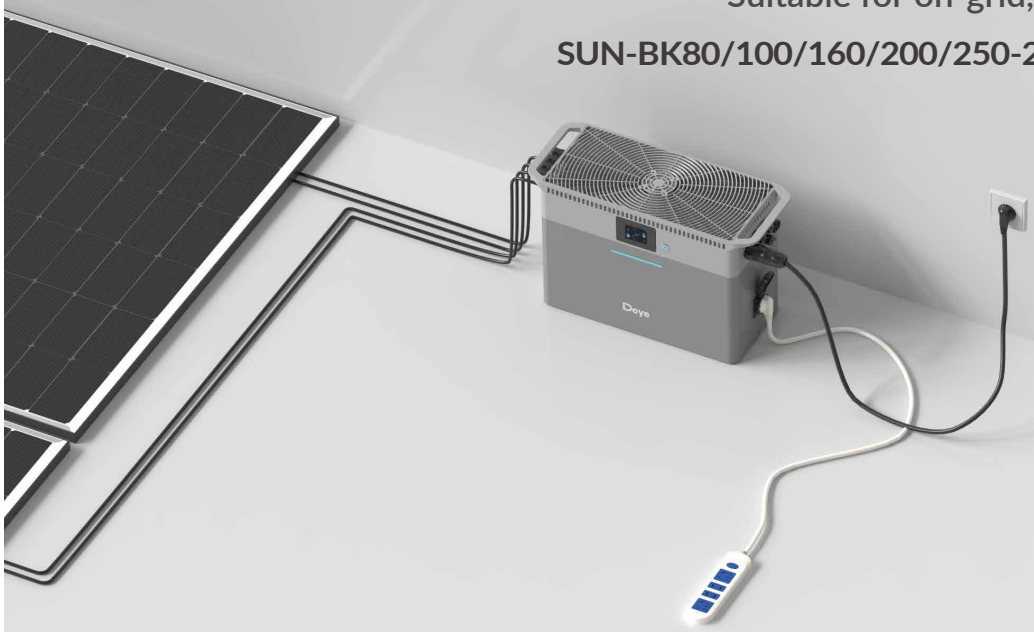
Deye

Micro Hybrid Energy Storage System

# MICRO HYBRID ESS

Suitable for on-grid, off-grid, and portable use

**SUN-BK80/100/160/200/250-2.56KWH-EU-AM4-18/32L**



IP65



**Hybrid Grid-Tied Mode**
Self-consumption



**Off-Grid Mode**
Standalone & portable energy storage



**AC-Coupled Mode**
Upgrade the existing PV balcony system to ESS

### Plug and Play
Installs easily with any standard socket

### Wireless Zero-Export Function
Precise control & ultra-low latency

### Time-of-Use Electricity Strategy
Sets up 6 time periods for charging/discharging

### 96.5% Conversion Efficiency
Low energy loss

### UPS-Grade Backup Power
≤4ms on-grid/off-grid switchover

### Strong Performance
Up to 2.5kW rated AC power

### Intelligent Load Control
Supports smart plug, smart switch, smart EV charger

### IP65 Protection Rating
10-year warranty

### 99% PV Module Compatibility
Max. 5760W PV access power

### Portable Design
Reliable power for outdoor trips

### Remote O&M
Control via Deye Cloud App

### Local Bluetooth Communication
Supports offline control

## Micro Hybrid Energy Storage System

Max. 5760W PV Access Power

2.56kWh LFP Battery

Max. 2500W On-grid & Off-grid Operation





| Model | SUN-BK80-2.56KWH-EU-AM4-18L | SUN-BK100-2.56KWH-EU-AM4-18L | SUN-BK160-2.56KWH-EU-AM4-18L | SUN-BK200-2.56KWH-EU-AM4-18L | SUN-BK250-2.56KWH-EU-AM4-18L |
|---|---|---|---|---|---|
| **Battery Input Data** | | | | | |
| Battery Type | $LiFePO_4$ | | | | |
| Battery Voltage Range(V) | 44.8-57.6 V | | | | |
| Battery Nominal Energy (Wh) | 2560Wh | | | | |
| Max.Charging/Discharging Current(A) | 50A | | | | |
| Charging Strategy for Li-ion Battery | Self-adaption to BMS | | | | |
| **PV String Input Data** | | | | | |
| Max. PV access power (W) | 4400W | | | | |
| Max. Operating PV Input Current (A) | 18+18+18+18A | | | | |
| Max. Input Short-Circuit Current (A) | 27+27+27+27A | | | | |
| Rated PV Input voltage (V) | 42.5V | | | | |
| Start-up Voltage (V) | 25Vdc | | | | |
| MPPT voltage range (V) | 20 ~ 55V | | | | |
| No. of MPP Trackers/No. of Strings MPP Tracker | 4/1+1+1+1 | | | | |
