

ORION E
OUTDOOR C&I ESS SOLUTION
ENERGY STORAGE SYSTEM

GE-F128/F240/F256 Series Outdoor Battery Cabinet

+

SUN-30~125K Hybrid Inverter

Or

SUN-100/125K PCS (On Grid)

Ultimate Protection, Continuing "0" safety accidents

- **Six-dimensional** safety design, eliminating the risk of fire and explosion
  D1 electrical isolation + D2 fire detection + D3 active exhaust + D4 explosion venting + D5 fire suppression + D6 Thermal isolation
- High-intensity cabinet, **unique patented door latch design**, eliminates structural weak points
- **Hour-level fire resistance**, prevent heat spread

Highly Integrated, Plug and play, no debugging required

- Outer cabinet wall preset inverter or PCS bracket installation position, **no wall bearing concerns, no need to drill**
- **Hybrid inverter,** covering PV, grid, load, generator, and battery interfaces
- Single cabinet can easily deploy **PV+ESS, PV+ESS+DG**

Stable Efficient, Excellent performance ensures returns

- Long-life lithium iron phosphate battery, **≥ 8000 cycles**
- High-efficiency thermal management, **no derating at 45°C,** cell temperature difference **≤6°C**
- Up to **200%** PV over-matching access

Intelligent Management, Flexible adaptation and expansion

- Self-developed **"3S"(EMS+PCS+BMS)**, full-system Intelligent Control
- Single cabinet can be configured with a **2/3/4h system of 30~125kW**, up to **10 units** AC-side on/off-grid parallel or **10 units** DC-side battery parallel
- Integrated energy platform, **24/7 AI** smart customization of optimal power usage strategies

ORION E Series Outdoor Battery Cabinet

	GE-F128 Series			GE-F240 Series					GE-F256 Series
Model	GE-F96-BC-2-A3	GE-F112-BC-2-A3	GE-F128-BC-2-A3	GE-F176-BC-2-A3	GE-F192-BC-2-A3	GE-F208-BC-2-A3	GE-F224-BC-2-A3	GE-F240-BC-2-A3	GE-F256-BC-2-A3
Main Parameters									
Cell Type	$LiFePO_4$								
Module Capcity (Ah)	314								
Module Nominal Voltage (Vdc)	51.2								
Module Energy (kWh)	16.08								
Module Qty In Series	6	7	8	11	12	13	14	15	16
System Nominal Energy (kWh)	96.46	112.53	128.61	176.84	192.92	208.99	225.07	241.15	257.23
System Usable Energy (kWh)*1	96.46	112.53	128.61	176.84	192.92	208.99	225.07	241.15	257.23
System Nominal Voltage (Vdc)	307.2	358.4	409.6	563.2	614.4	665.6	716.8	768	819.2
System Operating Voltage (Vdc)	240~350.4	280~408.8	320~467.2	440~642.4	480~700.8	520~759.2	560~817.6	600~876	640~934.4
Rated DC Power (kW)	48	56	64	88	96	104	112	121	129
Charge/Discharge Current(A)*2 — Recommend	157								
Charge/Discharge Current(A)*2 — Max. Continuous	180								
Charge/Discharge Current(A)*2 — Peak discharge @15s/20~45°C	285								
Other Parameters									
Fire Protection System	Aerosol and Water fire interface CO gas detection, Active exhaust and Explosion venting								
Cooling Method	Smart Air Cooling								
Communication Port	CAN, RS485								
Communication protocol	CAN2.0, Modbus485								
Operating Temperature(°C)*3	-30~55								
Recommend Storage Temperature(°C)	0~35								
Humidity	5% ~ 95%RH (No Condensing)								
Altitude	3000m								
IP Protection	IP55								
Anti Corrosion Level	Standard: C4-M, customizable up to C5								
Dimension(W x D x H,mm)	998 x 1240 x 2405.5			1303 x 1240 x 2405.5					1303x1240×2510
Weight(kg)	1460	1575	1690	2150	2265	2380	2495	2610	2790
Installation Location	Floor mount								
Cycle Life	≥8000 (25±2°C,0.5P,EOL70%)								
Warranty	10 years								
Certification	UN38.3,CE,IEC62619,IE62477,IEC62933-5-2,UL9540A								

1. Test conditions : 100% DOD, 0.5P charge & discharge at 25°C. System usable energy may vary due to system configuration parameters.
2. The current is affected by temperature and SOC.
3. Derated operation at > 45°C.

