HPS INDUSTRIAL

ECO-1000 Series "EDGEBoost EnergyPack"
Supercapacitor Technology for Mission-Critical Power Redundancy

The ECO-1000 Series EnergyPack is an industrial-grade supercapacitor tailored to redefine power backup redundancy for industrial computers and HMI displays during mission-critical computing deployments in unstable operational technology deployments.

The ECO-1000 EnergyPack provides automation focused integrators with efficient and sustainable redundant power back-up solutions, ensuring seamless operations and reducing unwanted downtime due to power failures. As computing workloads shift into more real-time and edge-native environments, the ECO-1000 EnergyPack will ensure ultra-reliable power redundancy and 24/7 automation efficiency when it matters most. Unleash the true potential of back-up energy storage with our state-of-the-art supercapacitor EnergyPack.

ECO-1000 EnergyPack Benefits:

- World-class Certification:
  UL-Certified, FCC, CE, and EN 50155
- Instantaneous Power Backup with supercapacitor technology
- 3 Smart Modes for Safe Shutdown

- Remote GUI and LCM Display Module
- Delivers Stable Power Supply
- Rapid Charge and Discharge
- Wide Temperature Tolerance
- 10 Years Operating Longevity

Key Markets and Applications

| Factory Automation | Renewable Energy | Electric Vehicles | Railway Solutions | Smart Energy Grids | Intelligent Healthcare | Industrial Robots | Smart City |

Built Rugged. Built Ready for the Edge.

- 8x Supercapacitors with 100W Power Output
- 16x Supercapacitors with 200W Power Output
- 10 Years Lifetime and 500,000 Lifecycles
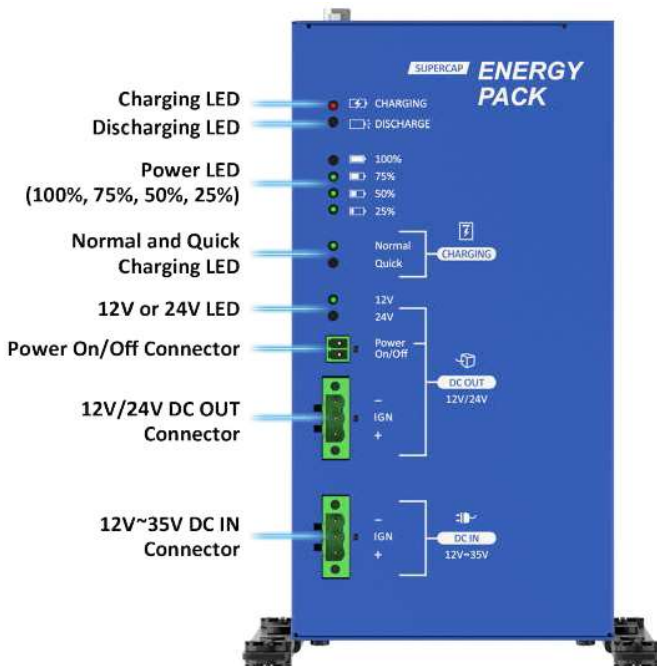- Modular Supercapacitors Unit
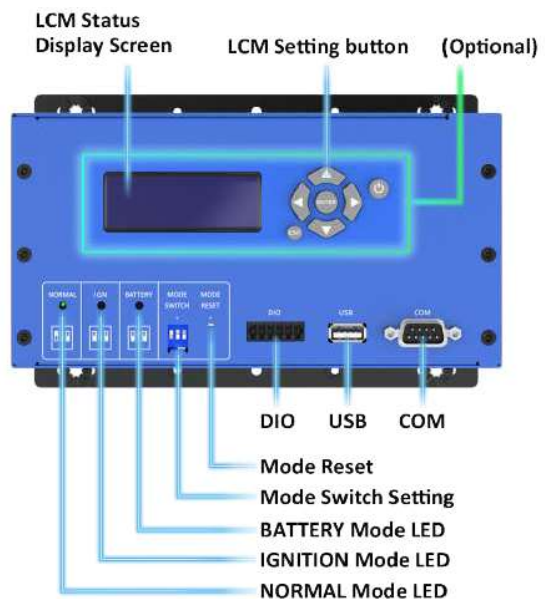
Configurable 8x/16x Supercapacitors

The ECO-1000 Series sets a new benchmark in supercapacitors versatility, offering a choice between 8x or 16x supercapacitors configurations powered by 370 Farads of high-density, industrial-grade supercapacitors. The ECO-1000 supercapacitors come on a modular, plug-and-play unit that enables quick replacement or upgrade to reduce downtime and maintenance costs. With the 16x configuration reaching an impressive 200W power output, the ECO-1000 ensures optimal energy delivery for a wide range of applications. The 10 years of longevity and 500,000 lifecycles offer superior lifetime and durability, making the ECO-1000 Series the optimal choice for industrial automation applications.

