



ITALIAN
POWER
TECHNOLOGY

MAX BESS



THE **ALL IN ONE**
STORAGE
SOLUTION



OVER 45 YEARS OF EXPERIENCE IN POWER ELECTRONICS APPLIED TO INDUSTRY

TECHNOLOGY, INNOVATION AND
THE HISTORICAL INDUSTRIAL EXPERIENCE OF EEI
FROM TODAY AVAILABLE FOR EVERY **C&I STORAGE SYSTEM**

**EEI'S MISSION BEGINS IN VICENZA IN 1978.
DEVELOPMENT AND RESEARCH OF NEW PRODUCTS
FOR SPECIAL APPLICATIONS.**

Leader in the world power electronics market for over 45 years, EEI has developed consolidated experience in the production of inverters and power supplies in various sectors: renewable energy, heavy manufacturing industry, scientific research and clinical applications for cancer treatment.

Since its foundation, EEI has aimed at innovative applications intended to become technical references in the market.

This is demonstrated by the frequent involvement in special industrial plants, but also by the applications made in the field of nuclear physics, such as the supply of power supplies for the large particle accelerator (27 km in circumference) LHC of CERN in Geneva.

Now EEI decides to transfer all the skills acquired over the years to the C&I world, with MAX BESS we put all our experience and professionalism at the service of energy that you produce and use every day.



www.eei.it

ITALIAN RELIABILITY





INDOOR



OUTDOOR

MAX BESS

MAX BESS IS AN **ALL-IN-ONE SYSTEM** CONSISTING OF:
INVERTER, BATTERIES, BMU AND ENERGY
MANAGEMENT SYSTEM.

Thanks to its very compact dimensions it is the ideal system for installations in commercial and industrial contexts, but also for larger power systems given the modularity and flexibility of installation.

MAX BESS MAIN FEATURES:

- Storage capacity up to 200kWh
- Integrated PCS with power up to 90kW
- LFP batteries for longer life and safety
- Monitoring with local interface
- Remote access via web server
- Modular system with a wide range of configurations



SELF-CONSUMPTION
OPTIMIZATION



PEAK
SHAVING



BACK - UP



POWER QUALITY



GENSET
OPTIMIZATION



ON GRID
OFF GRID

INDOOR ALL IN ONE SOLUTION

MAIN PANEL

IN-BUILT EMS
with power meter

AC main switch
disconnecter

Type 2/Class II
Surge protection device

RACK PCS

Withdrawable
PCS (with quick fit
connectors)
Up to 70 kW

BATTERY MANAGEMENT UNIT

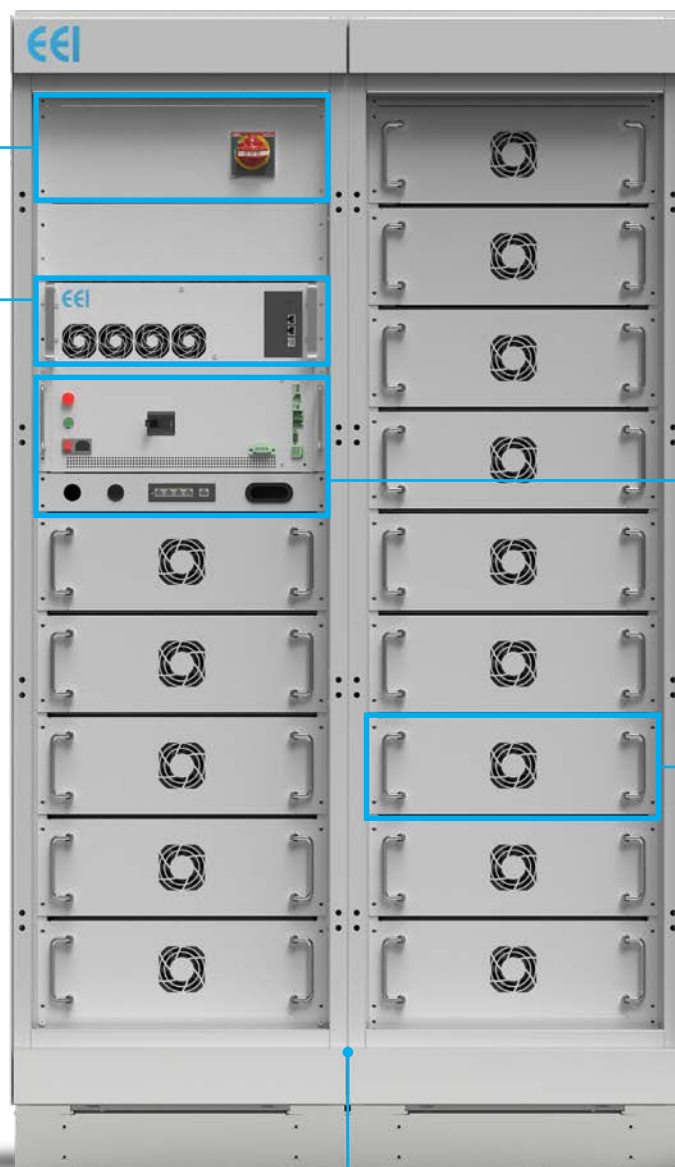
BMU with precharge
circuit, insulation
monitoring and CAN
communication

