

ORION E
OUTDOOR C&I ESS SOLUTION

GE-F240 Series Outdoor Battery Cabinet

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SUN-60~80K 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 50~80kW**, 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

GE-F240 Series Outdoor Battery Cabinet

	GE-F240 Series				
Model	**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**
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	11	12	13	14	15
System Nominal Energy (kWh)	176.84	192.92	208.99	225.07	241.15
System Usable Energy (kWh)*1	176.84	192.92	208.99	225.07	241.15
System Nominal Voltage (Vdc)	563.2	614.4	665.6	716.8	768
System Operating Voltage (Vdc)	440~642.4	480~700.8	520~759.2	560~817.6	600~876
Rated DC Power (kW)	88	96	104	112	121
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)	1303 x 1240 x 2405.5				
Weight(kg)	2150	2265	2380	2495	2610
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.

GE-F256 Series Outdoor Battery Cabinet Accessories

Power Distribution Unit



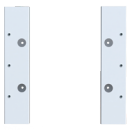
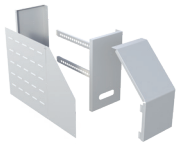
Model	BOS-B-PDU-2-A
Operating Voltage	200~1000Vdc
Nominal Charge/Discharge Current	180A
Operating Temperature	-20~60° C
Ingress Protection	IP20
AC Input Rating	220±10%VAC/2A
Details	526×788.6×167.2(W×D×H), 32kg

Battery Pack



Model	BOS-B-Pack16-A3
Nominal Capacity	314Ah
Nominal Energy	16.08kWh
Nominal Voltage	51.2Vdc
Max Charge/Discharge Current	180A
Ingress Protection	IP20
Operating Temperature (Charge)	0 - 55° C
Operating Temperature (Discharge)	-20 - 55° C
Storage Temperature	0 - 35° C
Details	526 × 795.9 × 274.2 (W × D × H), 116kg

Matching accessory pack

Model	Main Accessories	Application
GE-F256-AP-A	 3AWG_3000mm*2  3AWG_3000mm*2  Communication Cable_3000mm  Inverter Mounting Bracket  Cable Cover(For Inverter)	For inverters with single or dual battery ports ≤ **100A**
GE-F256-AP-E	 1AWG_3000mm  1AWG_3000mm  Communication Cable_3000mm  Cable Cover (For PCS)	For SUN-100/125K-PCS01HP3

Hybrid Inverter

Model	SUN-50K-SG01HP3-AU-BM4	SUN-60K-SG02HP3-AU-EM6	SUN-70K-SG02HP3-AU-EM6	SUN-80K-SG02HP3-AU-EM6
Battery Input Data				
Battery Type	Lithium-ion			
Battery Voltage Range (V)	160-800	160~1000		
Max. Charging Current (A)	50+50	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)	100000	120000	140000	160000
Max. PV Input Power (W)	75000	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)	600	650		
Max. Operating PV Input Current (A)	36+36+36+36	36+36+36+36+36+36		
Max. Input Short-Circuit Current (A)	55+55+55+55	54+54+54+54+54+54		
No. of MPP Trackers/ No. of Strings MPP Tracker	4/2+2+2	6/2+2+2+2+2+2		
AC Input/Output Data				
Rated AC Input/Output Active Power (W)	50000	60000	70000	80000
Max. AC Input/Output Apparent Power (VA)	50000	60000	70000	80000
Rated AC Input/Output Current (A)	72.5	87	101.5	116.0
Max. AC Input/Output Current (A)	72.5	87	101.5	116.0
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 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	97.60%	98.7%		
Euro Efficiency	97.0%	98.1%		
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	LCD+LED		
Communication Interface	WIFI,RS485,CAN	RS485,RS232,CAN		
General Data				
Operating Temperature Range (°C)	-40 to +60, >45 Derating			
Permissible Ambient Humidity	0~100%			
Permissible Altitude	2000m	3000m		
Noise (dB)	≤ 65			
Ingress Protection(IP) Rating	IP65			
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)	606×927×314 (Excluding Connectors and Brackets)		
Weight (kg)	80	105		
Type of Cooling	Intelligent Air Cooling	Smart 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	

