

ORION F Series

Modular Outdoor C&I ESS Solutions

GB-F

SUN-50~125K Hybrid Inverter

SUN-100/125K PCS+MPPT+STS Series Module

High Integration & Easy Deployment

- Industry-leading energy density, with a minimal system footprint of Min **0.9m²**.
- Flexible modular design: single system covers **72~252kWh**, scalable to MWh-level via multi-cluster expansion.

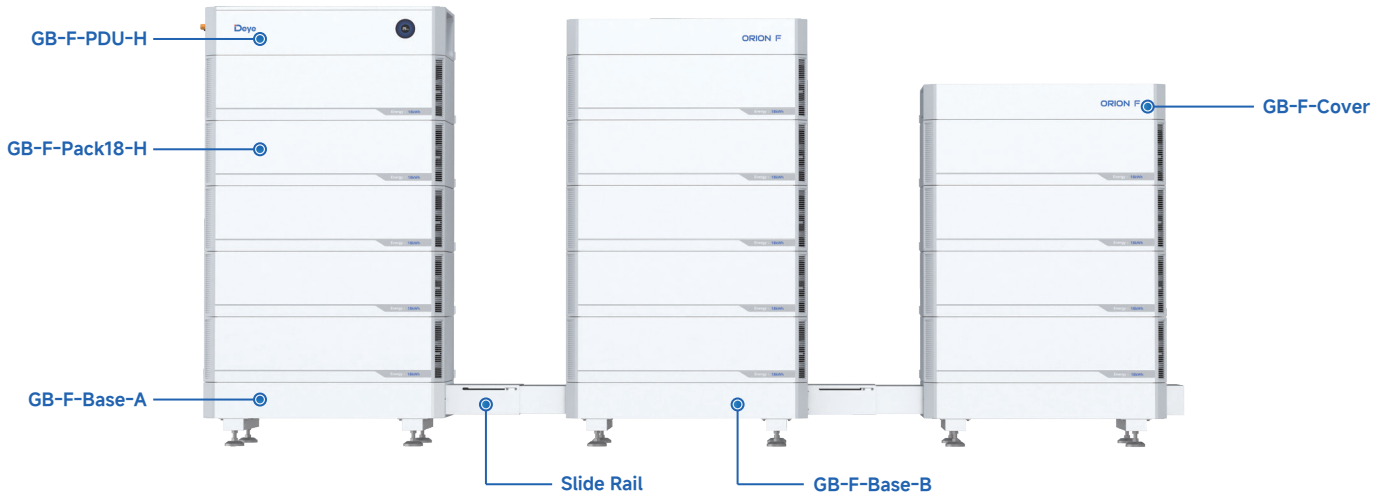
High Performance & Reliable Safety

- **IP66** protection, built-in low-temperature preheating and pack-level independent fan airflow system, enabling reliable outdoor operation at **-20°C~55°C**.
- Full over-temperature monitoring for cells and electrical parts, equipped with aerosol fire suppression and pressure relief valves for dual safety protection.

Smart Management & Effortless O&M

- Dual **pack & cell self-balancing** design. No manual balancing or SOC calibration needed for expansion and pack replacement.
- **Plug-and-play** compatibility with Deye inverters for zero on-site debugging. **Deye AI Cloud** enables one-click system diagnosis and remote upgrades.

System Accessories



Battery Module

Model		GB-F-Pack18-H(A)
Nominal Capacity（Ah）		314Ah
Nominal Energy（kWh）		18kWh
Operating Voltage（V）		45~65.7
Nominal Voltage（V）		57.6
Charge/Discharge Current（A）	Recommend	160/160
	Max.	200/200
Storage Temperature		-30~60°C
Dimensions (W*D*H, mm)		892.2*453*269.5
Weight (kg) (Estimate)		140

PDU+Base(A)　For Main Stack

Model	GB-F-PDU-H(A)
Operating Voltage	200~1000
Max. Charge/Discharge Current	200/200
Operating Temperature	-20~55°C
Dimensions (W*D*H, mm)	892.2*453*200
Weight (kg) (Estimate)	23
Model	**GB-F-Base-A**
Dimensions (W*D*H, mm)	892.2*453*210
Weight (kg) (Estimate)	23

