SOFAR

Battery Energy Storage System

PowerMagic

SOFAR INTRODUCTION

SOFAR is a global leading supplier of solar PV and energy storage solutions and committed to be the leader of digital energy solutions. SOFAR supports the transition to renewable energy through a comprehensive portfolio including PV inverters range from 1 kW to 255 kW, hybrid inverters range from 3 kW to 20 kW, battery storage system and smart energy management solutions for residential, commercial & industrial. and utility -scale applications.

Founded in 2013, SOFAR has always insisted on independent innovation and established a global R&D network with three R&D centers. Over 300 employees of its workforce is assigned to R&D, ensuring continuous innovation in order to remain a pioneer in the PV and energy storage industry.

SOFAR has implemented a globalization strategy since its establishment and now has two global manufacturing bases with an annual production capacity of l O GW PV and storage inverters, and l GWh batteries. Its extensive service network contains over 20 branch offices worldwide. SOFAR offices can now be found in the UK, Poland, Germany, South Korea, UAE, Pakistan, Australia, etc. By the end of 2021, SOFAR had shipped over l million inverters to more than 90 countries.

As the world's fastest-growing solar energy brand. SOFAR stands firmly among the mainstream solar energy brands with a compound annual growth rate of 86% from 2019 till 2021.SOFAR has received many awards for its state-of-the-art solutions. including the China "CQC" certification. the Chinese Top 5 String Inverter Brand, and the TOP 5 Global Hybrid Inverter Manufacturer. SOFAR has also been entitled by Eu PD as TOP Brand PV Inverter in India, Poland, the U.K., Italy and Brazil.

Looking forward, SOFAR believes technology drives the green energy transition. Through independent. continuous innovation and state-of-the-art PV solar and energy storage solutions, SOFAR aims to play a key role in this global transition.

PRODUCT PORTFOLIO

C&I ESS

POWER MAGIC

C&I ESS –**PowerMagic** – AC 400V

Efficient & Flexible | **Lower LCOS** | **Ultimate safety** | **Smart Management**

Grid | Backup Cabinet | 400V Junction Cabinet | Energy Storage Cabinet | Battery Cabinet

Lower LCOS

All-in-one design, High energy density
Plug-and-play design, quick installation & less cost

Efficient & Flexible

Modular design supports parallel connection and easy system expansion
Grid-On/Off auto-switch function, easy O&M

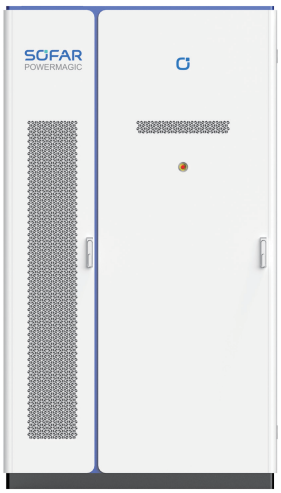
Ultimate Safety

3+2 protection design enables ultimate safety
Electricity and liquid separation reduces system risks

Smart Management

Integrated EMS enables multi-scenario energy management
Fast state monitoring and faults record enables pre-alarm and faults locating

Energy Storage Cabinet



Product Advantages

- Modular design, flexible system expansion
- Grid-on/off auto-switch
- Electrical cables and liquid pipes separated design
- 3 Level FSS+ Flammable gas emission & Explosion vents
- Liquid cooling + Anti-condensation design
- Multi-function EMS integrated