Battery Cabinet Compatible Inverters



GE-F240 Series

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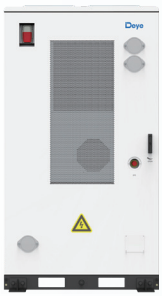
SUN-50K-SG01HP3-AU-BM4

Or



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





GE-F240

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SUN-125K-PCS01HP3

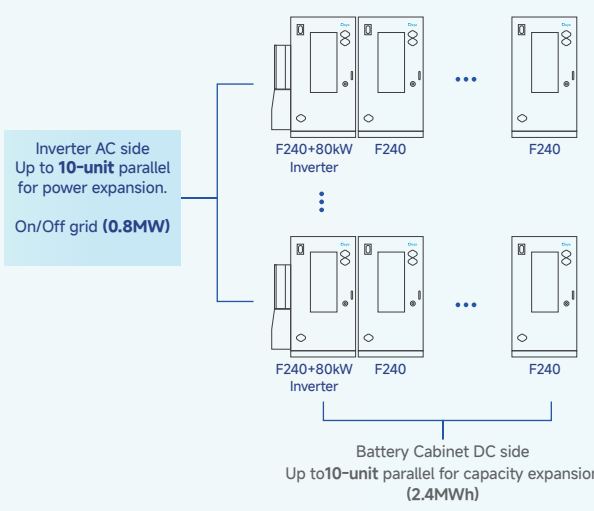


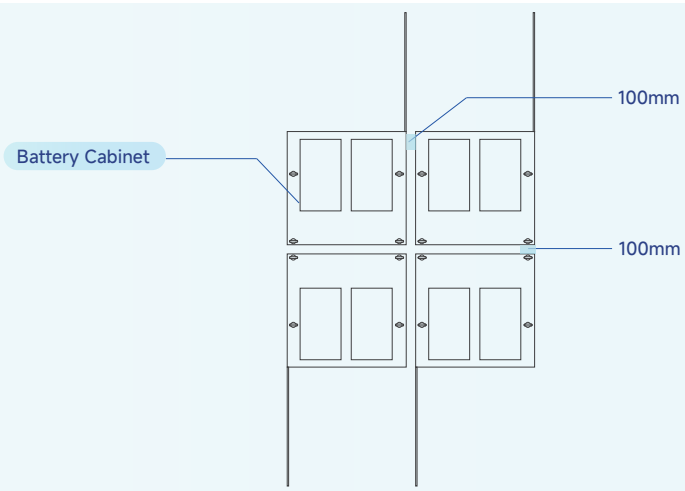
Power Unit	Battery Cabinet Model	Specification
2h ESS Solution		
SUN-80K-SG02HP3-AU-EM6（80A+80A）	GE-F176-BC-2-A3	80kW/176kWh
SUN-125K-PCS01HP3 (200A)*	GE-F240-BC-2-A3	125kW/241kWh
3h ESS Solution		
SUN-60K-SG02HP3-AU-EM6（80A+80A）	GE-F176-BC-2-A3	60kW/176kWh
SUN-70K-SG02HP3-AU-EM6（80A+80A）	GE-F208-BC-2-A3	70kW/208kWh
SUN-75K-SG02HP3-AU-EM6 (80A+80A)	GE-F224-BC-2-A3	75kW/225kWh
SUN-80K-SG02HP3-AU-EM6（80A+80A）	GE-F240-BC-2-A3	80kW/241kWh
4h ESS Solution		
SUN-50K-SG01HP3-AU-BM4（100A）	GE-F192-BC-2-A3	50kW/192kWh
SUN-50K-SG01HP3-AU-BM4（100A）	GE-F208-BC-2-A3	50kW/208kWh
SUN-60K-SG02HP3-AU-EM6（80A+80A）	GE-F240-BC-2-A3	60kW/241kWh

