

RESIDENTIAL ESS SOLUTION

DEYE SPRING AI SERIES



All-in-One

- ⦿ Integrated hybrid inverter
- ⦿ And LFP battery



Smarter

- ⦿ Peak-shaving, smart load
- ⦿ AC coupling, etc.



Scalable

- ⦿ Flat and stackable design
- ⦿ Capacity of 5kWh~30kWh



Swift Security

- ⦿ Fast switching time of 4ms
- ⦿ Ensuring energy security



Flexible

- ⦿ No wiring and extra fixing screws
- ⦿ Quick and easy installation



Convenient

- ⦿ Comfortable and easy control
- ⦿ Via App, PC or Touch-Display

≥6000

Cycles

IP65

Rated for indoor and outdoor use

70%

EOL

10 years

Warranty for long-term peace of mind

Model (Single-phase)	AI-W5.1-3.6P1-EU-B	AI-W5.1-5P1-EU-B	AI-W5.1-6P1-EU-B	AI-W5.1-7P1-EU-B	AI-W5.1-7.6P1-EU-B	AI-W5.1-8P1-EU-B	AI-W5.1-10P1-EU-B
Battery Input Data							
Battery Type	Lithium-ion						
Battery Voltage	40-60						
Max. Charging Current(A)	90	120	135	175	190	190	210
Max. Discharging Current(A)	90	120	135	175	190	190	210
Charging Strategy for Li-Ion Battery	Self-adaption to BMS						
Number of Battery Input	1						
PV String Input Data							
Max. PV access power(W)	7200	10000	12000	14000	15200	16000	20000
Max. PV Input Power(W)	5760	8000	9600	11200	12160	12800	16000
Max. PV Input Voltage(V)	500						
Start-up Voltage(V)	125						
PV Input Voltage Range(V)	125-500						
MPPT Voltage Range(V)	150-425						
Full Load MPPT Voltage Range(V)	300-425			200-425			250-425
Rated PV Input Voltage(V)	370						
Max. Operating PV Input Current(A)	18+18			32+32			
Max. Input Short-Circuit Current(A)	27+27			48+48			
No.of MPPT Trackers/No.of String MPPT Tracker	2/1+1			2/2+2			
Max. Inverter Backfeed Current to The Array	0						
AC Input/Output Data							
Rated AC Input/Output Active Power(W)	3600	5000	6000	7000	7600	8000	10000
Max. AC Input/Output Apparent Power(VA)	3960	5500	6600	7700	8360	8800	11000
Peak Power (off-grid)(W)	2 times of rated power, 10s						
Rated AC Input/Output Current(A)	16.4/15.7	22.7/21.7	27.3/26.1	31.9/30.5	34.5/33	36.4/34.8	45.5/43.5
Max. AC Input/Output Current(A)	18/17.2	25/23.9	30/28.7	35/33.5	38/36.3	40/38.3	50/47.9
Max. Continuous AC Passthrough (grid to load)(A)	35		40	50			
Max. Output Fault Current(A)	36	50	60	70	76	80	100
Max. Output Overcurrent Protection(A)	80			140			
Rated Input/Output Voltage/Range(V)	220V/230V 0.85Un-1.1Un						
Grid Connection Form	L+N+PE						
Rated Input/Output Grid Frequency/Range	50Hz/45Hz-55Hz 60Hz/45Hz-65Hz						
Power Factor Adjustment Range	0.8 leading-0.8 lagging						
Total Current Harmonic Distortion THDi	<3% (of nominal power)						
DC Injection Current	<0.5%In						
Efficiency							
Max. Efficiency	97.60%						
Euro Efficiency	96.50%						
MPPT Efficiency	>99%						
Equipment Protection							
DC Polarity Reverse Connection Protection	Yes						
AC Output Overcurrent Protection	Yes						
AC Output Overvoltage Protection	Yes						
AC Output Short Circuit Protection	Yes						
Thermal Protection	Yes						
Arc fault circuit interrupter (AFCI)	Optional						
Power Network Monitoring	Yes						
Island Protection Monitoring	Yes						
Earth Fault Detection	Yes						
DC Input Switch	Yes						
Overvoltage Load Drop Protection	Yes						
Residual Current (RCD) Detection	Yes						
Anti-islanding Protection	Yes(Active Frequency Shift)						
Surge Protection Level	TYPE II(DC), TYPE II(AC)						
Interface							
Display	LCD+LED						
Communication Interface	RS232, RS485, CAN						
Monitor Mode	GPRS/WIFI/Bluetooth/4G/LAN (optional)						
PV Connection	VP-D4						
General Data							
Operating Temperature Range	-40 to +60°C, >45°C Derating						
Permissible Ambient Humidity	0-100%						
Permissible Altitude	2000m						
Noise	<30 dB(A)						
Ingress Protection(IP) Rating	IP 65						
Inverter Topology	Non-Isolated						
Over Voltage Category	OVC II(DC), OVC III(AC)						
Cabinet size(W*H*D) [mm]	720W×399.2H×256D (Excluding connectors and brackets)						
Weight(kg)	31.6						
Warranty	5Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy						
Type of Cooling	Intelligent Air Cooling						
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						
Safetv EMC/Standard	IEC/EN 61000-6-1/2/3/4. IEC/EN 62109-1. IEC/EN 62109-2						

