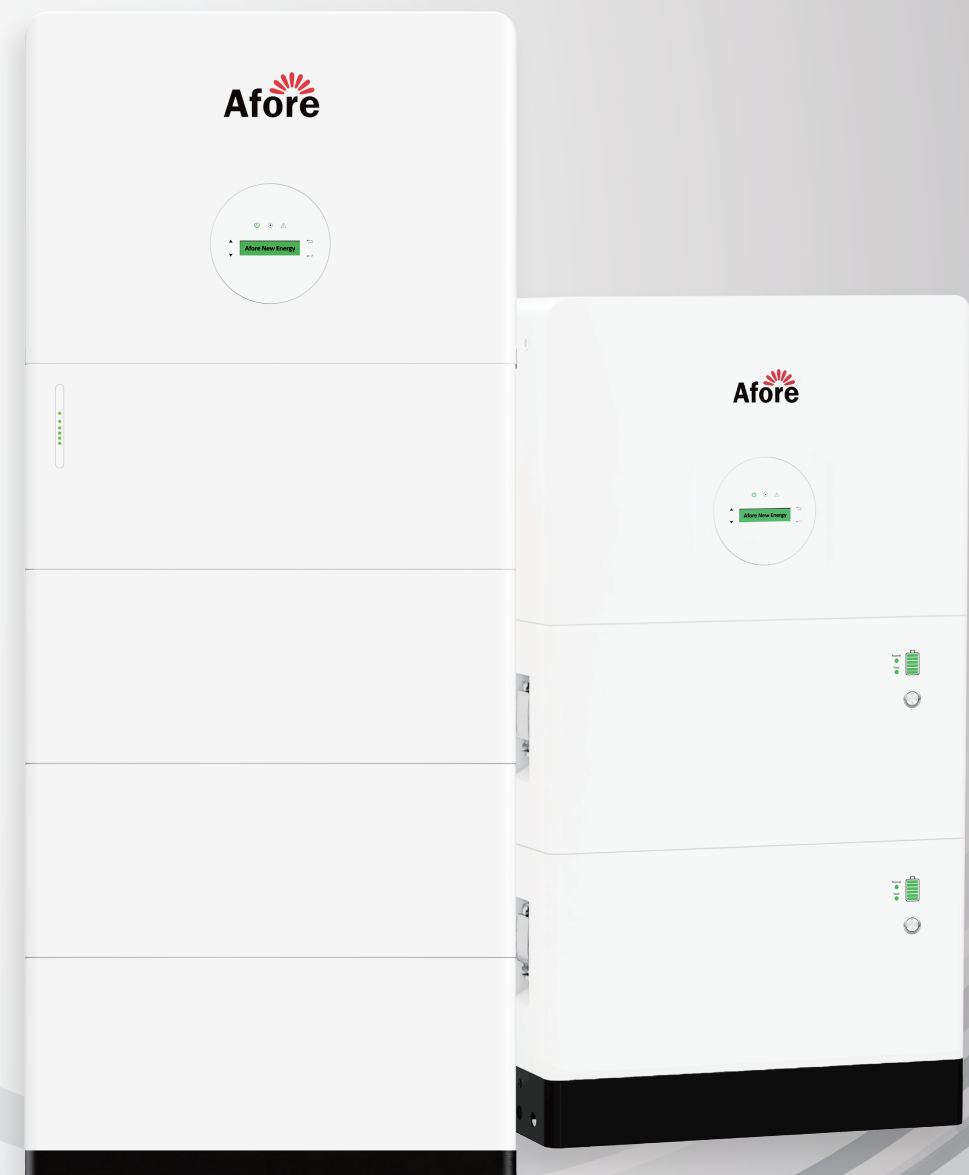




All-In-One Energy Storage System



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All In One Energy Storage System Single Phase Home Storage Solution (LV)

