

All In One Energy Storage System Three Phase Storage Solution (HV)

Afore ATH Series is an all-in-one solar and storage solution that integrates the inverter, battery charger, UPS-level switching, and battery enclosure into a pre-wired modular system for easier and faster installation. The compact, elegantly designed, and robust unit is IP66 rated, so it can be mounted either inside or outside withstanding all weather conditions and brings a reduction of installation time of up to 50%.



IP66 Outdoor Design



Modular Design
Plug & Play



AFCI Standard



Scalable Design Up
To 23.04kWh



UPS function
switch time $\leq 10\text{ms}$



RSD Ready
VPP Ready

FOR SOLAR + ENERGY STORAGE SYSTEM

POWER

3 / 4 / 5 / 6 / 8 / 10 / 12 / 15kW

BATTERY CAPACITY

9.21kWh - 23.04kWh

Afore



Technical Data	AF3K-ATH	AF4K-ATH	AF5K-ATH	AF6K-ATH	AF8K-ATH	AF10K-ATH	AF12K-ATH	AF15K-ATH
PV Input								
Max. DC Input Power (kW)	5	6	7.5	9	12	15	18	22.5
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)	200-850			250-850	300-850	500-850		
Start-up Voltage (V)	160							
Max. DC Input Current (A)	20x2							
Max. Short Current(A)	30x2							
No. of MPPT Tracker / Strings	2/2							
Battery Port								
Battery Nominal Voltage (V)	150	200	200	250	300	350	450	500
Battery Voltage Range (V)	80-600							
Max. Charge/Discharge Current (A)	30							
Max. Charge/Discharge Power (kW)	3	4	5	6	8	10	12	15
Charging Curve	3 Stages							
Compatible Battery Type	Li-ion / Sodium-ion battery							
AC Grid								
Nominal AC Output Power (kW)	3	4	5	6	8	10	12	15
Max. AC Input/Output Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5
Max. AC Output Current (A)	5.3	7	8.5	10.5	13.5	17	21.5	27
Nominal AC Voltage (V)	230/400							
Nominal AC Frenquency (Hz)	50/60							
Power Factor	1 (-0.8-0.8) adjustable							
Current THD (%)	<3%							
AC Load Output (Back-up)								
Nominal Output Power (VA)	3000	4000	5000	6000	8000	10000	12000	15000
Nominal Output Voltage (V)	230/400							
Nominal Output Frequency (Hz)	50/60							
Nominal Output Current (A)	4.4	5.8	7.3	8.7	11.6	14.5	17.4	21.8
Peak Output Power	3300VA, 60s	4400VA, 60s	5500VA, 60s	6600VA, 60s	8800VA, 60s	11000VA, 60s	13200VA, 60s	16500VA,60s
THDV (with linear load)	<3%							
Switching Time (ms)	<10							
Efficiency								
Europe Efficiency	97.50%							
Max. Efficiency	98.00%				98.20%		98.30%	
Battery Charge/Discharge Efficiency	98.00%							
Protection								
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							
General Data								
Dimensions (W x H x D, mm)	600 x 432 x 210							
Weight (kg)	25							
Topology	Transformerless							
Cooling Concept	Natural Convection			Intelligent Fan				
Relatively Humidity	0-100%							
Operating Temperature Range (°C)	-25 to 60 °C							
Operating Altitude (m)	<4000							
Standby Consumption (W)	<5							
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							

Model	AF9000W-HU	AF13000W-HU	AF18000W-HU	AF23000W-HU
Parameters Of System				
	2pcs	3pcs	4pcs	5pcs
Number of Pack				
Total Energy	9.21kWh	13.82kWh	18.43kWh	23.04kWh
Usable Energy*	8.75kWh	13.13kWh	17.51kWh	21.89kWh
Voltage Range	112~144Vd.c.	168~216Vd.c.	224~288Vd.c.	280~360Vd.c.
Nominal Voltage	128Vd.c.	192Vd.c.	256Vd.c.	320Vd.c.
Charging Voltage Declared by Manufacturer	144Vd.c.	216Vd.c.	288Vd.c.	360Vd.c.
Nominal Charging Current	30A			
Nominal Discharge Current	30A			
DOD	95%			
Communication	CAN/RS485			
Dimension (L*W*H)	(600±2)*(210±2)* (895±3)mm	(600±2)*(210±2)* (1180±5)mm	(600±2)*(210±2)* (1465±7)mm	(600±2)*(210±2)* (1750±9)mm
Net Weight	(100±2) kg	(141±4) kg	(182±6) kg	(223±6) kg
Operating Condition	Indoor or outdoor			
Storage Temperature Range	>3month, 15°C to 30°C <3month, 0°C to 45°C			
Operating	Charging	0~52 °C		
Temperature	Discharging	-15~52 °C		
Humidity	15% ~ 85%RH (No condensation)			
Cooling Type	Natural			
IP Rating of Enclosure	IP66			
Installation Method	Stacked installation			
Warranty	10 years (5 free warranty + 5 paid warranty)			

*Testing conditions based on temperature 25°C at the beginning of life. Total Energy/Usable Energy are measured with a standard test method: 0.2C Charge and Discharge. As per the characteristics of lithium batteries, such parameters as the charge/ discharge current and efficiency listed above are subject to change.

Model

AF4600W-HU

Pack		
Total Energy		4.60kWh
Usable Energy*		4.37kWh
Voltage Range		56~72 Vd.c
Nominal Voltage		64V
Charging Voltage Declared by Manufacturer		72V
Upper Limit Charging Voltage		73V
Discharge Cut-off Voltage		56V
Lower Limit Discharging Voltage		52V
Max.Continuous Charging Current		30A
Max.Continuous Discharge Current		30A
DOD		95%
Dimension ((L*W*H),mm)		(600±2)*(210±2)*(285±2)
Net Weight		(41±2)kg
Operating Condition		Indoor or outdoor
Operating	Charging	0~52 °C
Temperature	Discharging	-15~52 °C
Humidity		15% ~ 85%RH(No Condensation)
Configuration		(10S)2S
Warranty		10 years (5 free warranty + 5 paid warranty)