

Product brochure

Eaton Supercapacitor back up power solution

Complete back up power
made completely
by Eaton.

EATON

Powering Business Worldwide

More choice, more peace of mind, less cost

Now including a new static back up power option for short back-up times, the Eaton range of mission-critical back-up power is the widest, most economical and most reliable available. It is manufactured entirely in-house – from UPSs to supercapacitor modules – by one manufacturer, for your complete peace of mind.

Superior back-up power for short runtimes

A short runtime back-up power solution has traditionally meant high-maintenance batteries, or a less efficient mechanical flywheel with a very short autonomy time.

The new Eaton XLM Supercapacitor Modules – combined with an Eaton UPS – offer a new back up power solution that is:

- Highly reliable
- Economical
- Maintenance free
- Manufactured from environmentally-friendly materials

Combining Eaton 3 phase UPS with electrochemical double layer capacitors manufactured with proprietary materials and processes. Eaton Supercapacitor solution provides maintenance-free back up power at operating temperatures from -40°C to +65°C, and over a lifetime of up to 20 years.



Reliable back-up where you need it

The optimal back up power solution for the most common power quality problems, Eaton Supercapacitors are the ideal, reliable solution for your applications in:

MANUFACTURING Data centers
Healthcare
INFRASTRUCTURE

Short back-up times

When the primary power source is interrupted, the Eaton Supercapacitor back up solution will bridge the power for a short period until your generator starts up.

Short power interruptions

If faults (black-outs, brown-outs) or network operations (Autoreclosure events, autotransfers) occur in the upstream power distribution, the Eaton solution will provide complete protection for the short period until mains power is restored.

High-temperature environments

In operating environments where traditional battery back-up solutions will not function, Eaton Supercapacitors are unaffected – from -40°C to $+65^{\circ}\text{C}$.

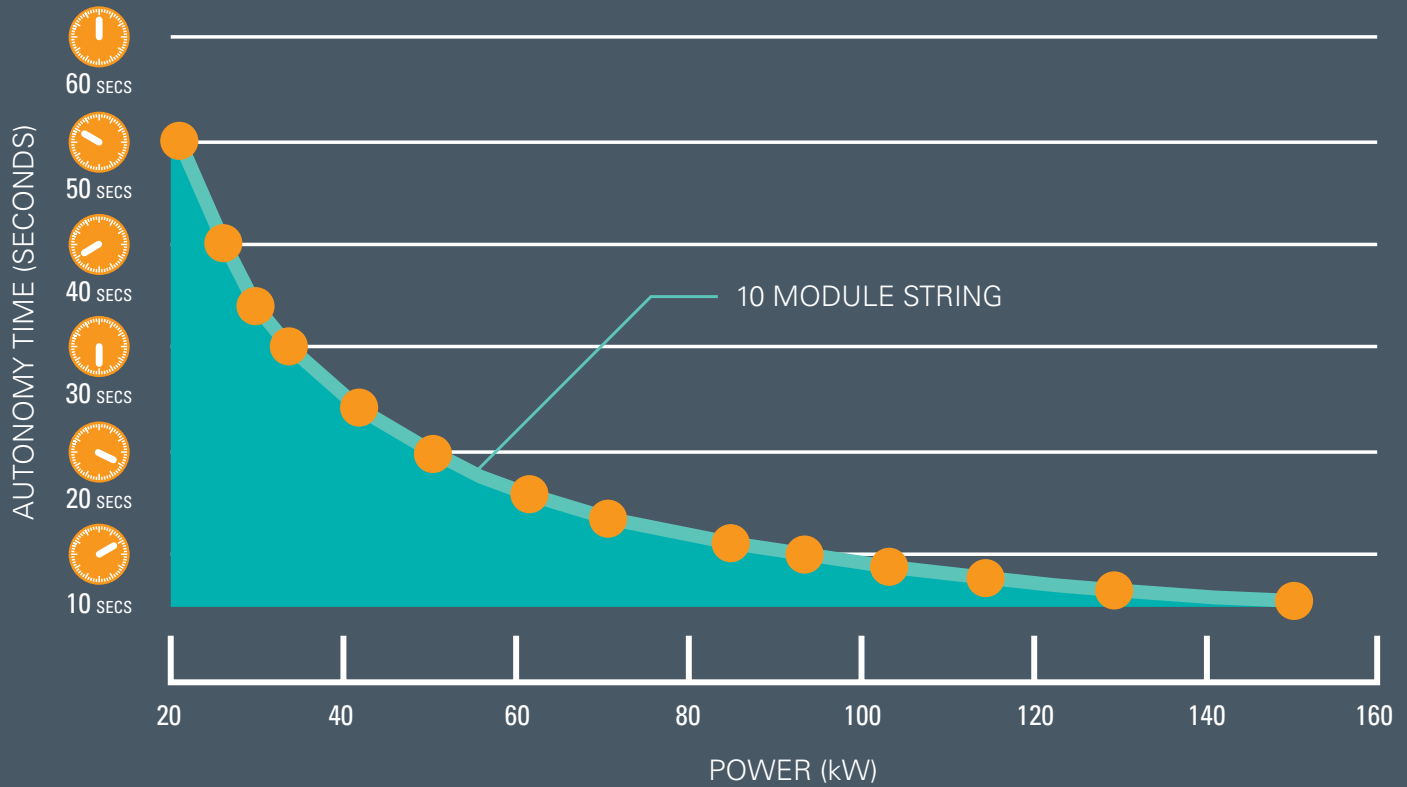
Power peaks

When short repetitive power peaks are problematic – for medical applications such as MRI devices or in process industries, for example – the Eaton solution provides a reliable peak buffer.