Model (Three-phase)	AI-W5.1-5P3-EU-B	AI-W5.1-6P3-EU-B	AI-W5.1-8P3-EU-B	AI-W5.1-10P3-EU-B	AI-W5.1-12P3-EU-B
Battery Input Data					
Battery Type	Lithium-ion				
Battery Voltage	40-60				
Max. Charging Current(A)	120	130	190	210	240
Max. Discharging Current(A)	120	130	190	210	240
Charging Strategy for Li-Ion Battery	Self-adaption to BMS				
Number of Battery Input	1				
PV String Input Data					
Max. PV access power(W)	10000	12000	16000	20000	24000
Max. PV Input Power(W)	8000	9600	12800	16000	19200
Max. PV Input Voltage(V)	800				
Start-up Voltage(V)	160				
PV Input Voltage Range(V)	160-800				
MPPT Voltage Range(V)	200-650				
Full Load MPPT Voltage Range(V)	350-650				
Rated PV Input Voltage(V)	550				
Max. Operating PV Input Current(A)	20+20			36+20	
Max. Input Short-Circuit Current(A)	30+30			54+30	
No.of MPPT Trackers/No.of String MPPT Tracker	2/1+1			2/2+1	
Max. Inverter Backfeed Current to The Array	0				
AC Input/Output Data					
Rated AC Input/Output Active Power(W)	5000	6000	8000	10000	12000
Max. AC Input/Output Apparent Power(VA)	5500	6600	8800	11000	13200
Peak Power (off-grid)(W)	2 times of rated power, 10s				
Rated AC Input/Output Current(A)	7.6/7.2	9.1/8.7	12.1/11.6	15.2/14.5	18.2/17.4
Max. AC Input/Output Current(A)	8.4/8	10/9.6	13.4/12.8	16.7/15.9	20/19.1
Max. Continuous AC Passthrough (grid to load)(A)	45				
Max. Output Fault Current(A)	16.8	20	26.8	33.4	40
Max. Output Overcurrent Protection(A)	70				
Rated Input/Output Voltage/Range(V)	220/380V,230/400V 0.85Un-1.1Un				
Grid Connection Form	3L+N+PE				
Rated Input/Output Grid Frequency/Range	50Hz/45Hz-55Hz 60Hz/55Hz-65Hz				
Power Factor Adjustment Range	0.8 leading-0.8 lagging				
Total Current Harmonic Distortion THDi	<3% (of nominal power)				
DC Injection Current	<0.5%In				
Efficiency					
Max. Efficiency	97.6%				
Euro Efficiency	97.0%				
MPPT Efficiency	>99%				
Equipment Protection					
DC Polarity Reverse Connection Protection	Yes				
AC Output Overcurrent Protection	Yes				
AC Output Overvoltage Protection	Yes				
AC Output Short Circuit Protection	Yes				
Thermal Protection	Yes				
Arc fault circuit interrupter (AFCI)	Optional				
Power Network Monitoring	Yes				
Island Protection Monitoring	Yes				
Earth Fault Detection	Yes				
DC Input Switch	Yes				
Overvoltage Load Drop Protection	Yes				
Residual Current (RCD) Detection	Yes				
Anti-islanding Protection	Yes(Active Frequency Shift)				
Surge Protection Level	TYPE II(DC), TYPE II(AC)				
Interface					
Display	LCD+LED				
Communication Interface	RS232, RS485, CAN				
Monitor Mode	GPRS/WIFI/Bluetooth/4G/LAN (optional)				
PV Connection	VP-D4				
General Data					
Operating Temperature Range	-40 to +60°C, >45°C Derating				
Permissible Ambient Humidity	0-100%				
Permissible Altitude	2000m				
Noise	≤ 55 dB				
Ingress Protection(IP) Rating	IP 65				
Inverter Topology	Non-Isolated				
Over Voltage Category	OVC II(DC), OVC III(AC)				
Protection Level	Class I				
Cabinet size(W*H*D) [mm]	720W×460.5H×254D (Excluding connectors and brackets)				
Weight(kg)	44				
Warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy				
Type of Cooling	Intelligent Air Cooling				
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		AI-W5.1-B
Main Parameter		
Battery Chemistry		LiFePO4
Built-in Circuit Breaker		125A 2P, 60Vdc
Nominal Energy (kWh)		5.12
Usable Energy (kWh) ^[1]		4.6
Capacity (Ah)		100
Nominal Voltage (V)		51.2
Operating Voltage(V)		44.8~57.6
Rated DC Power (kW)		2.5
Charge/Discharge Current (A) ^[2]	Recommend	50
	Max.	100
	Peak(10s,25°C)	150
Other Parameter		
Recommend Depth of Discharge		90%
Battery Dimension (W/D/H, mm)		720*255*300 (without terminal parts)
Battery Weight (kg)		53
Master LED Indicator	Battery module: 3LED (working, alarming, protecting), PDU module: 5LED(SOC:20%~ 100%)&3LED (working, alarming, protecting)	
Operating Temperature	Charge: 0~55°C (-20°C~55°C when heating on) / Discharge: -20°C~55°C	
Storage Temperature	0°C ~ 35°C	
IP Rating of Enclosure	IP65 (after stacking)	
Humidity	5%~95%, non-condensing	
Altitude	≤3000m	
Installation	Floor-Mounted	
Communication Port	CAN2.0, RS485	
Cycle Life	≥6000(25°C±2°C ,0.5C/0.5C,70%EOL)	
Energy Throughput	16MWh(Battery Module @70%EOL)	
Warranty Period ^[3]	10 years	
Certification	UN38 .3, IEC62619, CE, UK, VDE2510-50, CEI0-21,CE-LVD, CEC, FCC, UL1973, UL9540A	

