



Storage Systems

BATTERY STORAGE SYSTEM OUTDOOR BSO PRO 90/109



- **All-in-one outdoor battery storage system** – ON/OFF-Grid capable
- **On-Grid 90kVA / 75kVA backup power (120% overload)**
- **Phase unbalance up to 20kVA (transformerless)**
- **Diode load (up to 1kW)**
- **On/off grid switching ≤ 5 s** – Local switch box to ensure grid switching
- **High HW safety standard** – fire protection system, gas & smoke sensors
- **High security due to state-of-the-art SW architecture** – encrypted communication, digital cloud twin and 2-factor authentication



- **Higher added value** – by reducing operational downtimes
- **Autonomous energy supply** – supplying critical infrastructure
- **Self-sufficiency in remote areas**
- **Supports the use cases** – Self Consumption / Charging solutions / Energy Trading / Peak shaving / Multi-Use / Time of Use (ToU) / Grid Services



- **Retrofitting of existing Pramac systems possible**
- **Simple integration of the grid control box**
- **PV installation up to 75kWp in SDU possible**



DATASHEET BSO PRO 90/109



TECHNICAL DATA OUTDOOR SYSTEM

BSO PRO 90/109

Battery data

| | |
|------------------------------------|--------------------|
| Total capacity (kWh) | 109 |
| Rated capacity (kWh) (90% DoD) | 98 |
| Rated voltage (Vdc) | 736 |
| Cell type | Li-Ion (LFP) Pouch |
| Cycles @ 90% DoD 65% SoH 1C/1C | 7.300 |

Battery Inverter

PBI 90K-BU

| | |
|--|-----------------------------|
| Rated apparent power (kVA) | 90* (ON-Grid) / 75 (Backup) |
| Max. permissible phase unbalance (kVA) | 20 |
| Rated voltage (Vac) | 380 / 400 / 415 |
| Max. AC current (A) | 130 |
| Max. Peak current (A) | 185 |
| AC grid connection | 3P, N, PE / TT / TN-C-S |
| Rated frequency (Hz) | 50 |
| THDi (%) | < 3 |
| AC power factor / range | 1 / 0i ... 0c |
| Max. Efficiency (%) | 98,4 |
| Switchovertime (s) | < 5 |
| Topology | Transformerless |

*Power reduction from 33 °C ambient temperature

Safety devices System

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

DATASHEET BSO PRO 90/109

| 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 | | 2.300 | |
| Protection class | | IP 65 (Battery room) / IP 54 (Inverter room) | |
| Max. permissible installation height (m) | | 2.000 | |
| Corrosion resistance of the housing | | C3 | |
| Colour housing | | RAL9016 Traffic White / Pantone 382 C | |
| 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 / 2015/863/EU |
| | Battery inverter | Product safety | IEC 62109-1 / IEC 62109-2 / 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 4110:2023 / TOR Stromerzeugungsanlagen Typ A/B / C10/11 / G99 / CEI 0-16, CEI 0-21 / NTS 631, UNE 217002 / EN 50549-1/-2 |
| Warranty** | | 5 years product warranty 10 years performance warranty | |

* All certificates are available online at www.pramac.com

** For details, see current warranty conditions at www.pramac.com

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| TECHNICAL DATA | PRAMAC SMART TRANSFER SWITCH (PSTS) ZG311T00000 |
|--|--|
| Rated current @400 V (A) | 315 |
| Number of poles | 4-pole (L1, L2, L3, N) |
| Short-time current withstand capability (kA) | 25 |
| Terminal bolt size | M10×30 |
| Protection class | I |
| Overvoltage category | III |
| Mounting / Assembly | Floor or wall (Indoor) |
| Perm. rel. humidity (%) | 5-95, non-condensing |
| Dimensions (W×H×D, mm) | 600 × 1100 × 400 |
| Working temperature (°C) | 0 to +35 |
| Weight (kg) | 80 |

Pramac Smart Energy Controller (PSEC) PSEC-DMXX

Basic functions



Monitoring – visualization of energy flows & 24/7 historical data



Local & Cloud access



Operations management



Peak shaving



Self-consumption optimization



Time-of-Use



Multi-Use

Interfaces



REST (Cloud & Local), Modbus TCP

Compatible with

Charging stations

EnerCharge | Wallbox | Alpitronic | Mennekes | ABL | Cubos | i-charging

Energy meter / Data logger

Janitza | Acrel | Carlo Gavazzi / SMA | Solar-Log | SunGrow

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