Battery Cabinet Compatible Inverters

Model	SUN-29.9K-SG01HP3 -AU-BM3	SUN-40K-SG01HP3 -AU-BM4	SUN-50K-SG01HP3 -AU-BM4
Battery Input Data			
Battery Type		Lithium-ion	
Battery Voltage Range (V)		160-800	
Max. Charging/Discharging Current (A)		50+50	
Charging Strategy for Li-ion Battery		Self-adaption to BMS	
Number of Battery Input		2	
PV String Input Data			
Max. PV access power (W)	50000	80000	100000
Max. PV Input Power (W)	44850	60000	75000
Max. PV Input Voltage (V)		1000	
Start-up Voltage (V)		180	
MPPT Voltage Range (V)		150-850	
Rated PV Input Voltage (V)		600	
Max. Operating PV Input Current (A)	36+36+36	36+36+36+36	
Max. Input Short-Circuit Current (A)	55+55+55	55+55+55+55	
No. of MPP Trackers/ No. of Strings MPP Tracker	3/2+2+2	4/2+2+2	
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	29900	40000	50000
Max. AC Input/Output Apparent Power (VA)	29900	40000	50000
Rated AC Input/Output Current (A)	43.4	58	72.5
Max. AC Input/Output Current (A)	43.4	58	72.5
Max. Continuous AC Passthrough (grid to load) (A)		200	
Peak Power (off-grid) (W)		1.5 times of rated power, 10s	
Power Factor Adjustment Range		0.8 leading to 0.8 lagging	
Rated input/output voltage		230/400V 240/415V 0.85Un-1.1Un 3L+N+PE	
Rated Input/Output Grid Frequency/Range(Hz)		50/45-55	
Total Current Harmonic Distortion THDi		<3% (of nominal power)	
DC Injection Current		<0.5% In	
Efficiency			
Max. Efficiency		97.6%	
Euro Efficiency		97.0%	
MPPT Efficiency		>99%	
Equipment Protection			
Integrated		DC Reverse Polarity Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (AFCI) (optional), Anti-islanding Protection(Active Frequency shift), DC Switch, Insulation Impedance Detection, Residual Current Detection	
Surge Protection Level		TYPE II(DC), TYPE II(AC)	
Interface			
LCD/LED Display		LCD	
Communication Interface		WIFI,RS485,CAN	
General Data			
Operating Temperature Range (°C)		-40 to +60°C, >45°C Derating	
Permissible Ambient Humidity		0-100%	
Permissible Altitude		2000m	
Noise (dB)		≤65	
Ingress Protection(IP) Rating		IP 65	
Protection Level		Class I	
Inverter Topology		Non-Isolated	
Over Voltage Category		OVC II(DC), OVC III(AC)	
Cabinet Size (WxHxD mm)		527×894×294 (Excluding Connectors and Brackets)	
Weight (kg)		80	
Type of Cooling		Intelligent Air Cooling	
Warranty		10 Years	
Grid Regulation		AS/NZS 4777.2	
Safety / EMC Standard		IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2	