Cover+Base(B)+Slide Rail　For Slave Stack

Model	GB-F-Cover
Dimensions (W*D*H, mm)	892.2*453*146
Weight (kg) (Estimate)	11.5
Model	**GB-F-Base-B**
Dimensions (W*D*H, mm)	892.2*453*210
Weight (kg) (Estimate)	23.5
Model	**Slide Rail**
Details	350~450mm

Performance Specification

System Model		GB-F72	GB-F90	GB-F108	GB-F126	GB-F144	GB-F162	GB-F180	GB-F198	GB-F216	GB-F234	GB-F252
Battery Type		LiFePO4										
Capacity(Ah)		314										
Battery Module Qty In Series(Optional)		4	5	6	7	8	9	10	11	12	13	14
System Nominal Energy (kWh)		72	90	108	126	144	162	180	198	216	234	252
System Usable Energy (kWh)[1]		64.8	81.0	97.2	113.4	129.6	145.8	162.0	178.2	194.4	210.6	226.8
System Nominal Voltage (V)		230.4	288	345.6	403.2	460.8	518.4	576	633.6	691.2	748.8	806.4
System Operating Voltage(V)		180~262.8	225~328.5	270~394.2	315~459.9	360~525.6	405~591.3	450~657	495~722.7	540~788.4	585~854.1	630~919.8
Rated DC Power (kW)		36.9	46.1	55.3	64.5	73.7	82.9	92.2	101.4	110.6	119.8	129.0
Charge/Discharge Current (A)[2]	Recommend	160/160										
	Max.	200/200										
	Peak	295@25°C,15s										
Recommend Depth Of Discharge		90%										
Cycle Life[3]		≥8000										

System General Data

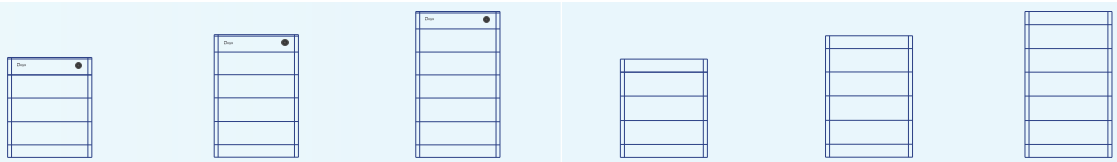
Communication	CAN2.0，RS485，Bluetooth
System Ingress Protection Rating	IP66
Display	LCD
Scalability	Max.16 Clusters In Parallel
Installation Method	Floor Mount(Modular Stack)
Fire Suppression	Aerosol and Explosion Relief Valve
Cooling Method	Natural Air cooling
Operating Temperature(°C)	Charge：0～55(-20～55，With optional heating)；Discharge：-20~55
Storage Temperature(°C)	-25~60
Humidity(%)	0 % ~ 100 % RH, non-condensing
Noise(dB)[4]	< 65@1m
Altitude(m)	≤3000
Compliance Standard[5]	IEC 62619, IEC63056, UN38.3, IEC 62477, IEC 62040, IEC 61000-6-1/3, VDE-2510-50, IEC 62933-5-2, UL 9540A

Note:
[1] Test conditions: 90% DOD. 0.5C charge & discharge at 25±2°C. System usable energy may vary due to system configuration parameters.
[2] The current is affected by temperature and SOC.
[3] This is provided by the battery cell manufacturer. Based on cell test condition of 25±2°C, 0.5C charge and discharge rate and SOH=70%.
[4] Noise level is tested based on the rated operating conditions (25 °C ambient temperature, 0.5C charge/discharge rate).
[5] This document reflects current technology and is subject to change without notice. Refer to the Deye website for the latest information.