BATTERY MODULE

5.12 kWh LFP battery
1C rate
with integrated fan

TERMINALS

Feed through terminals for power cables connections and external signal/command AC sockets



OUTDOOR ALL IN ONE SOLUTION

MAIN PANEL

IN-BUILT EMS
with power meter

AC main switch
disconnecter

Type 2/Class II
Surge protection
device

RACK PCS

Withdrawable
PCS (with quick fit
connectors)
Up to 90 kW

RACK DC/DC

Convert Battery
DC Voltage to
DC-Link Voltage

AIR FILTER

Easily
Replaceable Air
Filter Cartridge

LV PANEL AND TERMINALS

AC and DC Breakers and terminals for input and output

AIR CONDITIONER

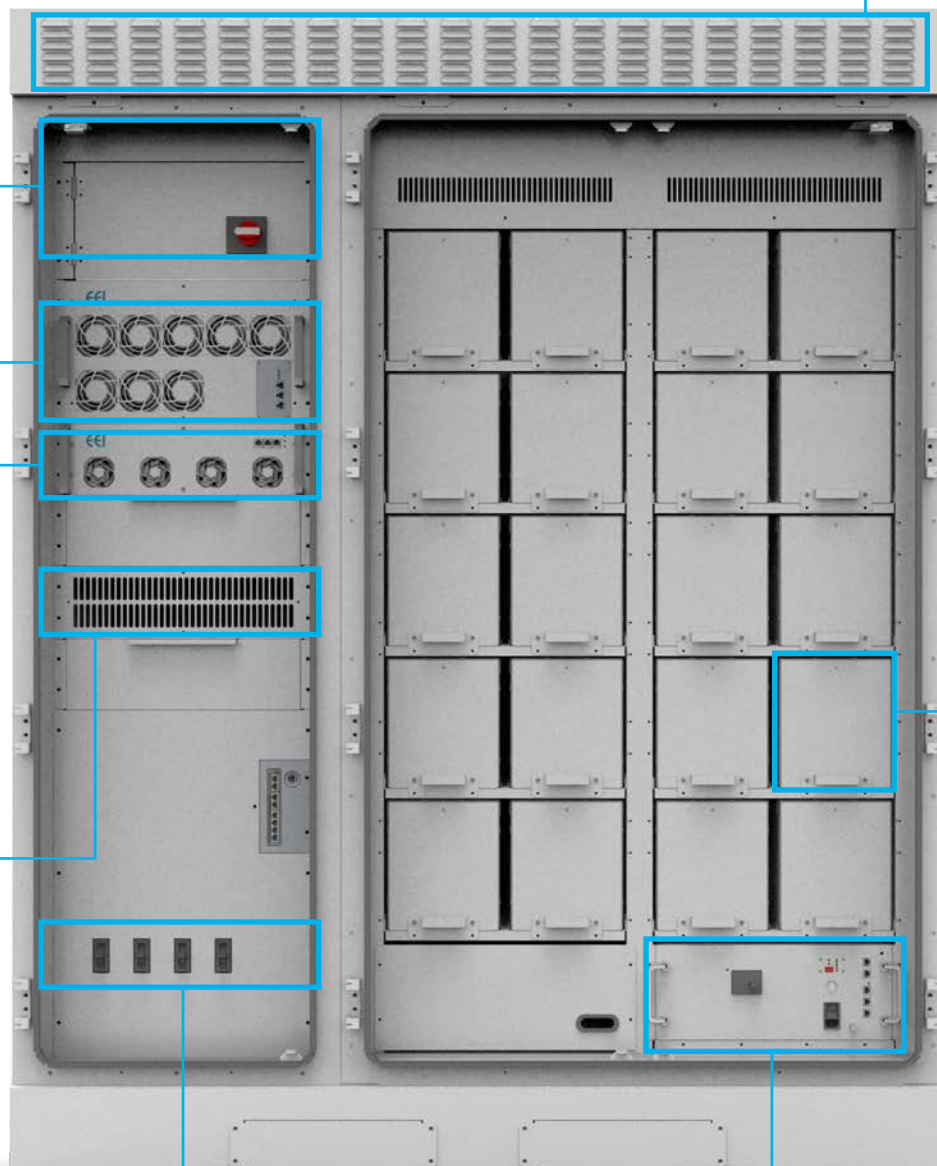
Cooling and heating for
battery cabinet

BATTERY MODULE

7.16 kWh LFP
Battery
0.5C rate

BATTERY MANAGEMENT UNIT

BMU with precharge circuit,
insulation monitoring and
CAN communication



MAX BESS FAMILY



Capacity: 72 kWh

Power: 35 kW



Capacity: 72 kWh

Power: 70 kW



Capacity : 144 kWh

Power: 60 kW



Capacity: 200 kWh

Power: 90 kW



 Outdoor

 Indoor

 Ideal for Energy applications

 Ideal for Power applications

FUNCTIONALITIES



SELF CONSUMPTION OPTIMIZATION

Use more energy from renewable sources and minimize feed in.



PEAK SHAVING

Shave consumption peaks and cut demand rate cost.



BACK-UP POWER

The storage system can take over the power supply in event of a power outage in the most green, economical and efficient way.



MICRO GRID

Max BESS can be part of a small power grid with or without connection to a utility grid where the batteries are active part of the system supplying the main references when the grid connection is not available.



OFF GRID / ON GRID

Create your energy independancy in case of weak grid or remote areas.



TIME OF USE

Time-dependent use of functions.



GENSET OPTIMIZATION

Max Bess can be used to keep generators running at the maximum efficiency point to minimize fuel costs and allow smooth and efficient operations.



POWER QUALITY

Balancing the mains voltage to keep your plant working at best conditions.

