Small-Scale C&I Energy Storage Solution

SUN-50K-SG01HP3-EU-BM4 / SUN-80K-SG02HP3-EU-EM6

SUN-100K-PCSL01HP3 **BOS-A**

SUN-50K-SG01HP3-EU-BM4 / SUN-80K-SG02HP3-EU-EM6

Practicality & Universal Compatibility

- ◎ 100% unbalanced output
- ◎ AC couple to retrofit existing solar system
- ◎ Dual Independent battery circuit

Versatile & High-Performance

- ◎ TOU function,Six time periods for battery charging/discharging
- ◎ Diesel generator-ready,VSG application

Reliability & Scalability

- ◎ Max. 10 pcs parallel for on-grid and off-grid operation
- ◎ Seamless switching between on-grid and off-grid modes in less than 10ms

BOS-A

Intelligent Control

Over-discharge/charge/current and temp protection

Superior Output

Support up to 160A current output

Flexible Expansion

Support 7~21 packs in series
Inverter 50~100kW, Battery 54~161kWh

10-Year Warranty

Safest LFP battery&Intelligent BMS

3U Rack Design

Connectable to two inverter DC interfaces

Battery Protection

Auto-managed charge/discharge&Cell voltage balancing

Small-Scale C&I Energy Storage Solution

Model	SUN-50K-SG01HP3-EU-BM4
Battery Input Data	
Battery Type	Lithium-ion
Battery Voltage Range (V)	160-800
Max. Charging Current (A)	50+50
Max. Discharging Current (A)	50+50
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
Max. PV Input Power (W)	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
Max. Input Short-Circuit Current (A)	55+55+55+55
No. of MPP Trackers/ No. of Strings MPP Tracker	4/2+2+2+2
AC Input/Output Data	
Rated AC Input/Output Active Power(W)	50000
Max. AC Input/Output Apparent Power(VA)	55000
Rated AC Input/Output Current (A)	75.8/72.5
Max. AC Input/Output Current (A)	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 Polarity Reverse Connection Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Overvoltage Load Drop Protection, Ground Fault Current Monitoring, Arc Fault Circuit Interrupter (optional), Power Network Monitoring, Island Protection Monitoring, Earth Fault Detection, DC Input Switch, DC Terminal Insulation Impedance Monitoring, Residual Current (RCD) Detection, Surge protection level
Surge Protection Level	TYPE II(DC), TYPE II(AC)
Interface	
Communication Interface	RS485/RS232/CAN
Monitor Mode	GPRS/WIFI/Bluetooth/4G/LAN(optional)
General Data	
Operating Temperature Range(°C)	-40 to +60°C, >45°C Derating
Permissible Ambient Humidity	0-100%
Permissible Altitude	2000m
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)	527×894×294 (Excluding Connectors and Brackets)
Weight (kg)	80
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

Small-Scale C&I Energy Storage Solution

Model	SUN-60K-SG02HP3 -EU-EM6	SUN-70K-SG02HP3 -EU-EM6	SUN-75K-SG02HP3 -EU-EM6	SUN-80K-SG02HP3 -EU-EM6
Battery Input Data				
Battery Type	Lithium-ion			
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	150000	160000
Max. PV Input Power (W)	96000	112000	120000	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	75000	80000
Max. AC Input/Output Apparent Power(VA)	66000	77000	82500	88000
Rated AC Input/Output Current (A)	91/87	106.1/101.5	113.7/108.7	121.3/115.9
Max. AC Input/Output Current (A)	100/95.7	116.7/111.6	125/119.6	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 nominal power)			
DC Injection Current	<0.5% In			
Efficiency				
Max. Efficiency	98.70%			
Euro Efficiency	98.10%			
MPPT Efficiency	>99%			
Equipment Protection				
Integrated	DC Polarity Reverse Connection Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Overvoltage Load Drop Protection, Ground Fault Current Monitoring, Arc Fault Circuit Interrupter (optional), Power Network Monitoring, Island Protection Monitoring, Earth Fault Detection, DC Input Switch, DC Terminal Insulation Impedance Monitoring, Residual Current (RCD) Detection, Surge protection level			
Surge Protection Level	TYPE II(DC), TYPE II(AC)			
Interface				
Communication Interface	RS485/RS232/CAN			
Monitor Mode	GPRS/WIFI/Bluetooth/4G/LAN(optional)			
General Data				
Operating Temperature Range(°C)	-40 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)	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			

