Micro Hybrid Energy Storage System

MICRO HYBRID ESS

Higher Capacity, Longer Backup

SUN-BK80/100/160/200/250-5.12KWH-EU-AM4-18L/32L

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

Higher Single-Unit Capacity
Longer backup time

Remote O&M
Control via Deye Cloud App

Local Bluetooth Communication
Supports offline control

Micro Hybrid Energy Storage System

Max. 4400W PV Access Power

5.12kWh LFP Battery

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

Model	SUN-BK80-5.12KWH -EU-AM4-18L	SUN-BK100-5.12KWH -EU-AM4-18L	SUN-BK160-5.12KWH -EU-AM4-18L	SUN-BK200-5.12KWH -EU-AM4-18L	SUN-BK250-5.12KWH -EU-AM4-18L
Battery Input Data					
Battery Type	$LiFePO_4$				
Battery Voltage Range(V)	44.8-57.6 V				
Battery Nominal Energy (Wh)	5120Wh				
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-0.8 lagging				
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)	560 × 510 × 210mm				
Weight (kg)	52±3kg				
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				

Micro Hybrid Energy Storage System

Max. 5760W PV Access Power

5.12kWh LFP Battery

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

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Battery Input Data					
Battery Type	$LiFePO_4$				
Battery Voltage Range(V)	44.8-57.6 V				
Battery Nominal Energy (Wh)	5120Wh				
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				
Rated AC Input/Output Active Power （W）	800W	1000W	1600W	2000W	2500W
Max. AC Input/Output Active Power （W）	880W	1100W	1760W	2200W	2750W
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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				
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Max. Efficiency	96.5%				
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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					
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Ingress Protection(IP) Rating	IP 65				
Cabinet Size (W X H X D)	560 × 510 × 210mm				
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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				

Battery Modules

Model	AE-F5.12
Battery Technical Specification	
Battery Chemistry	$LiFePO_4$
Battery Nominal Voltage	51.2V
Battery Nominal Energy	5120Wh
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.	3 pcs (up to 15.36kWh)
Parallel Capability	16 pcs*
Other Technical Specification	
Display	LED (SOC, Alarm)
Communication Interfaces	LoRa
Dimension (W × D × H) (mm)	450 × 210 × 420 (without terminal)
Ingress Protection(IP) Rating	IP 65
Weight Approximate	40±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 16 AE-F5.12 packs in parallel, providing up to 81.92 kWh.

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.

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 :

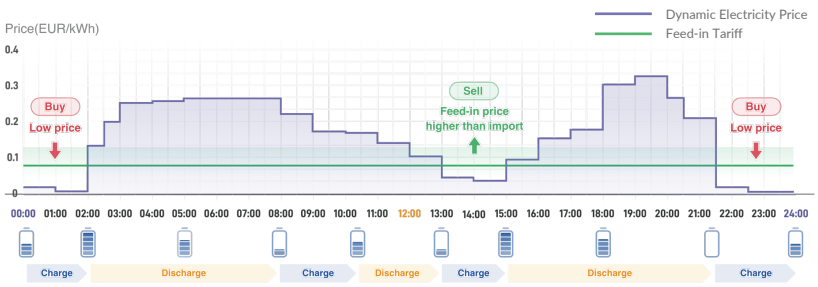
Camping Power Solution

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!

Deye

What Can It Power

Max. 2.5 kW/ 5.12 kWh

1 Inverter + 1 Battery Design

Typical Device Runtime

No Electricity Anxiety for Emergency Power Backup

Phone	Laptop	Light	TV	Camera
270 Times	**46** Times	**6** Days	**15** Hours	**266** Times

UAV	Microwave	Mini Refrigerator	Wi-Fi Router	Space Heater
40 Times	**3.6** Hours	**2-4** Days	**6** Days	**50** 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.

Deye