Utility ESS

POWER MASTER



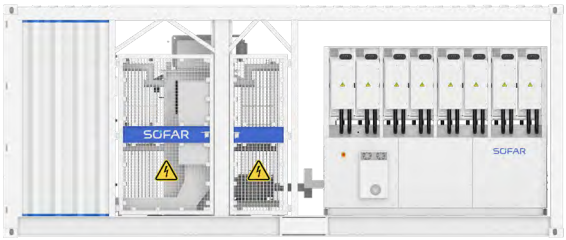
Utility ESS –**PowerMaster**

LESS LCOS | **High Efficiency and Flexibility** | **Ultimate Safety** | **Intelligent Stability**

Utility-Scale Energy Storage System Solution



Battery container



MV station with PCS

Air-Liquid Mixing

Liquid-cooling+ Air-cooling
Intelligent Heat Disspation

Modular Design

One unit malfunction
will not affect others
Easy O&M, Lower OPEX

Suitable For Large Cells

Higher Energy Density
3.93 MWh

3+2 Ultimate Safety Design

Cell-Level
Cabin-Level
Water Firefighting level

Combustible Gas Emissi
Explosion Vent Desig

Container-Combined Layout

Support 20-foot conainers installed side by side, the land area reduced by more than 30 %

High conversion efficiency in the full power range

Smart coordination strategy to ensure high efficiency performance of PCS full power-range

ESS-3M44LA-BD1

Battery container



Efficient & Flexible

- Better temperature uniformity, cell temperature difference <2.5℃
- Liquid-cooling+ Air-cooling, to realize intelligent heat
- Suitable for larger cells to achieve high energy density

Safety & Friendly

- 3+2 ultimate safey design for protection of property and individuals
- Disspation and Anti-Condensation design

Smart management

- Supports multiple external communication protocols
- Intelligent control and management

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BESS Specifications	
Cell Type	**LFP/280Ah**
Nominal Capacity (BOL)	3.44 MWh
DC operating voltage range	960~1401.6V
Recommended Working Voltage Range	1036.8~1363.2V
Charge and Discharge Rate	≤ 0.5P
Operating Ambient Temperature	-30℃~55℃
Working Environment Relative Humidity	0~100% (No Condensation)
Working Altitude	≤ 4000m
Cooling Method	Air Cooling + Liquid Cooling
Safety Design	Perfluoro Gas Firefighting (Cell Level & Cabin Level) + Backup Water FireFighting+Combustible Gas Emission + Explosion Venting Design
Communication Interface	Ethernet/CAN/RS485
Communication Protocol	IEC61850, IEC104, CAN2.0, Modbus
Degree of Protection	IP55
Anti-Corrosion Grade	C4 (C5 optional)
Dimensions (W×D×H)	6058×2438×2896 mm
Weight	~34T
Standards	GB/T36276, IEC62619, UL1973, UL9540A, UN3536