Small-Scale C&I Energy Storage Solution

MPPT Module	SUN-MPPT-L01-EU-AM8
PV String Input Data	
Max. PV Input Power (kW)	200
Max. PV Input Voltage (V)	1000
Start-up Voltage (V)	200
MPPT Voltage Range (V)	180-850
Full Load MPPT Voltage Range（V）	450-850
Rated PV Input Voltage (V)	600
Max. Operating PV Input Current (A)	40+40+40+40+40+40+40+40
Max. Input Short-Circuit Current (A)	60+60+60+60+60+60+60+60
No. of MPP Trackers	8
Efficiency	
Max. Efficiency	>99%
MPPT Efficiency	>99.9%
Equipment Protection	
DC input reverse protection	YES
DC ARC protection	Optional
Anti-PID(Potential Induced Degradation)	Optional
DC Switch	YES
Surge Protection Level	TYPE II
General Data	
Ingress Protection(IP) Rating	IP65
Over Voltage Category	OVC II
Cabinet Size[W×H×D] (mm)	543x198x700
Weight (kg)	41.75
Type Of Cooling	Intelligent air cooling
Safety EMC/Standard	IEC/EN 62109-1
DC Output Data	
DC Output Voltage Range(V)	630-1000
Max. DC Output Current(A)	200

STS Module	SUN-STS500L
Grid/PCS Side Data	
Rated AC Input/Output Active Power（kW）	500
Rated AC Input/Output Current（A）	758/725
Rated Input/Output Voltage(V)	220/380, 230/400 (three phase)
Grid Connection Form	3L/N/PE
Rated Input/Output Grid Frequency	50Hz/60Hz
Load Side Data	
Rated Output Active Power（kW）	500
Rated Output Current（A）	758/725
Rated Output Voltage(V)	220/380, 230/400 (three phase)
Grid Connection Form	3L/N/PE
Rated Output Grid Frequency	50Hz/60Hz
GEN Side Data	
Rated AC Input Active Power（kW）	500
Rated AC Input Current（A）	758/725
Rated Input Voltage(V)	220/380, 230/400 (three phase)
Grid Connection Form	3L/N/PE
Rated Input Grid Frequency	50Hz/60Hz
General Data	
Off grid switching time	<20ms
Ingress Protection(IP) Rating	IP20
Over Voltage category	OVC III

Small-Scale C&I Energy Storage Solution

Cabinet Size[W×H×D] (mm)	543x575x671	
Weight (kg)	108	
Type Of Cooling	Natural Cooling	
Safety EMC/Standard	IEC/EN 61439-1/-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%	
MPPT Efficiency	>99%	
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	
Weight (kg)	70.35	
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 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 62477-1	