$P(f)$, $Q(V)$, $\cos\phi$ regulation, LVRT/OVRT are all in-built functions to run your factory safely and efficiently.



MAX BESS FOR APPLICATIONS

C&I - FACTORY, BUILDING, HOTEL



SELF CONSUMPTION
OPTIMIZATION



TIME OF USE



PEAK SHAVING



WEAK GRID - AGRICULTURE



SELF CONSUMPTION
OPTIMIZATION



POWER QUALITY



PEAK SHAVING



MICRO GRID - GEN SET



GENSET
OPTIMIZATION



MICRO GRID



PEAK SHAVING



EV CHARGING - PEAK SHAVING



TIME OF USE



OFF GRID / ON GRID



PEAK SHAVING



MONITORING EEI ENERGY MANAGEMENT SYSTEM IN-BUILT EMS

All data can be monitored, controlled and recorded with EEI energy management system consisting of in-built EMS. By setting dedicated control logic, you can combine a wide variety of functionalities to perfectly adapt the system to your needs.

LOCAL INTERFACE & IN-BUILT EMS:

- Data acquisition and optimised energy flows
- Generation, load and storage system control
- Local user interface with different views for complete configuration of the system.
- Integrated three phase meter for grid monitoring and control.
- Remote monitoring, service and maintenance through EEI Energy Portal.



Genset



Solar inverter



Public grid



EEI IN BUILT EMS



Loads



Critical loads



STANDARD IN-BUILT EMS MANAGES
MULTIPLE UNITS IN PARALLEL



IN-BUILT EMS PROVIDES MONITORING AND
MAINTENANCE FROM LOCAL AND REMOTE

GENERAL TECHNICAL FEATURES

AC OUTPUT PARAMETERS

	MAX BESS 35_72	MAX BESS 70_72
Rated power	35kVA	70 kVA
Rated voltage	400 Vac +- 10%	400 Vac +- 10%
Rated frequency	50 / 60 Hz (±5Hz)	50 / 60 Hz (±5Hz)
Rated output current	50 A	101 A
Overload	110% (1 min every 30 min)	110% (1 min every 30 min)
AC connection	3ph+N+PE Transformeless	3ph+N+PE Transformeless
Power factor	(0 leading ~ 0 lagging) @ rated Vdc	(0 leading ~ 0 lagging) @ rated Vdc
THDi	<3%	<3%
Disconnection device	AC Switch disconnecter + fuses	AC Switch disconnecter + fuses
Overvoltage protection	Surge suppressors	Surge suppressors

