Solition containerized energy storage systems

Technical data sheet

Applications

Commercial and industrial applications

Agriculture

E-mobility

Renewable energy

Biogas plant

Utilities

Technical characteristics and data

General data for 20ft Container	
Converter	Max. 2 converter racks
Inverter type	Bi-directional four quadrant
AC power	Up to 1000 kW
Scalability	In increments of 62.5 kW
AC voltage	400 V ± 10 % (3-phase + PE) (with additional transformer: 480 V ± 10 %)
AC grid current	Max. 1520 A
AC frequency	50 Hz (49.5 Hz ~ 50.5 Hz) or 60 Hz (59.5 Hz ~ 60.5 Hz)
Cos. Phi	0.1 ~ 1 leading or lagging
Peak efficiency	98.2 %
Output THD	≤ 3 %
Protection	Min./max. AC voltage, frequency, battery voltage, max. power, temperature, overcharging, overdischarging
DC voltage range	600 V ~ 900 V
Certification Converter and Container	ETL listed (conforming to UL1714, UL1741SA, UL9540, CPUC Rule 21, CSA 22,2), CE, G99, IEC62109, IEC62040, EN50549, UNE206007-1, UNE 217002, UE 2016/631, AS/NZS 4777.2:2020, NRS 097-2-1, Complies to AS5139, AS4487-2013, AS61000
Off-grid	Data available on request

Battery system	
Battery technology	Li-$FePO_4$ (LFP)
Storage capacity	Up to 1104 kWh
C-rate	Up to 1C (charging and discharging)
Battery configuration	Up to 8 x 138 kWh racks with 15 modules each
Scalability	In increments of 138kWh
BMS	With mains DC-switch and protection for over and under voltage, over current, temperature, SoC, system voltage, string voltage, temperature alarms
Master BMS	LCD touch screen with graphical interface
Certification batteries	Modules and cells: UN38.3 Cells: GB/T36276, UL1973, UL1642, UL9540A, IEC62619

System	
Housing	Freestanding ISO High Cube container with double locking doors and two separate chambers for converters and batteries
Dimensions (incl. HVAC; L x W x H)	6.06 (6.64) m x 2.44 m x 2.90 m
Weight	< 18 000 kg
Auxiliary power	3 Ph5W 230V
External communication	Modbus TCP/IP
Internet	4G connection
Isolation	Via optional transformer
Nominal round trip efficiency	91%

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Technical characteristics and data (continued)

Environmental conditions	
Temperature	- 20 °C to 50 °C (de-rating > 45 °C)
Noise at full power	< 78 dB @ 1m distance; silencer is possible
Operating altitude	3000 m (> 2000 m de-rating)
Space requirements	At least 2.5m around the container must be freely available for service access

Safety	
Cooling	Forced air cooling for converters. 2x 5 kW or 10kW HVAC for the batteries, UL compliant
Enclosure/Housing	Outdoor IP55
Fire extinguisher system	NOVEC, Automatic fire extinguisher system compliant with UL864, UL1638, UL464, AS-4487-2013 and FM listed
Fire extinguisher controller	Stand alone with battery backup, heat and smoke detectors and external alarm signals

Warranty conditions	
Capacity guarantee	5 years or 4000 cycles which comes first @average 0.5C/0.5C, 18-35°C, 90% DoD Capacity at EoL: 70%
System guarantee	5 years

System configuration	
Scalability	Multiple containers can be combined as one system.
Indoor	Indoor solutions without container are also possible on request.