ORION E
OUTDOOR C&I ESS SOLUTION
ENERGY STORAGE SYSTEM

GE-F128/F240/F256 Series Outdoor Battery Cabinet

+

SUN-30~125K Hybrid Inverter

Or

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

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 30~125kW**, 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/F240/F256 Series Outdoor Battery Cabinet

	GE-F128 Series		GE-F240 Series			GE-F256 Series
Model	GE-F112-BC-2-A3	GE-F128-BC-2-A3	GE-F176-BC-2-A3	GE-F208-BC-2-A3	GE-F240-BC-2-A3	GE-F256-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	11	13	15	16
System Nominal Energy (kWh)	112.53	128.61	176.84	208.99	241.15	257.23
System Usable Energy (kWh)*1	112.53	128.61	176.84	208.99	241.15	257.23
System Nominal Voltage (Vdc)	358.4	409.6	563.2	665.6	768	819.2
System Operating Voltage (Vdc)	280~408.8	320~467.2	440~642.4	520~759.2	600~876	640~934.4
Rated DC Power (kW)	56	64	88	104	121	129
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		1303 x 1240 x 2405.5			1303x1240x2510
Weight(kg)	1575	1690	2150	2380	2610	2790
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.

Model	SUN-30K-SG02HP3 -EU-BM3(-P)	SUN-40K-SG02HP3 -EU-BM4(-P)	SUN-50K-SG02HP3 -EU-BM4(-P)
Battery Input Data			
Battery Type	Lithium-ion		
Battery Voltage Range (V)	160-800		
Max. Charging Current (A)	100(160)	100(160)	100(160)
Max. Discharging Current (A)	100(160)	100(160)	100(160)
Charging Strategy for Li-ion Battery	Self-adaption to BMS		
Number of Battery Input	1		
PV String Input Data			
Max. PV Access Power (W)	60000	80000	100000
Max. PV Input Power (W)	48000	64000	80000
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	
Max. Input Short-Circuit Current (A)	55+55+55	55+55+55+55	
No. of MPP Trackers/ No. of Strings MPP Tracker	3/2+2+2	4/2+2+2+2	
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	30000	40000	50000
Max. AC Input/Output Apparent Power (VA)	33000	44000	55000
Rated AC Input/Output Current (A)	45.5/43.5	60.7/58	75.8/72.5
Max. AC Input/Output Current (A)	50/47.9	66.7/63.8	83.4/79.8
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%		
Euro Efficiency	97.0%		
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 (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		
Communication Interface	WIFI/RS485 /CAN		
Monitor Mode	GPRS/WIFI/Bluetooth/4G		
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)		
Weight (kg)	65		
Type of Cooling	Intelligent Air Cooling		
Warranty	Standard 5 years, extended warranty		
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		

Hybrid Inverter

Model	SUN-60K-SG02HP3-EU-EM6	SUN-70K-SG02HP3-EU-EM6	SUN-80K-SG02HP3-EU-EM6
Battery Input Data			
Battery Type	Lithium-ion Coming soon		
Battery Voltage Range (V)	160~1000		
Max. Charging Current (A)	80+80		
Max. Discharging Current (A)	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)	120000	140000	160000
Max. PV Input Power (W)	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)	650		
Max. Operating PV Input Current (A)	36+36+36+36+36+36		
Max. Input Short-Circuit Current (A)	54+54+54+54+54+54		
No. of MPP Trackers/ No. of Strings MPP Tracker	6/2+2+2+2+2+2		
AC Input/Output Data			
Rated AC Input/Output Active Power (W)	60000	70000	80000
Max. AC Input/Output Apparent Power (VA)	60000	70000	80000
Rated AC Input/Output Current (A)	91/87	106.1/101.5	121.3/116
Max. AC Input/Output Current (A)	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	98.7%		
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 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)	606×927×314 (Excluding Connectors and Brackets)		
Weight (kg)	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		

ESS Solution (Recommend)

GE-F128 Series

+

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

Or

SUN-60K-SG02HP3-EU-EM6

GE-F240 Series

+

SUN-50K-SG02HP3-EU-BM4

Or

SUN-60K /80K-SG02HP3-EU-EM6

Or

SUN-100K/125K-SG02HP3-EU-GM10 (8)