Model	SUN-29.9K-SG02HP3-AU-BM3-P* Coming soon	SUN-40K-SG02HP3-AU-BM4-P* Coming soon	SUN-50K-SG02HP3-AU-BM4-P* Coming soon
Battery Input Data			
Battery Type	Lithium-ion		
Battery Voltage Range (V)	160-800		
Max. Charging Current (A)	160		
Max. Discharging Current (A)	160		
Charging Strategy for Li-ion Battery	Self-adaption to BMS		
Number of Battery Input	1		
PV String Input Data			
Max. PV Access Power (W)	59800	80000	100000
Max. PV Input Power (W)	47840	64000	80000
Max. PV Input Voltage (V)	1000		
Start-up Voltage (V)	180		
MPPT Voltage Range (V)	150-850		
Rated PV Input Voltage (V)	600		
Max. Operating PV Input Current (A)	36+36+36	36+36+36+36	
Max. Input Short-Circuit Current (A)	55+55+55	55+55+55+55	
No. of MPP Trackers/ No. of Strings MPP Tracker	3/2+2+2	4/2+2+2+2	
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	29900	40000	50000
Max. AC Input/Output Apparent Power (VA)	29900	44000	55000
Rated AC Input/Output Current (A)	43.4	60.7/58	75.8/72.5
Max. AC Input/Output Current (A)	43.4	66.7/63.8	83.4/79.8
Max. Continuous AC Passthrough (grid to load)(A)	200		
Peak Power (off-grid) (W)	1.5 times of rated power, 10s		
Power Factor Adjustment Range	0.8 leading to 0.8 lagging		
Rated Input/Output Voltage/Range (V)	220/380V, 230/400V, 0.85Un-1.1Un		
Rated Input/Output Grid Frequency/Range(Hz)	50/45-55, 60/55-65		
Grid Connection Form	3L+N+PE		
Total Current Harmonic Distortion THDi	<3% (of nominal power)		
DC Injection Current	<0.5% In		
Efficiency			
Max. Efficiency	97.60%		
Euro Efficiency	97.0%		
MPPT Efficiency	>99%		
Equipment Protection			
Integrated	DC Reverse Polarity Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (optional), Anti-islanding Protection, DC Switch, Insulation Impedance Detection, Residual Current Detection		
Surge Protection Level	TYPE II(DC), TYPE II(AC)		
Interface			
LCD/LED Display	LCD		
Communication Interface	WIFI/RS485 /CAN		
Monitor Mode	GPRS/WIFI/Bluetooth/4G		
General Data			
Operating Temperature Range (°C)	-40 to +60, >45 Derating		
Permissible Ambient Humidity	0-100%		
Permissible Altitude	3000m		
Noise (dB)	≤ 65		
Ingress Protection(IP) Rating	IP 65		
Inverter Topology	Non-Isolated		
Over Voltage Category	OVC II(DC), OVC III(AC)		
Cabinet Size (WxHxD mm)	528×793×278 (Excluding Connectors and Brackets)		
Weight (kg)	65		
Type of Cooling	Intelligent Air Cooling		
Warranty	Standard 5 years, extended warranty		
Grid Regulation	AS/NZS 4777.2		
Safety / EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2		