Front View

Charging LED
Discharging LED

Power LED
(100%, 75%, 50%, 25%)

Normal and Quick
Charging LED

12V or 24V LED

Power On/Off Connector

12V/24V DC OUT
Connector

12V~35V DC IN
Connector

Top View

LCM Status
Display Screen

LCM Setting button

(Optional)

DIO   USB   COM

Mode Reset
Mode Switch Setting
BATTERY Mode LED
IGNITION Mode LED
NORMAL Mode LED

Quick and Normal Charge

The ECO-1000 Series pioneers dynamic charging options to suit varying energy demands. Alongside the Normal Charge mode, which operates with 60W or 120W power supplies, the Quick Charge mode elevates performance with rapid power inputs of 220W, 280W, and 306W. This diverse charging capability ensures adaptable energy replenishment, catering to time-sensitive requirements without compromising efficiency, performance, and longevity.


Power Supply Adapter	Normal Charge	Quick Charge
60W (12V | 5A)	✔	
120W (24V | 5A)	✔	
220W (24V | 9.2A)	✔	✔
280W (24V | 11.67A)	✔	✔
306W (24V | 12.75A)	✔	✔

* Normal Charge Time: 8S ±3 minutes, 16S ±5 minutes   ** Quick Charge Time: 8S ±2 minutes, 16S ±4 minutes

Compatibility and Power Stability

The ECO-1000 adapts seamlessly to diverse industrial environments, catering to various industrial computers, panel PCs, and industrial displays with either 12V or 24V power supply requirements. This flexibility, coupled with its capability to provide a stable power supply from fluctuating sources that are common in industrial settings, ensures uninterrupted operation across a wide array of setups, boosting reliability in demanding conditions.
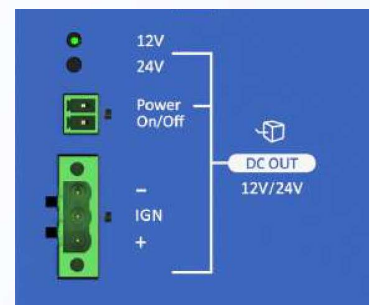
3 Configurable Smart Modes

Engineered with cutting-edge technology, the ECO-1000 Series is configured with 3 Smart Modes as its intelligent power management systems to provide seamless power backup for operational continuity and safeguarding critical industrial processes through graceful system shutdowns during power interruptions. These innovative modes leverage the ignition control, remote power on/off, and electrical sensors in the ECO-1000 to intelligently manage the power supplied to the computer. Moreover, the ECO-1000 has an embedded logic on its MCU that can utilize its DIO ports to enable additional monitoring from the computer. The there configurable smart modes are:

- **Normal Backup Mode**
- **Ignition Control Mode**
- **Battery Mode**

Normal Backup Mode

Use this mode when the ECO-1000 is connected to an AC power plug. This mode is suitable for applications in factory automation, smart city, and smart energy grids. The normal backup mode provides the following:
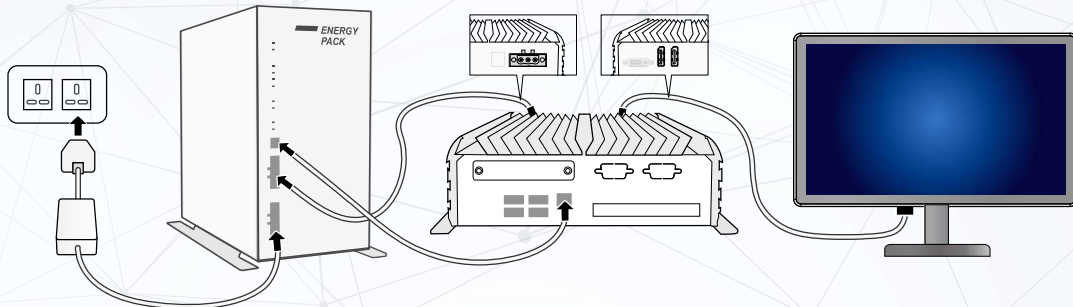
Instantaneous Power Backup   Configurable Countdown Timer   Safe Shutdown