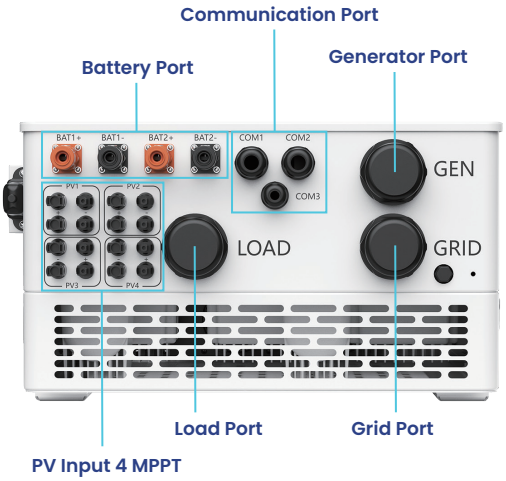
Small-Scale C&I Energy Storage Solution

Model		BOS-A		
Main Parameters				
Cell Chemistry		$LiFePO_4$		
Module Energy (kWh)		7.68		
Module Nominal Voltage (V)		38.4		
Module Capacity (Ah)		200		
Module Dimension (W × D × H, mm)		601.5 × 520 × 135		
Module Weight Approximate (kg)		70		
Battery Module Qty In Series (Optional)		7	13	21
System Nominal Voltage (V)		268.8	499.2	806.4
System Operating Voltage (V)		235.2 ~ 306.6	436.8 ~ 569.4	705.6 ~ 919.8
System Energy (kWh)		53.76	99.84	161.28
System Usable Energy (kWh) [1]		48.38	89.85	145.15
Charge / Discharge[2] Current (A)	Recommend	100		
	Max	160		
Working Temperature (°C)		Charge : 0 ~ 55 / Discharge : -20 ~ 55		
Status Indicator		Yellow : Battery High Voltage Power On Red : Battery System Alarm		
Communication Port		CAN2.0		
Humidity		5% ~ 85%RH		
Altitude		≤3000m		
IP Rating of Enclosure		IP20		
Dimension (W × D × H, mm)		610 × 610 × 1900	610 × 610 × 2350	(610 × 610 × 1900) × 2
Weight Approximate (kg)		558	985	1586
Installation Location		Rack-Mounted		
Storage Temperature (°C)		0 ~ 35		
Recommend Depth of Discharge		90%		
Cycle Life		≥6000 (25±2°C, 0.5C / 0.5C, EOL70%)		
Warranty[3]		10 years		
Certification		CE / IEC 62619 / IEC 62040 / UN38.3 / VDE-2510		

1. DC Usable Energy, test conditions : 90%DOD, 0.3C 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. The warranty is due whichever reached first of warranty period or life cycle power.

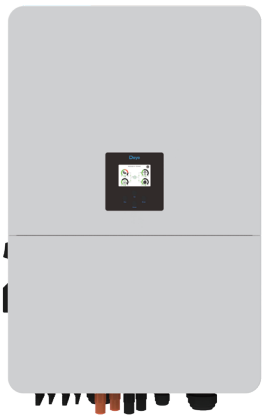
Small-Scale C&I Energy Storage Solution

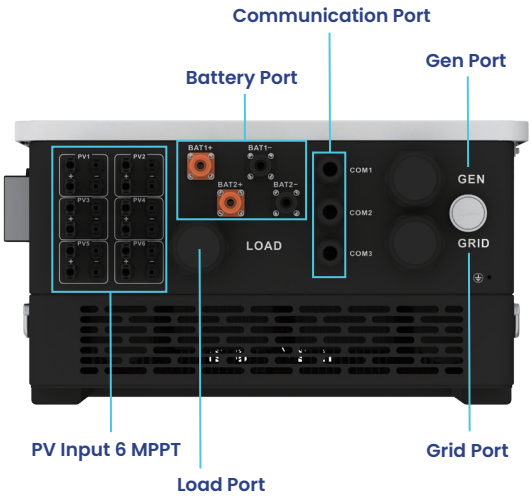
Model SUN-50K-SG01HP3-EU-BM4



◎ Battery Port: Dual independent battery circuit port, supporting multiple brand battery connetion and battery voltage range 160-800V.
◎ Communication Port: Serve as communicate with battery and data exchange between inverter and extra devices.
◎ Load Port: Offer AC power to connected loads.
◎ Grid Port: Connect to utility grid, for bidirectional power transfer: importing from and exporting to the grid.
◎ Generator Port: Connect to diesel generator for backup power supply during outages, also can connect with existing solar inverter for AC Coupling.
◎ PV Input: Connect to PV panels with 4 MPPTs.

