Hybrid ESS Cabinet



ESS-AELIO

50kW / 60kW
100 / 200kWh

High Performance

- Max. 200% PV oversizing input
- Global MPP scan for optimal energy harvest
- Single cabinet with up to 200kWh, expandable to MWh-scale capacity

Assured Reliability

- Four-level fire safety protection
- IP66 for inverter, IP55 for cabinet
- Type II SPD on AC & DC side
- Smart IV curve scan for early panel diagnosis
- Optional AFCI protection
- Supporting three-phase unbalance output

Smart Management

- AI-driven intelligent algorithms for high SOC and accuracy
- VPP ready with SolaXCloud (IEEE 2030.5, OpenADR)
- Supporting micro-grids and diverse scenarios
- Smart schedule, smart scene and 7×24h TOU
- Wireless meter compatibility

Flexible Adaptability

- Supporting grid-connected and off-grid
- Expandable design with modular capacity options
- Max. 40A DC input current for high power solar panel

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V1.4 Information may be subject to modify without notice. 650.00074.00

ENERGY STORAGE SYSTEM

	AELIO-P50B100	AELIO-P50B200	AELIO-P60B100	AELIO-P60B200
DC SIDE				
Max. recommended PV array power	100 kWp		120 kWp	
Max. PV input voltage①	1000 V			
Start-up voltage	180 V			
Rated PV input voltage	650 V			
MPPT voltage range②	160 ~ 950 V			
No. of MPP trackers / strings per MPP tracker	5 / 2		6 / 2	
Max. input current per MPPT	40 A			
Isc PV array short circuit current per MPPT③	50 A			
AC SIDE				
Rated output power	50.0 kW		60.0 kW	
Rated output current	75.8 A @ 220 V 72.5 A @ 230 V		91.0 A @ 220 V 87.0 A @ 230 V	
Max. apparent power	55.0 kVA		66.0 kVA	
Max. output continuous current	83.4 A @ 220 V 79.8 A @ 230 V		100.0 A @ 220 V 95.7 A @ 230 V	
Nominal AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V			
Rated AC frequency	50 Hz / 60 Hz			
Adjustable power factor range	~1 (0.8 leading ~ 0.8 lagging)			
THDi (rated power)	< 3%			
BATTERY SIDE				
Battery type	LFP / 280 Ah			
Rated battery capacity	100 kWh	200 kWh	100 kWh	200 kWh
Rated battery voltage	358.4 V	716.8 V	358.4 V	716.8 V
Battery voltage range	296.8 ~ 408.8 V	596.3 ~ 817.6 V	296.8 ~ 408.8 V	596.3 ~ 817.6 V
Rated charge / discharge current	140 A			
GENERAL				
Dimensions (with inverter) (W × H × D)	1310 × 2300 × 1140 mm	2070 × 2420 × 1200 mm	1310 × 2300 × 1140 mm	2070 × 2420 × 1200 mm
Dimensions (without inverter) (W × H × D)	1020 × 2300 × 1140 mm	1680 × 2420 × 1200 mm	1020 × 2300 × 1140 mm	1680 × 2420 × 1200 mm
Weight (with inverter)	1600 kg	2800 kg	1600 kg	2800 kg
Weight (without inverter)	1500 kg	2700 kg	1500 kg	2700 kg
Operation temperature range	-30 ~ 55°C	-30 ~ 50°C	-30 ~ 55°C	-30 ~ 50°C
Relative humidity	0 ~ 100% RH (non-condensing)			
Max. operation altitude	3000 m			
Cooling concept	Smart air cooling			
Ingress protection	Cabinet: IP55; Inverter: IP66			
Fire protection	Aerosol / Water			
Topology	Non-isolated			
Certifications	IEC62619, IEC63056:2000, IEC61000, IEC62477-1, UN38.3， IEC 60730, IEC 60529, IEC 60068, VDE 2510-50, IEC62040, UL9540A			

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter
② Input voltage exceeding the MPPT voltage range may trigger inverter protection
③ Isc current for single PV input string is 35A

