

# ORION E
# OUTDOOR C&I ESS SOLUTION

GE-F128 Series Outdoor Battery Cabinet

+

SUN-30~60K Hybrid Inverter

## 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 30~60kW**, 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-F128 Series Outdoor Battery Cabinet

| | GE-F128 Series | |
|---|---|---|
| **Model** | **GE-F112-BC-2-A3** | **GE-F128-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 | 7 | 8 |
| System Nominal Energy (kWh) | 112.53 | 128.61 |
| System Usable Energy (kWh)*1 | 112.53 | 128.61 |
| System Nominal Voltage (Vdc) | 358.4 | 409.6 |
| System Operating Voltage (Vdc) | 280-408.8 | 320-467.2 |
| Rated DC Power (kW) | 56 | 64 |
| 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 | |
| Weight(kg) | 1575 | 1690 |
| 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-F128 Series Outdoor Battery Cabinet Accessories

## Power Distribution Unit



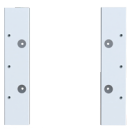
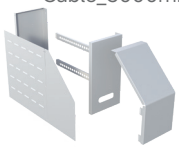
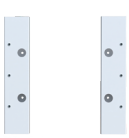
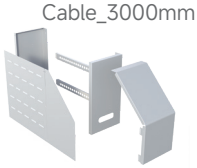
| Model | BOS-B-PDU-2-A |
|---|---|
| Operating Voltage | 200~1000Vdc |
| Nominal Charge/Discharge Current | 180A |
| Operating Temperature | -20~60° C |
| Ingress Protection | IP20 |
| AC Input Rating | 220±10%VAC/2A |
| Details | 788.6×526×167.2(W×D×H), 32kg |

## 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 | 795.9 × 526 × 274.2 (W × D × H), 126kg |

## Matching accessory pack

| Model | Main Accessories | Application |
|---|---|---|
| **GE-F128-AP-A** |  3AWG_3000mm*2  3AWG_3000mm*2  Communication Cable_3000mm  Inverter Mounting Bracket  Cable Cover | For inverters with single or dual battery ports ≤ **100A** |
| **GE-F128-AP-B** |  1AWG_3000mm  1AWG_3000mm  Communication Cable_3000mm  Inverter Mounting Bracket  Cable Cover | For inverters with single battery port ≤ **160A** |

# Battery Cabinet Compatible Inverters

| Model | SUN-30K-SG02HP3-EU-BM3 | SUN-40K-SG02HP3-EU-BM4 | SUN-50K-SG02HP3-EU-BM4-P | SUN-60K-SG02HP3-EU-EM6 |
|---|---|---|---|---|
| **Battery Input Data** | | | | |
| Battery Type | Lithium-ion | | | |
| Battery Voltage Range (V) | 160~800 | | | 160~1000 |
| Max. Charging Current (A) | 100 | 100 | 160 | 80+80 |
| Max. Discharging Current (A) | 100 | 100 | 160 | 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) | 60000 | 80000 | 100000 | 120000 |
| Max. PV Input Power (W) | 48000 | 64000 | 80000 | 96000 |
| 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 | | 36+36+36+36+36+36 |
| Max. Input Short-Circuit Current (A) | 55+55+55 | 55+55+55+55 | | 54+54+54+54+54+54 |
| No. of MPP Trackers/ No. of Strings MPP Tracker | 3/2+2+2 | 4/2+2+2+2 | | 6/2+2+2+2+2+2 |
| **AC Input/Output Data** | | | | |
| Rated AC Input/Output Active Power (W) | 30000 | 40000 | 50000 | 60000 |
| Max. AC Input/Output Apparent Power (VA) | 33000 | 44000 | 55000 | 66000 |
| Rated AC Input/Output Current (A) | 45.5/43.5 | 60.7/58 | 75.8/72.5 | 91/87 |
| Max. AC Input/Output Current (A) | 50/47.9 | 66.7/63.8 | 83.4/79.8 | 100/95.7 |
| 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% | | | 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 | 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) | | | 606×927×314 (Excluding Connectors and Brackets) |
| Weight (kg) | 65 | | | 105 |
| 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 | | | |