| **AC Input/Output Data** | | | | | |
| Rated AC Input/Output Active Power （W） | 800W | 1000W | 1600W | 2000W | 2500W |
| Max. AC Input/Output Active Power （W） | 880W | 1100W | 1760W | 2200W | 2750W |
| Max. off grid power (W) | 2500W | | | | |
| Rated AC Input/Output Current （A） | 3.7A / 3.5A | 4.6A / 4.4A | 7.3A / 7.0A | 9.1A / 8.7A | 11.4A / 10.9A |
| Max. AC Input/Output Current （A） | 4A / 3.9A | 5A / 4.8A | 8A / 7.7A | 10A / 9.6A | 12.5A / 12A |
| Peak Power (off-grid) (W) | 2 times of rated power,10s | | | | |
| AC Input / Output Frequency and Voltage | 50Hz ( 45Hz ~ 55Hz ) , 60Hz ( 55Hz ~ 65Hz ) , L + N + PE , 220 / 230 Vac | | | | |
| Power Factor Adjustment Range | 0.8 leading-0.8lagging | | | | |
| Max. Continuous AC Passthrough (grid to load)(A) | 30A | | | | |
| DC Injection Current | <0.5%In | | | | |
| **Efficiency** | | | | | |
| Max. Efficiency | 96.5% | | | | |
| Euro Efficiency | 96.0% | | | | |
| MPPT Efficiency | >99% | | | | |
| **Equipment Protection** | | | | | |
| Integrated | DC reverse polarity protection, AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection, Insulation Impedance detection, Anti-islanding protection | | | | |
| Surge Protection Level | TYPE II(DC),TYPE II(AC) | | | | |
| **General Data** | | | | | |
| Max. Inverter Parallel NO. | 3 pcs (up to 7.5 kW rated output) | | | | |
| Communication Interface | Wi-Fi，Bluetooth，LoRa | | | | |
| Operating Temperature Range (°C) | -10°C ~ 55°C, >45°C Derating, (-20°C~55°C with heating, optional) | | | | |
| Permissible Altitude (m) | 2000m | | | | |
| Ingress Protection(IP) Rating | IP 65 | | | | |
| Cabinet Size (W X H X D) | 526 × 326 × 210mm | | | | |
| Weight (kg) | 32kg | | | | |
| Permissible Ambient Humidity | 0% ~ 95% ( No Condensing ) | | | | |
| Warranty | 10 years | | | | |
| Grid Regulation | VDE 4105, IEC 61727/62116, VDE 0126, AS 4777.2, CEI 0-21, EN 50549-1, G98, C10-11, UNE 217002 | | | | |
| Safety EMC/Standard | IEC 62619, UN38.3, IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1/2/3/4 | | | | |

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## Micro Hybrid Energy Storage System

