



UL 9540A
Tested to

Deye



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+MPPT+STS Series Module



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 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							
	Max. Continuous	180							
	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	2770
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 ,CEC								

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			
Max. Input Short-Circuit Current (A)	63+63+63+63+63+63+63+63+63			
No. of MPP Trackers/	10/2+2+2+2+2+2+2+2+2			
No. of Strings MPP Tracker				
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			

HESS Solution (Recommend)



GE-F128 Series

+



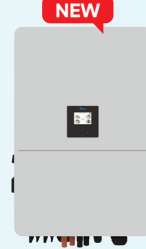
SUN-50K-SG02HP3-AU-BM4-P*

Or



SUN-29.9K-SG01HP3-AU-BM3
SUN-40K-SG01HP3-AU-BM4

Or

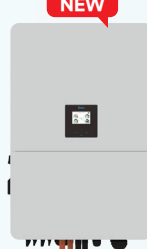


SUN-60K-SG02HP3-AU-EM6



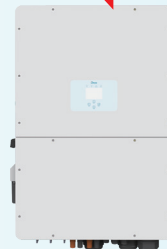
GE-F240 Series

+



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

Or



Coming soon
SUN-100K/125K-SG02HP3-AU-GM10



GE-F256 Series

+



Coming soon
SUN-125K-SG02HP3-AU-GM10*

Or



SUN-125K-PCS01HP3-AU+
(SUN MPPT-L01-AU-AM8+SUN-ST5500L)

Power Unit

Battery Cabinet Model

Specification

2h HESS Solution

SUN-50K-SG02HP3-AU-BM4-P*	GE-F112-BC-2-A3	50kW/112kWh
SUN-60K-SG02HP3-AU-EM6	GE-F128-BC-2-A3	60kW/128kWh
SUN-80K-SG02HP3-AU-EM6	GE-F176-BC-2-A3	80kW/176kWh
SUN-100K-SG02HP3-AU-GM10*	GE-F208-BC-2-A3	100kW/208kWh
SUN-125K-SG02HP3-AU-GM10*	GE-F240-BC-2-A3	125kW/241&257kWh
SUN-125K-SG02HP3-AU-GM10*	GE-F256-BC-2-A3	125kW/241&257kWh
SUN-125K-PCS01HP3-AU+ (SUN MPPT-L01-AU-AM8+SUN-ST5500L)	GE-F256-BC-2-A3	125kW/257kWh