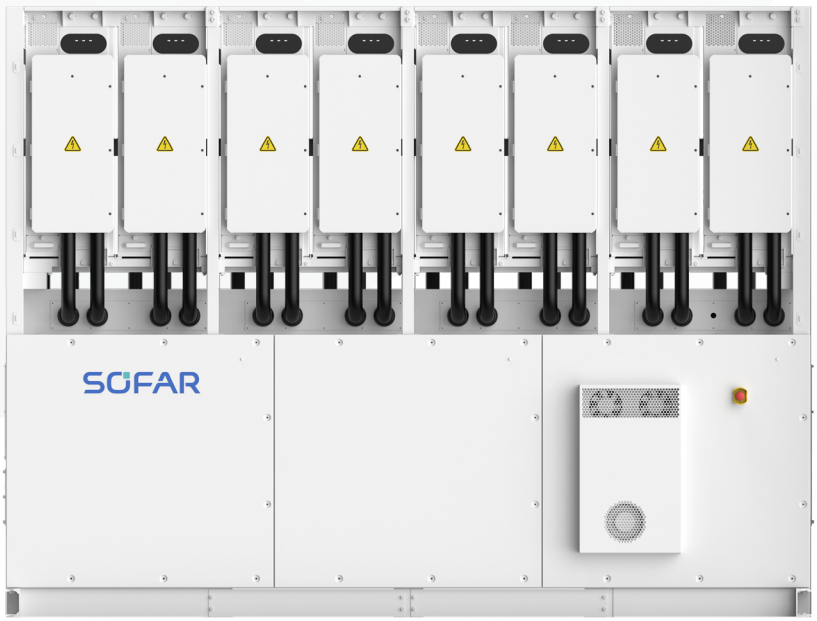
PACK Specifications	
Model	**S1G-LP430**
Cell Type	LFP
Series and Parallel Mode	1P48S
Nominal Capacity/Energy	280Ah/43kWh
Rated Voltage	153.6V
DC Operating Voltage Range	120~175.8V
Recommended Working Voltage Range	129.6~170.4V
Charge and Discharge Rate	≤ 0.5P
Working Temperature	-30℃~55℃
Working Environment Relative Humidity	0~100% (No Condensation)
Working Altitude	≤ 4000m
Cooling Method	Liquid Cooling
Fire Fighting Method	Cell-Level Firefighting (Perfluoro)
Communication Interface	CAN
Degree of Protection	IP67
Dimensions (W×D×H)	765×1050×245 mm
Weight	≤ 310kg
Standards	GB/T36276, IEC62619, UL1973, UN38.3

Rack Specifications	
Nominal Energy	**344kWh**
Configuration	1P384S
Rated Voltage	1228.8V
DC Operating Voltage Range	960~1401.6V
Recommended WorkXing Voltage Range	1036.8~1363.2V
Charge and Discharge Rate	≤ 0.5P
Working Temperature	-30℃~55℃
Working Environment Relative Humidity	0~100% (No Condensation)
Working Altitude	≤ 4000m
Cooling Method	Liquid Cooling
Fire Fighting Method	Perfluoro Gas Firefighting
Communication Interface	CAN, Dry Contact
Dimensions (W×D×H)	1050×1105×2400 mm
Weight	≤ 3.2 T
Standards	GB/T36276, IEC62619, UL1973

*All specifications are subject to change without notice.

EBI 1725K

Smart string PCS



High yield

- Supports 1500Vdc battery system, high conversion efficiency in full power band
- Modular design, easy installation, easy maintenance, lower OPEX
- Intelligent air cooling, no derating at 45˚C

Grid friendly

- Supports IEC61850 and fast power response
- Supports active and reactive power response and fourquadrant operation
- Supports high and low voltage ride-through to support the grid

Safe & Reliable

- Module IP66 protection level, system IP55
- Modularized design, high system availability

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Model	EBI 1725K
DC Side	
Maximum DC Voltage	1500V
DC Voltage Working Range	1000~1500V
Maximum DC Current	875A ×2
AC Side (Grid-on)	
Rated AC Power	1725 kW
Maximum AC Active Power	1898 kW
Maximum AC Apparent Power	1898 kVA
Rated AC Current	1443A
Maximum AC Current	1588A
Rated Grid Voltage	690V
Grid Voltage Range	586.5~759V
Rated Grid Frequency	50/60Hz
Grid Frequency Range	45~55Hz / 55~65Hz
Power Factor	-1~1, adjustable
THDi (@Rated Power)	< 3%
System Characteristics	
Working Temperature	-35˚C ~ +60˚C
Relative Humidity	0~100%, no condensation
Noise Level	< 80dB@1m
SPD	DC: type II, AC: type II
Maximum Working Altitude	4000m
Cooling Method	Smart air forced cooling
Communication Port	CAN, RS485, Ethernet
Communication Protocol	CAN2.0, Modbus RTU, Modbus TCP, IEC 61850, IEC104
Degree of Protection	Module: IP66, System: IP55
Mechanical Parameters	
Dimensions (W×H×D)	2790×2115×975 mm
Weight	< 1500kg
Standards	IEC/EN 61000-6-2/4, IEC 62477-1

*All specifications are subject to change without notice.

