

Hybrid ESS Cabinet



ESS-AELIO

50kW / 60kW
100 / 200.2kWh



High Performance

- Max. 200% PV oversizing input
- Global MPP scan for optimal energy harvest
- Single cabinet with up to 200.2kWh, expandable to MWh-scale capacity



Smart Management

- AI-driven intelligent algorithms for high SOC and accuracy
- VPP ready with SolaX Cloud (IEEE 2030.5, OpenADR)
- Supporting micro-grids and diverse scenarios
- Smart schedule, smart scene and 7x24h TOU
- Wireless meter compatibility



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



Flexible Adaptability

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

ENERGY STORAGE SYSTEM

AELIO-P50B100-AU		AELIO-P50B200		AELIO-P60B100-AU		AELIO-P60B200	
DC SIDE							
Max. recommended PV array power	100 kWp			120 kWp			
Max. PV input voltage ^①	1000 V						
Start-up voltage	180 V						
Rated PV input voltage	650 V						
MPPT voltage range ^②	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 MPPT ^③	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	200.2 kWh	100 kWh	200.2 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, AS 3000, AS 5139						
Max. parallel quantity	10						
SPD	Type II						

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-50K		X3-AELIO-60K	
PV INPUT			
Max. recommended PV array power	100 kWp		120 kWp
Max. PV input voltage ^①	1000 V		
Rated PV input voltage	650 V		
MPPT voltage range ^②	160 ~ 950 V		
Start-up voltage	180 V		
No. of MPP trackers / strings per MPP tracker	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	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. output 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
Rated AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V		
Rated AC frequency	50 Hz / 60 Hz		
AC frequency range ^③	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	50.0 kVA		60.0 kVA
Max. EPS output power	75 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-50K		X3-AELIO-60K	
GENERAL			
Dimensions (W × H × D)	670 × 820 × 257 mm		
Net weight	< 100 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

*Feature to be upgraded in the future