*: 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



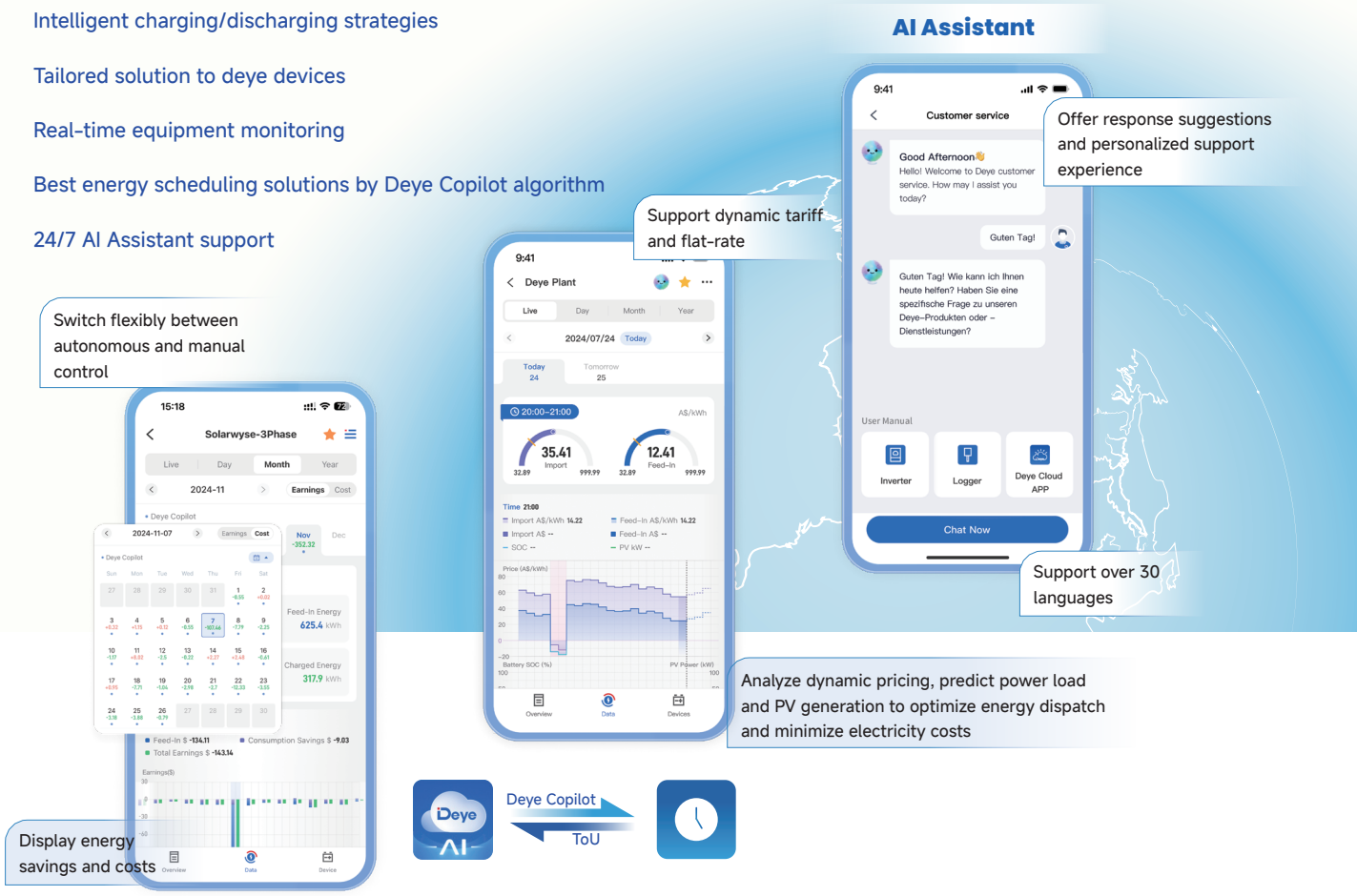


Support back-to-back and side-by-side installation.

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