



Storage Systems

BATTERY STORAGE SYSTEM OUTDOOR BSO 50-88/109



- **All-in-one battery storage system for outdoor use**
- **Outdoor cabinet with protection class IP65 / IP54**
- **Easy & quick installation** – components pre-installed
- **High safety standard** – Gas & smoke sensors, fire protection system
- **Heating & cooling included**



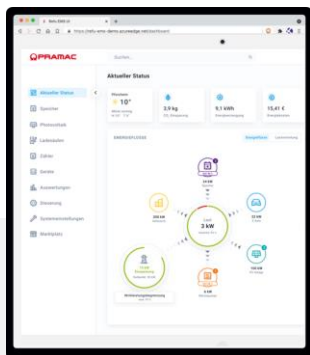
- **Commercial and Industrial Buildings** – Peak Shaving, Self consumption, Time of Use
- **Buffer storage for EV fast charging** – increasing the usable output
- **Agricultural buildings** – use of PV electricity after end of subsidies
- **Urban storage or new buildings** – reducing the load on the transformer



- **Pramac Storage Systems** – leading supplier of power electronics
- **Proven technology** – For a wide range of battery applications
- **Strong team** – with a global partner
- **Reliable energy storage solutions** – Indoor / Outdoor / Container



BATTERY STORAGE SYSTEM OUTDOOR BSO



TECHNICAL DATA OUTDOOR SYSTEM	BSO 50/109	BSO 88/109
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Battery data		
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Total capacity (kWh)	109	
Rated capacity (kWh) (90% DoD)	98	
Rated voltage (Vdc)	736	
Max. Charge/discharge current (A)	148	
Cell type	Li-Ion (LFP) Pouch	
Cycles @ 90% DoD 65% SoH 0,5C/0,5C	7300	

Battery Inverter	PBI 50K-PC	PBI 88K-PC
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Rated power (kW)	50	88*
Rated voltage (Vac)	380 / 400 / 415	
Maximum AC current (A)	128	
AC grid connection	3P, PE / TT, TN-C, TN-S	
Rated frequency (Hz)	50	
THDi (%)	< 3	
AC power factor / range	1 / 0,3i ... 0,3c	
Max. Efficiency (%)	98,6	
Topology	Transformerless	

*Power reduction from 33 °C ambient temperature

Safety devices System		
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Safety devices	Active devices	Permanent monitoring of the battery cells
		CO sensor
		H ₂ sensor
		Smoke sensor
		Exhaust fan
	Passive devices	Extinguishing system with Novec 1230
		Overpressure flap

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General data		
Operating temperature range (°C)		-20 to +50
Cooling/heating concept	Battery room	Cooling power 2 kW Heating power 1 kW
	Inverter room	Smart active cooling
Dimensions (W×D×H, mm)		1500×1108×2320
Total weight (kg) Incl. batteries and inverter		2100
Protection class		IP 65 (Battery room) / IP 54 (Inverter room)
Max. permissible installation height (m)		3000
Corrosion resistance of the housing		C3
Colour housing		RAL7035
Interfaces		RJ45 (Ethernet)
Certification / Approvals	Battery system	CE / UN 38.3 / UN 3481 / IEC 62619 / IEC 63056 / UL 1973 / UL 9540A / VDE 2510-50 / EN 61000-6-2 / EN 61000-6-4
	EU Directives	2014/30/EU / 2014/35/EU / 2011/65/EU
	Battery inverter	Product IEC 62109-1 / IEC 62109-2 / IEC 62116 / IEC 61727 / IEC 62477-1 / IEC 61439-1 / IEC 61439-2 /
	Grid connection conditions	DIN VDE V 0126-1-1 / VDE AR-N 4105:2018 / VDE AR-N 4110:2018 / TOR Erzeuger Typ A / UTE C15-712-1 VFR 2019 / G99 / EN 50549-1/-2
Warranty		5 years product warranty 10 years performance guarantee

All certificates are available online at www.pramac-storage-systems.com

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TECHNICAL DATA ENERGY-MANAGEMENT-SYSTEM		Pramac Smart Energy Controller (PSEC) ZY000A00011 PSEC-DMXX
Voltage supply		<ul style="list-style-type: none"> • 10-24 Vdc • UPS for controlled shutdown and recovery
Connectors	USB	V 2.0 Micro-USB AB (OTG-Flash-Port) V 2.0 USB-A (Host Port)
	LAN	2× RJ45 with 10/100 Mhz Dedicated MAC addresses for OT/IT use
	IoT	1× Internal bus connection module Digital-IO 1× Internal bus connection module RS485
Basic functions		<ul style="list-style-type: none"> • Self-consumption optimization • Peak load shaving • Time-based charging/discharging
Extended functions		<ul style="list-style-type: none"> • Simple management of charging stations • Load management and prioritisation for charging points

TECHNICAL DATA SMART METER		Acrel ADL3000-E* ZY000A00002
Voltage	Reference voltage	3×380 V, 3×220/380 V
Current	Input current	3×1(6) A, 3×1(6) A (Passive current transformer), 3×10(80) A
Power		Active, reactive, apparent power, error ±0,5 %
Communication		RS485 (Modbus RTU)
Conductor cross-section voltage measurement min/max (mm²)		2,5/16
Mounting		DIN rail
Dimension (W×D×H, mm)		126×88×69
*Current transformer and fuse protection voltage measurement are not included in the scope of delivery		

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