The economical alternative

The unique characteristics of Eaton Supercapacitors combine to make them the most economical alternative for your back-up power solution.



Reduce your CAPEX

- **Longer life** - Eaton Supercapacitors have an operating lifetime of over 15 years – with up to 20 years possible in a 25°C operating environment.
- **Lower infrastructure costs** - The Eaton Supercapacitors' tolerance for higher temperatures means the infrastructure of their location can be optimized, with less need for cooling, and no need for hydrogen removal. Supercapacitors also weigh less than batteries or flywheels so no additional floor strengthening is required.
- **Greater scalability** - Storage can be easily scaled – together with scalable UPSs – to suit the power required. Eaton Supercapacitors are scalable in approximately 100kW/10 sec increments, by adding new capacitor strings in parallel.

Lower your operating costs

- **No maintenance** - Unlike back-up batteries, Eaton Supercapacitors require no scheduled maintenance, which reduces costs and also ensures minimum downtime.
- **No spares** - No maintenance means no spares – reducing parts costs and eliminating inventory costs.
- **Minimal operating losses** - Eaton Supercapacitors have minimal operating losses, and significantly lower losses than rotating back-up power solutions.

Increase your peace of mind

- **Reliability** - The highest availability for mission-critical loads.
- **Tolerance** - Industrial-standard design ensures high tolerance of harsh operating conditions, including high temperatures. This also reduces the need for cooling, as the Supercapacitors can be located alongside the UPS.
- **Information** - The state of charge is known at all times and can be clearly displayed if required.
- **Speed** - A fast recharge time of just 5-6 times, the discharge time provides a greater capability for handling repeating faults.
- **Quality** - Uniquely, every single component of Eaton Supercapacitors is designed and engineered entirely by one manufacturer. Eaton's factories operate to the highest quality standards, ensuring robust, reliable product solutions.
- **Integration** - Eaton Supercapacitors and Eaton UPSs are manufactured to the same high standards, ensuring uniquely seamless integration, for the most reliable back-up power solution.

Technical specifications

Power range

The Supercapacitor back up power solution is available for all the latest 3-phase Eaton UPS products and covers power ranges from 8 kW up to 7700 kW from seconds up to minutes.



What is a supercapacitor?

Eaton Supercapacitors are high in reliability, high in power and are ultra-high capacitance energy storage devices, utilizing electrochemical double layer capacitor (EDLC) construction combined with proprietary materials and processes. This combination of advanced technologies allows Eaton to offer a wide variety of capacitor solutions tailored to applications for backup power. Each 62V Capacitor module consists of 23 series connected sealed supercapacitor cells.



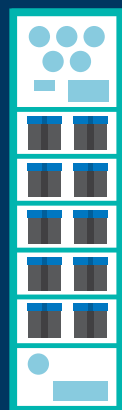
Internal/External

Eaton Supercapacitors can be fitted within a UPS or placed in an external rack.

Configuration with UPS

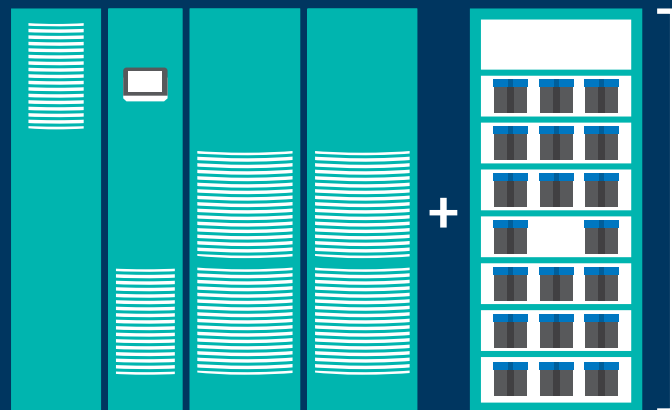
The supercapacitor back up power solution will be built from one or several parallel capacitor strings. Each string consist of 10 supercapacitor modules.

INTERNAL IN UPS



1 STRING

EXTERNAL IN RACK



UPS

RACK

1-2 STRINGS

Modular UPS combined with Supercapacitors - Higher availability with lower life cycle cost

When combined with a modular UPS, supercapacitors form a solution that combines the benefits of modern UPS technologies and the latest developments in energy storage technology:



Resilience

The modular structure of a UPS and capacitor solution allows for **internal redundancy**. If a single module or capacitor fails it can be isolated and the system continues to support the loads.

