

The Mc Energy battery energy storage system – eSAN Storage hub

The Mc Energy system architecture allows you to almost instantaneously connect your Mc Energy battery energy storage system to the AC 50/60Hz grid or to your storage hub. Based on your requirements you can add a **dedicated amount of storage power** and use the system as backup power for medical applications, shore power solution, peak shaving application, microgrid development or grid resilience. Each system is capable and standard equipped for island mode, black starts or even as a UPS (uninterrupted power supply)

Ready to use

Each system is **plug-and-play** usable. Just offload the storage hub unit, connect the battery pack (BattPack) system and you can store your energy and use at any time and any place you want.

Safety

The system is **safe**. Only thoroughly tested battery packs or selected Mc Energy® power sources are used without any risk on thermal runaway events, fire risks, explosions or release of toxic gases. Each Mc Energy system is equipped with state-of-the-art safety systems like fire detection and extinguishing, gas detection, temperature monitoring, has optionally a dry firefighting water connection and it is even earth quake proof up to 2g in each direction!

Scalable

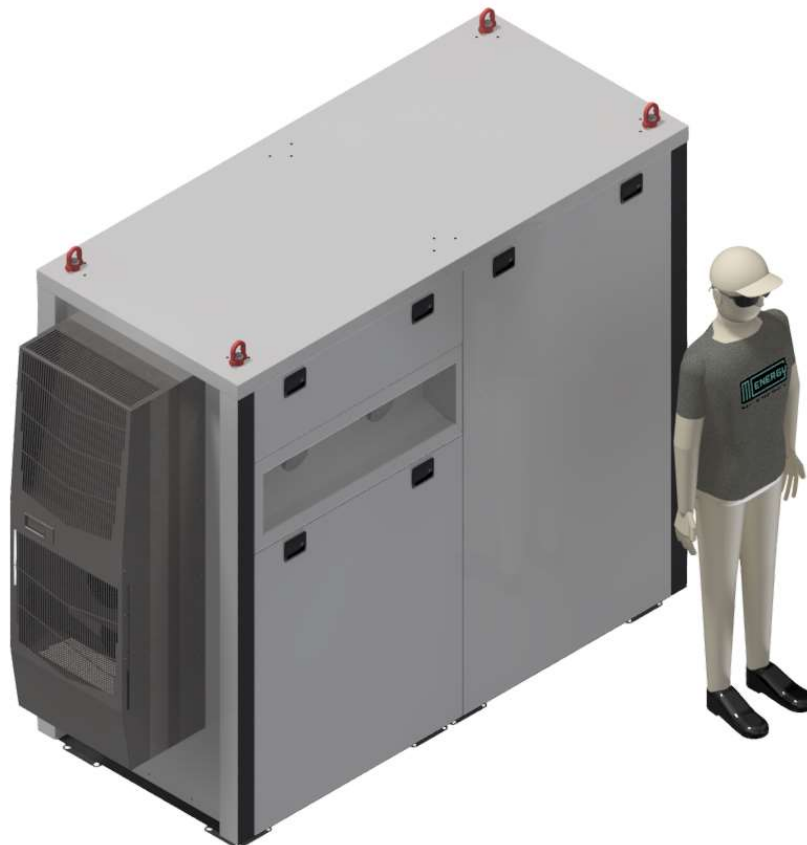
The Mc Energy system is **highly scalable**. You have a Storage hub running with a BattPack connected and you want to connect an additional BattPack? Just open the hatch on your storage hub unit and plug-in your next BattPack. It is **automatically recognized** by the energy management system and instantly expands and uses the **additional kWh storage power**.

Environmentally friendly

The Mc Energy® selected NiMH batteries can easily be refilled when reached 80% of their capacity. By **refilling** the battery's electrolyte with H_2 the batteries are like new again and can be charged up to 100%. This saves a huge amount of battery waste over the **total battery life cycle**.

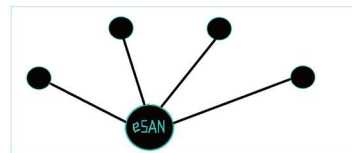
Technical features

The system is portable by using the forklift pockets or the lifting lugs. The storage hub provides 3~400V output and operates on 50Hz. Optionally other voltages and 60Hz output are available. The **advanced fresh air routine** refreshes the air every hour and has an integrated air conditioning system for keeping the batteries in their optimal temperature environment. The HMI (touch screen) allows a **full control** over the system. Per battery string one DC/DC converter controls the balance of the batteries for charge and discharge operations. The system works with a **transformer connection** to prevent high switching frequencies.



Energy storage is in our DNA

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eSAN Storage hub 100

PERFORMANCE	
Output connection	3~400V 50Hz
# sockets	2x 63A CEE form 5p 6h (without cabling)
Rated output power	2x 55kVA
Hot pluggable	Yes
Max output current	100A
# BattPack connections	10 inlets
Energy management	Standard Mc Energy® EMS based on SOC (State of Charge)
Black start functionality	Yes
Outdoor use	Yes
Lifting and transport	Forklift pockets and lifting lugs included
Calendar life	20 years ¹
Status lights indication	Green - Orange - Red (operational - warning - not functional)
Recommended range of operation at 25°C	10%-98% state of charge
Controls and connectivity	
Communication protocol	ModBus/TCP-IP
Storage module	Cell temperature, cell pressure, voltage level, balancing status
Monitoring functions	Voltage, current, SOC, SOH alarms, warning, contactor status, internal system temperature, gas (H ₂) detection, fire detection
Control functions	Precharge, switching and rack isolation, emergency stop, UPS mode, Island mode, full slave mode
Cell balancing	Passive
Connectivity	Ethernet/3G/4G/5G
Safety features	
Protection	Emergency stop, breaker, fuse, fire protection, alarm and trip, gas detection, dry fire fighting water inlet, earth quake proof (up to 2G in all directions)
Lockout mechanism	Pad-lockable door and pad-lockable DC switches
Fire protection	Integrated firepro protection
Gas detection	For H ₂ (Optional)
Environment	
Operating humidity	0%-100%
Storage and operating temperature range	-20°C to +55°C (Arctic configuration: -40°C to +30°C)
Operating altitude	<1000 m ASL ²
Cooling system	Air conditioned, fully self contained
Dimensions	950x2200x1950 (w×l×h in mm)
Weight	1250Kgs
Certification & Standards	
Cells	CE
Module and BMS	CE
Rack	CE
Container	CE

¹ With product manual having a maintenance procedure in place

² High altitude solutions available upon request

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