Afore ASL 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



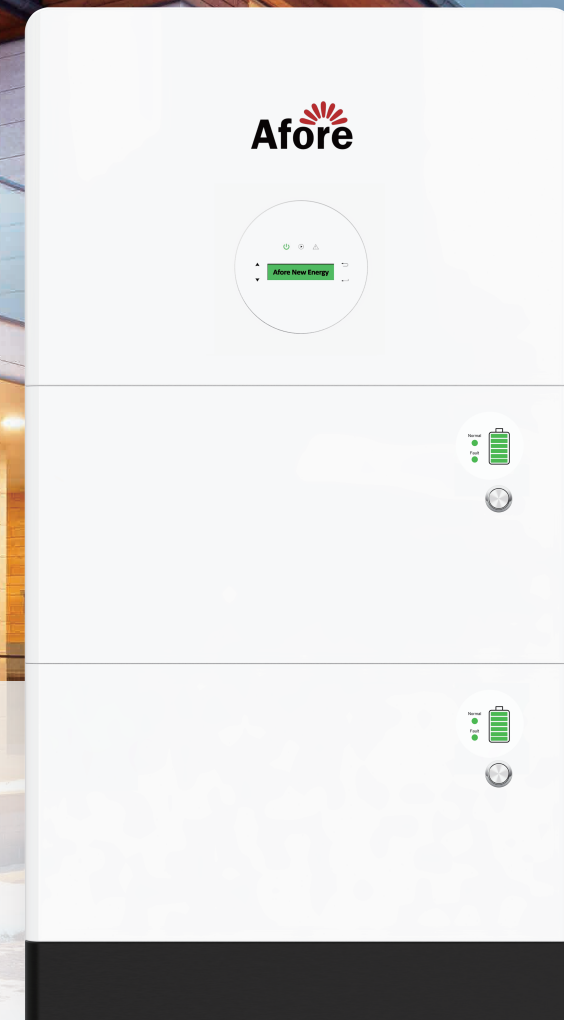
Scalable Design
Up To 30.72kWh



150% Backup
Overloading for 10s



RSD Ready
VPP Ready

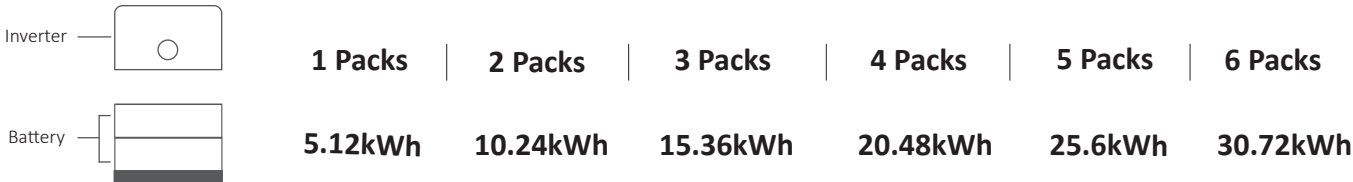


FOR SOLAR + ENERGY STORAGE SYSTEM

POWER 3 / 3.6 / 4 / 4.6 / 5 / 5.5 / 6 kW

CAPACITY 5.12kWh - 30.72kWh Battery Capacity

■ Technical Data	AF3K-ASL	AF3.6K-ASL	AF4K-ASL	AF4.6K-ASL	AF5K-ASL	AF5.5K-ASL	AF6K-ASL
PV Input							
Max. Input Power (kW)	4.5	5.4	6.0	6.9	7.5	8.3	9.0
Max. PV Voltage (V)	550						
MPPT Range (V)	80 - 500						
Full MPPT Range (V)	90 - 500	110 - 500	120 - 500	130 - 500	150 - 500	160 - 500	170 - 500
Normal Voltage (V)	360						
Startup Voltage (V)	100						
Max. Input Current (A)	18.5 x 2						
Max. Short Current (A)	26 x 2						
No. of MPP Tracker / No. of PV String	2 / 2						
Battery Port							
Max. Charge/Discharge Power (kW)	3.0	3.6	4.0	4.6	5.0	5.5	6.0
Max. Charge/Discharge Current (A)	80				120		
Battery Normal Voltage (V)	51.2						
Battery Voltage Range (V)	40 - 60						
Battery Type	Li-ion / Lead-acid etc.						
AC Grid							
Max Continuous Current (A)	14.0	17.0	19.0	22.0	23.0	26.0	28.0
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5	6.0
Nominal Grid Current (A)	13.7 / 13.1	16.4 / 15.7	18.2 / 17.4	21.0 / 20.0	22.8 / 21.8	25.0 / 24.0	27.3 / 26.1
Nominal Grid Voltage (V)	198 to 242 @ 220 / 207 to 253 @ 230						
Nominal Grid Frequency (Hz)	50 / 60						
Power Factor	0.999 (Adjustable from 0.8 overexcited to 0.8 underexcited)						
Current THD (%)	< 3						
AC Load Output (Back-up)							
Max Continuous Current (A)	14.0	17.0	19.0	22.0	23.0	26.0	28.0
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5	6.0
Max Peak Current (A) (10min)	20.5 / 19.6	24.6 / 23.5	27.3 / 26.1	31.4 / 30	34.1 / 32.7	37.8 / 36.1	41.0 / 39.2
Max Peak Power (kVA) (10min)	4.5	5.4	6.0	6.9	7.5	8.3	9.0
Nominal AC Voltage L-N (V)	220 / 230						
Nominal AC Frequency (Hz)	50 / 60						
Switching Time (ms)	< 10						
Voltage THD (%)	< 3						
Efficiency							
CEC Efficiency (%)		97.0				98.1	
Max. Efficiency (%)		97.6				98.1	
PV to Bat. Efficiency (%)		98.1				98.1	
Bat. between AC Efficiency (%)		96.8				96.8	
Protection							
PV Reverse Polarity Protection	Yes						
Over Current/Voltage Protection	Yes						
Anti-Islanding Protection	Yes						
AC Short Circuit Protection	Yes						
Residual Current Detection	Yes						
Ground Fault Monitoring	Yes						
Insulation Resister Detection	Yes						
PV Arc Detection	Yes						
Enclosure Protect Level	IP66 / NEMA4X						
AC/DC surge protection	Type II						
General Data							
Dimensions (W x H x D, mm)	600 x 430 x 210						
Weight (kg)	25						
Topology	Transformerless						
Cooling	Intelligent Fan						
Relatively Humidity	0 - 100 %						
Operating Temperature Range (°C)	- 25 to 60						
Operating Altitude (m)	< 4000						
Standby Consumption (W)	< 10						
Mounting	Wall Bracket						
Communication with RSD	SUNSPEC						
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						



