

AELIO

HYBRID C&I ESS CABINET



SAFE

- Four-level fire safety protection
- IP65 protection for Inverter and IP54 for cabinet
- AFCI optional
- AC&DC SPD type II, always guarding the inverter
- Smart IV Curve scan for early panel diagnosis



INTELLIGENT

- AI ready, forecasting solar generation and load consumption, smart energy management strategy
- Support smart scene function, intelligent loads management(e.g., Heat pump, EV charger)
- VPP ready, SolaX cloud supports resource aggregator (2030.5, OpenADR)
- Support Micro-grid and a variety of scenarios
- Support 7x24h remote O&M and schedule deployment
- Support wireless meter solution



ROBUST

- Support both on-grid
- Robust back-up ability, switch over time < 10ms, up to 200% EPS output for 10s
- Support unbalanced loads on three phases



ECONOMIC

- Maximum 200% PV oversized input
- Maximum 40A input current per MPPT, support high power solar panel
- Advanced LFP battery, single cabinet with up to 200kWh, expandable to MWh





AELIO series C&I Hybrid energy storage cabinet

is a highly integrated, all-in-one solution with multiple application scenarios.

Aelio series has outstanding advantages such as intelligent charge and discharge management, safety and reliability, and simple operation and maintenance.

First of all, Aelio cabinet uses high-density, high-safety, and high-performance LFP batteries. There are two models with capacity of 100kWh and 200kWh. When used in a single cabinet or multiple cabinets, it can charge and discharge stably according to the set working modes at different time periods, and the large-capacity battery cell of 280Ah also reduces the initial cost of the system.

Secondly, the cabinet is equipped with a self-developed Energy Management System (EMS) that can monitor the working status and abnormal alerts of each battery cell, PCS, and fire protection system in real-time. The local data storage capability allows for data analysis and verification for up to 1 year. The advanced EMS system also has leading advantages in intelligent control of different smart

AELIO

“ INTRODUCTION ”

operation strategies, autonomous scheduling based on local electricity prices, and comprehensive management of photovoltaic, energy storage systems, EV charging and generators at power plant level. These features improve the overall system efficiency and shorten the investment return period.

In addition, the cabinet also has multiple safety protection measures. It has built-in protection functions such as overvoltage, overcurrent, and overtemperature. It is also equipped with fireproof materials and 4 levels of fire protection system, which can promptly detect and respond to potential fire risks, effectively control the spread of fires and reduce the risk of safety accidents.

The cabinet is suitable for various C&I PV&ESS scenarios, including peak shaving, demand response, backup mode, photovoltaic and energy storage integration, and stable load consumption curves. It also supports applications such as virtual power plants (VPP) and frequency regulation.

DC Side						
Max. PV input power [kW]	110		120		130	
Max. PV input voltage [V]			1000			
Start output voltage [V]			200			
Nominal input voltage [V]			650			
MPPT voltage range [V]			160 ~ 950			
No. of MPP trackers / Strings per MPP tracker	5(2 per MPPT)		6(2 per MPPT)		6(2 per MPPT)	
Max. input current [A]			40			
Max. input short circuit current [A]			50			
AC Side						
Rated AC output power [kW]	50		60		65	
Rated AC output current [A]	72.2		86.6		93.9	
Max. AC output apparent power [kVA]	55		66		66	
Max. AC output current [A]	83.6		100.3		100.3	
Nominal AC voltage [V]			3P4W, 400/230, 380/220			
Rated AC grid frequency [Hz]			50/60			
Power Factor range			0.99 leading ~ 0.99 lagging			
THDi (Rated power) [%]			< 3			
Battery Side						
Battery Type	LFP / 280Ah					
Nominal Capacity [kWh]	100	200	100	200	100	200
Rated Voltage [V]	358.4	716.8	358.4	716.8	358.4	716.8
Voltage Range [V]	280 ~ 408.8	560 ~ 817.6	280 ~ 408.8	560 ~ 817.6	280 ~ 408.8	560 ~ 817.6
Discharge Depth [%]	90					
Max Charge/Discharge Current [A]	160 (80 × 2)					
Cycle Life	> 6000					
General						
Dimensions(with Inverter) (W×H×D) [mm]	1280 × 2300 × 1150	2067 × 2420 × 1100	1280 × 2300 × 1150	2067 × 2420 × 1100	1280 × 2300 × 1150	2067 × 2420 × 1100
Dimensions (without Inverter) (W×H×D) [mm]	1180 × 2300 × 1150	1680 × 2420 × 1100	1180 × 2300 × 1150	1680 × 2420 × 1100	1180 × 2300 × 1150	1680 × 2420 × 1100
Weight (with Inverter) [kg]	1600	2800	1600	2800	1600	2800
Weight (without Inverter) [kg]	1500	2700	1500	2700	1500	2700
Operating ambient temperature range [°C]	-30 ~ 55					
Relative Humidity [%]	0 ~ 100					
Max. operating altitude [m]	3000					
Cooling Concept	Smart cooling					
Ingress protection	IP54					
Fire Protection	Optional: Aerosol / Novec1230 / Water					
Topology	Transformerless					
Standard	IEC621619, IEC63056:2000, IEC61000-6-2&6-4, IEC62477-1, UN38.3					