Model	ESS-258kLA-SA1	ESS-215kLA-SA1
DC Side		
Battery type	LFP/280Ah	
Rated energy	258kWh (6Pack)	215kWh (5Pack)
Rated Voltage	921.6V	768V
DC operating voltage range	734.4V~1036.8V DC	612V~864V DC
Recommend DC voltage range	777.6V~1022.4V DC	648V~852V DC
AC side		
AC Voltage	400V AC	
Rated power	125kW	
Maximum AC power	138kW	
Maximum AC current	198A	
Rated grid frequency	50Hz/60Hz	
Power factor	-1~1	
System Parameters		
Operating ambient temperature	-30℃~50℃ (Derating above 45℃)	
Storage ambient temperature	-30℃~60℃	
Operating relative humidity	0~100% (No condensation)	
Cooling type	Liquid cooling	
Fire suppression	1.Battery cell level (perfluorohexanone) 2.Canibet level (perfluorohexanone or aerosol) 3. Water fire suppression	
System configuration	AC side: Maximum 6 Energy storage cabinets in parallel DC side: Maximum 3 Battery cabinets per Energy storage cabinet	
Grid-On/Off	Auto-switch (With backup cabinet)	
Cabinet connection	Plug-in connector	
Dimension(W*D*H)	1450*1350*2200mm	
Weight	＜2.8T	＜2.5T
Ingress protection rating	IP55	
Anti-corrosion	C4 (C5 optional)	
Operating altitude	≤4000m (Derating above 2000m)	
Noise level	≤60dB	
Installation	Ground mounting	
Communication interface	Ethernet, Dry connect	
Standard	IEC/EN 61000-6-2/4 , IEC62477-1 , IEC62619, UN38.3, UL9540A, UL1973	

* All specifications are subject to change without notice.

Battery Cabinet

Product Advantages

- Modular design, flexible system expansion
- Electrical cables and liquid pipes separated design
- 3 Level FSS + Flammable gas emission & Explosion vents
- Liquid cooling + Anti-condensation design

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Recommend DC voltage range	777.6V~1022.4V DC	648V~852V DC
Operating ambient temperature	-30℃~50℃ (Derating above 45℃)	
Storage ambient temperature	-30℃~60℃	
Operating relative humidity	0~100% (No condensation)	
Cooling type	Liquid cooling	
Fire suppression	1.Battery cell level (perfluorohexanone) 2.Canibet level (perfluorohexanone or aerosol) 3. Water fire suppression	
Communication interface	CAN、RS485	
Cabinet connection	Plug-in connector	
Dimension(W*D*H)	1000*1350*2200mm	
Weight	＜2.5T	＜2.2T
Ingress protection rating	IP55	
Anti-corrosion	C4 (C5 optional)	
Operating altitude	≤4000m (Derating above 2000m)	
Installation	Ground mounting	
Standard	IEC62619, UN38.3, UL9540A, UL1973	

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400V Junction Cabinet

Product Advantages

- Non-Walk-In design with less footprint
- Easy installation and O&M
- Support installation against wall
- Maximum 6 Energy Storage Cabinets in Parallel

Model	PAC-750K-H1
Input side	
Rated operating voltage	400V AC, Three-phase four-wire
Rated current	6*180A (max 6 cabinets in parallel)
Maximum current	Max 1188A
Rated input power	6*125kW
System Parameters	
Operating ambient temperature	-30℃~50℃ (Derating above 45℃)
Storage ambient temperature	-30℃~60℃
Relative humidity	0~100% (No condensation)
Maximum operating altitude	≤2000m (Customized if above)
Ingress protection rating	IP55
Anti-corrosion	C4 (C5 optional)
Wire inlet & outlet	Bottom inlet, bottom outlet
Dimension(W*D*H)	700*700*2182mm
Weight	＜300kg
Installation	Ground mounting
Standard	IEC/EN 61439-2

* All specifications are subject to change without notice.

Backup Cabinet

Product Advantages

- Grid-on/off auto-switch
- Pre-assembled design, less on-site renovation
- Easy installation and O&M

Model	PAC-750K-W1
Rated voltage	400V AC
Rated current	2160A
Rated frequency	50Hz/60Hz
Grid-On/Off	Auto-switch
Ingress protection rating	Enclosure IP4X, Internal cubicle IP2X (indoor installation)
Operating ambient temperature	-15℃~40℃ (indoor installation)
Storage ambient temperature	-30℃~60℃
Dimension(W*D*H)	1300*800*2200mm
Maximum operating altitude	≤4000 (Standard ≤ 2000m, customized above 2000m)
Communication interface	RS485
Standard	IEC/EN 61439-2

* All specifications are subject to change without notice.