Hybrid Inverter

Model	SUN-60K-SG02HP3-AU-EM6* Coming soon	SUN-70K-SG02HP3-AU-EM6* Coming soon	SUN-80K-SG02HP3-AU-EM6* Coming soon
Battery Input Data			
Battery Type	Lithium-ion Coming soon		
Battery Voltage Range (V)	160~1000		
Max. Charging Current (A)	80+80		
Max. Discharging Current (A)	80+80		
Charging Strategy for Li-ion Battery	Self-adaption to BMS		
Number of Battery Input	2		
PV String Input Data			
Max. PV Access Power (W)	120000	140000	160000
Max. PV Input Power (W)	96000	112000	128000
Max. PV Input Voltage (V)	1000		
Start-up Voltage (V)	180		
MPPT Voltage Range (V)	150~850		
Rated PV Input Voltage (V)	650		
Max. Operating PV Input Current (A)	36+36+36+36+36+36		
Max. Input Short-Circuit Current (A)	54+54+54+54+54+54		
No. of MPP Trackers/ No. of Strings MPP Tracker	6/2+2+2+2+2+2		
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	60000	70000	80000
Max. AC Input/Output Apparent Power (VA)	60000	70000	80000
Rated AC Input/Output Current (A)	87/87	101.5/101.5	116/116
Max. AC Input/Output Current (A)	87/87	101.5/101.5	116/116
Max. Continuous AC Passthrough (grid to load)(A)	200		
Peak Power (off-grid) (W)	1.5 Times Of Rated Power,10s		
Power Factor Adjustment Range	0.8 Leading to 0.8 Lagging		
Rated Input/Output Voltage/Range (V)	230/400V 240/415V 0.85Un-1.1Un		
Rated Input/Output Grid Frequency/Range(Hz)	50/45-55		
Grid Connection Form	3L+N+PE		
Total Current Harmonic Distortion THDi	<3% (Of Rated Power)		
DC Injection Current	<0.5% In		
Efficiency			
Max. Efficiency	98.7%		
Euro Efficiency	98.10%		
MPPT Efficiency	> 99%		
Equipment Protection			
Integrated	DC Reverse Polarity Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (AFCI) (Optional), Anti-islanding Protection, DC Switch, Insulation Impedance Detection, Residual Current Detection		
Surge Protection Level	TYPE II(DC),TYPE II(AC)		
Interface			
LCD/LED Display	LCD+LED		
Communication Interface	RS485,RS232,CAN		
Monitor Mode	GPRS/WIFI/Bluetooth/4G/LAN(optional)		
General Data			
Operating Temperature Range (°C)	-40 to +60, >45 Derating		
Permissible Ambient Humidity	0~100%		
Permissible Altitude	3000m		
Noise (dB)	≤ 65		
Ingress Protection(IP) Rating	IP65		
Inverter Topology	Non-Isolated		
Over Voltage Category	OVC II(DC), OVC III(AC)		
Cabinet Size (WxHxD mm)	606×927×314 (Excluding Connectors and Brackets)		
Weight (kg)	105		
Type of Cooling	Intelligent Air Cooling		
Warranty	5 Years/10 Years		
Grid Regulation	AS/NZS 4777.2		
Safety / EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2		

Hybrid Inverter

Model	SUN-100K-SG02HP3-AU-GM10* Coming soon	SUN-125K-SG02HP3-AU-GM10* Coming soon
Battery Input Data		
Battery Type	Lithium-ion Coming soon	
Battery Voltage Range (V)	160~1000	
Max. Charging Current (A)	100+100	
Max. Discharging Current (A)	100+100	
Charging Strategy for Li-ion Battery	Self-adaption to BMS	
Number of Battery Input	2	
PV String Input Data		
Max. PV Access Power (W)	200000	250000
Max. PV Input Power (W)	160000	200000
Max. PV Input Voltage (V)	1000	
Start-up Voltage (V)	180	
MPPT Voltage Range (V)	150~850	
Rated PV Input Voltage (V)	650	
Max. Operating PV Input Current (A)	42+42+42+42+42+42+42+42+42+42	
Max. Input Short-Circuit Current (A)	63+63+63+63+63+63+63+63+63+63	
No. of MPP Trackers/ No. of Strings MPP Tracker	10/2+2+2+2+2+2+2+2+2+2	
AC Input/Output Data		
Rated AC Input/Output Active Power (W)	100000	125000
Max. AC Input/Output Apparent Power (VA)	100000	125000
Rated AC Input/Output Current (A)	145.0	181.2
Max. AC Input/Output Current (A)	145.0	181.2
Max. Continuous AC Passthrough (grid to load)(A)	250	
Power Factor Adjustment Range	0.8 Leading to 0.8 Lagging	
Rated Input/Output Voltage/Range (V)	230/400V 240/415V 0.85Un-1.1Un	
Rated Input/Output Grid Frequency/Range(Hz)	50/45-55	
Grid Connection Form	3L+N+PE	
Total Current Harmonic Distortion THDi	<3% (Of Rated Power)	
DC Injection Current	<0.5% In	
Efficiency		
Max. Efficiency	98.70%	
Euro Efficiency	98.10%	
MPPT Efficiency	> 99%	
Equipment Protection		
Surge Protection Level	TYPE II(DC),TYPE II(AC)	
Interface		
LCD/LED Display	LCD+LED	
Communication Interface	RS485, RS232,CAN	
General Data		
Operating Temperature Range (°C)	-40 to +60, >45 Derating	
Permissible Ambient Humidity	0~100%	
Permissible Altitude	3000m	
Noise (dB)	≤ 65	
Ingress Protection(IP) Rating	IP65	
Inverter Topology	Non-Isolated	
Over Voltage Category	OVC II(DC), OVC III(AC)	
Cabinet Size (WxHxD mm)	734×1091×344 (Excluding Connectors and Brackets)	
Weight (kg)	161.7	
Type of Cooling	Intelligent Air Cooling	
Warranty	10 Years	
Grid Regulation	AS/NZS 4777.2	
Safety / EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2	