HYBRID C&I ESS CABINET

Inverter



Safe

- IP65 protection level
- AC&DC SPD type II, always guarding the inverter
- AFCI optional
- Smart IV Curve scan for early panel diagnosis



Intelligent

- AI ready, forecasting solar generation and load consumption, smart energy management strategy
- VPP ready, SolaX cloud supports resource aggregator (2030.5, OpenADR)
- Support smart scene function, intelligent loads management(e.g., Heat pump, EV charger)
- Micro-grid ready, supporting a variety of scenarios, both on-grid and off-grid, balancing power between PCS and Hybrid in real time
- Support 7x24h scheduling mode
- Support Wireless meter solution
- Dual independent battery ports are ready to expand battery capacity free



Robust

- Robust back-up ability, switch over time <10ms, up to 200% EPS output for 10s
- Support off-grid operation without battery



Economic

- Maximum 200% oversize and 200% PV input power
- Maximum 40A input current per MPPT, support high power solar panel

	X3-AELIO-50K	X3-AELIO-60K	X3-AELIO-65K
DC Side			
Max. PV input power [kW]	100	120	130
Max. PV input voltage [V]		1000	
Start-up voltage [V]	200	200	200
Nominal input voltage [V]		650	
MPPT voltage range [V]		160 - 950	
No. of MPP trackers / Strings per MPP tracker	5 (2 per MPPT)	6 (2 per MPPT)	6 (2 per MPPT)
Max. input current per MPPT [A]		40	
Max. input short circuit current per MPPT [A]		50	
AC Side			
Rated AC output power [kW]	50	60	65
Rated AC output current [A]	72.2	86.6	93.9
Max. AC output apparent power [kVA]	55	66	66
Max. AC output current [A]	83.6	100.3	100.3
Nominal AC voltage [V]		3P/(N)/PE, 400/230, 380/220	
Rated AC grid frequency [Hz]		50 / 60	
Power Factor range		-1 ~ 1	
THDi (Rated power) [%]		< 3	

X3-AELIO-50K

X3-AELIO-60K

X3-AELIO-65K

Battery Side

Battery type	Lithium - ion		
Battery voltage range [V]	180 - 810		
Max. charge / discharge current [A]	160		

EPS Output(with battery)

Peak apparent AC power [kVA]	55	66	66
Nominal voltage [V]; Frequency [Hz]	3P/(N)/PE, 400/230V, 380/220V; 50/60Hz		
Max. output continuous current [A]	83.6	100.3	100.3
Switch time [ms]	< 10		

General

Max. efficiency [%]	98		
European weighted efficiency [%]	97.7		
Ingress protection	IP65		
Operating ambient temperature range [°C]	- 30 ~ 55		
Max. operating altitude [m]	< 3000		
Relative humidity [%]	0 ~ 100		
Typical noise emission [dB]	< 70		
Dimensions (WxHxD) [mm]	820 × 670 × 257		
Net weight [kg]	< 100		
Cooling concept	Smart air cooling		
Communication interfaces	RS485, CAN(BMS), CAN, USB, DI, DO, DRM		
Display	LCD (optional)		

Power Consumption

Standby consumption (night) [W]	< 10		
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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		
Anti-islanding protection	Yes		
Over temperature protection	Yes		
SPD (DC/AC)	Type II, DC and AC		
Arc-fault circuit interrupter(AFCI)	OPT		

Standard

Safety	EN/IEC 62109-1/-2		
EMC	EN 61000-6-1/2/3/ 4; EN 61000-3-11/12; EN 5011; IEC62920		
Cetification	VDE4105/G99/AS4777/EN50549/CEI 0-21/IEC61727/PEA/MEA/NRS-097-2-1/RD1699/TOR		

HYBRID C&I ESS CABINET Pack



TP-HR140

Battery Type	LFP 280Ah
Total Capacity [kWh]	14.3
Battery Configuration	1P16S
Nominal Battery Voltage [V]	51.2
Battery Voltage Range [V]	40-57.6
Weight [kg]	115
Charge/Discharge Rate	≤ 0.5C
Dimensions(WxHxD) [mm]	461 × 228 × 778
Operating Temperature Range [°C]	-20 ~ 53
Relative Humidity [%]	0 ~ 95
Altitude [m]	3000
Ingress Protection	IP20
Communication to PCS	CAN



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