GE-F256

+

SUN-60K/80K-SG02HP3-EU-EM6

Or

SUN-125K-SG02HP3-EU-GM10

Or

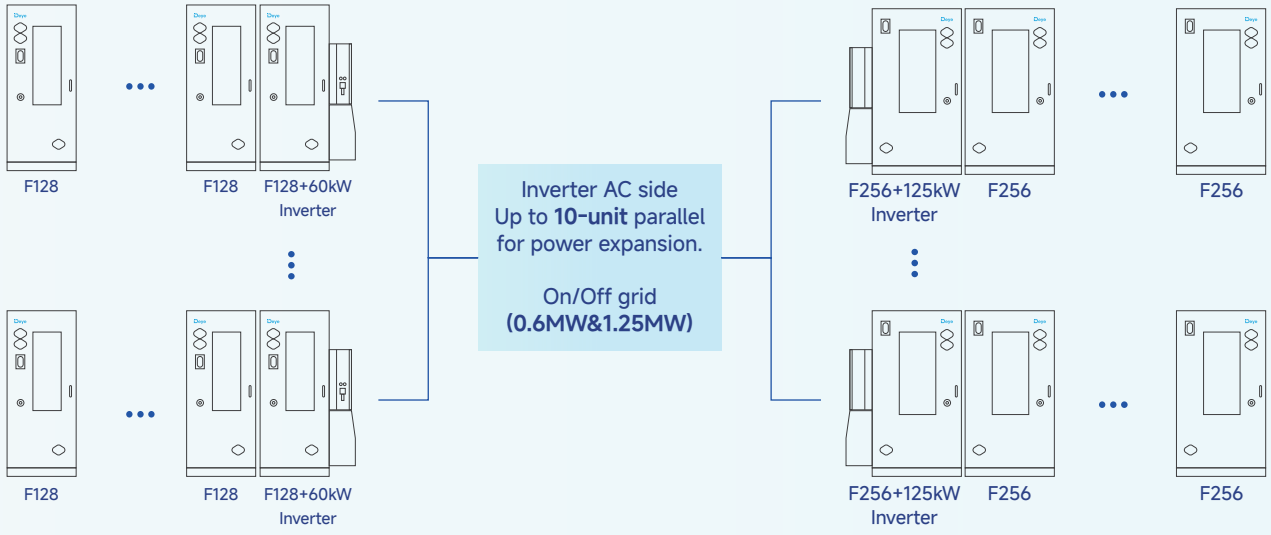
SUN-125K-PCS01HP3+
(SUN MPPT-L01-EU+SUN-STS500L)

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
SUN-80K-SG02HP3-EU-EM6（80A+80A）	GE-F176-BC-2-A3	80kW/176kWh
SUN-100K-SG02HP3-EU-GM10（100A+100A）	GE-F208-BC-2-A3	100kW/208kWh
SUN-125K-SG02HP3-EU-GM10（100A+100A）	GE-F240-BC-2-A3	125kW/241kWh
SUN-125K-SG02HP3-EU-GM10（100A+100A）	GE-F256-BC-2-A3	125kW/257kWh
SUN-125K-PCS01HP3（200A）+ (SUN MPPT-L01-EU+SUN-STS500L)*	GE-F256-BC-2-A3	125kW/257kWh
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
SUN-60K-SG02HP3-EU-EM6（80A+80A）	GE-F176-BC-2-A3	60kW/176kWh
SUN-70K-SG02HP3-EU-EM6（80A+80A）	GE-F208-BC-2-A3	70kW/208kWh
SUN-80K-SG02HP3-EU-EM6（80A+80A）	GE-F240-BC-2-A3	80kW/240kWh
SUN-80K-SG02HP3-EU-EM6（80A+80A）	GE-F256-BC-2-A3	80kW/257kWh
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
SUN-50K-SG02HP3-EU-BM4（100A）	GE-F208-BC-2-A3	50kW/208kWh
SUN-50K-SG01HP3-EU-BM4（50A+50A）	GE-F208-BC-2-A3	50kW/208kWh
SUN-60K-SG02HP3-EU-EM6（80A+80A）	GE-F240-BC-2-A3	60kW/241kWh
SUN-60K-SG02HP3-EU-EM6（80A+80A）	GE-F256-BC-2-A3	60kW/257kWh