Max. 5760W PV Access Power

2.56kWh LFP Battery

Max. 2500W On-grid & Off-grid Operation

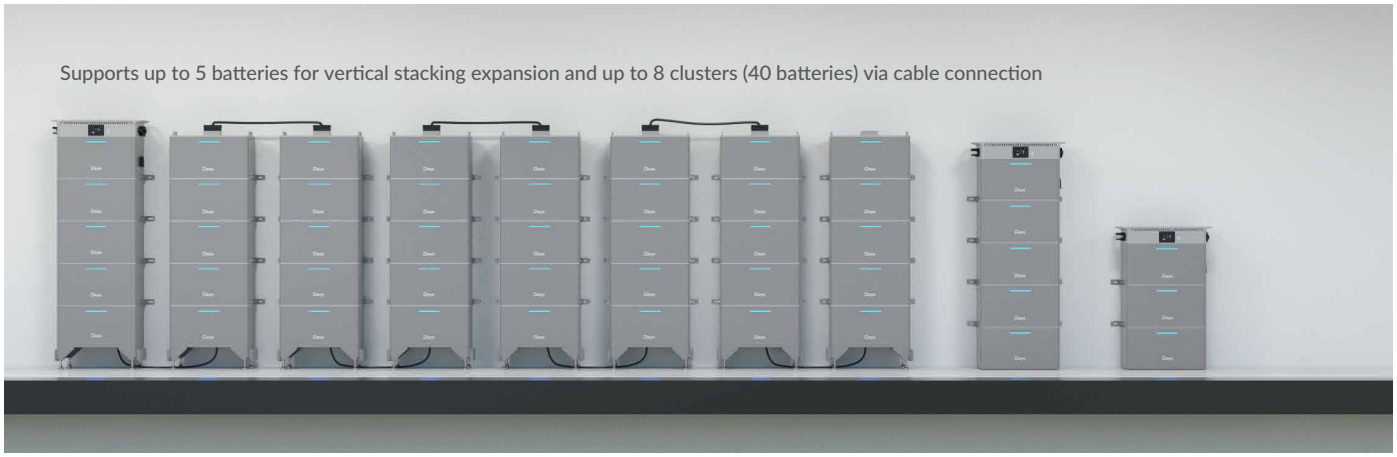




| Model | SUN-BK80-2.56KWH-EU-AM4-32L | SUN-BK100-2.56KWH-EU-AM4-32L | SUN-BK160-2.56KWH-EU-AM4-32L | SUN-BK200-2.56KWH-EU-AM4-32L | SUN-BK250-2.56KWH-EU-AM4-32L |
|---|---|---|---|---|---|
| **Battery Input Data** | | | | | |
| Battery Type | $LiFePO_4$ | | | | |
| Battery Voltage Range(V) | 44.8-57.6 V | | | | |
| Battery Nominal Energy (Wh) | 2560Wh | | | | |
| Max.Charging/Discharging Current(A) | 50A | | | | |
| Charging Strategy for Li-ion Battery | Self-adaption to BMS | | | | |
| **PV String Input Data** | | | | | |
| Max. PV access power (W) | 5760W | | | | |
| Max. Operating PV Input Current (A) | 32+32+32+32A | | | | |
| Max. Input Short-Circuit Current (A) | 48+48+48+48A | | | | |
| Rated PV Input voltage (V) | 42.5V | | | | |
| Start-up Voltage (V) | 25Vdc | | | | |
| MPPT voltage range (V) | 20 ~ 55V | | | | |
| No. of MPP Trackers/No. of Strings MPP Tracker | 4/1+1+1+1 | | | | |
| **AC Input/Output Data** | | | | | |
| Rated AC Input/Output Active Power （W） | 800W | 1000W | 1600W | 2000W | 2500W |
| Max. AC Input/Output Active Power （W） | 880W | 1100W | 1760W | 2200W | 2750W |
| Max. off grid power (W) | 2500W | | | | |
| Rated AC Input/Output Current （A） | 3.7A / 3.5A | 4.6A / 4.4A | 7.3A / 7.0A | 9.1A / 8.7A | 11.4A / 10.9A |
| Max. AC Input/Output Current （A） | 4A / 3.9A | 5A / 4.8A | 8A / 7.7A | 10A / 9.6A | 12.5A / 12A |
| Peak Power (off-grid) (W) | 2 times of rated power,10s | | | | |
| AC Input / Output Frequency and Voltage | 50Hz ( 45Hz ~ 55Hz ) , 60Hz ( 55Hz ~ 65Hz ) , L + N + PE , 220 / 230 Vac | | | | |
| Power Factor Adjustment Range | 0.8 leading-0.8lagging | | | | |
| Max. Continuous AC Passthrough (grid to load)(A) | 30A | | | | |
| DC Injection Current | <0.5%In | | | | |
| **Efficiency** | | | | | |
| Max. Efficiency | 96.5% | | | | |
| Euro Efficiency | 96.0% | | | | |
| MPPT Efficiency | >99% | | | | |
| **Equipment Protection** | | | | | |
| Integrated | DC reverse polarity protection, AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection, Insulation Impedance detection, Anti-islanding protection | | | | |
| Surge Protection Level | TYPE II(DC),TYPE II(AC) | | | | |
| **General Data** | | | | | |
| Max. Inverter Parallel NO. | 3 pcs (up to 7.5 kW rated output) | | | | |
| Communication Interface | Wi-Fi，Bluetooth，LoRa | | | | |
| Operating Temperature Range (°C) | -10°C ~ 55°C, >45°C Derating, (-20°C~55°C with heating, optional) | | | | |
| Permissible Altitude (m) | 2000m | | | | |
| Ingress Protection(IP) Rating | IP 65 | | | | |
| Cabinet Size (W X H X D) | 526 × 326 × 210mm | | | | |
| Weight (kg) | 32kg | | | | |
| Permissible Ambient Humidity | 0% ~ 95% ( No Condensing ) | | | | |
| Warranty | 10 years | | | | |
| Grid Regulation | VDE 4105, IEC 61727/62116, VDE 0126, AS 4777.2, CEI 0-21, EN 50549-1, G98, C10-11, UNE 217002 | | | | |
| Safety EMC/Standard | IEC 62619, UN38.3, IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1/2/3/4 | | | | |