Model SUN-80K-SG02HP3-EU-EM6



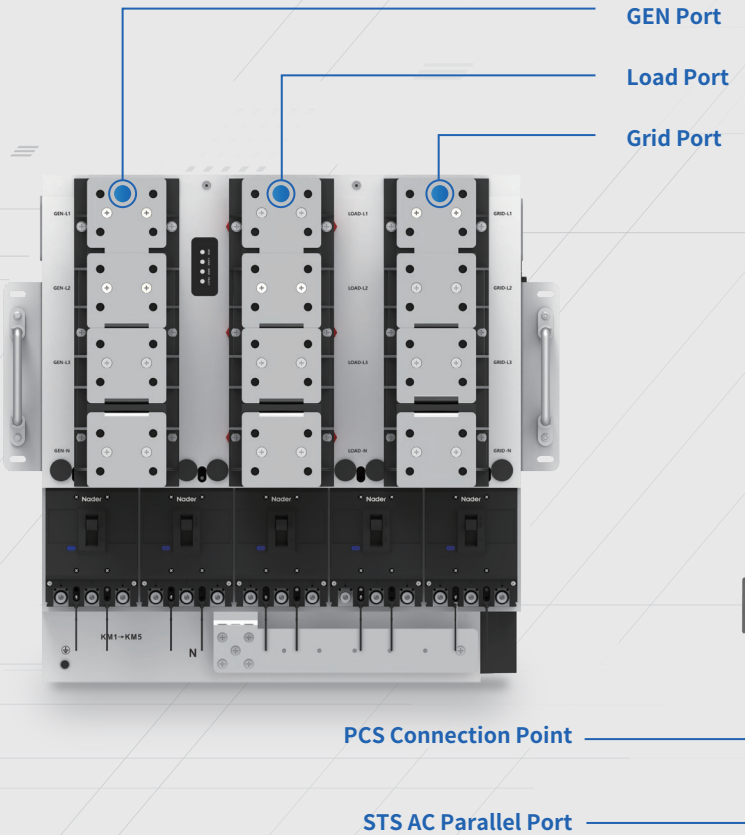


◎ Battery Port: Dual independent battery circuit port, supporting multiple brand battery connetion and battery voltage range 160-1000V.
◎ Communication Port: Serve as communicate with battery and data exchange between inverter and extra devices.
◎ Load Port: Offer AC power to connected loads.
◎ Grid Port: Connect to utility grid, for bidirectional power transfer: importing from and exporting to the grid.
◎ Generator Port: Connect to diesel generator for backup power supply during outages, also can connect with existing solar inverter for AC Coupling.
◎ PV Input: Connect to PV panels with 6 MPPTs.

Small-Scale C&I Energy Storage Solution

STS Module

Smoothly switch between on-grid, off-grid, and diesel generator modes with a switching time of less than 20ms. Each diesel, load, and grid connection is independent, with each path supporting 500kW. One STS module can connect to five 100kW PCS modules or four 125kW PCS modules.



STS Module (500kW)

◎ Switching capacity of **500**kW.

◎ Enables smooth switching between on-grid, off-grid, and diesel generator modes.

◎ Switching time of less than **20ms**.

MPPT Module & PCS Module

MPPT Module (8 MPP Trackers)

◎ Maximum 200kWp PV module connection with 8 MPPT channels, **40A** per MPPT.

PCS Module (100kW/125kW)

◎ **175A/200A** charge and discharge current.

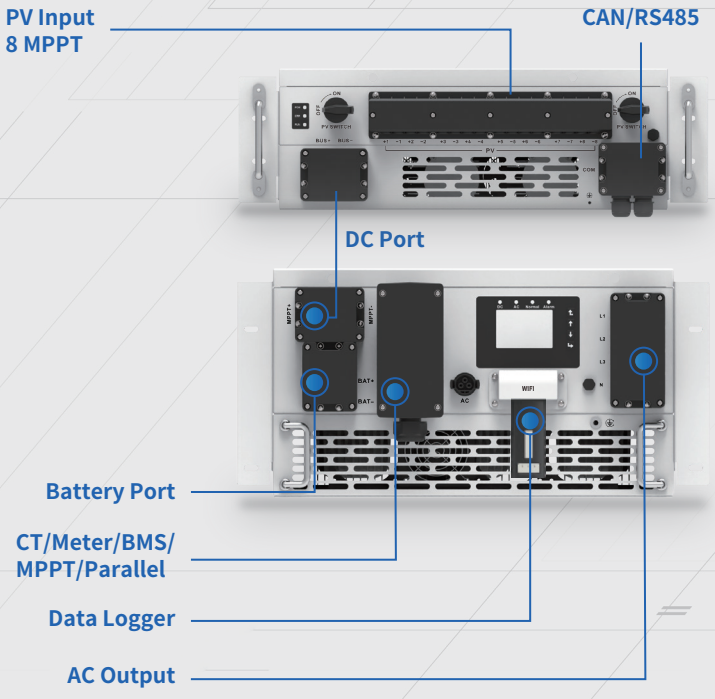
◎ Maximum efficiency of **98.5%**.

◎ System rated power up to **2.5MW**.

