various equipment such as tower cranes, hoists, mast climbers, concrete pumps, batching plants, and welding gear, enabling the use of smaller generators.



Material Handling

Material handlers are in use across a wide range of applications, for example: ports, rail terminals, scrap and recycling.

These are highly dynamic applications and as such are well suited to flywheel deployment.



Green Energy

The Peak Power 200 can be used to load-level outputs from intermittent and dynamic sources such as wind and wave power.

This helps avoid excessive production and associated sanctions whilst avoiding energy wastage.



Pumping

The Peak Power 200 is known for its use in industrial pumping, such as: oil production, concrete, water, waste, and dewatering.

These applications are highly dynamic and benefit from a reduction in emissions.

SUCCESS STORIES

➤ Case Study

Industrial Shredders – Saving Fuel and Cutting Emissions

The TYRON 2000 XL 2.0 is a large hybrid mobile shredder. When mains power is not available, it requires an 800kVA generator due to its highly dynamic load cycle. By integrating the flywheel system, the generator was successfully downsized to 550kVA.

The TYRON shredder uses 280kW electric motors to power its two shafts. During shredding, power demand spikes as material is loaded, then drops while preparing the next load.

The Peak Power 200 flywheel stores energy during low-load periods and injects power during peaks, reducing strain on the generator. This enables smaller generators, therefore lowering rental costs, fuel consumption, and emissions.

Test Setup

The trial took place at Geminor's waste processing facility in Hull, which handles 150,000 tonnes of RDF annually. For the test, the grid was disconnected and instead of the 800kVA, the power system comprised a 550kVA Stage V generator with the PP200 flywheel and all necessary cabling.

The flywheel operated in power capping mode for optimal load-levelling. In this mode, the flywheel injects power whenever demand exceeds the selected power cap.





Read the full case study and many more on our website www.dumarey.com



Results

The shredder operated as normal with the smaller generator and PP200. The flywheel smoothed load fluctuations, improving generator efficiency and reducing servicing needs. This delivered annual fuel savings of approximately £22,500 (€26,000) and generator rental savings of around £35,000 (€40,000), resulting in a total net annual benefit of £57,000 (€66,000). CO₂ emissions were reduced by over 40 tonnes per year, alongside additional benefits such as improved generator efficiency and reduced maintenance. Figures are based on operation with a Stage V generator. Dumarey Green Power would like to thank all partners for making this test possible.



Fuel Savings

£22,500 per year (≈ 6 litres / hour)



Generator Downsizing

From 800kVA to 550kVA



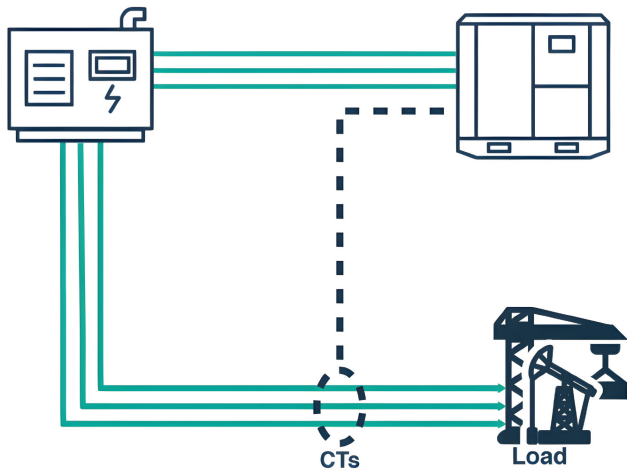
CO₂ Reduction

Over 40 tonnes per year

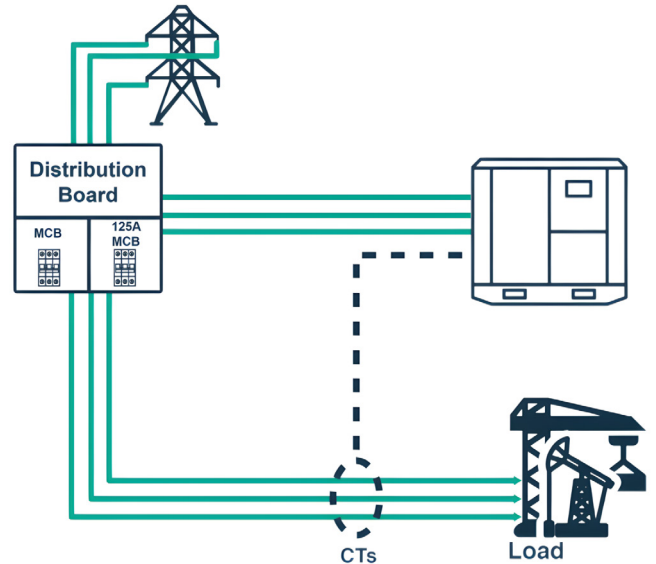
METRIC	800kVA	500kVA
Annual Diesel Usage (L)	125,000	108,750
Fuel Saving (L)		16,250
Fuel Cost Saving @ £1.50 / €1.70		£24,375 / €27,625
Annual Generator Rental Saving		£25,000 / €28,000
Flywheel Rental		£25,000 / €28,000
Net Financial Benefit		£24,375 / €27,625
Emission Savings (kg of CO ₂)		43,550

