BSO PRO 90/109



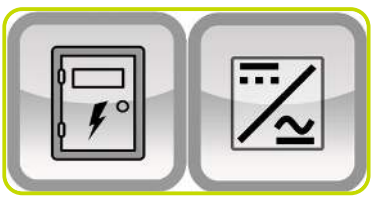
FEATURES:

- All-in-one outdoor system including inverter, air conditioning and fire protection equipment
- ON/OFF-Grid capable
- 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 voltage	Vac	400
Frequency	Hz	50
Maximum AC current	A	130
Battery cell	Type	Li-Ion (LFP) Pouch
Total capacity	kWh	109
Rated net capacity (90%DoD)	kWh	98
Rated apparent power ON-Grid	kVA	90
Rated apparent power Backup	kVA	75



Inverter		
Quantity	n.	1
Maximum AC current	A	130
Power factor / Range		1 / 0i ... 0c
Initial short circuit current (Ik“)	A	130
Rated apparent power ON-Grid	kVA	90
Rated apparent power Backup	kVA	75
Max. permissible phase unbalance	kVA	20
Max. peak current	A	185
Switchover time with PSTS	s	<5



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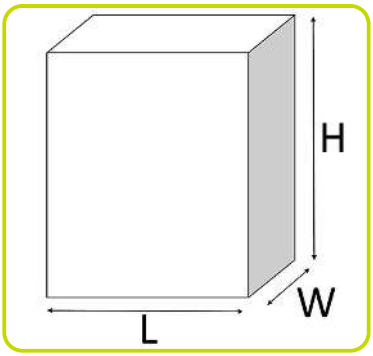
Battery		
Quantity of module	n.	23
Module capacity	kWh	4.74
Rated Voltage	V	736
Max. C-rate		1C
Battery cell	Type	Li-Ion (LFP) Pouch
Cycles @ 90% DoD | 65% SoH	n.	7300



Technical data - Energy Management System		
Voltage supply	VDC	24
RJ45 dedicated MAC adresses 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 ON-Grid		3P, N, PE / TT, TN-C-S
Communication Interfaces RJ45 (Ethernet)		√
Dimensions (LxWxH)		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	√
Overpressure flap	√



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Certificates / Approvals

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



Smart Transfer Switch (PSTS)

- Pre-installed transfer switch including changeover switch and monitoring devices.
- Transfer controller (PTC) for direct communication with the EMS.
- Easy integration into existing Pramac systems.

Rated operating current @ 400 V	A	315
Number of poles		4 (L1, L2, L3, N)
Short-time current withstand capability	kA	25
Terminal bolt size		M10x30
Protection class		I
Overvoltage category		III
Mounting / Assembly		Floor or Wall / Indoor
Perm. rel. humidity (%)	%	5-95, non-condensing
Operating temperature range	°C	0~+35
Dimensions (L/H/W)	mm	600 × 1100 × 400
Weight	kg	80



Optional features

Optional Router	•
Optional Energy Meter Ethernet	•
Optional Energy Meter RS485	•



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The information is aligned with the Data file at the time of download.
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