◎ Supports instantaneous peak power up to 170% of rated power.

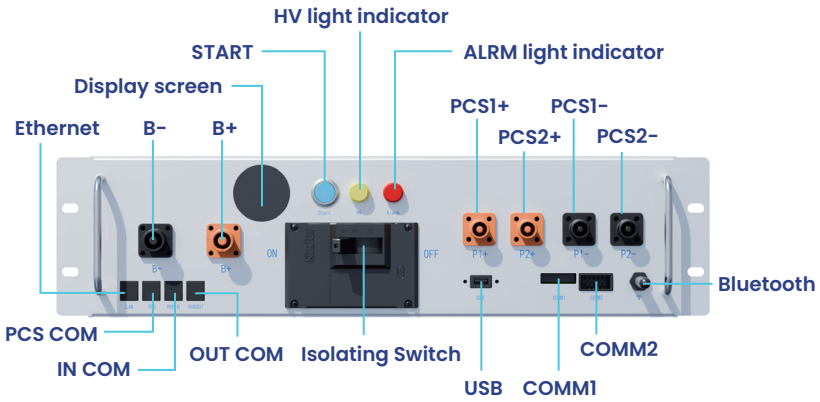
◎ Integrates zero-export and time-of-use control functions.

◎ Eliminating the need for additional EMS.



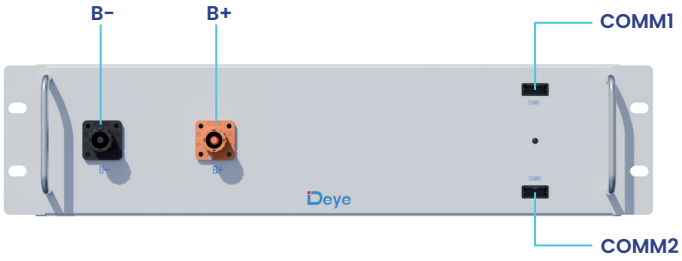
Small-Scale C&I Energy Storage Solution

Model	BOS-A-PDU-2
Operating Voltage	200~1000Vdc
Max.Charge/Discharge Current	160A
Operating Temperature	-20~65°C
Ingress Protection	IP20
DC Input Rating	12±2%V/4.15A
Details	632×572×142.2(W×H×D),21kg



◎ Ethernet:Features not yet developed.
◎ PCS COM:PCS COM battery communication terminal: used to output battery information to the inverter.
◎ IN COM:Connection position with previous BOS-A-PDU-4 communication input.
◎ OUT COM:Connection position with next BOS-A-PDU-4 communication output.
◎ Isolating Switch:It is used to manually control the connection between the battery rack and external devices.
◎ USB:BMS upgrade port and storage expansion port.
◎ COMM1:Connection position of external 12VDC power supply.
◎ COMM2:Used for communication and providing power.
◎ Bluetooth:The mobile APP connects to the data acquisition rod of the energy storage system.
◎ B+:Battery common positive connection position (red).
◎ B-:Battery common negative connection position (black).
◎ Display screen:Display SOC and fault codes.
◎ START:A start switch of 12VDC power inside the high-voltage control box.
◎ HV light indicator:High-voltage hazard indicator (yellow).
◎ ALRM light indicator:Battery system fault alarm indicator (red).
◎ PCS1+:First PCS positive connection position (orange).
◎ PCS2+:Second PCS positive terminal connection position (orange).
◎ PCS1-:First PCS negative connection position (black).
◎ PCS2-:Second PCS negative connection position (black).

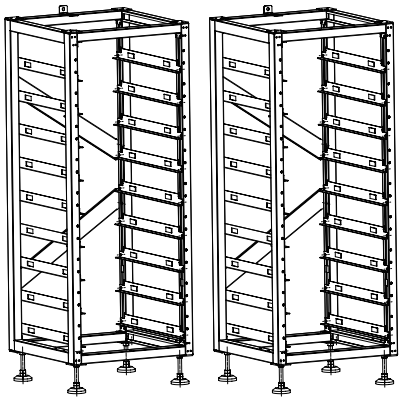
Model	BOS-A-Pack7.68		
Nominal Capacity	200Ah	Ingress Protection	IP20
Nominal Energy	7.68kWh	Operating Temperature(Charge)	0~55°C
Nominal Voltage	38.4Vdc	Operating Temperature(Discharge)	-20~55°C
Nominal Charge/Discharge Current	160A	Storage Temperature	0~35°C
Details	632×576×135.2(W×H×D),66kg		