3h HESS Solution

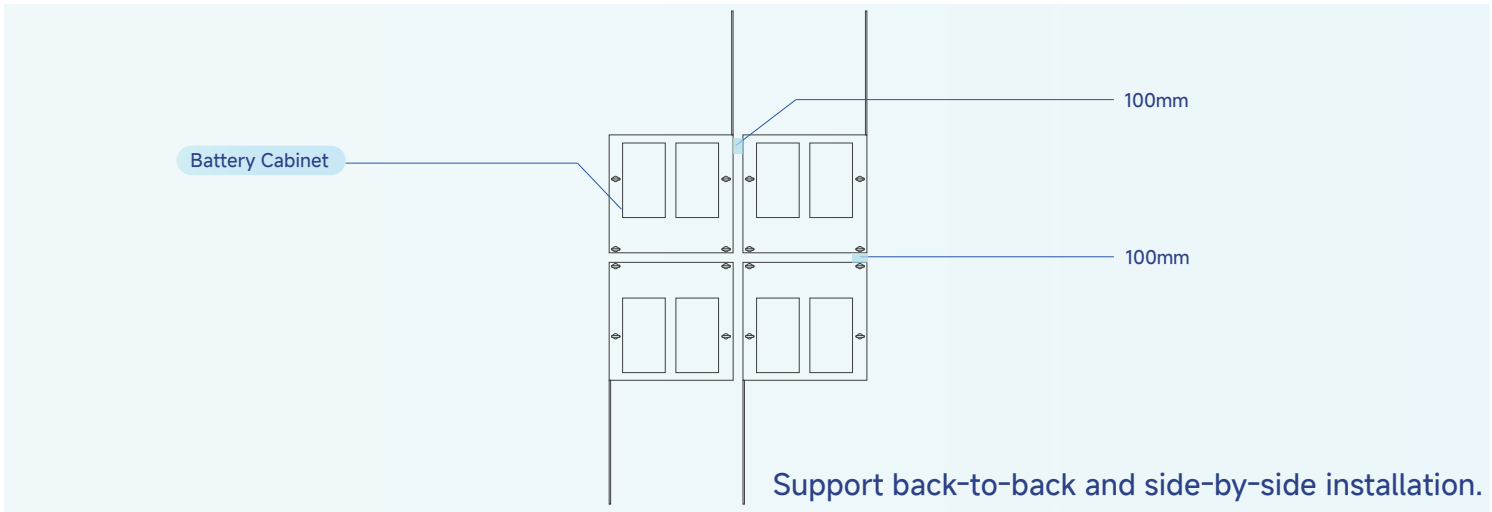
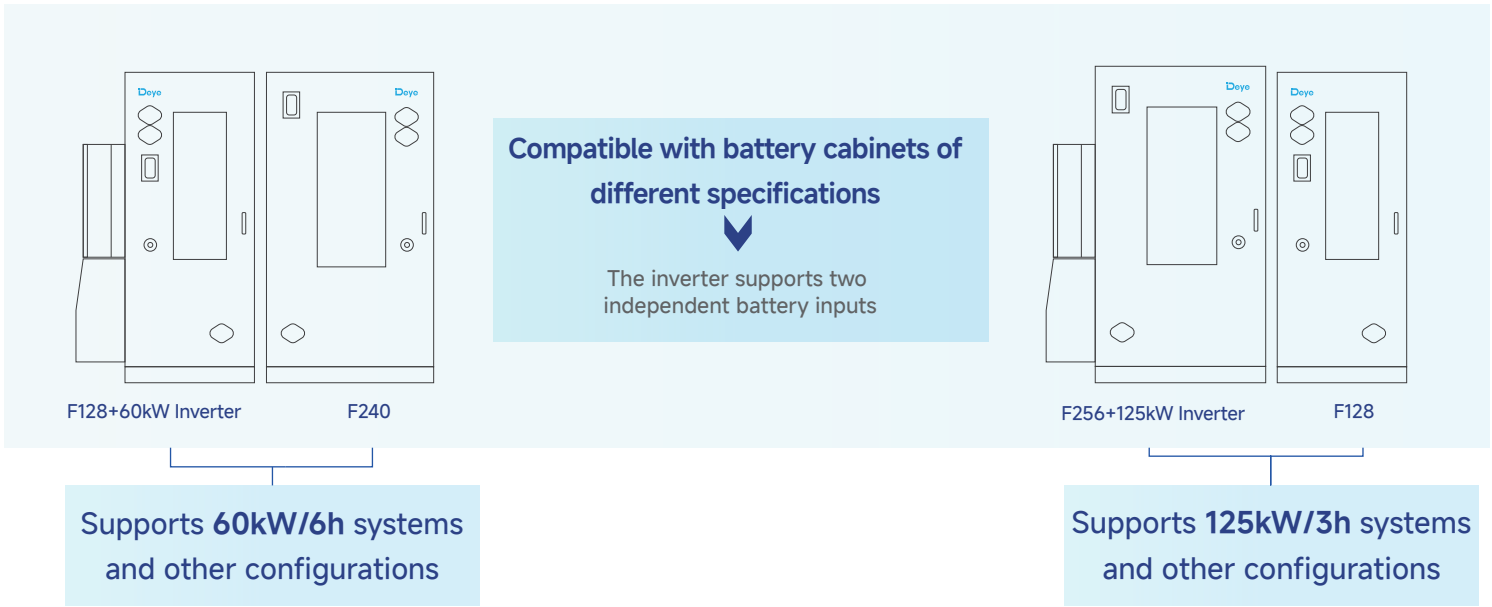
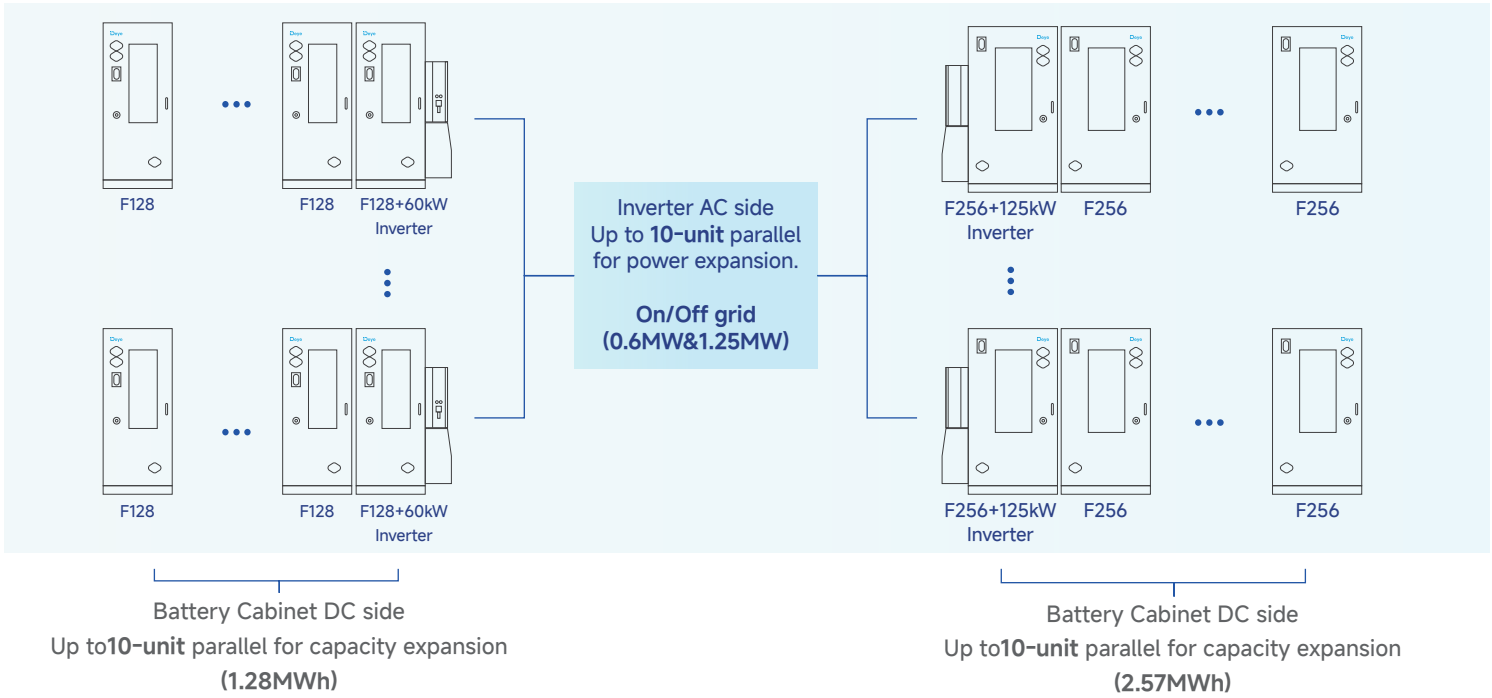
SUN-29.9K-SG01HP3-AU-BM3(50A+50A)	GE-F96-BC-2-A3	30kW/96kWh
SUN-40K-SG01HP3-AU-BM4	GE-F128-BC-2-A3	40kW/128kWh
SUN-60K-SG02HP3-AU-EM6	GE-F176-BC-2-A3	60kW/176kWh
SUN-70K-SG02HP3-AU-EM6	GE-F208-BC-2-A3	70kW/208kWh
SUN-80K-SG02HP3-AU-EM6	GE-F240-BC-2-A3	80kW/241kWh
SUN-80K-SG02HP3-AU-EM6	GE-F256-BC-2-A3	80kW/257kWh

