



## ENERGY STORAGE SYSTEM ESS 3.0 DATA SHEET



## 1. Preface

ESS 3.0 is a new modular lithium-ion based energy storage system, which stores the surplus of the collected solar energy for later demand. 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 BMZ ESS 3.0 System, consumers of solar power become more independent from electricity prices and use their home-made eco-electricity when they need it.

### Advantages

- Store during the day; use day and night
- Independent from daylight and public grid
- Economic, cost-cutting and eco-friendly
- Lightweight, safe and space-saving
- Modular installation: the storage capacity can be adapted to your needs
- Subsidized by the Federal Government: 30 % KfW-Program 275

### Technical Properties

- Powerful energy storage system
- New lithium-ion technology: a 7 year warranty covering the system's current value
- High efficiency: 97 %
- High discharge depth: 80 % DOD
- Durability: 5,000 full cycles
- Parallel installation possible (max. 12 systems)
- High operational safety

### Safety Measures

- |  |            |
|--|------------|
| • Direct current relays for a redundant battery cut-off  | <b>yes</b> |
| • Overcurrent and undercurrent monitoring for each cell string with redundant battery cut-off  | yes        |
| • Temperature monitoring for each cell string and current interrupt device (CID) in each cell  | yes        |
| • Protection against a reboot after deep discharge or any other serious error                  | yes        |
| • No insecure parallel connection of cells without current interrupt device (CID) in each cell | yes        |
| • Active current control as a function of cell voltage and temperature                         | yes        |
| • Closed metal housing   | yes        |

## 2. Technical Properties of a Single Module

General Properties	
Energy	6.74 kWh
Nominal voltage	54.7 V
Charge end voltage	61.5 V
Discharge end voltage	41.0 V
Nominal charge	121 Ah
Max. charge	80 A
Max. discharge current	300 A ( 3 sec. )
Max. discharge power	6,500 W
Weight	95 kg
Dimensions (mm) W x H x D	639 x 453 x 457
Volume	260 l
Communication	CAN – SMA Protocol
Battery chemistry	Li-Ion NMC
Discharge depth	DOD 80 %
Full cycles	5,000

### Developed according to the standards and user guidelines for stationary energy storage systems

VDE-ST-Li-ESS-001:2013/03
IEC62897Ed1
DIN EN 50272-1
DIN EN 50272-2
DIN EN 61427-1
DIN EN 61427-2
DIN EN 61508
DIN EN 62281
DIN EN 60950-1
DIN EN 62619 (draft standard)
DIN EN 62620
FNN-documents
<b>version 07/2014</b>

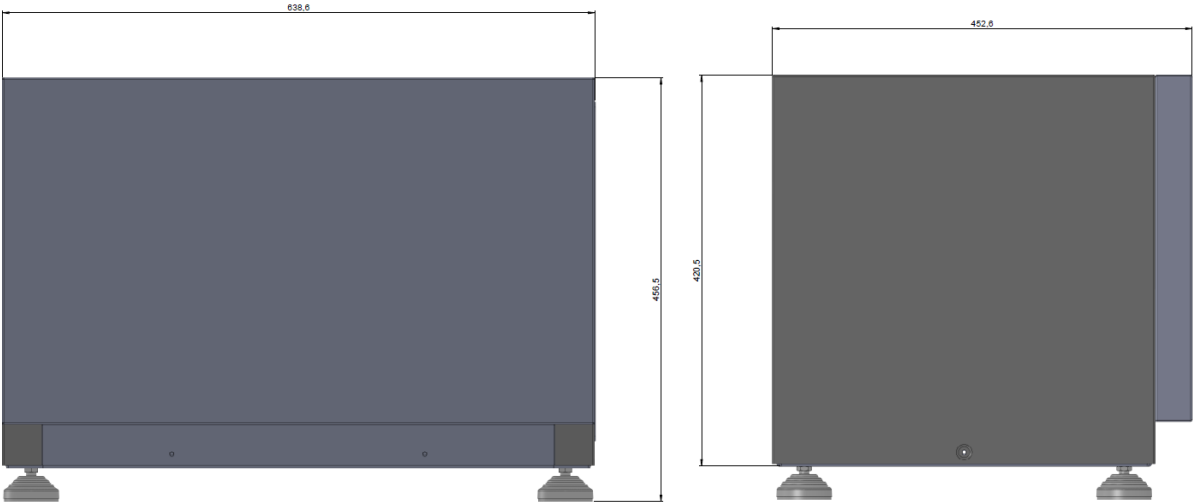
### Performance Data

Energy density (weight)	93 Wh/kg
Energy density (volume)	149 Wh/l
Power density (weight)	252 W/kg
Power density (volume)	408 W/l

### User Information

Discharge temperature (cells)	0 °C to +45 °C
Charge temperature (cells)	0 °C to +40 °C
recommended storage temperature	10 °C to 25 °C
Self discharge (cells)	approx. 4 % per year
Max. parallel connection	12 (with optional master unit)
Protection class	IP 21
European Conformity (CE)	yes
UN-test 38.3	yes
Warranty	7 year warranty covering the system's current value

3. Drawing





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