

Hybrid ESS Cabinet



ESS-AELIO

50kW / 60kW
100~400kWh



High Performance

- Max. 200% PV oversizing input
- Up to 40A DC input current per MPPT
- Global MPP scan for optimal energy harvest
- Up to 200 kWh capacity with advanced LFP battery



Assured Safety

- Four-level fire safety protection & optional AFCI
- IP66 rating for inverter, IP55 for cabinet
- AC&DC SPD type II, always guarding the inverter
- Smart IV Curve scan for early panel diagnosis



Intelligent Design

- AI-driven forecasting for solar and load management
- Smart scene function for load management
- VPP-ready with SolaX cloud support(2030.5,OpenADR)
- Wireless meter solution & 24/7 scheduling.



Flexible Adaptability

- Supports both on-grid and off-grid operation
- Fast backup <10ms switchover time & 150% EPS output for 10s
- Handles unbalanced loads across three phases
- Expandable design with modular capacity options

AELIO-P50B100
AELIO-P50B200
AELIO-P60B100
AELIO-P60B200

DC SIDE				
Max. recommended PV array power	100 kWp		120 kWp	
Max. PV input voltage ^①	1000 V			
Start-up voltage	200 V			
Nominal 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 kW		60 kW	
Rated output current	72.2 A		86.6 A	
Max. apparent power	55 kVA		66 kVA	
Max. output continuous current	83.6 A		100.3 A	
Nominal AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V			
Nominal AC frequency	50 Hz / 60 Hz			
Adjustable Power Factor range	1 (0.8 lagging to 0.8 leading)			
THDi (rated power)	< 3%			
BATTERY SIDE				
Battery type	LFP / 280Ah			
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	280 ~ 408.8 V	560 ~ 817.6 V	280 ~ 408.8 V	560 ~ 817.6 V
Discharge depth	90%			
Rated charge/discharge current	140 A			
Max charge/discharge current	160 A (80 A x 2)			
GENERAL				
Dimensions (with inverter) (W x H x D)	1310 x 2300 x 1140 mm	2070 x 2420 x 1200 mm	1310 x 2300 x 1140 mm	2070 x 2420 x 1200 mm
Dimensions (without Inverter) (W x H x D)	1020 x 2300 x 1150 mm	1680 x 2420 x 1200 mm	1020 x 2300 x 1150 mm	1680 x 2420 x 1200 mm
Weight (with inverter)	1600 kg	2800 kg	1600 kg	2800 kg
Weight (without inverter)	1500 kg	2700 kg	1500 kg	2700 kg
Operating ambient temperature range	-30 ~ 55°C			
Relative humidity	0 ~ 95% RH (non-condensing)			
Max. operating altitude	3000 m			
Cooling concept	Smart air cooling			
Ingress protection	Cabinet: IP55; Inverter: IP66			
Fire protection	Aerosol (Optional: Novec1230) / Water			
Topology	Non-isolated			
Standard	IIEC62619, IEC63056:2000, IEC61000, IEC62477-1, UN38.3			

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

HYBRID C&I ESS CABINET INVERTER

X3-AELIO-49.9K

X3-AELIO-50K

X3-AELIO-60K

X3-AELIO-61K

PV INPUT				
Max. recommended PV array power	100 kWp		120 kWp	
Max. PV input voltage ^①	1000 V			
Nominal PV input voltage	650 V			
MPPT voltage range ^②	160 ~ 950 V			
Start-up voltage	200 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	49.9 kW	50 kW	60 kW	61 kW
Rated output current	72.3 A	72.5 A	87.0 A	88.4 A
Max. output apparent power	49.9 kVA	55 kVA	66 kVA	66 kVA
Max. output continuous current	83.2 A	83.3 A	100.0 A	100.0 A
Nominal AC voltage	3 / N / PE, 220 / 380 V, 230 / 400 V			
Nominal AC frequency	50 Hz / 60 Hz			
AC frequency range ^③	50 ± 5 Hz / 60 ± 5 Hz			
Adjustable Power Factor range	1 (0.8 lagging to 0.8 leading)			
THDi (rated power)	< 3%			
BATTERY				
Battery type	Lithium			
Battery voltage range	180 ~ 820 V			
Max. charge / discharge current	160 A (80 A × 2)			
EPS (OFF-GRID) OUTPUT				
Rated EPS output voltage, frequency	230 / 400 V, 220 / 380 V, 50 Hz / 60 Hz			
Rated EPS output power	49.9 kW	50 kW	60 kW	61 kW
Peak EPS output power	55 kW, continuous 75 kW, 10s		66 kW, continuous 90 kW, 10s	
Switchover time	< 10 ms			
EFFICIENCY				
Max. efficiency	98.0%			
European efficiency	97.2%			
ENVIRONMENT LIMIT				
Ingress protection	IP66			
Operating ambient temperature range ^④	-35 ~ 60°C			
Max. operating altitude	3000 m			
Relative humidity	0 ~ 100% RH (condensing)			
Overvoltage Category	Mains: III, Battery: II, PV: II			
GENERAL				
Dimensions (W × H × D)	820 × 670 × 257 mm			

Net weight	< 100 kg	< 105 kg
Cooling concept	Smart air cooling	
Communication interfaces	RS485, CAN, USB, Ripple Control, DI, DO	
Power consumption (night)	< 10 W	
Topology	Non-isolated	
Certificates and approvals	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

④ Derating above +45°C

HYBRID C&I ESS CABINET PACK

TB-HR140

Battery type	LFP 280Ah
Battery capacity	14.3 kWh
Battery configuration	1P16S
Rated cattery 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
Operating temperature range	-20 ~ 53°C
Relative humidity	0 ~ 95% RH (non-condensing)
Max. operating altitude	3000 m
Ingress protection	IP20
Communication to PCS	CAN