BATTERY ENERGY STORAGE SYSTEM

E405 / 522

High-capacity hybrid power.

Mains, solar, battery and genset coordinated by PowerArk EMS.



E405 / 522 | PRODUCT CONFIGURATION

405 kVA
NOMINAL RATED POWER

522 kWh
NOMINAL BATTERY CAPACITY

2 h
CHARGE / DISCHARGE DURATION

Liquid-cooled LFP storage with active balancing, automatic genset control and remote system visibility.

REMOTE SITES / CONSTRUCTION / C&I / GENSET HYBRID

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Technical specifications

E405 / 522 | Rated values and operating conditions

01 Performance & electrical

Nominal rated power	**405 kVA**
110% overload - continuous	**445.5 kVA**
120% overload - 60 s	**486 kVA**
150% overload - 10 s	**607.5 kVA**
Rated voltage	**400 Vac (-15% / +15%)**
Frequency	**50 / 60 Hz ±5 Hz**
AC wiring	**3P4N**
Power factor	**0.99 / adjustable -1 to 1**
PV input power	**110 kW**

02 Battery & energy storage

Cell specification / chemistry	**3.2 V / 314 Ah / LFP**
Nominal capacity	**522 kWh**
Effective capacity	**469.8 kWh**
Charge power / duration	**235 kW / 2 h**
Discharge power / duration	**235 kW / 2 h**
System round-trip efficiency	**Up to 96%**
Depth of discharge	**90%**
Cell lifetime at 70% DoD	**8,000 cycles**
Pack lifetime at 70% DoD	**7,500 cycles**

03 Environmental & mechanical

Enclosure / critical components	**IP54 / up to IP67**
Operating temperature	**-20°C to +50°C**
Humidity	**0-95%, non-condensing**
Maximum operating altitude	**3,000 m**
Sound level at 1 m	**<50 dB(A)**
Thermal management	**Liquid cooling and heating**
Dimensions (L × W × H)	**3000 × 2300 × 2500 mm**
Weight	**7,970 kg**

Specifications are subject to final technical agreement.

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System integration

Control interfaces, documentation scope and operating capabilities

04 Integration & control

Energy management	**PowerArk EMS**
BMS	**Automotive-grade / BMSER**
Battery balancing	**Active balancing**
Genset start / stop	**2-wire dry contact**
Genset control & monitoring	**RS485 / Modbus RTU**
Device protocols	**Modbus TCP/IP, Wi-Fi, ETH**
Cloud platform	**PowerArk Cloud**
Remote connectivity	**Ethernet / 4G / 5G**
Local HMI	**15-inch color touchscreen**

05 Compliance & certifications

PCS	EU grid code	**EN 50549-1/-2/-10**
	AU/NZ grid code	**AS/NZS 4777.2**
	Safety	**IEC 62477 & IEC 62109**
	EMC	**IEC 61000**
Battery pack (LFP)	Safety	**IEC 62619 / IEC 63056**
	Transportation	**UN 38.3**
	EMC	**IEC 61000**
System-level	Source-listed baseline	**UN38.3**

Certification availability and supporting documents depend on the final PCS, battery pack and project configuration.

06 System capabilities

Off-grid load adaptability

100% three-phase unbalanced loads and 100% non-linear (half-wave) loads. Supports 150% overload.

Thermal management

Liquid cooling and heating with active battery balancing supports performance and battery service life.

Reliability & durability

Automotive-grade control core and industrial components: -40°C to +80°C. Dual-redundant links and watchdogs on all controllers.

Uptime-centric EMS

Coordinates mains, PV, battery, genset and site loads, prioritizing system robustness and load availability.