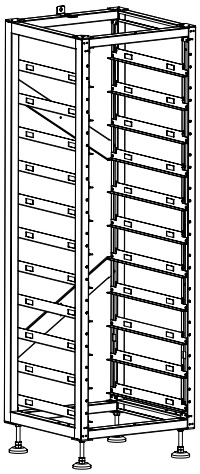
◎ B-:Battery module negative pole (black).
◎ B+:Battery module positive pole (orange).
◎ COMM1:Used for communication and providing power.
◎ COMM2:Used for communication and providing power.

Small-Scale C&I Energy Storage Solution

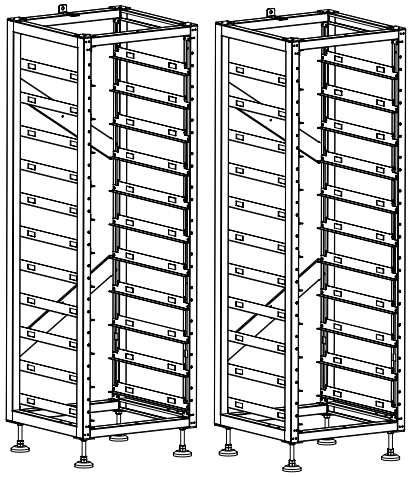
Model	BOS-A
BOS-A-Rack9 *2	Can install 16 pcs batteries and 1 pcs High Voltage Battery cluster control box.
Dimension (W × D × H) Weight Approximate	1220 × 610 × 1600mm 84kg



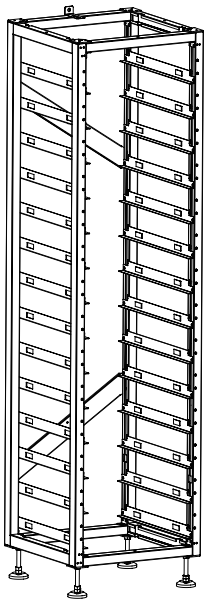
BOS-A-Rack11 **BOS-A-Rack11 *2**	Can install 10 pcs batteries and 1 pcs High Voltage Battery cluster control box. Can install 21 pcs batteries and 1 pcs High Voltage Battery cluster control box.
Dimension (W × D × H) Weight Approximate	610 × 610 × 1900mm 47kg



1220 × 610 × 1900mm
94kg

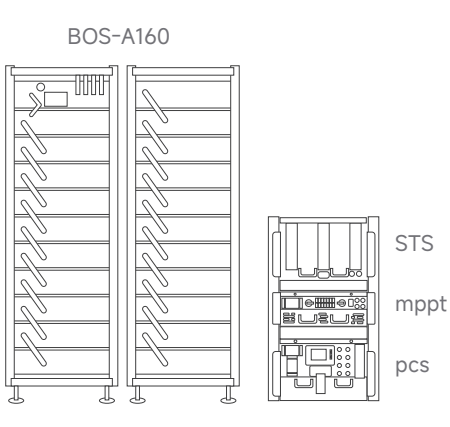


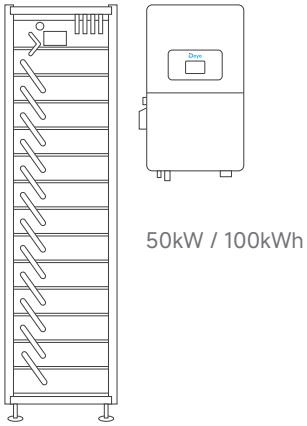
BOS-A-Rack14	Can install 13 pcs batteries and 1 pcs High Voltage Battery cluster control box.
Dimension (W × D × H) Weight Approximate	610 × 610 × 2350mm 55kg

