

HIGH VOLTAGE COMMERCIAL & INDUSTRIAL ESS

ESS-MHV PRO(161-209KWH)

MOTOMA[®]
Power into the Future



Introduction

The ESS-MHV PRO is a compact, scalable, and outdoor-ready commercial and industrial (C&I) energy storage system. It offers flexible capacity options—161kWh, 193kWh, or 209kWh per unit—and supports expansion with up to 8 units in parallel. Thanks to its high energy density and modular design, it is ideal for commercial and industrial applications requiring reliable, high-performance energy storage.

Features

Flexible Configuration & Expansion :

- 161kWh / 193kWh / 209kWh unit options.
- Expandable up to 8 units in parallel.
- Compact, modular, and lightweight design.
- Small footprint, quick installation, low maintenance.

Advanced Safety & Protection :

- IP55-rated for outdoor use.
- Three-level BMS with multi-layer protection.
- Full protections: over/under voltage, current, temp, short circuit.

Smart Control & Communication :

- Integrated LCD screen for real-time monitoring.
- Local & remote monitoring (Wi-Fi/4G/LAN optional)
- CAN / RS485 / Ethernet communication
- Modular system-level architecture

High Efficiency & Performance:

- Inverter efficiency up to 97.8%.
- Charge/discharge efficiency up to 97.5%.
- 8000 cycles @70%EOL (LiFePO4 cells).
- Built-in fans for thermal balance.



Commercial Premises



Industrial Park



Mine



PV ESS EV Charging Station



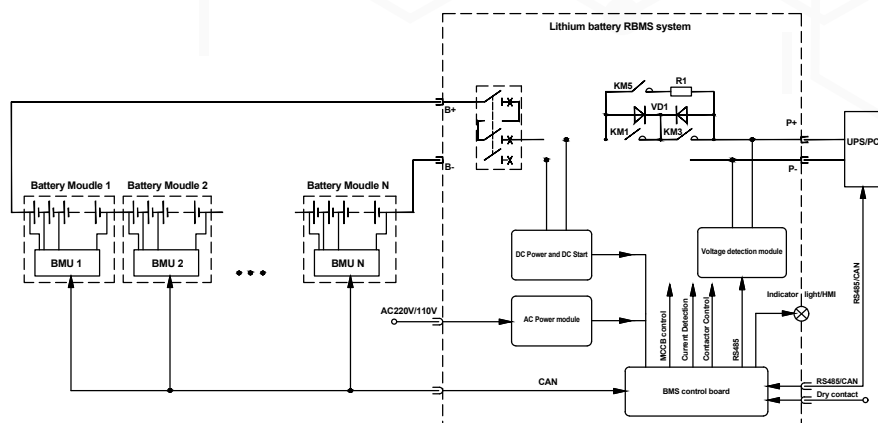
Airport



Gas Station



Data Center



*The product diagram is for reference only !

Technical Parameters

MODEL	ESS-M77-161	ESS-M92-193	ESS-M100-209
System Specification			
Nominal Output Power/UPS Power (W)	50000		
AC Output Frequency and Voltage	50/60Hz; 3L/N/PE 220/380, 230/400Vac		
Grid Type	Three phase		
Energy Configuration (kWh)	160.7	192.9	208.9
Dimension (W x D x H,mm)	1200×1150×2150(Excluding inverter)		
Weight Appr. (kg) (no contain inverter)	1760	2000	2150
Max Charge & Discharge Current (A)	150		
Battery Operating Voltage (V)	450-750		
Battery Chemistry	LiFePO4		
IP Rating of Enclosure	IP55		
Installation Style	Floor-Mounted		
Warranty	10 years		
Inverter Technical Specification			
Max. PV Input Power (W)	65000		
Max. PV Input Current (A)	40+40+40+40		
Rated PV Input Voltage (Vdc)	600		
Start Up DC Voltage (Vdc)	180		
MPPT Voltage Range (Vdc)	150-850		
Max. PV Short-circuit Current (A)	60+60+60+60		
Number of MPPT	4		
Peak Power (off grid)	1.6 time of rated power, 2s		
Power Factor	>0.99 (0.8 leading - 0.8 lagging)		
THDi	<3%		
DC Injection Current (mA)	<0.5In		
Display	7.0" LCD display & Bluetooth + APP		
Operating Temperature Range (°C)	-40~60(>45°C derating)		
Relative Humidity	15% ~ 85% (No Condensing)		
Dimension (W × H × D, mm)	530×880×290		
Inverter Communication	CAN, RS485, Ethernet, Optional: Wi-Fi, Cellular, LAN		
Safety / EMC Standard	IEC/EN 62109-1/-2, IEC/EN 61000-6-2/-4, EN 55011		
Grid Connection Standard	G99, VDE-AR-N 4105/VDE V 0124, EN 50549-1/EN 50549-10, VDE 0126/UTE C 15/VFR:2019,		
Max. Efficiency	97.80%		
Max. Charging/Discharging Efficiency	97.50%		
Max Parallel Connection Sets	6		
Battery Technical Specification			
Battery Module Nominal Voltage (V)	512	614.4	665.6
Battery Capacity (Ah)	314		
Battery Energy (kWh)	160.7	192.9	208.9
BMS Communication	CAN/RS485		
BMS Parallel Support Connection	8		
Max Charge & Discharge Current (A)	150		
Operating Temperature Range	Charge: 0~55°C / Discharge: -20°C~55°C		
Cycle Life	≥8000 (@25°C±2°C, 0.2C/0.2C, 70%EOL)		
Short Circuit Protection	YES		
Over Current Protection	YES		
Over Charge Protection	YES		
Over Temperature Protection	YES		
Cell Over Voltage Protection	YES		
Cell Over Under Protection	YES		
Cell Discharge Protection	YES		

The product parameters are for reference only.