EBI 125K-R

Product Advantages

High Yield

- Advanced three-level technology, max. efficiency 98.3%
- Effective forced air cooling, no derating up to 45˚C
- Rack level management, more battery usable energy

Flexible & Reliable

- Bidirectional power conversion system with full four-quadrant operation
- Modular design, easy for design & maintenance
- IP66 protection degree, suitable for outdoor installation

Grid Support

- Compliant with CE, IEC 62477 and grid regulations
- L/HVRT, Fast active/reactive power response

Model	EBI 125K-R
DC Side	
Maximum DC Voltage	1200 V
DC Voltage Working Range	600~1200 V
DC Voltage Full-power Working Rage	650~1100 V
Maximum DC Current	220A
AC Side (Grid-on)	
Rated AC Power	125 kW
Maximum AC Active Power	138 kW
Maximum AC Apparent Power	138 kVA
Rated AC Current	180 A
Maximum AC Current	198 A
Rated Grid Voltage	400V 3W+PE
Grid Voltage Range	340~440V
Rated Grid Frequency	50 / 60 Hz
Grid Frequency Range	45~55Hz / 55~65Hz
Power Factor	-1~1
Current Total Harmonic Distortion (@Rated Power)	<3%
System Parameters	
Working Temperature	-35℃~60℃, >45℃ derating
Relative Humidity	0~100%, no condensation
Noise level	<75 dB
Maximum Working Altitude	4000m, >2000m derating
Cooling method	Temperature controlled forced air cooling
Communication port	CAN, RS485, Ethernet
Degree of Protection	IP66
Mechanical Parameters	
Dimensions (W*H*D)	740*265*850mm (without terminals)
Weight	<93 kg

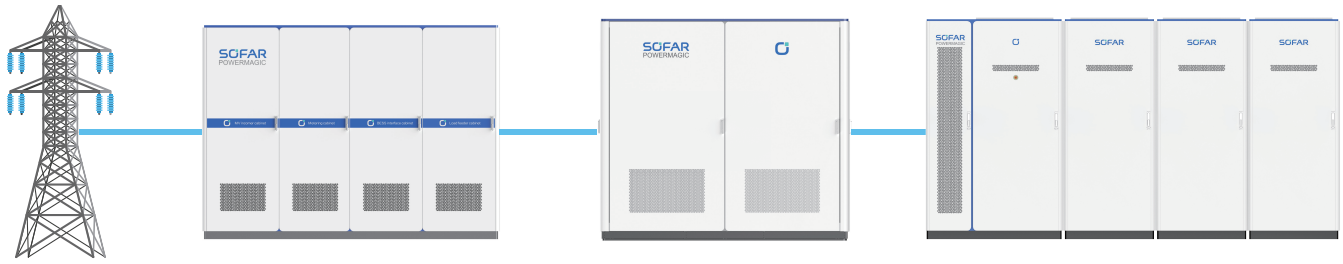
* All specifications are subject to change without notice.

C&I ESS

POWER MAGIC

C&I ESS –**PowerMagic** – AC 690V

Efficient & Flexible | **Lower LCOS** | **Ultimate safety** | **Smart Management**



Grid | MV Backup Cabinet | Transformer Cabinet | Energy Storage Cabinet | Battery Cabinet

Lower LCOS

All-in-one design, High energy density
Plug-and-play design ,quick installation & less cost

Efficient & Flexible

Modular design supports parallel connection and easy system expansion
Grid-On/Off auto-switch function, easy O&M

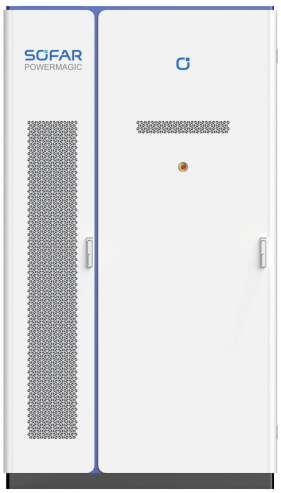
Ultimate Safety

3+2 protection design enables ultimate safety
Electricity and liquid separation reduces system risks