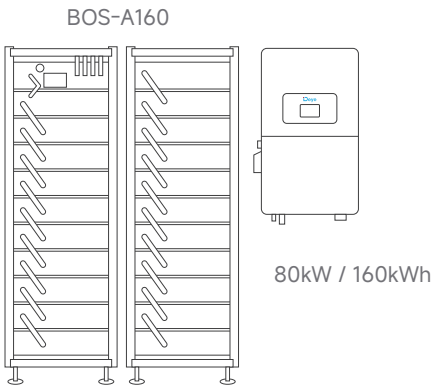


Small-Scale C&I Energy Storage Solution

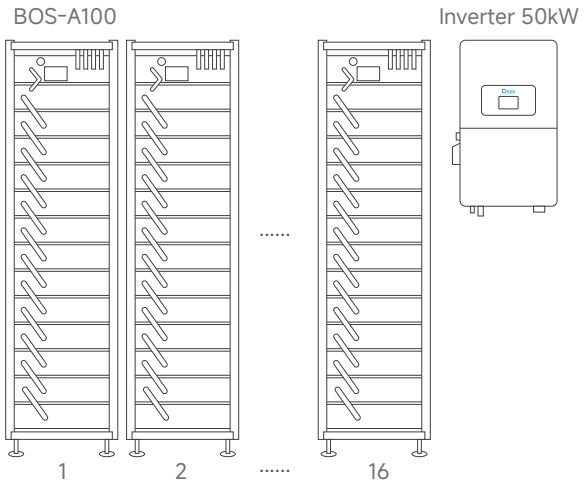
Backup Power Duration Plan	1 hours	2 hours		4 hours	
Hybrid inverter power	100kW	50kW	80kW	50kW	80kW
Battery model	BOS-A160	BOS-A100	BOS-A160	BOS-A100	BOS-A160
Number of batteries	1 pc	1 pc	1 pc	2 pcs	2 pcs



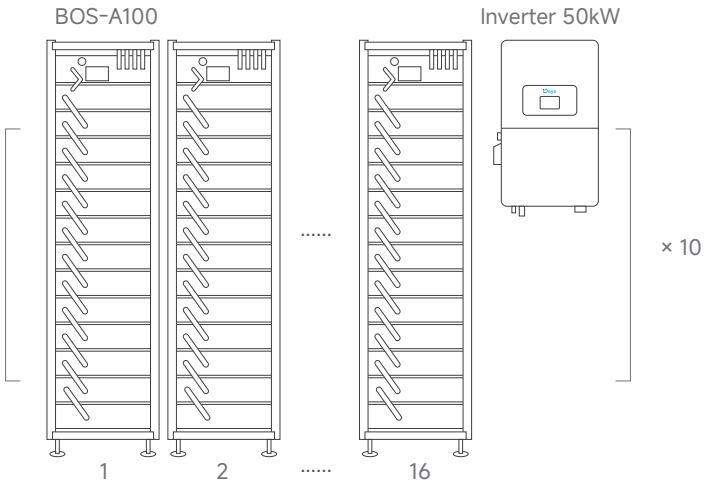




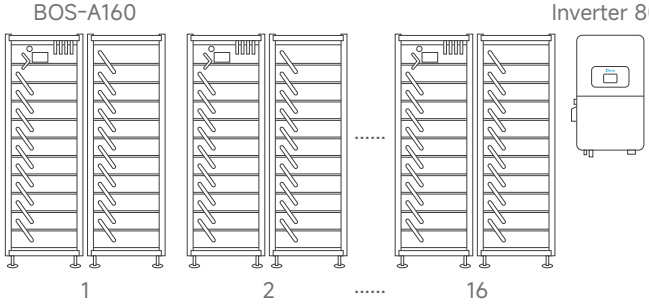
Typical Application Scenarios



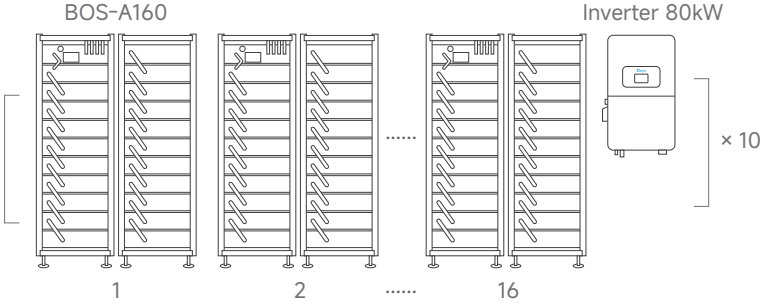
Maximum support for 16 racks of batteries in parallel