100kW-2.5MW C&I ESS Solution

PCS Model	SUN-100K-PCS01HP3-AU	SUN-125K-PCS01HP3-AU
Battery Data		
Battery Type	Lithium-ion	
Battery Voltage Range(V)	630-1000	
Max.Charging Current(A)	175	200
Max.Discharging Current(A)	175	200
Charging Strategy for Li-ion Battery	Self-adaption to BMS	
Number of battery input	1	
DC Input Data		
DC Input Voltage Range(V)	630-1000	
Max. DC Input Current(A)	200	
AC Input/Output Data		
Rated AC Input/Output Active Power（W）	100000	125000
Max. AC Input/Output Active Power（W）	100000	125000
Max. AC Input/Output Apparent Power （VA）	100000	125000
Rated AC Input/Output Current（A）	145.0	181.2
Max. AC Input/Output Current（A）	145.0	181.2
Max. Output Fault Current	350	
Max. Output Overcurrent Protection	450	
Rated Input/Output Voltage/Range(V)	230/400V,240/415V 0.85Un-1.1Un	
Grid Connection Form	3L+N+PE	
Rated Input/Output Grid Frequency/Range	50Hz/45Hz-55Hz	
Power Factor Adjustment Range	-1~+1	
Total Current Harmonic Distortion THDi	<3%	
DC Injection Current	<0.5%In	
Efficiency		
Max. Efficiency	98.5%	
Euro Efficiency	97.8%	
Equipment Protection		
Integrated	AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection,Insulation Impedance detection, Anti-islanding protection, Residual Current Detection	
Surge Protection Level	TYPE II(DC), TYPE II(AC)	
Interface		
LCD/LED display	LCD	
Communication Interface	WIFI, RS485, CAN, Meter	
General Data		
Max. operating frequency（Hz）	200M	
Operating Temperature Range	-40°C-60°C, > 45°C Derating	
Permissible Ambient Humidity	0~95%	
Permissible Altitude	4000m	
Noise	< 75dB	
Ingress Protection(IP) Rating	IP 65	
Inverter Topology	Non-Isoltaed	
Over Voltage category	OVC II(DC),OVC III(AC)	
Cabinet size（W*H*D）[mm]	543*310*775（Excluding connectors and brackets）	
Weight[kg]	81.86	
Warranty	Standard 5 years, extendable warranty	
Type Of Cooling	Intelligent air cooling	
Grid Regulation	AS/NZS 4777.2	
Safety EMC/Standard	IEC/EN 62109-1, IEC/EN 62109-2,IEC/EN 62477-1	

HESS Solution (Recommend)



GE-F128 Series

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SUN-50K-SG02HP3-AU-BM4-P

Or



SUN-60K-SG02HP3-AU-EM6





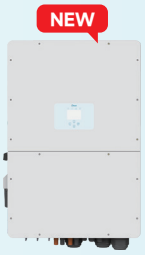
GE-F240/256 Series

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SUN-60K/80K-SG02HP3-AU-EM6

Or



SUN-100K/125K-SG02HP3-AU-GM10 (8)





