BMZ
THE INNOVATION GROUP

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ESS Z

The customized solution for your needs

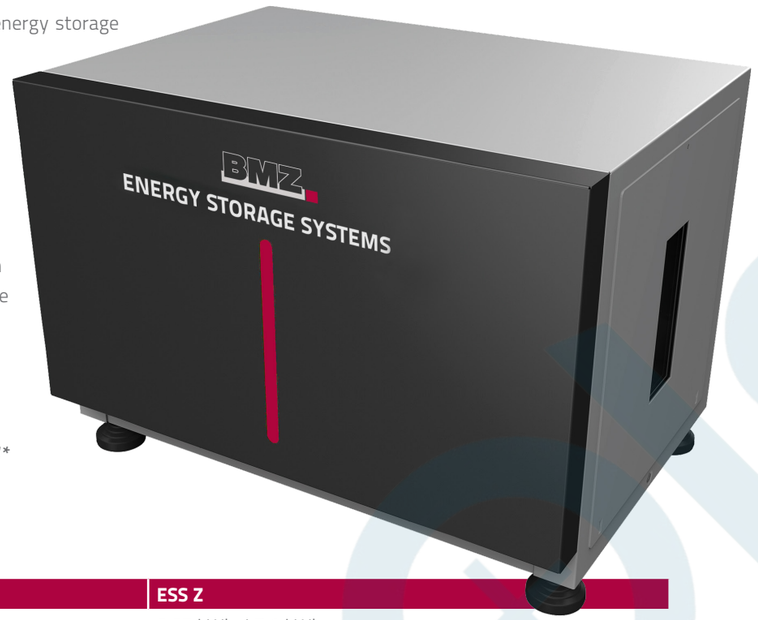
E-MOBILITY | DRIVE SYSTEMS | **ENERGY STORAGE SYSTEMS** | POWER- AND GARDENTOOLS | INDUSTRIAL | MEDICAL

Energy Storage Systems
ESS Z

>> We deliver customized solutions for your needs - Flexibly adaptable due to the modular and compact design. <<

ESS Z is a new modular lithium-ion based energy storage system, which stores the surplus of the collected solar energy for later use. Energy can either be directed into the storage system or be fed into the public grid via an inverter. Energy is available as required: in the evening, at night, or on a cloudy day. With the ESS Z System, consumers of solar power become more independent from electricity prices and use their home-made eco-electricity when they need it.

- **Scalable up to 12 modules**
- **Maximum energy density**
- **Maximum discharge power up to 18 kW***