[1]DC Usable Energy, test conditions: 90%DOD, 0.5C 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]Conditions apply, refer to Deye Warranty Letter.

[4]Made in China.

Model	Accessories Parts Description	Remark
AI-W5.1-B Module (individual package)	5.12kWh Battery Module (Standard Configuration)	Stacked battery modules, each 5.12kWh, a single inverter can be stacked and installed 1 ~ 6 (battery capacity 5~30kWh) , the maximum expansion of 36 modules to 184kWh.
AI-W5.1-PDU3-B+Base (individual package) (Optional 1)	Power Distribute Unit III (Included)	Battery power and communication quickly interface connect with Inverter and LED display system status, only support 2 ~ 6 modules expansion, capacity 10 ~ 30kWh.
	AI-W5.1-Base (Included)	The bottom support seat



Model : AI-W5.1-B (Battery Module)
Details : 5.12kWh, 720 × 255 × 300 (W × D × H, mm) , 55kg



Model : AI-W5.1-PDU3-B
Details : 720 × 255 × 228 (W × D × H, mm) , 15kg
Built-in Circuit Breaker: 250A 2P, 1000Vdc



Model : AI-W5.1-Base-B (Battery Base)
Details : 720 × 255 × 68 (W × D × H, mm) , 6.5kg

Deye Cloud

All-in-one Energy & Device Management Platform

- Unlock significant savings
- Individual Add-on for dynamic tariff
- Intelligent charging/discharging strategies
- Tailored solution to deye devices
- Real-time equipment monitoring
- Best energy scheduling solutions by Deye Copilot
- 24/7 AI Assistant support

Switch flexibly between autonomous and manual control

Display energy savings and costs

Support dynamic tariff and flat-rate

AI Assistant

Offer response suggestions and personalized support experience

Support over 30 languages

Analyze dynamic pricing, predict power load and PV generation to optimize energy dispatch and minimize electricity costs

Smarten Up Your Hybrid Energy Storage System

Download Deye Cloud APP to join us!

Embrace a seamless, effortless energy experience that's both eco-friendly and budget-friendly with our intelligent assistant



APP & Web Manage your energy effortlessly	Cloud-edge Collaboration Faster and more efficient	Accelerated Connection Optimized for speed and performance	Localized Data Centers Ensure data sovereignty and compliance in EU & US	Deye Copilot AI-powered energy analysis and control	AI Assistant 24/7 support, fast, efficient, in your language
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