4h HESS Solution

SUN-29.9K-SG01HP3-AU-BM3	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	GE-F208-BC-2-A3	50kW/208kWh
SUN-60K-SG02HP3-AU-EM6	GE-F240-BC-2-A3	60kW/241kWh
SUN-60K-SG02HP3-AU-EM6	GE-F256-BC-2-A3	80kW/257kWh

AC/DC Side Parallel Expansion (Capacity & Power)

ENERGY STORAGE SYSTEM



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

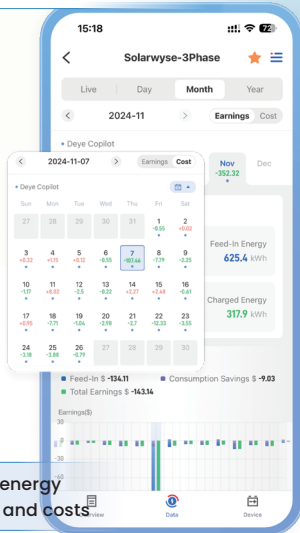
AI Assistant



Offer response suggestions and personalized support experience

Support dynamic tariff and flat-rate

Switch flexibly between autonomous and manual control



Display energy savings and costs



Analyze dynamic pricing, predict power load and PV generation to optimize energy dispatch and minimize electricity costs

Support over 30 languages



Deye Copilot

ToU



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

24/7 support, fast, efficient, in your language



POWERING YOUR LIFE



www.deyeess.com / www.deyeinverter.com



Deye ESS / Deye New Energy