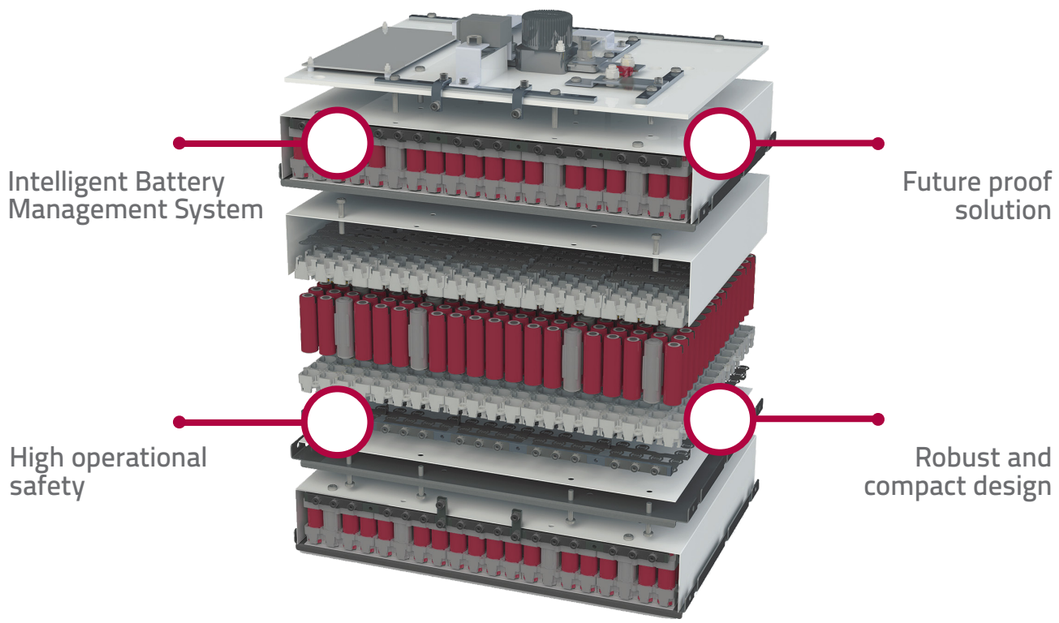


PROPERTIES	ESS Z
Energy (nom. / usable)	8.87 kWh / 7.1 kWh
Nominal Voltage	54.75 V
Charge End Voltage	61.5 V
Discharge End Voltage	45.0 V
Capacity (nom. / usable)	162 Ah / 129.6 Ah
Max. Charge	81 A
Max. Discharge Current	300 A (3 Sec.)
Max. Discharge Power	18 kW*
Weight	98 kg
Dimensions (W * H * D)	638 x 421 x 487 mm
Communication	CAN - SMA Ready
Battery Chemistry	Li-Ion NCA
Discharge Depth	80 % DOD
Full Cycles	5,000
Battery Management System	Monitoring of cell voltage, cell temperature, current, derating and passive balancing
Energy Density (Weight)	90.5 Wh / kg

*depends on the respective inverter

MULTI-LEVEL SAFETY CONCEPT

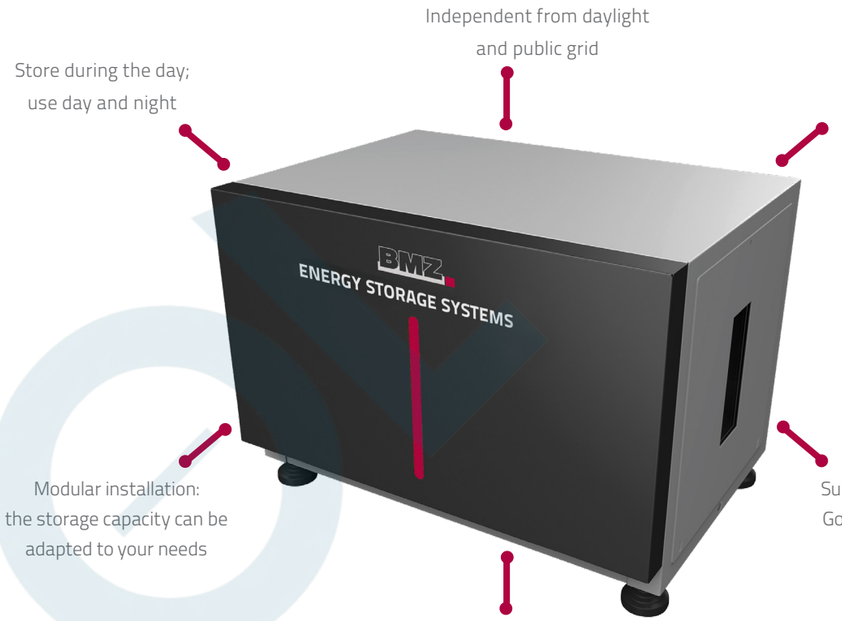
- Direct current relay and 2nd protection (chemical fuse) for a redundant battery cut-off
- Over- and undervoltage monitoring for each cell string with redundant battery cut-off
- Closed metal, double housing
- Current Interrupt-Device (CID) in each cell
- Protection against a reboot after deep discharge or any other serious error
- Active current control as a function of cell voltage and temperature (derating)
- Temperature monitoring for each cell string



USER INFORMATION

- Powerful energy storage system
- High efficiency: 95 %
- Durable: 5,000 full cycles
- High operational safety
- Discharge temperature (cells):
  2° to 45° C
- Charge temperature (cells):
  2° to 45° C
- Recommended storage temperature:
  10° to 25° C
- Stand-by consumption:
  Aktive mode 5 W / Sleep mode 0.126 W
- Protection class: IP 21
- European Conformity (CE): yes
- UN-test 38.3: yes
- Self discharge (cells):
  Ca. 2 % per year
- High discharge depth: 80 % DoD
  (Depth of Discharge)
- Max. parallel connection (of batteries):
  12 (additional hardware required)
- Warranty:
  10 year warranty covering the system's current value
  (in Germany)

ADVANTAGES OF BMZ-ENERGY STORAGE



A safe investment in your future

Reduction
of your energy costs

Environmental friendly
Technology

Lifetime up to
20 years

Made in
Germany

DEVELOPED ACCORDING TO THE STANDARDS AND USER GUIDELINES FOR STATIONARY ENERY STORAGE SYSTEMS

- VDE-AR-E 2510-50
- VDE-AR-E 2510-2
- DIN EN 62619 (Draft)
- FNN note (04/2016 version)

Any questions?

Contact us, we will be pleased to advise you.

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