*: SUN MPPT-L01-EU and SUN-STS500L are optional

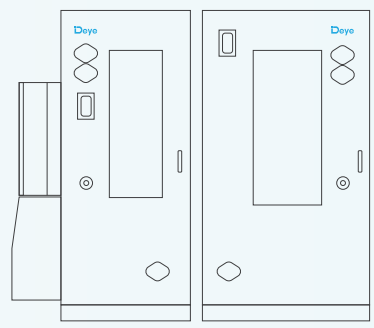
AC/DC Side Parallel Expansion (Capacity & Power)

ENERGY STORAGE SYSTEM



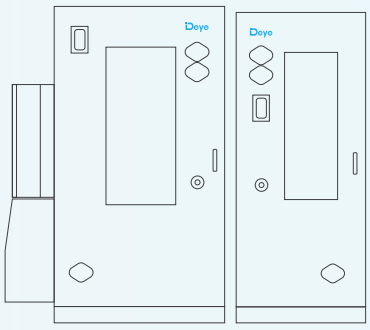
Battery Cabinet DC side
Up to**10-unit** parallel for capacity expansion
(1.28MWh)

Battery Cabinet DC side
Up to**10-unit** parallel for capacity expansion
(2.57MWh)



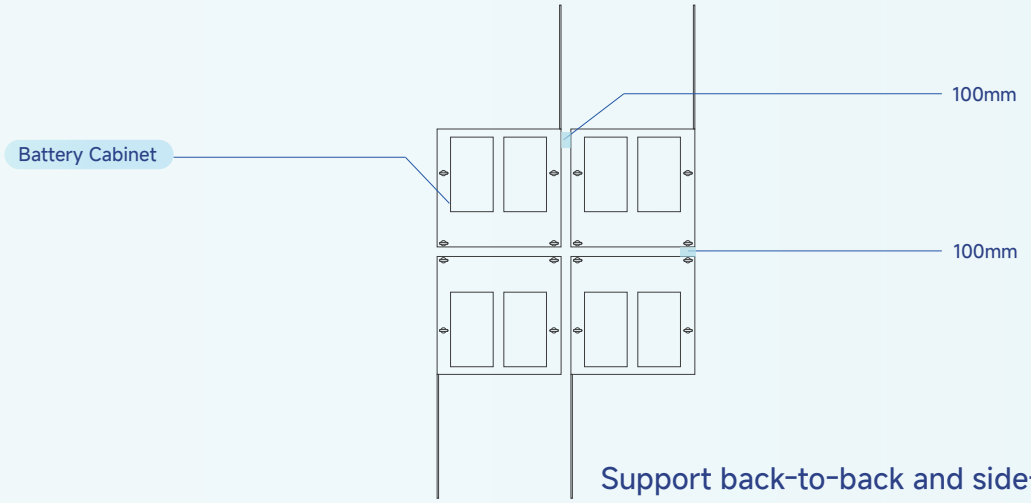
Compatible with battery cabinets of different specifications

The inverter supports two independent battery inputs



Supports **60kW/6h** systems and other configurations

Supports **125kW/3h** systems and other configurations



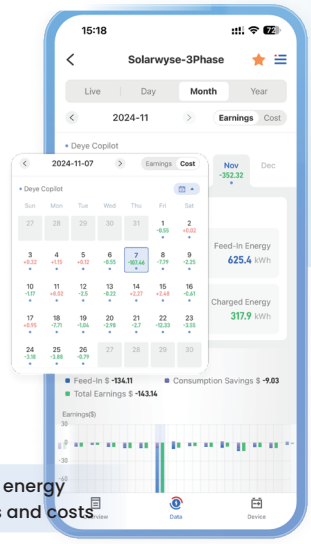
Support back-to-back and side-by-side installation.

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

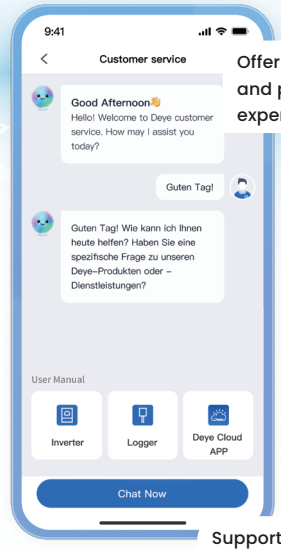
Support dynamic tariff and flat-rate

Deye Copilot

ToU

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

AI Assistant



Offer response suggestions and personalized support experience

Support over 30 languages

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

www.deyeess.com / www.deyeinverter.com

Deye ESS / Deye New Energy