System configuration (Recommend)

Main Stack
——GB-F-Pack18-H *n pcs
——GB-F-PDU-H+GB-F-Base-A *1pcs

Slave Stack
——GB-F-Pack18-H *n pcs
——GB-F-Cover+GB-F-Base-B+Slide Rail *1pcs



Number Of Modules	3	4	5	3	4	5
Stack Energy (kWh)	54	72	90	54	72	90
Stack Demension (W*D*H, mm)	996.2*453*1218.5	996.2*453*1488	996.2*453*1757.5	996.2*453*1164.5	996.2*453*1434	996.2*453*1703.5
Stack Weight (kg) (Estimate)	466	606	746	455	595	735
GB-F72/72kWh		*1				
GB-F90/ 90kWh			*1			
GB-F108/ 108kWh	*1			*1		
GB-F126/ 126kWh		*1		*1		
GB-F144/ 144kWh		*1			*1	
GB-F162/ 162kWh			*1		*1	
GB-F180/ 180kWh			*1			*1
GB-F198/ 198kWh		*1		*1	*1	
GB-F216/ 216kWh		*1			*2	
GB-F234/ 234kWh			*1		*2	
GB-F252/ 252kWh			*1		*1	*1

Hybrid Inverter

Model	SUN-50K-SG02HP3-EU-BM4-P	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)	160	80+80		
Max. Discharging Current (A)	160	80+80		
Charging Strategy for Li-ion Battery	Self-adaption to BMS			
Number of Battery Input	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 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	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		

PCS Model	SUN-100K-PCS01HP3	SUN-125K-PCS01HP3
Battery Data		
Battery Type	Lithium-ion	
Battery Voltage Range (V)	630-1000	
Max. Charging Current (A)	175	200
Max. Discharging Current (A)	175	200
Charging Strategy for Li-ion Battery	Self-adaption to BMS	
Number of Battery Input	1	
DC Input Data		
DC Input Voltage Range(V)	630-1000	630-1000
Max. DC Input Current(A)	200	200
AC Input/Output Data		
Rated AC Input/Output Active Power (kW)	100	125
Max. AC Input/Output Apparent Power (kVA)	110	125
Rated AC Input/Output Current (A)	151.6/145	189.4/181.2
Max. AC Input/Output Current (A)	166.7/159.5	189.4/181.2
Rated Input/Output Voltage/Range(V)	220/380, 230/400 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	-1~1	
Total Current Harmonic Distortion THDi	<3% (of nominal power)	
DC Injection Current	<0.5% In	
Efficiency		
Max. Efficiency	98.5%	
Euro Efficiency	97.8%	
Equipment Protection		
Integrated	AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection,Anti-islanding Protection, Insulation Impedance Detection, Residual Current Detection	
Surge Protection Level	TYPE II(DC), TYPE II(AC)	
Interface		
LCD/LED display	LCD	
Communication Interface	WIFI, RS485, CAN, Meter	
General Data		
Operating Temperature Range(°C)	-40°C-60°C, > 45°C Derating	
Permissible Ambient Humidity	0-95%	
Permissible Altitude	4000m	
Noise	<75dB	
Ingress Protection(IP) Rating	IP 65(PCS Module)	
Cabinet Size[W×H×D] (mm)	543x310x775 (Excluding connectors and brackets)	
Weight (kg)	81.86	
Inverter Topology	Non-Isolated	
Over Voltage Category	OVC II(DC), OVC III(AC)	
Type of Cooling	Intelligent Air Cooling	
Warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inve rter, More Info Please Refer to Warranty Policy	
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105	
Safety/EMC Standard	IEC/EN 62477-1	

HESS Solution (Recommend)



GB-F
(72~252kWh)