INVERTER

	X3-AELIO-49.9K	X3-AELIO-49.9K-P	X3-AELIO-50K	X3-AELIO-60K	X3-AELIO-61K
PV INPUT					
Max. recommended PV array power	100 kWp	120 kWp	100 kWp	120 kWp	
Max. PV input voltage①	1000 V				
Rated PV input voltage	650 V				
MPPT voltage range②	160 ~ 950 V				
Start-up voltage	180 V				
No. of MPP trackers / strings per MPP tracker	5 / 2	6 / 2	5 / 2	6 / 2	
Max. input current per MPPT	40 A				
Max. input short circuit current per MPPT	50 A				
AC INPUT & OUTPUT (ON-GRID)					
Rated output power	49.9 kW	49.9 kW	50.0 kW	60.0 kW	61.0 kW
Rated output current	75.7 A @ 220 V 72.4 A @ 230 V	75.7 A @ 220 V 72.4 A @ 230 V	75.8 A @ 220 V 72.5 A @ 230 V	91.0 A @ 220 V 87.0 A @ 230 V	92.5 A @ 220 V 88.5 A @ 230 V
Max. output apparent power	49.9 kVA	49.9 kVA	55.0 kVA	66.0 kVA	66.0 kVA
Max. output continuous current	75.7 A @ 220 V 72.4 A @ 230 V	75.7 A @ 220 V 72.4 A @ 230 V	83.4 A @ 220 V 79.8 A @ 230 V	100.0 A @ 220 V 95.7 A @ 230 V	100.0 A @ 220 V 95.7 A @ 230 V
Rated AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V				
Rated AC frequency	50 Hz / 60 Hz				
AC frequency range③	50 ± 5 Hz / 60 ± 5 Hz				
Adjustable power factor range	~1 (0.8 leading ~ 0.8 lagging)				
THDi (rated power)	< 3%				
BATTERY					
Battery type	LFP				
Battery voltage range	180 ~ 820 V				
Max. charge / discharge current	160 A (80 A × 2)				
EPS (OFF-GRID) OUTPUT					
Rated EPS output voltage, frequency	3 / N / PE, 220 / 380 V, 50 Hz / 60 Hz 3 / N / PE, 230 / 400 V, 50 Hz / 60 Hz				
Rated EPS output power	49.9 kVA	49.9 kVA	50.0 kVA	60.0 kVA	61.0 kVA
Max. EPS output power	75 kVA, 10s	75 kVA, 10s	75 kVA, 10s	90 kVA, 10s	90 kVA, 10s
Switchover time	< 10 ms				
EFFICIENCY					
Max. efficiency	98.0%				
European efficiency	97.2%				
GENERAL					
Ingress protection	IP66				
Operating temperature range	-35 ~ 60°C (derating +45°C)				
Max. operation altitude	3000 m				
Relative humidity	0 ~ 100% RH (condensing)				
Overvoltage category	Mains: III, Battery: II, PV: II				

INVERTER

	X3-AELIO-49.9K	X3-AELIO-49.9K-P	X3-AELIO-50K	X3-AELIO-60K	X3-AELIO-61K
GENERAL					
Dimensions (W × H × D)	670 × 820 × 257 mm				
Net weight	< 100 kg	< 105 kg	< 100 kg	< 105 kg	< 105 kg
Cooling concept	Smart air cooling				
Communication interfaces	RS485-Meter, RS485-Monitor, RS485-Parallel (daisy-chain), CAN-BMS, CAN-Parallel (daisy-chain), USB, DI×2, DO×1, RCR (DI×4), DRM				
Topology	Non-isolated				
Certifications and approvals	CE, VDE4105, G99, AS4777, EN50549, CEI 0-21, IEC61727, PEA/MEA, NRS-097-2-1, RD1699, TOR				
PROTECTION					
Over / under voltage protection	Yes				
DC isolation protection	Yes				
DC reverse-polarity protection	Yes				
Grid monitoring	Yes				
DC injection monitoring	Yes				
Back feed current monitoring	Yes				
Residual current detection	Yes				
Over temperature protection	Yes				
Active anti-islanding method	Frequency shift				
Surge protection (DC / AC)	DC: Type II, AC: Type II				
Arc-fault circuit interrupter (AFCI)	Optional				
AC auxiliary power supply (APS)	Built-in				

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter
② Input voltage exceeding the MPPT voltage range may triggers inverter protection
③ The AC frequency range may vary from different country codes

BATTERY PACK

	TB-HR140
Battery type	LFP 280Ah
Battery capacity	14.3 kWh
Battery configuration	1P16S
Rated battery voltage	51.2 V
Battery voltage range	40 ~ 58.4 V
Weight	115 kg
Charge / discharge rate	≤ 0.5 C
Dimensions (W × H × D)	461 × 228 × 778 mm
Ingress protection	IP20