

Efficient, Sustainable

Energy Storage

ESS - 50

50 kWh - Ion Lithium

Technical Datasheet



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System Description

ESS-50 System is a Second Life Energy Storage Unit based in Ion Lithium Cells that have its origin in Electric Vehicles. These Cells, once retired from its original application, still preserve high energy storage capacity (between 75% and 95% of its original capacity), so, correctly categorized and configured, they are suitable for stationary energy storage.

The ESS-50 configuration allows the system to work by its own (one independent unit) or it can be connected to other identical units to combine their total capacity, following user needs. Our bet for the interior climate control system, makes the product suitable for different locations, and it can be placed indoor or outdoor.

Batteries

Each ESS System has a nominal storage capacity of 48 kWh, and it is made up of independent battery racks, distributed in three different Rack Sets.

Protections

- Manual activation main Isolating Switch, that isolates the racks from the rest of the system.
- Overload Protection through a specific fuse for battery applications.
- BMS activated Force Contactors with bidirectional cut capacity.
- Preload System to prevent wear of the Power Unit caused by voltage differentials.

Rack Climatization System

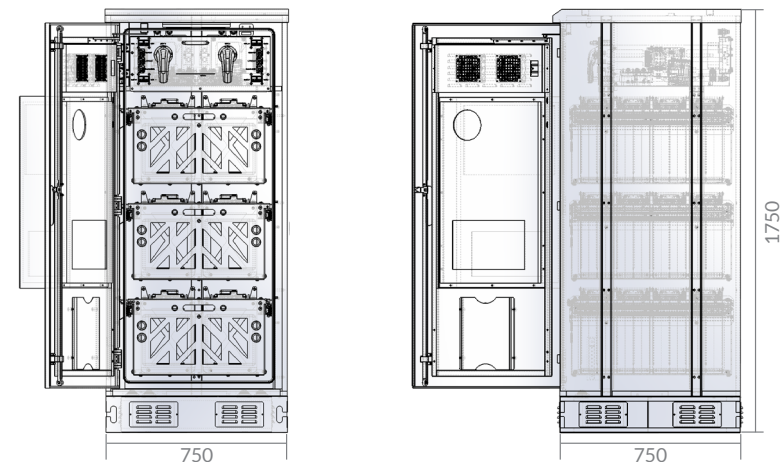
Each Rack is installed in an ESS-50 that has an independent climatization system, allowing the station to have full control over the battery working temperature anytime. This way, we ensure the cells are functioning in optimum conditions, extending its life span.

Fire Prevention System

The product has an advanced fire surveillance and detection system, that allows for early warning in case of battery malfunction or thermal anomalies, and activates the necessary mitigation functions.

Control / Management System (EMS)

PAC device (Programmable Automatization Controller) manages the entire system, allowing the station to adapt the energy management strategy for each application.



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GENERAL SPECIFICATIONS

Independent Unit Climatization :	Refrigeration Capacity : 2500 W Heating Capacity: 1000 W
Thermal Isolation :	PEF Panel (Polyethylene Foam)
Optimal Working Temperature :	15 ~ 35°C
Humidity Range :	5% ~ 95%
Weight :	740 Kg
Dimensions (LxWxH) :	750 x 750 x 1750 mm
Materials :	Galvanized Steel (RAL 7035 Paint)
IP Protection Grade :	IP 55
NEMA Protection Category:	NEMA 4X
Protections:	Overload, Short Circuit and Temperature.
Battery Warranty :	4500 Cycles or 7 Years
BMS Type :	Master - Slave Architecture

SUSTAINABILITY

Greenhouse effect Emissions Reduced.
Reduced Generated Waste.

BATTERY SPECIFICATIONS

Battery Type :	EV Second Life (Li - ion)
Chemistry :	NMC
Nominal Capacity (kWh) :	48 kWh
Maximum Intensity (Charge/Discharge) :	125/250 A
Nominal Intensity :	55 A
Nominal Voltage :	360 V
Working Voltage Range :	240 ~ 400 V
*An extended Working Voltage Range Version is Available	*480 ~ 800 V
Discharge Depth (DoD):	80%

QUALITY AND SECURITY STANDARDS

IEC 61140 :	Electrical Discharge Protection.
IEC 60664-1 :	Low Voltage System Equipment Isolation.
IEC 62619 :	Requirements and Security Tests for Lithium Batteries in Industrial Applications