

# BSO 88/109



## FEATURES:

- All-in-one outdoor system including inverter, air conditioning and fire protection equipment
- Battery inverter and energy management system (EMS) perfectly harmonised by in-house development
- Quick & easy installation; components pre-installed, connection of the AC supply line and software-side commissioning
- Separate battery and inverter areas for efficient temperature management monitoring
- High accessibility for user-friendly maintenance (max. once a year)
- Easy installation via crane eyes and forklift pockets for full flexibility
- 10-year performance warranty with a wide temperature range

### General technical data

Rated apparent power	kVA	88
Rated voltage	Vac	400
Frequency	Hz	50
Maximum AC current	A	128
Battery cell	Type	Li-Ion (LFP) Pouch
Total capacity	kWh	109
Rated net capacity (90%DoD)	kWh	98



### Inverter

Quantity	n.	1
Rated apparent power	kVA	88
Maximum AC current	A	128
Power factor / Range		1 / 0,3i ... 0,3c
Peak current (Ip)	A	325
Initial short circuit current (Ik <sup>u</sup> )	A	128



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## Battery

Quantity of module	n.	23
Module capacity	kWh	4.74
Rated Voltage	V	736
Max. C-rate		1C
Battery cell	Type	Li-Ion (LFP) Pouch
Cycles @ 90% DoD   65% SoH	n.	7300



## Technical data - Energy Management System

Voltage supply	VDC	24
RJ45 dedicated MAC addresses for OT/IT use	n.	2
Encrypted MQTTS communication		✓
Digital cloud twin		✓
2-factor authentication		✓
Communication Interface Ethernet (Modbus TCP/IP / local and cloud-to-cloud REST API)		✓

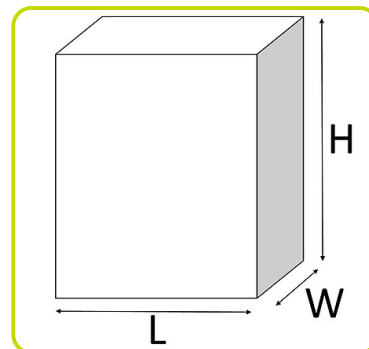


## • Possible Applications

Self-consumption optimization (SCO)		✓
Peak shaving (PS)		✓
Time-based charging/discharging (ToU)		✓
Combined operation (multi-use e.g. PS and SCO)		✓
Energy trading		✓
Simple management of charging stations		✓
Load management and prioritisation for charging points		✓
Integration of Plant controllers		✓

## Installation data

Cooling capacity (Battery room)	kW	2
Heating capacity (Battery room)	kW	1
Forced air cooling (Inverter room)		✓
AC-Grid connection	3P, PE / TT, TN-C, TN-S	
Communication Interfaces RJ45 (Ethernet)		✓
Dimensions	(L/W/H) mm	1500x1200x2320
Max. permissible installation height	m	2000
Corrosion resistance		C3
Weight	kg	2100
Protection rating (battery room)	IP	65
Protection rating (inverter room)	IP	54
Operating temperature range	°C	-20~50
Product warranty	Years	5
Performance warranty	Years	10



## Safety devices

Permanent monitoring of the battery cells		✓
CO, H2 and smoke sensor		✓
Fire protection system with Novec 1230		✓
Pressure relief flap		✓



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## Certificates / Approvals

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### Battery System

#### Modul:

UN38.3 / UL 9540A

#### Battery System:

CE / UN 3481 / IEC 62619 / IEC 63056 / UL 1973 / VDE 2510-50 / EN 61000-6-2 / EN 61000-6-4

### Battery Inverter

#### EU- Directives:

2014/30/EU / 2014/35/EU / 2011/65/EU / 2015/863/EU

#### Safety Battery Inverter:

IEC 62109-1 / IEC 62109-2 / IEC 62116 / IEC 61727 / IEC 62477-1 / IEC 61439-1 / IEC 61439-2

#### EMC:

EN 61000-6-2 / EN 61000-6-4 / EN 61000-3-12 / EN 61000-3-11

**Grid codes:** DIN VDE V 0126-1-1 / VDE AR-N 4105:2018 / VDE AR-N 4110:2023 / C10/C11 / G99/1-9 / TOR Stromerzeugungsanlagen Typ A/B / CEI 0-16, CEI 0-21 / EN 50549-1/-2 / AS4777.2 / NTS 631, UNE 27002



For other grid codes please contact your local sales representative

### Optional features

- |                                |   |
|--------------------------------|---|
| Optional Router                | • |
| Optional Energy Meter Ethernet | • |
| Optional Energy Meter RS485    | • |



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