TECHNICAL OVERVIEW

Installation



Diesel Generator



Grid / Battery Connection

Peak Power 200 reacts to frequency voltage and power changes on the microgrid between power source and application. The Peak Power 200 can be used alongside a diesel generator or it can be connected to the grid / battery.

Electrical Connections

1 x 125A three phase IEC form plug, MCB protected.

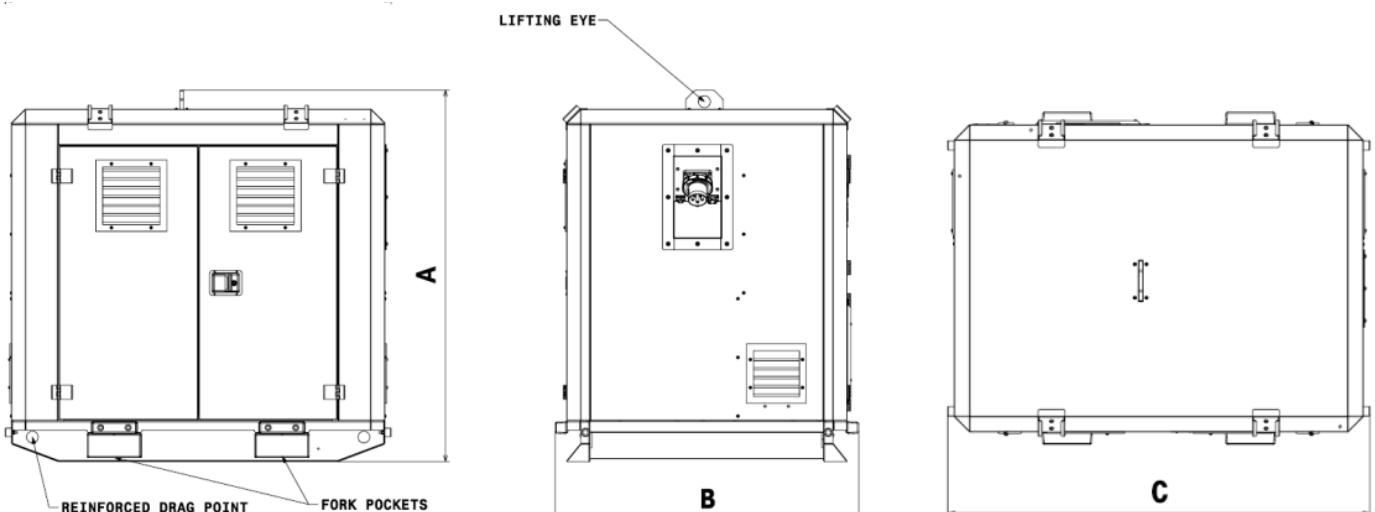
Powersafe (optional)

Custom distribution options available upon request.

Peak Power 200

A	1,591mm
B	1,300mm
C	1,654mm
Mass	1,280mm

Dimensions & Weight



➤ Specifications

SPECIFICATIONS	
Operating temperature	-20°C to 45°C (Standard) >50°C (High temperature system*)
Acoustic sound pressure level at 1m, 50Hz (60% SoC)	68dB (A)
Acoustic sound pressure level at 7m, 50Hz (60% SoC)	58dB (A)
Design life	10 years
Peak power rating	85kW
Peak power rate	2,500kW/s
Voltage	400/480V
Frequency	50/60Hz
Load reaction time	<30ms
Reactive power	85kVAr continuous
Maintenance	Oil and filter service every 12 months
Warranty	2 years from delivery

*Details of high temp system available upon request

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