Smart Management

Integrated EMS enables multi-scenario energy management
Fast state monitoring and faults record enables pre-alarm and faults locating

Energy Storage Cabinet



Product Advantages

- Modular design, flexible system expansion
- Grid-on/off auto-switch
- Electrical cables and liquid pipes separated design
- 3 Level FSS+ Flammable gas emission & Explosion vents
- Liquid cooling + Anti-condensation design
- Multi-function EMS integrated

Model	ESS-344kLA-SA1
DC Side	
Battery type	LFP/280Ah
Rated energy	344kWh (8Pack)
Rated Voltage	1228.8V
DC operating voltage range	979.2V~1382.4V DC
Recommend DC voltage range	1036.8~1363.2V DC
AC side	
AC Voltage	690V AC
Rated power	215kW
Maximum AC power	237kW
Maximum AC current	198A
Rated grid frequency	50Hz/60Hz
Power factor	-1~1
System Parameters	
Operating ambient temperature	-30℃~50℃ (Derating above 45℃)
Storage ambient temperature	-30℃~60℃
Operating relative humidity	0~100% (No condensation)
Cooling type	Liquid cooling
Fire suppression	1.Battery cell level (perfluorohexanone) 2.Canibet level (perfluorohexanone or aerosol) 3. Water fire suppression
System configuration	AC side: Maximum 6 Energy storage cabinets in parallel DC side: Maximum 3 Battery cabinets per Energy storage cabinet
Grid-On/Off	Auto-switch (With backup cabinet)
Cabinet connection	Plug-in connector
Dimension(W*D*H)	1450*1350*2550mm
Weight	＜3.5T
Ingress protection rating	IP55
Anti-corrosion	C4 (C5 optional)
Operating altitude	≤4000m (Derating above 2000m)
Installation	Ground mounting
Communication interface	Ethernet, Dry connect
Standard	IEC/EN 61000-6-2/4 , IEC62477-1 , IEC62619, UL 9540, UN38.3, UL9540A, UL1973

* All specifications are subject to change without notice.

Battery Cabinet

Product Advantages

- Modular design, flexible system expansion
- Electrical cables and liquid pipes separated design
- 3 Level FSS + Flammable gas emission & Explosion vents
- Liquid cooling + Anti-condensation design

Model	ESS-344kLA-BD1
Battery type	LFP/280Ah
Rated energy	344kWh (8Pack)
Rated Voltage	1228.8V
DC operating voltage range	979.2V~1382.4V DC
Recommend DC voltage range	1036.8~1363.2V DC
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Operating relative humidity	0~100% (No condensation)
Cooling type	Liquid cooling
Fire suppression	1.Battery cell level (perfluorohexanone) 2.Canibet level (perfluorohexanone or aerosol) 3. Water fire suppression
Communication interface	CAN、RS485
Cabinet connection	Plug-in connector
Dimension(W*D*H)	1000*1350*2550mm
Weight	＜3.2T
Ingress protection rating	IP55
Anti-corrosion	C4 (C5 optional)
Operating altitude	≤4000m (Derating above 2000m)
Installation	Ground mounting
Standard	IEC62619, UN38.3, UL9540A, UL1973

* All specifications are subject to change without notice.

Transformer Cabinet

Product Advantages

- Non-Walk-In design with less footprint
- Full isolation of high and low voltage
- Easy installation and O&M
- Support installation against wall
- Maximum 6 Energy Storage Cabinet in Parallel