Maximum support for 10 inverters in AC parallel operation



Maximum support for 16 clusters of batteries in parallel



Maximum support for 10 inverters in AC parallel operation

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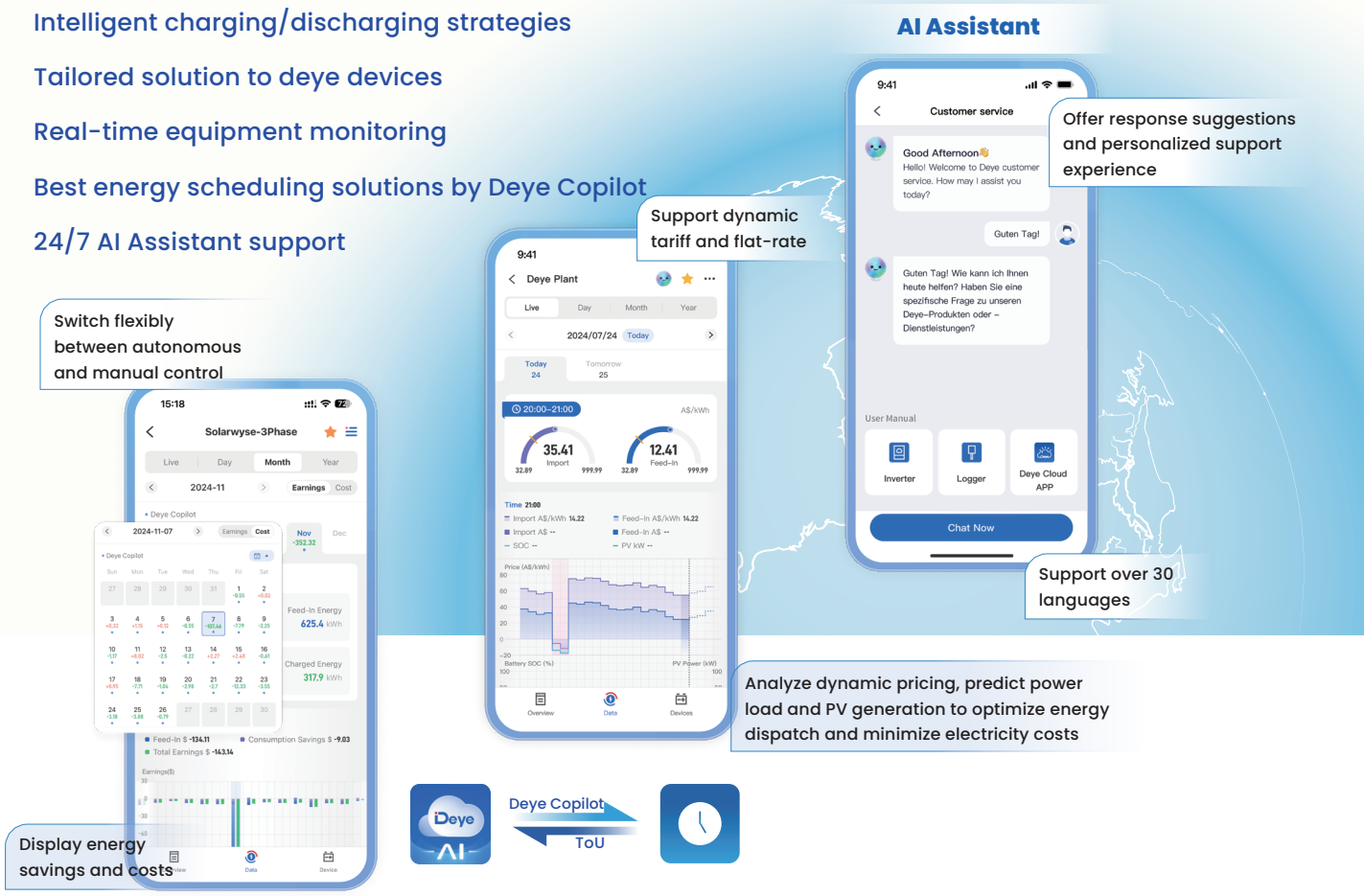

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