








# Outdoor Cabinet ESS Solution



-  100% Unbalanced Output
-  150% Backup Overload
-  UPS
-  UPS Level Switch Time  $\leq 10\text{ms}$
-  Parallel Operation Extend to 300kW
-  Support DC & AC Coupling System
-  Support DG Input & Smart Load

The Afore all-in-one ESS cabinet is designed for small to medium-sized C&I energy storage and microgrid applications. It has the characteristics of high reliability, high efficiency.

## Model AF100KW-LI

DC Data	
Battery chemistry	LiFePO4
Cycle life	$\geq 6000$ (@25°C, 0.5C/0.5C)
Cell spec	3.2V/100Ah
Battery module capacity	10.24KWh
string configuration	2P160S
Number of strings	1
Rated energy capacity	102.4KWh
Rated voltage	512V
Voltage range	448V-584V

General Data	
Dimension (W*D*H)	1100 x 1100 x 2380 mm
Weight of the whole system	<1.5T
Degree of protection	IP54
Cooling method	HVAC
Fire Fighting System	Hot aerosol fire extinguishing
Operating temperature range	-20~40°C
Relative humidity	0~95%(non-condensing)
Max working altitude	$\leq 3,000\text{m}$ (9,842ft)
Communication interfaces	CAN
Standards	UN38.3

Technical Data	AF36K-ATH	AF40K-ATH	AF50K-ATH
<b>PV Input</b>			
Max. DC Input Power (kW)	54	60	75
Max. PV Voltage (V)		1000	
Rated DC Input Voltage (V)		620	
DC Input Voltage Range (V)		150 - 1000	
MPPT Voltage Range (V)		150 - 850	
Full MPPT Range(V)		500 - 850	
Start-up Voltage (V)		160	
Max. DC Input Current (A)		40 x 4	
Max. Short Current(A)		48 x 4	
No. of MPPT Tracker / Strings		4/8	
<b>Battery Port</b>			
Battery Nominal Voltage (V)		500	
Battery Voltage Range (V)		150 - 800	
Max. Charge/Discharge Current (A)		120	
Max. Charge/Discharge Power (kW)	36	40	50
Charging Curve		3 Stages	
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery		
<b>AC Grid</b>			
Nominal AC Output Power (kW)	36	40	50
Max. AC Input/Output Power (kVA)	72 / 39.6	80 / 44	100/ 55
Max. AC Output Current (A)	60.06	66.77	83.38
Nominal AC Voltage (V)		230/400	
Nominal AC Frequency (Hz)		50/60	
Power Factor		1 (-0.8-0.8)	
Current THD (%)		<3%	
<b>AC Load Output (Back-up)</b>			
Nominal Output Power (VA)	36000	44000	55000
Nominal Output Voltage (V)		230/400	
Nominal Output Frequency (Hz)		50/60	
Nominal Output Current (A)	52.2	58	72.5
Peak Output Power	54000VA, 10s / 39600VA, 60s	60000VA, 10s / 44000VA, 60s	75000VA, 10s / 55000VA, 60s
THDV (with linear load)		3%	
Switching Time (ms)		<10	
<b>Efficiency</b>			
Europe Efficiency	98.20%	98.30%	98.30%
Max. Efficiency		98.60%	
Battery Charge/Discharge Efficiency		99.00%	
<b>Protection</b>			
Reverse Polarity Protection		Yes	
Over Current / Voltage Protection		Yes	
Anti-islanding Protection		Yes	
AC Short-circuit Protection		Yes	
Leakage Current Detection		Yes	
Ground Fault Monitoring		Yes	
Grid Monitoring		Yes	
Enclosure Protect Level		IP66	
AC/DC surge protection		Type II	
<b>General Data</b>			
Dimensions (W x H x D, mm)	979 x 610 x 310 mm		
Weight (kg)	70kg		
Topology	Transformerless		
Cooling Concept	Intelligent Fan		
Relative Humidity	0 - 100%		
Operating Temperature Range (°C)	-25 to 60 °C		
Operating Altitude (m)	<4000		
Noise Emission (dB)	<60		
Standby Consumption (W)	<100		
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G		
Certification & Approvals	NRS097, G98/G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, VDE0126, IEC62109-1, IEC62109-2		
EMC	EN61000-6-2, EN61000-6-3		