SP3545K-MV



Smart O&M

- Modular PCS, easy O&M and more generation
- OTA update, less OPEX

Lower CAPEX

- Integrated PCS, MV transformer, RMU and auxiliary power, lower transportation and installation cost
- Oil leakage tank integrated, lower initial investment

Environment adaptation

- IP55 ingress protection, easy for outdoor installation
- No detating up to 45˚C, suitable for high-temp environment
- C5 anti-corrosion degree optional, adjust to harsh applications

Grid support

- Compliance with standards: IEC 62477-1, IEC 62271-202, IEC 62271-200, IEC 60076 and grid code
- Supports L/HVRT, fast active/reactive power response

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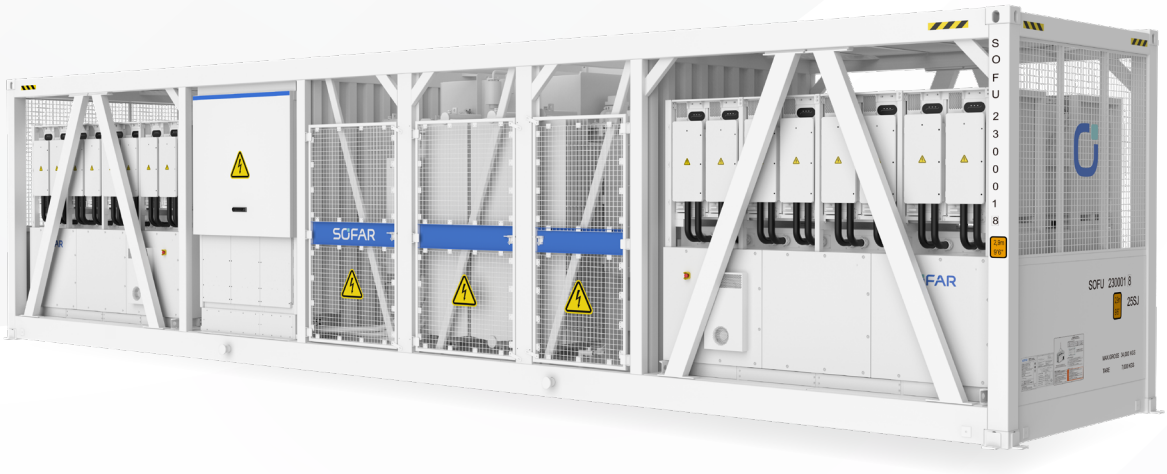
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Model	SP3545K-MV
DC Side	
Max. DC Voltage	1500V
DC Voltage Range	1000~1500V
Max. DC Current	875A ×4
AC Side (Grid-on)	
AC Output Power	3545 kVA @45˚C / 3900 kVA @35˚C
Max. AC Current	2966A @45˚C / 3263A @35˚C (690 V)
PCS Nominal AC Voltage	690V
PCS AC Voltage Range	586.5~759V
Nominal Frequency / Frequency Range	50Hz/45~55Hz (60Hz / 55~65Hz)
Harmonic (THD)	< 3% (At nominal power)
Power Factor	-1~1 (adjustable)
Feed-in Phases / AC Connection	3/3
MV Transformer	
Transformer Rated Power	3545 kVA
Transformer Max. Power	3900 kVA
LV/MV Voltage	0.69kV / (6~37)kV
Transformer Vector	Dy11
Transformer Cooling Type	ONAN
Winding Material	Al (Cu optional)
Oil Type	Mineral oil (PCB free) or degradable oil on request
Protection	
PCS Output Protection	Circuit breaker+Fuse
AC Output Protection	Circuit breaker
Surge Protection	Type II + Type I (PCS)
Overheat Protection	Yes
Overcurrent Protection	Yes
Grid Monitoring / Ground Fault Monitoring	Yes/Yes
Insulation Monitoring	Yes
Transformer Protection	Yes (Includes oil temperature, oil level, pressure relief, gas relays)
System Parameters	
Operating Temperature	-35˚C~60˚C (Derated above 45˚C)
Working Environment Relative Humidity	0~100% (No condensation)
Battery Expansion	Max 5h duration hours BESS (Max 5 ESS-3M44LA-BD1 connected)
Cooling Method	Temperature controlled forced air cooling
Protection Class	IP55
Anti-corrosion Grade	C4-M/C5 (Optional)
Max. Working Altitude	4000m (more than 2000m needs to be customized)
Communication	RS485, CAN, Ethernet
Compliance	IEC 62477-1, IEC 62271-202, IEC 62271-200, IEC 60076
Dimensions (W×D×H)	7000×2438×2896 mm
Weights	< 20t