GE-F256

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SUN-125K-PCS01HP3

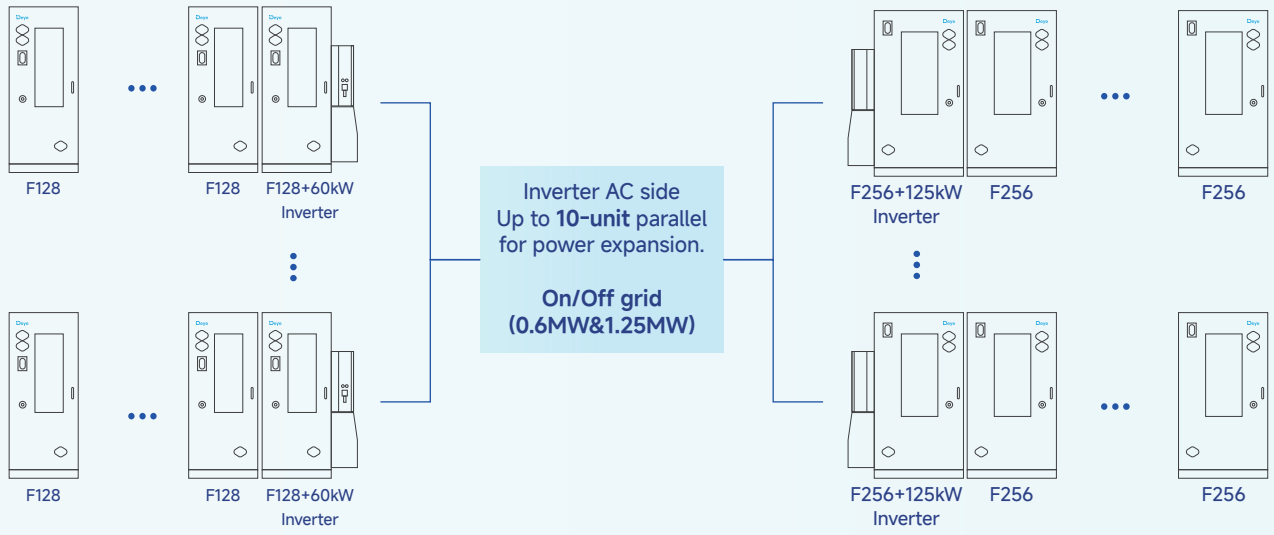


Power Unit	Battery Cabinet Model	Specification
2h HESS Solution		
SUN-50K-SG02HP3-AU-BM4-P*（160A）	GE-F112-BC-2-A3	50kW/112kWh
SUN-60K-SG02HP3-AU-EM6（80A+80A）	GE-F128-BC-2-A3	60kW/128kWh
SUN-80K-SG02HP3-AU-EM6（80A+80A）	GE-F176-BC-2-A3	80kW/176kWh
SUN-100K-SG02HP3-AU-GM10*（100A+100A）	GE-F208-BC-2-A3	100kW/208kWh
SUN-125K-SG02HP3-AU-GM10*（100A+100A）	GE-F240-BC-2-A3	125kW/241&257kWh
SUN-125K-SG02HP3-AU-GM10*（100A+100A）	GE-F256-BC-2-A3	125kW/241&257kWh
SUN-125K-PCS01HP3 (200A)*	GE-F256-BC-2-A3	125kW/257kWh
3h HESS Solution		
SUN-29.9K-SG01HP3-AU-BM3（50A+50A）	GE-F96-BC-2-A3	30kW/96kWh
SUN-40K-SG01HP3- AU-BM4（50A+50A）	GE-F128-BC-2-A3	40kW/128kWh
SUN-60K-SG02HP3-AU-EM6（80A+80A）	GE-F176-BC-2-A3	60kW/176kWh
SUN-70K-SG02HP3-AU-EM6（80A+80A）	GE-F208-BC-2-A3	70kW/208kWh
SUN-80K-SG02HP3-AU-EM6（80A+80A）	GE-F240-BC-2-A3	80kW/241kWh
SUN-80K-SG02HP3-AU-EM6（80A+80A）	GE-F256-BC-2-A3	80kW/257kWh
4h HESS Solution		
SUN-29.9K-SG01HP3-AU-BM3（50A+50A）	GE-F128-BC-2-A3	29.9kW/128kWh
SUN-50K-SG01HP3-AU-BM4（100A）	GE-F192-BC-2-A3	50kW/192kWh
SUN-50K-SG01HP3-AU-BM4（50A+50A）	GE-F208-BC-2-A3	50kW/208kWh
SUN-60K-SG02HP3-AU-EM6（80A+80A）	GE-F240-BC-2-A3	60kW/241kWh
SUN-60K-SG02HP3-AU-EM6（80A+80A）	GE-F256-BC-2-A3	80kW/257kWh