## ESS Solution (Recommend)



GE-F128

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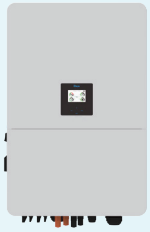
SUN-30K-SG01HP3-EU-BM3
SUN-40K-SG01HP3-EU-BM4

Or




SUN-30K-SG02HP3-EU-BM3
SUN-40K-SG02HP3-EU-BM4
SUN-50K-SG02HP3-EU-BM4-P

Or

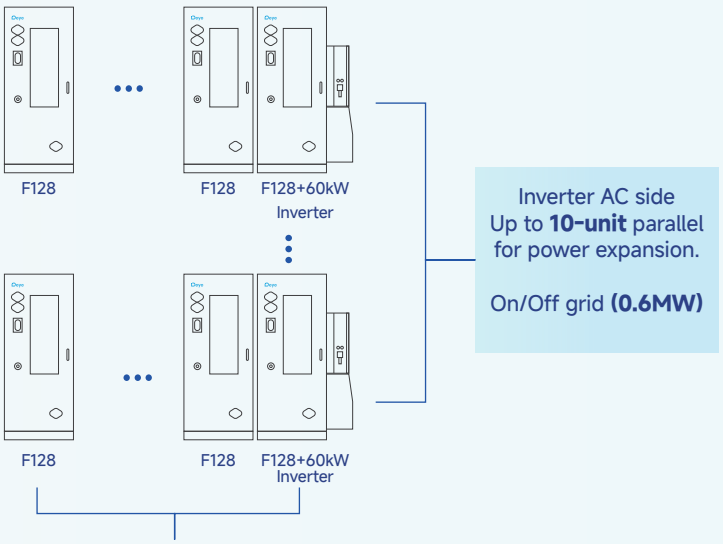


SUN-60K-SG02HP3-EU-EM6

| Power Unit | Battery Cabinet Model | Specification |
|---|---|---|
| **2h ESS Solution** | | |
| SUN-50K-SG02HP3-EU-BM4-P（160A） | GE-F112-BC-2-A3 | 50kW/112kWh |
| SUN-60K-SG02HP3-EU-EM6（80A+80A） | GE-F128-BC-2-A3 | 60kW/128kWh |
| **3h ESS Solution** | | |
| SUN-40K-SG02HP3-EU-BM4（100A） | GE-F128-BC-2-A3 | 40kW/128kWh |
| SUN-40K-SG01HP3-EU-BM4（50A+50A） | GE-F128-BC-2-A3 | 40kW/128kWh |
| **4h ESS Solution** | | |
| SUN-30K-SG02HP3-EU-BM4（100A） | GE-F128-BC-2-A3 | 30kW/128kWh |
| SUN-30K-SG01HP3-EU-BM4（50A+50A） | GE-F128-BC-2-A3 | 30kW/128kWh |

## AC/DC Side Parallel Expansion (Capacity & Power)

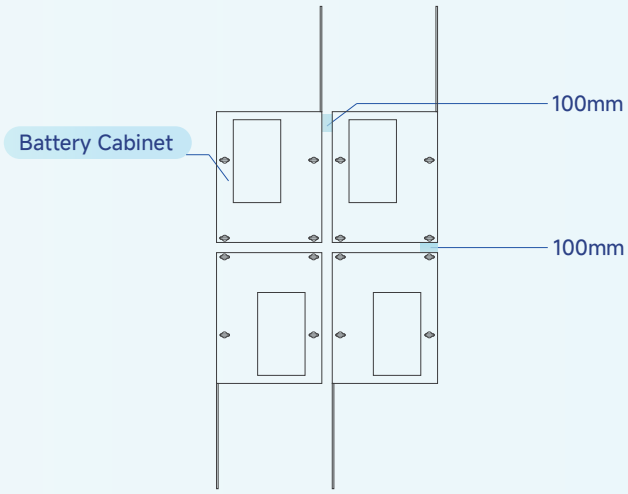
### ENERGY STORAGE SYSTEM




Inverter AC side
Up to **10-unit** parallel
for power expansion.