*All specifications are subject to change without notice.

SP7100K-MV



Smart O&M

- Modular PCS, easy O&M and more generation
- OTA update, less OPEX

Lower CAPEX

- Integrated PCS, MV transformer, RMU and auxiliary power, lower transportation and installation cost
- Oil leakage tank integrated, lower initial investment

Environment adaptation

- IP55 ingress protection, easy for outdoor installation
- No detating up to 45˚C, suitable for high-temp environment
- C5 anti-corrosion degree optional, adjust to harsh applications

Grid support

- Compliance with standards: IEC 62477-1, IEC 62271-202, IEC 62271-200, IEC 60076 and grid code
- Supports L/HVRT, fast active/reactive power response

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Model	SP7100K-MV
DC Side	
Max. DC Voltage	1500V
DC Voltage Range	1000~1500V
Max. DC Current	875A ×8
AC Side (Grid-on)	
AC Output Power	7100 kVA @45˚C / 7810 kVA @35˚C
Max. AC Current	2 × 2971A @45˚C / 2 × 3268A @35˚C (690V)
PCS Nominal AC Voltage	690V
PCS AC Voltage Range	586.5~759V
Nominal Frequency / Frequency Range	50Hz / 45~55Hz
Harmonic (THD)	< 3% (At nominal power)
Power Factor	-1~1 (adjustable)
Feed-in Phases / AC Connection	3/3
MV Transformer	
Transformer Rated Power	7100 kVA
Transformer Max. Power	7810 kVA
LV/ MV Voltage	0.69kV / (6.6~37)kV
Transformer Vector	Dy11y11
Transformer Cooling Type	ONAN
Winding Material	Al (Cu optional)
Oil Type	Mineral oil (PCB free) or degradable oil on request
Protection	
PCS Output Protection	Circuit breaker+Fuse
AC Output Protection	Circuit breaker
Surge Protection	Type II + Type I (PCS)
Overheat Protection	Yes
Overcurrent Protection	Yes
Grid Monitoring / Ground Fault Monitoring	Yes/Yes
Insulation Monitoring	Yes
Transformer Protection	Yes (Includes oil temperature, oil level, pressure relief, gas relays)
System Parameters	
Operating Temperature	-35˚C~60˚C (Derated above 45˚C)
Working Environment Relative Humidity	0~100% (No condensation)
Battery Expansion	Max 5h duration hours BESS (Max 10 ESS-3M44LA-BD1 connected)
Cooling Method	Temperature controlled forced air cooling
Protection Class	IP55
Anti-corrosion Grade	C4-M/C5 (Optional)
Max. Working Altitude	4000m (more than 2000m needs to be customized)
Communication	RS485, CAN, Ethernet
Compliance	IEC 62477-1, IEC 62271-202, IEC 62271-200, IEC 60076
Dimensions (W×D×H)	12192×2438×2896 mm
Weights	< 33t

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