*： SUN-MPPT-L01-AU and SUN-STS500L are optional and require extra space for installation

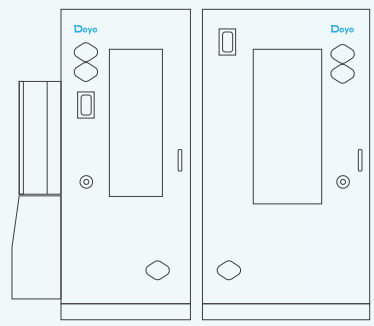
AC/DC Side Parallel Expansion (Capacity & Power)

ENERGY STORAGE SYSTEM



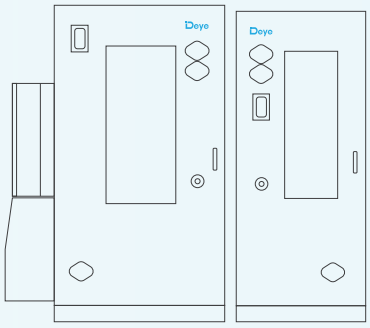
Battery Cabinet DC side
Up to**10-unit** parallel for capacity expansion
(1.28MWh)

Battery Cabinet DC side
Up to**10-unit** parallel for capacity expansion
(2.57MWh)



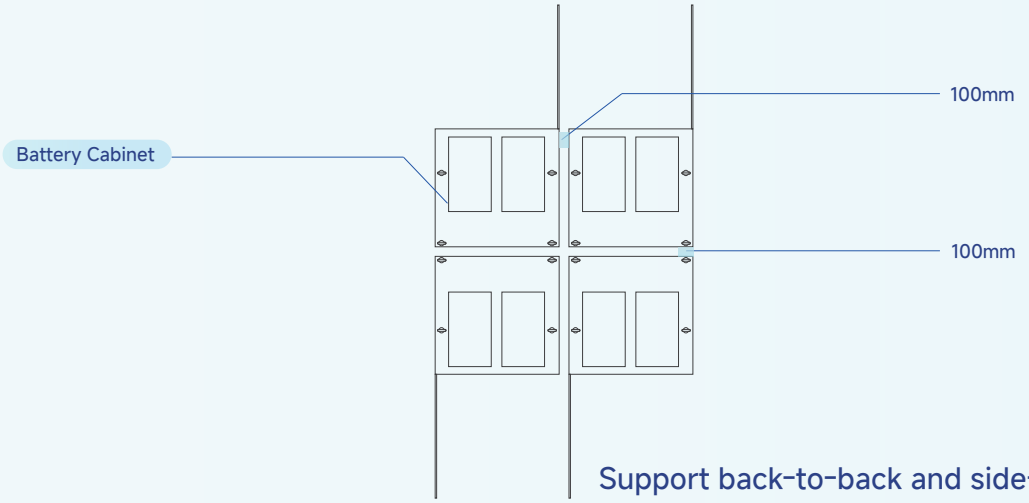
Compatible with battery cabinets of different specifications

The inverter supports two independent battery inputs



Supports **60kW/6h** systems and other configurations

Supports **125kW/3h** systems and other configurations



Support back-to-back and side-by-side installation.

Deye Cloud

All-in-one Energy & Device Management Platform

- Unlock significant savings
- Individual Add-on for dynamic tariff
- Intelligent charging/discharging strategies
- Tailored solution to deye devices
- Real-time equipment monitoring
- Best energy scheduling solutions by Deye Copilot algorithm
- 24/7 AI Assistant support



Smarten Up Your Hybrid Energy Storage System

Download Deye Cloud APP to join us!
Embrace a seamless, effortless energy experience that's both eco-friendly and budget-friendly with our intelligent assistant

APP & Web
Manage your energy effortlessly

Cloud-edge Collaboration
Faster and more efficient

Accelerated Connection
Optimized for speed and performance

Localized Data Centers
Ensure data sovereignty and compliance in EU & US

Deye Copilot
AI-powered energy analysis and control

AI Assistant
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