In-Vehicle Ignition Control Mode

Use this mode when the ECO-1000 is connected to an in-vehicle DC power supply with an ignition (IGN) control signal. This mode is suitable for applications in rolling stocks, electric vehicles, truck telematics, and other transportation solutions. The ignition control mode provides the following:
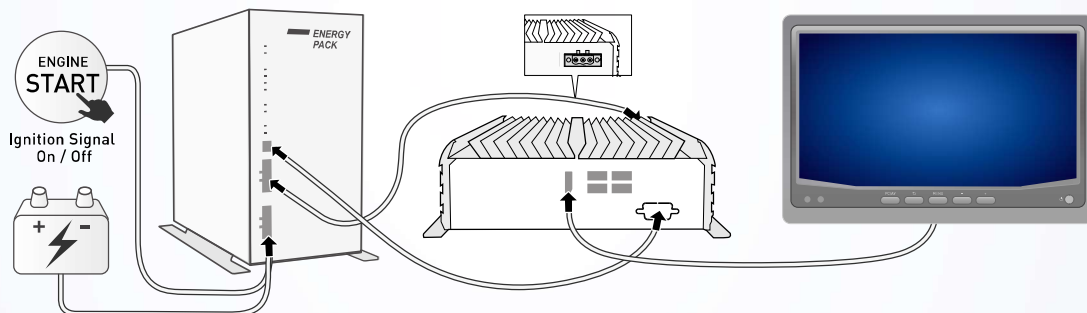
Smart On/Off Ignition Detection   Configurable Countdown Timer   Safe Shutdown

Battery Mode

Use this mode when the ECO-1000 is connected to an in-vehicle DC power supply and the ignition (IGN) control signal is connected to the computer. The battery mode provides a continuous stable power supply to the computer. This mode is suitable for applications with frequent power fluctuations. The battery mode provides the following:
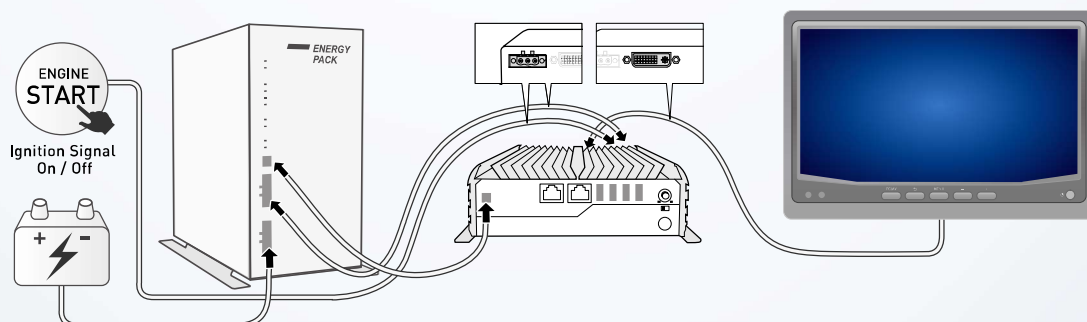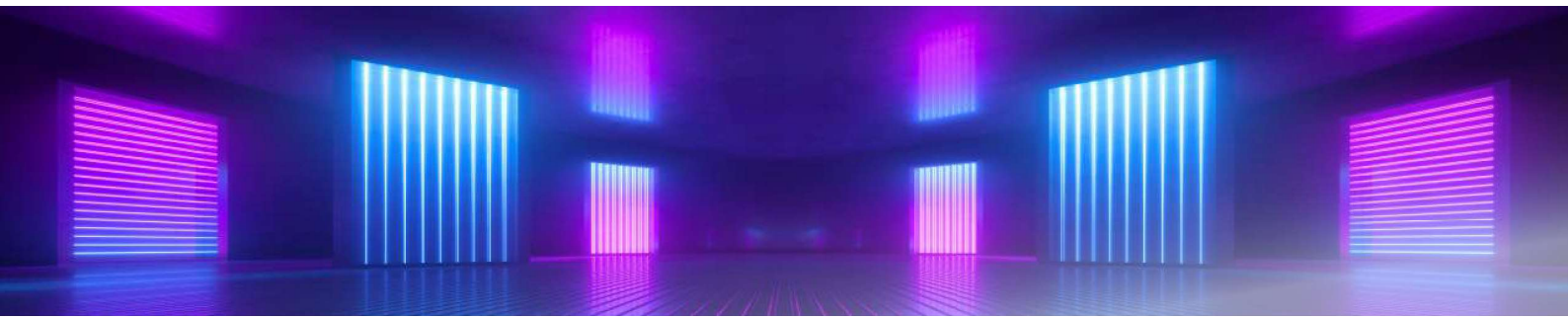
On/Off Ignition Connect Straight to the PC   No Power Off Countdown   Continuously Power the PC during Normal or Power Loss Conditions