On/Off grid **(0.6MW)**

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

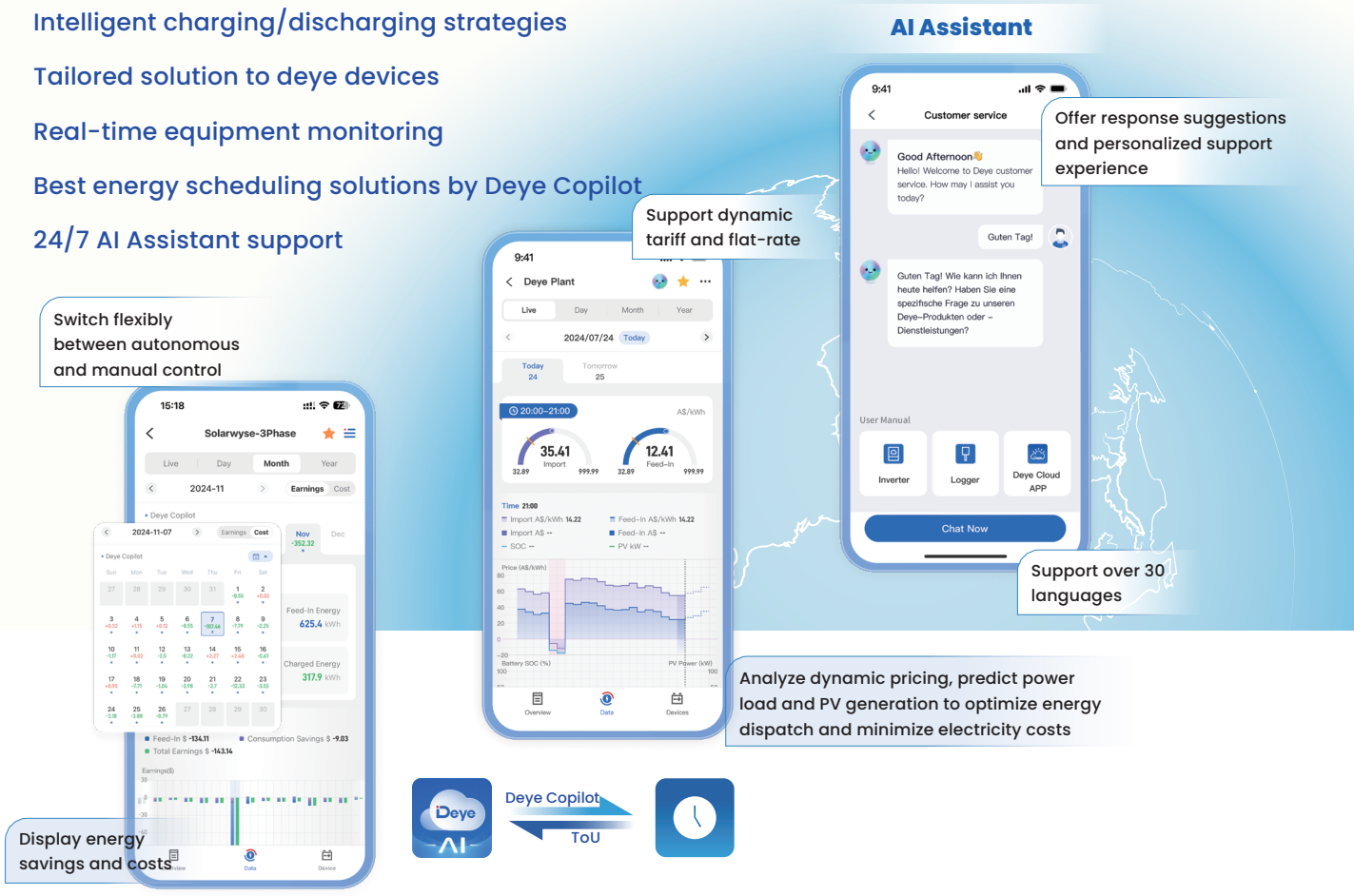



Support back-to-back and side-by-side installation.

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