

ORION E
OUTDOOR C&I ESS SOLUTION

GE-F240 Series & GE-F256 Series Outdoor Battery Cabinet

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SUN-50~125K 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 50~125kW**, 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

GE-F240 Series & GE-F256 Series Outdoor Battery Cabinet

	GE-F240 Series			GE-F256 Series
Model	GE-F176-BC-2-A3	GE-F208-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	11	13	15	16
System Nominal Energy (kWh)	176.84	208.99	241.15	257.23
System Usable Energy (kWh)*1	176.84	208.99	241.15	257.23
System Nominal Voltage (Vdc)	563.2	665.6	768	819.2
System Operating Voltage (Vdc)	440~642.4	520~759.2	600~876	640~934.4
Rated DC Power (kW)	88	104	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)	1303 x 1240 x 2405.5			1303x1240×2510
Weight(kg)	2150	2380	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			

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.

Hybrid Inverter

Model	SUN-50K-SG02HP3-EU-BM4	SUN-60K-SG02HP3-EU-EM6	SUN-70K-SG02HP3-EU-EM6	SUN-80K-SG02HP3-EU-EM6
Battery Input Data				
Battery Type	Lithium-ion			
Battery Voltage Range (V)	160-800	160~1000		
Max. Charging Current (A)	100	80+80		
Max. Discharging Current (A)	100	80+80		
Charging Strategy for Li-ion Battery	Self-adaption to BMS			
Number of Battery Input	1	2		
PV String Input Data				
Max. PV Access Power (W)	100000	120000	140000	160000
Max. PV Input Power (W)	80000	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+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)	55000	66000	77000	88000
Rated AC Input/Output Current (A)	75.8/72.5	91/87	106.1/101.5	121.3/116
Max. AC Input/Output Current (A)	83.4/79.8	100/95.7	116.7/111.6	133.4/127.6
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)	<3% (Of Rated Power)		
DC Injection Current	<0.5% In			
Efficiency				
Max. Efficiency	97.60%	98.7%		
Euro Efficiency	97.0%	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	LCD+LED		
Communication Interface	WIFI/RS485/CAN	RS485,RS232,CAN		
Monitor Mode	GPRS/WIFI/Bluetooth/4G	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)	528×793×278 (Excluding Connectors and Brackets)	606×927×314 (Excluding Connectors and Brackets)		
Weight (kg)	65	105		
Type of Cooling	Intelligent Air Cooling			
Warranty	Standard 5 years, extended warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy		
Grid Regulation	IEC 61727,IEC 62116,CEI 0-21,EN 50549, NRS 097,RD 140,UNE 217002,OVE-Richtlinie R25,G99,VDE-AR-N 4105			
Safety / EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2			

Model	SUN-100K-SG02HP3-EU-GM8	SUN-100K-SG02HP3-EU-GM10	SUN-125K-SG02HP3-EU-GM10
Battery Input Data			
Battery Type	Lithium-ion		
Battery Voltage Range (V)	160-1000		
Max. Charging/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	200000	250000
Max. PV Input Power (W)	160000	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+42+42+42+42+42+42+42+42	
Max. Input Short-Circuit Current (A)	63+63+63+63+63+63+63+63	63+63+63+63+63+63+63+63+63+63	
No. of MPP Trackers/ No. of Strings MPP Tracker	8/2+2+2+2+2+2+2+2	10/2+2+2+2+2+2+2+2+2+2	
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	100000	100000	125000
Max. AC Input/Output Apparent Power (VA)	110000	110000	135000
Rated AC Input/Output Current (A)	151.6/145.0	151.6/145.0	189.4/181.2
Max. AC Input/Output Current (A)	166.7/159.5	166.7/159.5	204.6/195.7
Max. Continuous AC Passthrough (grid to load) (A)	250		
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	220/380V, 230/400V 0.85Un-1.1Un 3L+N+PE		
Rated Input/Output Grid Frequency/Range(Hz)	50/45-55, 60/55-65		
Total Current Harmonic Distortion THDi	<3% (of nominal power)		
DC Injection Current	<0.5% In		
Efficiency			
Max. Efficiency	98.70%		
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°C to +60°C, >45°C 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)	734×1091×344 (Excluding Connectors and Brackets)		
Weight (kg)	161.7		
Type of Cooling	Intelligent Air Cooling		
Warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy		
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105		
Safety / EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2		

HESS Solution (Recommend)