BATTERY PACK SPECIFICATION

Battery rated voltage	716.8 V
Rated current charge/discharge	100 A
Rated capacity	71.68 kWh
Battery type	LFP (LiFePO4)
Cycles	6000 cycles/0.5 C/100% DoD/25°C 3000 cycles/1 C/100% DoD/25°C
Modules in series	14

GENERAL SYSTEM SPECIFICATION

Dimension (L×H×D)mm	1113*1920*800 (Outdoor version: 1700*2100*900)
Weight (Kg)	1240 kg (Outdoor version: 1400 kg)
Operating temperature range °C	0°C ~ +40°C (Outdoor version: -10°C ~ +50°C)
Storage temperature range °C	0°C ~ +40°C (Outdoor version: -20°C ~ +60°C)
Humidity	0~95% (non-condensing)
IP rating	IP21 INDOOR (IP54 OUTDOOR available)
Cooling	Forced air (Outdoor version: Air conditioning for battery section)
Noise level [dB]	<85
Communication	Modbus TCP/IP-4G and WIFI (optional)
Altitude	≤2000m
Warranty	5 years product / 10 years performance*

STANDARDS AND CERTIFICATION

Safety (cell)	IEC 62619, UL 9540, UN 38.3
EMC/Safety	EN61000-6-2, EN61000-6-4 / IEC 62477-1
Grid code	CEI 0-21, CEI 0-16

*For warranty details, please refer to the MAX BESS product warranty

GENERAL TECHNICAL FEATURES

AC OUTPUT PARAMETERS

	MAX BESS 60_144	MAX BESS 90_200
Rated power	60 kW	90 kW
Rated voltage	400 Vac	400 Vac
Rated frequency	50 / 60Hz	50 / 60Hz
Rated output current	87 A	130 A
Overload	110% (1 min every 30 min)	110% (1 min every 30 min)
AC connection	3ph+N+PE Transformerless	3ph+N+PE Transformerless
Power factor	(0 leading ~ 0 lagging), @ rated Vdc	(0 leading ~ 0 lagging), @ rated Vdc
THDi	<3%	<3%
Disconnection device	AC Switch disconnecter + fuses	AC Switch disconnecter + fuses
Overvoltage protection	Surge suppressors	Surge suppressors

DC OUTPUT PARAMETERS

Rated voltage	750 V	750 V
Rated current	160 A	240 A
Rated power	120 kW	180 kW

BATTERY PACK SPECIFICATION

Battery rated voltage	512 V	716.8 V
Rated current charge/discharge	140 A	140 A
Rated capacity	143.36 kWh	200.7 kWh
Battery type	LFP (LiFePO4)	LFP (LiFePO4)
Cycles	6000 cycle, 0,5 C, 100% DOD, 25°C	6000 cycle, 0,5 C, 100% DOD, 25°C
Modules in series	20	28

GENERAL SYSTEM SPECIFICATION

Dimensions (L×H×D)mm	1700*2100*900	2250*2100*900
Weight (Kg)	1940 kg	2650 kg
Operating temperature range °C	-10°C ~ +50°C	-10°C ~ +50°C
Storage temperature range °C	-20°C ~ +60°C	-20°C ~ +60°C
Humidity	0~95% (non-condensing)	0~95% (non-condensing)
IP rating	IP54 OUTDOOR	IP54 OUTDOOR
Cooling	Forced air (converter section), Air conditioning (battery section)	Forced air (converter section), Air conditioning (battery section)
Noise level [dB]	<80	<80
Communication	Modbus TCP/IP - 4G (optional)	Modbus TCP/IP - 4G (optional)
Altitude	≤2000m	≤2000m
Warranty	5 years product / 10 years performance*	5 years product / 10 years performance*

STANDARDS AND CERTIFICATION

Safety (cell)	IEC 62619, UL 9540, UN 38.3	IEC 62619, UL9540, UN 38.3
Safety/EMC	IEC 62477-1/EN61000-6-2, EN61000-6-4	IEC 62477-1/EN61000-6-2, EN61000-6-4
Grid code	CEI 0-21, CEI 0-16	CEI 0-21, CEI 0-16



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