Interactive GUI and LCM Display

Streamlined management meets user-friendly convenience with the ECO-1000's interactive GUI and LCM display module. The GUI enables remote management and monitoring by connecting effortlessly to a display through ECO-1000's USB or COM ports. The LCM display module is an optional feature for onsite monitoring and management. These feature-rich interfaces enable efficient remote and onsite management, empowering operators with real-time insights and control over critical systems, thereby minimizing downtime and optimizing productivity.
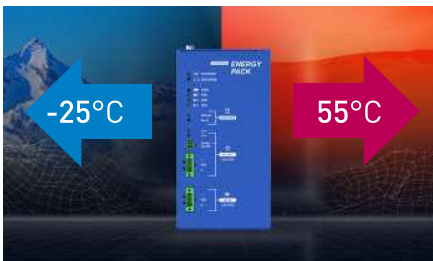

LCM Display Module

GUI Software

Ultimate Safety and Reliability Against Extreme Environments

-25°C   55°C

Wide Operating Temperature

In comparison to batteries, the ECO-1000 supercapacitors have remarkable temperature resilience without compromising energy storage, power output, and lifetime. The ECO-1000 Series is designed and rigorously tested to function optimally across an extensive operating temperature range of -25°C to 55°C, making it suitable for diverse industrial environments with extreme temperature fluctuations.

- -25°C to 55°C Wide Operating Temperature

Shock and Vibration Resistance

Built to meet the most demanding deployments, the ECO-1000 Series boasts MIL-STD-810G compliance, exemplifying its robustness. With an impressive 20G shock and 5Grms vibration resistance, the ECO-1000 Series is primed to endure challenging conditions in various industrial solutions such as railway and in-vehicle applications where reliability is paramount.

- MIL-STD-810G Compliant
- 20G Shock Resistance
- 5 Grms Vibration Resistance

Power Protection and Safety

Safety and longevity remain at the forefront of the ECO-1000 Series design, evident through its comprehensive protection features. Equipped with Over Voltage Protection (OVP) that shields against voltages spikes above 50V, Over Current Protection (OCP) to prevent excessive current flow, and Reverse Protection to safeguard against reverse polarity, the ECO-1000 Series ensures safety for mission-critical applications.

- Over Voltage Protection (OVP)
- Over Current Protection (OCP)
- Reverse Protection

Wall Mount   DIN Rail Mount (optional)

Configurable Mounting Option

The ECO-1000 Series offers adaptable integration solutions with both Wall Mount and optional DIN Rail Mount options. This configurable mounting flexibility simplifies installation and enhances compatibility, allowing seamless incorporation into diverse industrial setups without compromising space or design considerations.

Certification Ready Solution

The certification-ready approach underscores the ECO-1000 Serie's commitment to safety, reliability, rapid go-to-market, and compatibility. With UL Certified compliance to UL 62368-1 Ed. 3, it guarantees adherence to rigorous safety requirements. Additionally, its EN50155 certification assures compliance with EN50121-3-2, reflecting its suitability for deployment in railway applications. These safety certifications build the confidence for solution integration in the ECO-1000 Series' ability to navigate complex regulations in the global supply chain.

- UL Certified: UL 62368-1 Ed. 3
- EN50155: EN50121-3-2
- CE, FCC Class A
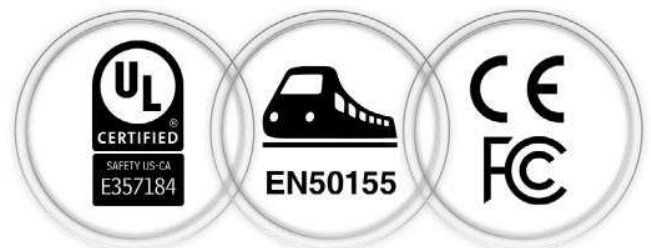
NEW

ECO-1000 SERIES

Model	ECO-1000	
Capacity	ECO-1000-8S for 8x 370 Farads Supercapacitor	ECO-1000-16S for 16x 370 Farads Supercapacitor
Input Voltage	12 ~ 35 VDC	
Input Connector	3-pin Terminal Block (V+, GND, IGN IN)	
Output Voltage	Charge mode: DC IN Voltage bypass (DC OUT = DC IN) Discharge mode: 12 or 24V	
Output Power	Maximum 100W output	Maximum 200W output
Output Connector	3-pin Terminal Block (V+, GND, IGN Out)	
I/O	1x RS-232, 1x USB Type A, 2x DI + 2x DO with isolation	
Others	1x Remote Power On/Off 1x Smart Mode Switch 1x Mode Reset Switch	
Power Ignition Sensing	Power Ignition Management	
Display Module	Optional LCM Display and Button Module	
Operating Temp	-25°C to 55°C	
Certification	CE, FCC Class A, UL 62368-1 Ed. 3 EMC Conformity with EN50155, EN50121-3-2	
Dimensions (WxDxH)	100 x 192 x 187.4 mm	
Weight	1.8 kg	2.8 kg
Mounting	Wall Mounting, DIN Rail Mounting (Optional)	