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## Battery Modules




| Model | AE-F2.56 |
|---|---|
| **Battery Technical Specification** | |
| Battery Chemistry | $LiFePO_4$ |
| Battery Nominal Voltage | 51.2V |
| Battery Nominal Energy | 2560Wh |
| Max. Charging / Discharging Current | 50A |
| Battery Operating Voltage | 44.8V ~ 57.6V |
| Battery Cycle Life | ≥6,000 (@25°C±2°C, 70%EOL) |
| Max. Stack NO. | 5 pcs (up to 12.8kWh ) |
| Parallel Capability | 40 pcs* |
| **Other Technical Specification** | |
| Display | LED ( SOC, Alarm ) |
| Communication Interfaces | LoRa |
| Dimension ( W × D × H ) (mm) | 450 × 210 × 244 (without terminal) |
| Ingress Protection(IP) Rating | IP 65 |
| Weight Approximate | 22±3kg |
| Operating Temperature Range | -10°C~55°C ( -20°C~55°C with heating, optional) |
| Max. Operating Altitude | 2000m |
| Relative Humidity | 0% ~ 95% ( No Condensing ) |
| Certification | UN38.3, IEC 62619, CE |
| Installation Style | Floor-Mounted,Stacked-Mounted |
| Warranty | 10 years |

*Maximum 40 Pieces AE-F2.56 Packs in Parallel, Up to 102.4kWh.

**Optional Interfaces:**

Parallel communication port & load port

RS485 port

CT port

Note: Optional interfaces are not field-upgradable and must be selected at the time of order with the required hardware.



**Optional Accessory:**

Deye Wireless CT
(Model: SUN-SMART-CT02-L)

Installed in the distribution box to monitor power consumption, enabling wireless zero-export control.



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## Deye Cloud
## Intelligent Energy Management

Efficiency Optimization | Real-Time Monitoring | User-Friendly




### SCENARIO-BASED ENERGY MANAGEMENT SOLUTIONS

Utilize energy in every outdoor adventure or household needs. Embrace effortless energy experience that's both eco-friendly and budget-friendly with our intelligent assistant.

**Scenario 1 :**

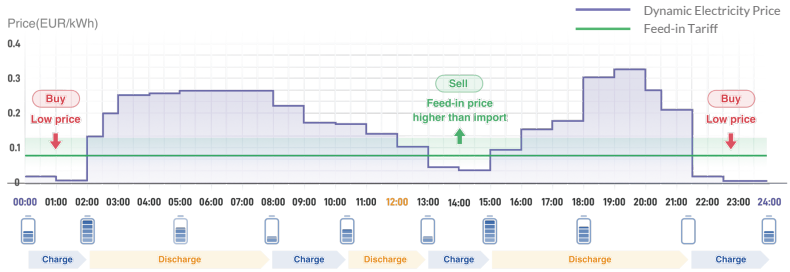
Compact Balcony Solar Plant
Automated Energy-Saving Strategies

**Scenario 2 :**

Camping Power Solution
Empower Your Outdoor Adventure

**Scenario 3 :**

Reliable Home Emergency Power Source
Ensure You Stay Powered Up When You Need It Most




### One-Tap Setup, Real-Time Optimization

**Flexible Scheduling**

Sets up 6 customizable charging/discharging time slots to utilize time-of-use electricity pricing and reduce costs.

**Deye Copilot Function**

Enables Deye Cloud to access local dynamic electricity prices and intelligently decide the optimal time for electricity trading.

* Selling electricity back to grid is available where local regulations permit.

Download on the App Store

GET IT ON Google Play

Join Deye's Intelligent Energy Revolution and Start Saving Today!

## What Can It Power

**Max. 2.5 kW/ 2.56 kWh**

1 Inverter + 1 Battery Design




## Typical Device Runtime

No Electricity Anxiety for Emergency Power Backup

| Phone | Laptop | Light | TV | Camera |
|---|---|---|---|---|
| 135 Times | 23 Times | 3 Days | 7.5 Hours | 133 Times |

| UAV | Microwave | Mini Refrigerator | Wi-Fi Router | Space Heater |
|---|---|---|---|---|
| 20 Times | 1.8 Hours | 1-2 Days | 3 Days | 25 Hours |

* The data above is for reference only. Actual runtime may vary with use.

## Compatible Appliances

| Kitchen Appliances | Household Appliances | Office & Entertainment | Lighting & Small Electronics |
|---|---|---|---|
| Electric kettle 1800W | Hair dryer 1800W | Wi-Fi router 10W | Light 10W DC |
| Microwave oven 1000W | Vacuum cleaner 1000W | Laptop 60W | Phone charger 25W |
| Blender 500W | Air purifier 100W | Printer 50W | Fan 40W |
| Rice cooker 800W | Space heater 1500W | Projector 300W | Loudspeaker 60W |
| Air fryer 1500W | Washing machine 500W | Television 120W | Tablet 45W |

### Key Power Note:

The rated powers above are for reference only. All devices with a rated power of ≤2500W are compatible.
Operational Safety: Ensure the total power of all devices running simultaneously stays under 2500W.