Hybrid Inverter
SUN-50K-SG02HP3-EU-BM4-P



Hybrid Inverter
SUN-60/70/80K-SG02HP3-EU-EM6



Hybrid Inverter
SUN-100/125K-SG02HP3-EU-GM8/10



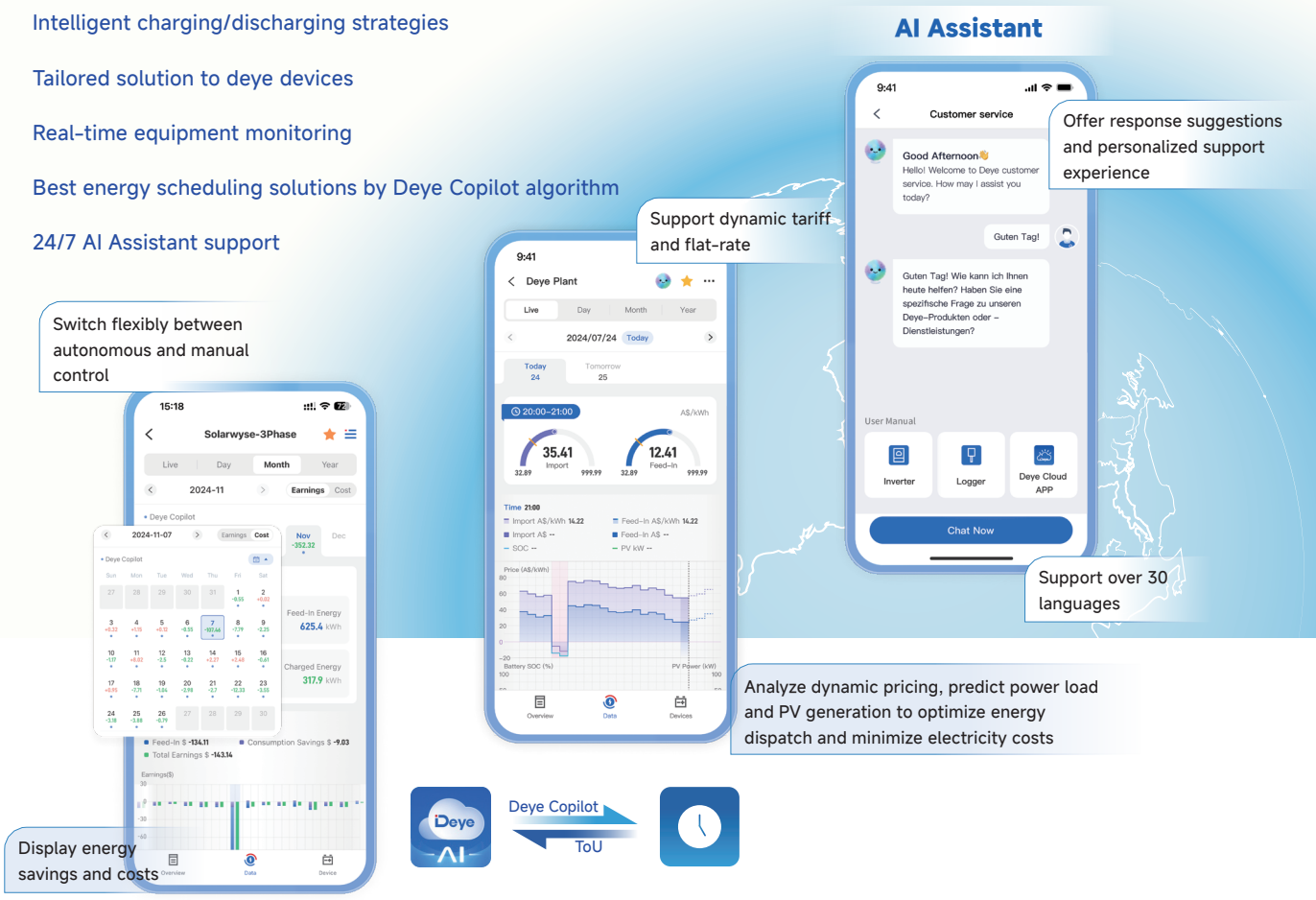
PCS+MPPT+STS
SUN-100/125K-PCS01HP3+MPPT

Hybrid Inverter / PCS		Battery	Specification
50W	SUN-50K-SG02HP3-EU-BM4-P（160A）	GB-F108	50kW / 108kWh
60kW	SUN-60K-SG02HP3 -EU-EM6（80A+80A）	GB-F126	60kW / 126kWh
70kW	SUN-70K-SG02HP3 -EU-EM6（80A+80A）	GB-F144	70kW / 144kWh
80kW	SUN-80K-SG02HP3 -EU-EM6（80A+80A）	GB-F162	80kW / 162kWh
100kW	SUN-100K-SG02HP3-EU-GM8/10（100A+100A）	GB-F198	100kW / 198kWh
	SUN-100K-PCS02HP3（175A）+MPPT	GB-F252	100kW / 252kWh
125kW	SUN-125K-SG02HP3-EU-GM10（100A+100A）	GB-F252	125kW / 252kWh
	SUN-125K-PCS02HP3（200A）+MPPT	GB-F252	125kW / 252kWh

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 algorithm
- 24/7 AI Assistant support



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

Deye

POWERING YOUR LIFE

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