GE-F240 Series

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SUN-50K-SG02HP3-EU-BM4

Or



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

Or



SUN-100K/125K-SG02HP3-EU-GM10



GE-F256 Series

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SUN-125K-SG02HP3-EU-GM10

Or

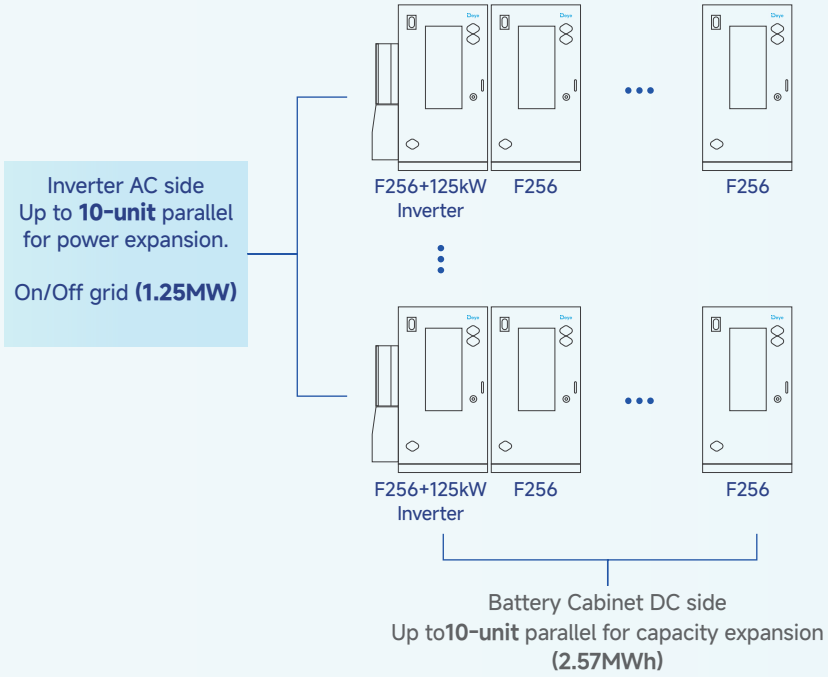


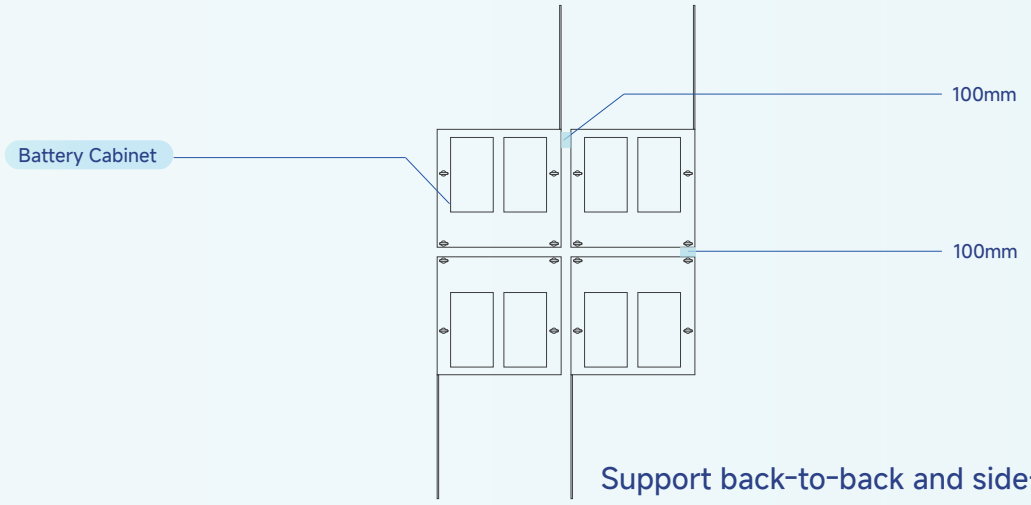
SUN-125K-PCS02HP3+
(SUN MPPT-L01-EU+SUN-STS500L)

Power Unit	Battery Cabinet Model	Specification
2h HESS Solution		
SUN-80K-SG02HP3-EU-EM6	GE-F176-BC-2-A3	80kW/176kWh
SUN-100K-SG02HP3-EU-GM10	GE-F208-BC-2-A3	100kW/208kWh
SUN-125K-SG02HP3-EU-GM10	GE-F240/F256-BC-2-A3	125kW/241&257kWh
SUN-125K-PCS02HP3+ (SUN MPPT-L01-EU+SUN-STS500L)	GE-F256-BC-2-A3	100&125kW/257kWh
3h HESS Solution		
SUN-60K-SG02HP3-EU-EM6	GE-F176-BC-2-A3	60kW/176kWh
SUN-70K-SG02HP3-EU-EM6	GE-F208-BC-2-A3	70kW/208kWh
SUN-80K-SG02HP3-EU-EM6	GE-F240-BC-2-A3	80kW/241kWh
4h HESS Solution		
SUN-50K-SG02HP3-EU-BM4	GE-F208-BC-2-A3	50kW/208kWh
SUN-60K-SG02HP3-EU-EM6	GE-F240-BC-2-A3	60kW/241kWh