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

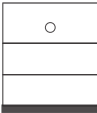
BATTERY CAPACITY

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	AF4600W-2	AF4600W-3	AF4600W-4	AF4600W-5
Parameter				
Number oflayers	2	3	4	5
Picture				
Usable Energy* (kWh)	8.74	13.12	17.50	21.88
Voltage Range (Vd.c)	112~144	168~216	224~288	280~360
Nominal Voltage (V)	128	192	256	320

■ Model	AF4600W-HB
Parameter	
Nominal Voltage(V)	64
Nominal Capacity(kWh)	4.60
Working Voltage Range(Vdc)	56~72
Charge Voltage(Vdc)	72
Nominal Charge/Discharge Current(A)	30
Max.Charge/Discharge Current(A)	30
Series Connection	2~5 pack
Cycle Life	≥6000 times, 70% SOH (25+2°C, initial clamping force 300Kgf, 0.5P/0.5P, residual capacity≥50.4Ah)

Structure	
Dimension(mm)	(600±2) * (210±2) * (285±2)
Weight(kg)	41±2
IP Rating	IP66
Installation	Stacked
Working Environment	
Charge Working Temperature(°C)	0-52
Discharge Working Temperature(°C)	-15~22
Altitude(M)	<2500
Humidity(RH)	15% ~ 85% RH (No Condensation)
Communication	
Communication Port	RS485, CAN
Display	SOC status indicator, LED indicator



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	≥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 x1100 x2380 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	≤3,000m(9,842ft)
Communication interfaces	CAN
Standards	UN38.3

Technical Data	AF36K-TH	AF40K-TH	AF45K-TH	AF50K-TH	AF60K-TH
PV Input					
Max. DC Input Power (kW)	54	60	67.5	75	90
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)			40x4		
Max. Short Current(A)			48x4		
No. of MPPT Tracker / Strings			4/8		
Battery Port					
Battery Nominal Voltage (V)			500		
Battery Voltage Range (V)			150-800		
Max. Charge/Discharge Current (A)			120		
Max. Charge/Discharge Power (kW)	36	40	45	50	60
Charging Curve			3 Stages		
Compatible Battery Type		Li-ion / Lead-acid / Sodium metal chloride battery			
AC Grid					
Nominal AC Output Power (kW)	36	40	45	50	60
Max. AC Input/Output Power (kVA)	54 / 39.6	60 / 44	67.5 / 49.5	75 / 55	90 / 66
Max. AC Output Current (A)	60.5	67	75.5	83.5	96
Nominal AC Voltage (V)			230/400		
Nominal AC Frequency (Hz)			50/60		
Power Factor		1 (-0.8-0.8 adjustable)			
Current THD (%)			<3%		
AC Load Output (Back-up)					
Nominal Output Power (kVA)	36	40	45	50	60
Nominal Output Voltage (V)			230/400		
Nominal Output Frequency (Hz)			50/60		
Max. AC Output Current (A)	60.5	67	75.5	83.5	96
Peak Output Power	39.6kVA, 60s	44kVA, 60s	49.5kVA, 60s	55kVA, 60s	66kVA, 60s
THDV (with linear load)			3%		
Switching Time (ms)			<10		
Efficiency					
Europe Efficiency	98.20%	98.30%	98.30%	98.30%	98.30%
Max. Efficiency			98.60%		
Battery Charge/Discharge Efficiency			99.00%		
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)			867 x 715 x 306 mm		
Weight (kg)			81kg		
Topology			Transformerless		
Cooling Concept			Intelligent Fan		
Relative Humidity			0-100%		
Operating Temperature Range (°C)			-25 to 60 °C		
Operating Altitude (m)			<4000		
Standby Consumption (W)			<100		
Display & Communication Interfaces		LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec			
Certification & Approvals	NRS097, G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, VDE0126, IEC62109-1, IEC62109-2				
EMC	EN61000-6-2, EN61000-6-4				