Due to the **high ambient temperature tolerance** in an Eaton UPS with supercapacitors, you can achieve a solution that operates reliably in higher temperature environments without the need for additional cooling equipment.

Serviceability

Thanks to modularity of the UPS and supercapacitor solution, most maintenance can be done concurrently* and so Mean Time To Repair is reduced.

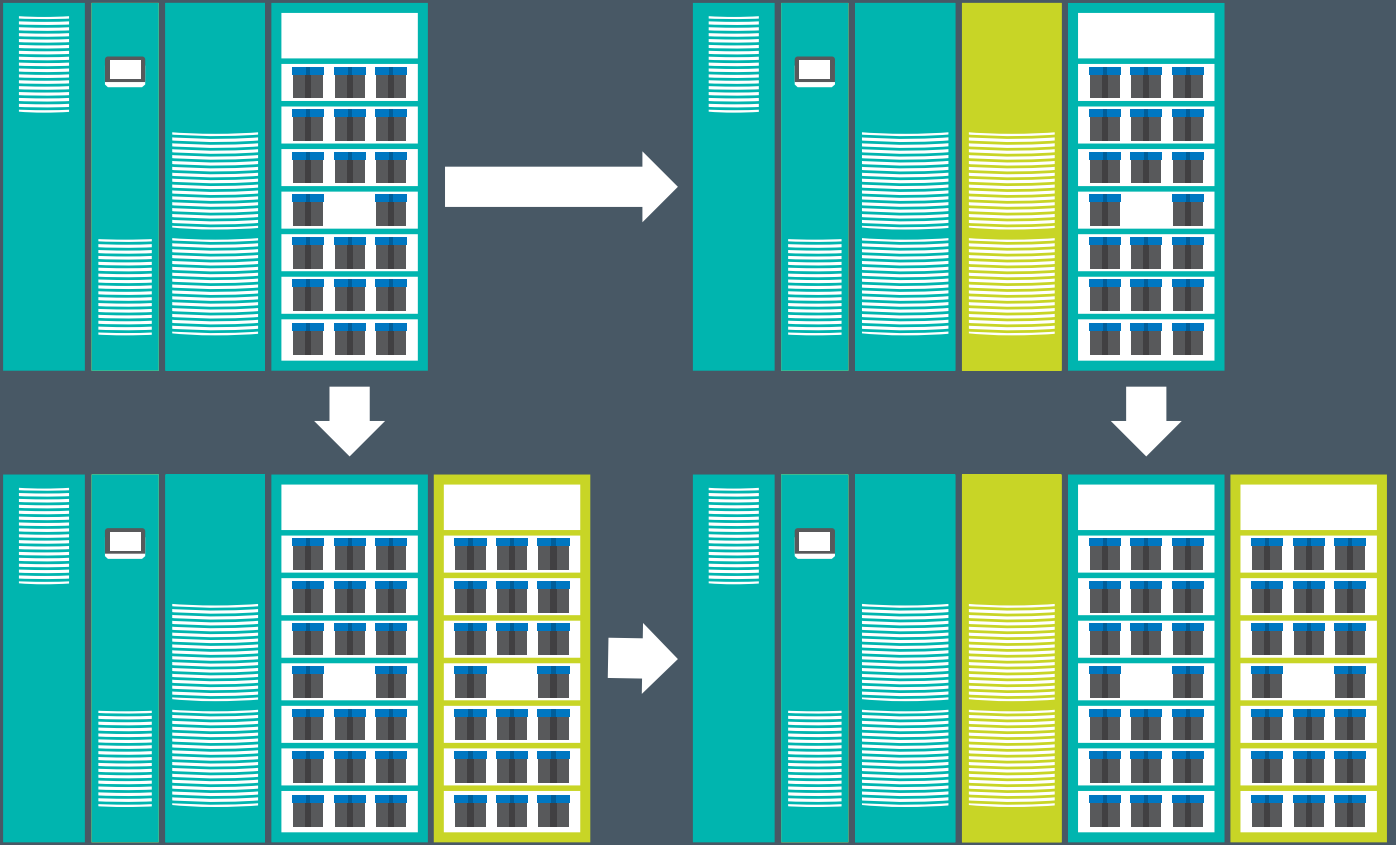
As supercapacitors do not require scheduled maintenance, a static UPS with supercapacitors offers a market leading solution for short backup time requirements in terms of efficiency and maintenance.

* 9395P and 93PS allow concurrent maintenance for power modules provided that the number of modules 2 or more.



Scalability

Both UPS power and backup capacity can be scaled up as loads grow. The autonomy time can also be scaled up at a later date if backup time requirements change.



Low operating costs

By combining the energy saving technologies in highly efficient Eaton UPS and energy efficient supercapacitor storage, the lowest operating costs for short back up applications can be delivered. This is achieved as supercapacitors do not require maintenance, thus reducing the total maintenance cost.



For more information, visit www.eaton.eu/UPSwithSupercapacitors

To contact an Eaton salesperson or local distributor/agent,
please visit www.eaton.eu/electrical/customersupport