AC/DC Side Parallel Expansion (Capacity & Power)

ENERGY STORAGE SYSTEM



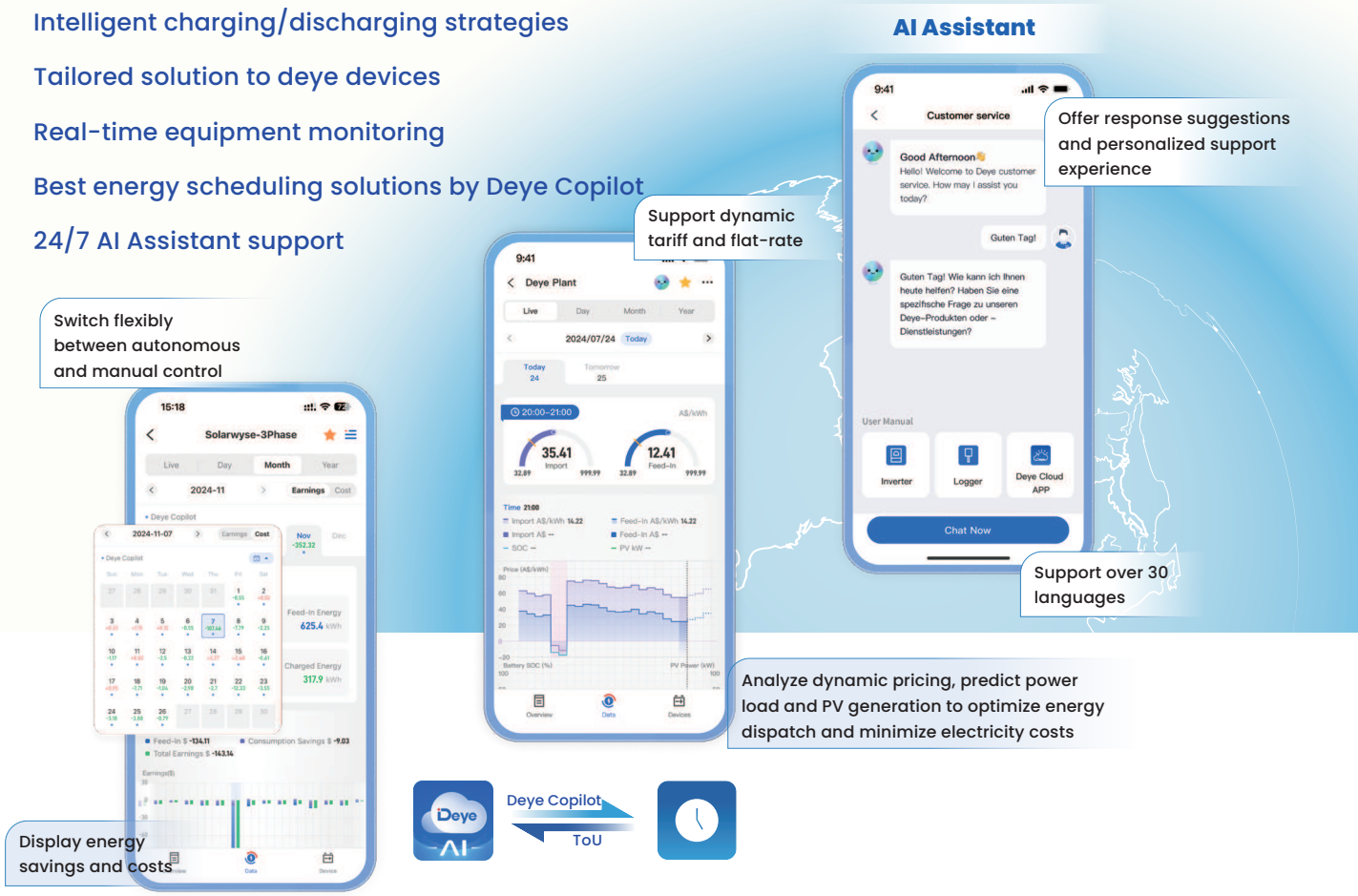


Support back-to-back and side-by-side installation.

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