

215 kWh

Battery Energy Storage System

BESS-215

The BESS-215 is a liquid-cooled, highly integrated battery energy storage system designed for industrial, commercial, microgrid, and off-grid applications.

It combines 215 kWh LFP battery capacity, an integrated BMS, PCS, EMS, liquid cooling, fire protection, power distribution, communication, and safety systems within a compact, industrial-grade enclosure.



The system features a modular architecture and is prepared for cascaded interconnection of multiple units. It supports grid-connected and off-grid operation, enables black-start capability, scales up to 10 units, and is suitable for power expansion, peak load management, self-consumption optimization, and resilient power supply.

Technical Data

Dimensions (W × D × H)	1,350 × 1,350 × 2,000 mm
Installation	Indoor and outdoor
Operating temperature	-30 to +55 °C
Humidity	0-95 % (non-condensing)
Weight	approx. 2,600 kg
Operating altitude	≤ 2,000 m
Protection class	IP54
Cooling	Liquid cooling (glycol-water)
Battery System	
Battery type	LFP (Lithium Iron Phosphate)
Battery capacity	215 kWh
Voltage range	672-864 V DC
Cell type	LFP 3.2 V / 280 Ah
Battery module	1P48S ¹ / 43 kWh per unit
Battery system	1P240S ² (5 × 1P48S)
C-rate	0.5 C (charge / discharge rate)
Cycle life	≥ 8,000 cycles @ 25 °C, 0.5 C / 0.5 C, 90 % DoD to 70 % EoL or 10 years (whichever occurs first)
Balancing	Passive cell balancing
Battery temperature	Charging: 0 to +55 °C Discharging: -20 to +55 °C

Power Electronics (PCS)

Grid Operation (On-Grid)

Rated power	100 kW (@ 50 °C)
Maximum power	110 kW (@ 45 °C)
Grid voltage	400 V
Grid frequency	50 / 60 Hz
Power factor	-0.99 to +0.99
THDi	≤ 3 % (at rated power)
DC component	≤ 0.5 % (at rated power)
Charge / discharge switching time	< 100 ms

¹ 1P48S = 48 cells in series per module

² 1P240S = 5 × 1P48S = 240 cells in series

Off-Grid Operation	
Output voltage	400 V
AC voltage range	400 V ±3 %
Output power	100 kW
Max. Current	200 A
Frequency	50 / 60 Hz
Load asymmetry	100 % possible
Off-grid THD	THDi ≤ 3 % (at rated load, linear load)

System Efficiency

Max. conversion efficiency	> 98 %
Overall efficiency	> 86 %

Fire Protection System

Medium	Aerosol / Perfluorohexanone, Automatic and integrated
Protection zones	Battery, power distribution, control units

Communication

Interfaces	RS485 / Ethernet / CAN
Protocols	Modbus TCP / RTU, CAN 2.0
Monitoring	Local display + remote monitoring (cloud-capable)

Certification

Safety / Product and System Safety:

IEC 62619 – Safety requirements for industrial rechargeable cells and battery systems

IEC 63056 – Safety of stationary energy storage systems (ESS)

IEC 62477-1 – Electrical safety of power electronic systems

IEC 60730-1 – Automatic electrical control devices

EN 61000-6-2 / -6-4 – Electromagnetic compatibility (EMC)

Grid Compliance:

LV (Low Voltage): VDE-AR-N 4105 (Germany), CEI 0-21 (Italy), EN 50549-10 (EU)

MV (Medium Voltage): VDE-AR-N 4110 (Germany)

HV (High Voltage): VDE-AR-N 4120 (Germany)

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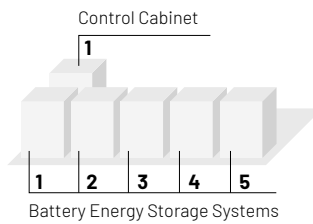
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1,075 / 2,150 kWh

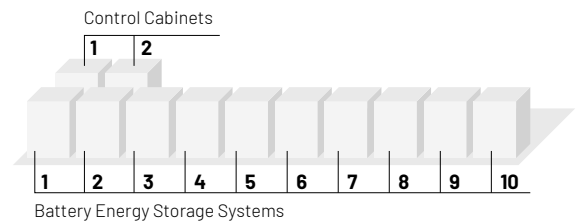
Modular Battery Energy Storage Systems

BESS-215

1 & 2 MWh Cluster



1 MWh Cluster



2 MWh Cluster

Technical Data

	1 MWh Cluster 5× BESS-215	2 MWh Cluster 10× BESS-215
Total weight (incl. batteries & switch cabinets)	~13.5 t	~27 t
Battery system	5× BESS-215	10× BESS-215
Total capacity	1,075 kWh (5× 215 kWh)	2,150 kWh (10× 215 kWh)
Nominal voltage	672 – 864 V DC	
Battery module	1P48S ¹ / 43 kWh per unit	
System configuration	5× 1P240S ²	10× 1P240S ²
Wechselrichter- und Netzanschlussdaten		
Total input power	500 kW (5× 100 kW)	1,000 kW (10× 100 kW)
Rated output power	500 kW (5× 100 kW)	1,000 kW (10× 100 kW)
Control cabinets	1	2

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² 1P240S = 5 × 1P48S = 240 cells in series