Model	PAC-1M29-T1
LV side	
Rated operating voltage	0.69kV/10kV AC
Rated icurrent	6*180A (max 6 cabinets in parallel)
Maximum current	Max 1188A
Rated input power	1290kW(max 6 cabinets in parallel)
MV side	
Rated operating voltage	10kV/20kV/33kV etc., Three-phase three-wire
Rated output current	75A @ 10kV
Rated output power	1290kW
Maximum output power	Max 1419kW
System Parameters	
Operating ambient temperature	-30℃~50℃ (Derating above 45℃)
Storage ambient temperature	-30℃~60℃
Relative humidity	0~100%(No condensation)
Maximum operating altitude	≤2000m(Customized if above)
Ingress protection rating	IP55
Anti-corrosion	C4 (C5 optional)
Rated frequency	50Hz/60Hz
Wire inlet & outlet	Bottom inlet, bottom outlet
Dimension(W*D*H)	2800*2000*2525mm
Weight	＜6.8T
Installation	Ground mounting
Standard	CE,IEC/EN 62271-202:2022

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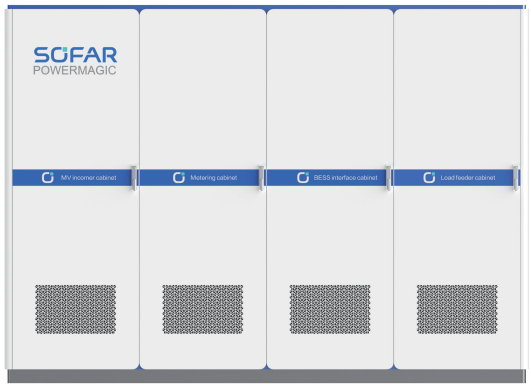
MV Backup Cabinet



Product Advantages

- Grid-on/off auto-switch
- Pre-assembled design, less on-site renovation
- Easy installation and O&M

Model	PAC-2M58-W1
Rated voltage	10kV etc.
Rated current	150A @ 10kV
Rated frequency	50Hz/60Hz
Grid-On/Off	Auto-switch
Ingress protection rating	Enclosure IP4X, Internal cubicle IP2X
Operating ambient temperature	-15℃~+40℃(indoor installation)
Storage ambient temperature	30℃~+60℃
Dimension(W*D*H)	MV incomer cabinet 800* 500*2300(Grid connection) Metering cabinet 800* 1500*2300(Metering point) BESS interface cabinet 800* 1500*2300(For BESS) Load feeder cabinet 800* 1500*2300(For 10kV load)
Operating altitude	≤2000m (Customized if above)
Communication interface	RS485
Standard	CE,IEC/EN 62271-200:2021

* All specifications are subject to change without notice.

EBI 215K-R

Product Advantages

High Yield

- Advanced three-level technology, max. efficiency 99%
- Effective forced air cooling, no derating up to 45˚C
- Rack level management, more battery usable energy

Flexible & Reliable

- Bidirectional power conversion system with full four-quadrant operation
- Modular design, easy for installation & maintenance
- IP66 protection degree, suitable for outdoor installation

Grid Support

- Compliant with CE, IEC 62477 and grid regulations
- L/HVRT, Fast active/reactive power response

Model	EBI 215K-R
DC Side	
Maximum DC Voltage	1500 V
DC Voltage Working Range	1000~1500 V
DC Voltage Full-power Working Rage	1100~1400 V
Maximum DC Current	220A
AC Side (Grid-on)	
Rated AC Power	215 kW
Maximum AC Active Power	237 kW
Maximum AC Apparent Power	237 kVA
Rated AC Current	180 A
Maximum AC Current	198 A
Rated Grid Voltage	690V 3W+PE
Grid Voltage Range	586.5~759V
Rated Grid Frequency	50 / 60 Hz
Grid Frequency Range	45~55Hz /55~65Hz
Power Factor	-1~1
Current Total Harmonic Distortion (@Rated Power)	<3%
System Parameters	
Working Temperature	-35℃~60℃, >45℃ derating
Relative Humidity	0~100%, no condensation
Noise level	<75 dB
Maximum Working Altitude	4000m, >2000m derating
Cooling method	Temperature controlled forced air cooling
Communication port	CAN, RS485, Ethernet
Degree of Protection	IP66
Mechanical Parameters	
Dimensions (W*H*D)	740*265*850mm (without terminals)
Weight	<93 kg

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