

# Three Phase Hybrid Storage Inverter

## 3-12 kW Plus Series

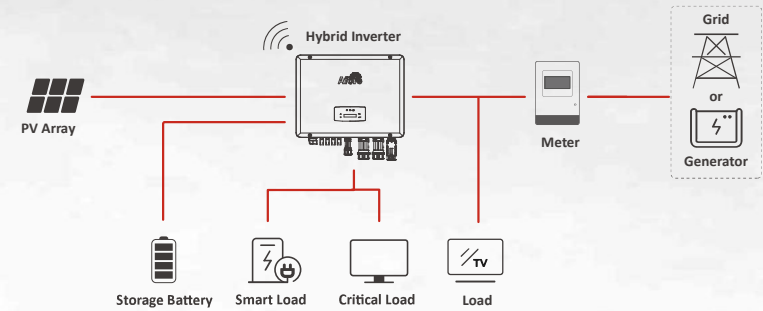


The Afore three phase storage inverters plus series are designed to increase energy independence for homeowners and commercial users. The power range is from 3.0kW to 12kW, compatible with high voltage (80-600V) batteries.

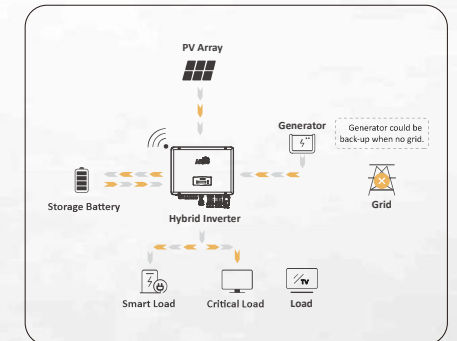
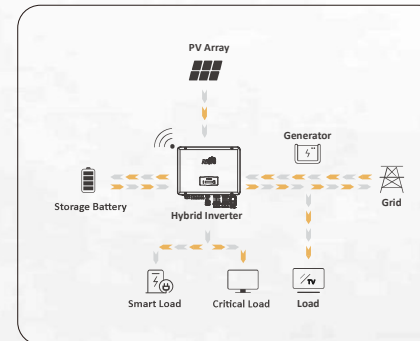
Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from public grid.

Thanks for the UPS function (switch time < 10ms), enables the crucial loads power on during outages. Additionally, under the backup operation mode, the inverter provides you up to 150% peak output overloading.

For New Storage System:

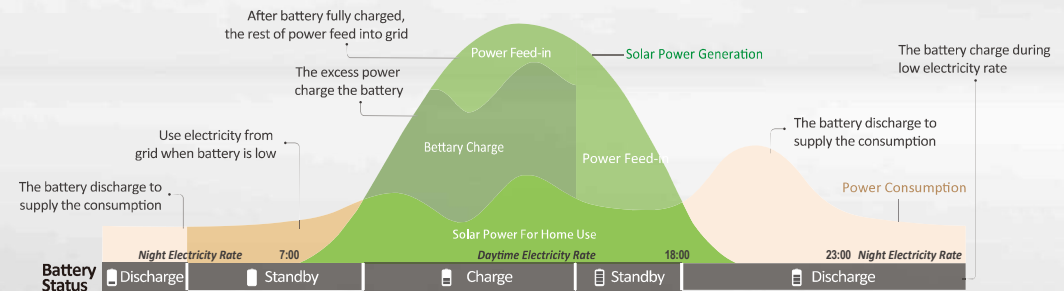


### Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



### Optimizing Self-Consumption Mode

With energy storage system installed, users may also be able to change from a flat rate electricity tariff to a time-of-use tariff. For the areas and regions, where peak shaving can be applied.



**MIN. 80V**  
Battery Voltage  
Minimum 80V



**MAX. 50A**  
Max. Charge/  
Discharge Current 50A



**100% UNBALANCE**  
Support Unbalance Load



**Max. 1.5**  
1.5 Times PV Oversize



**Max. 20A**  
String Current Up To 20A



**<10 ms**  
UPS FUNCTION  
Switch Time < 10ms

Support for Time-of-use Optimization

Configurable Operation Modes

AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

100% unbalanced output, each phase;  
200% unbalanced output, each phase (Below 10kW)

Smart Monitoring & Remote Firmware Upgrade

PV Input	AF3K-THP	AF4K-THP	AF5K-THP	AF6K-THP
Max. DC Input Power (kW)	5	6	7.5	9
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	
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)	100	100	100	150
Battery Voltage Range (V)	80-600			
Max. Charge/Discharge Current (A)	50			
Max. Charge/Discharge Power (W)	3K	4K	5K	6K
Charging Curve	3 Stages			
Compatible Battery Type	Li-ion / Lead-acid			
AC Grid Output	AF3K-THP	AF4K-THP	AF5K-THP	AF6K-THP
Nominal AC Output Power (VA)	3000	4000	5000	6000
Max. AC Input Power	4500	6000	7500	9000
Max. AC Output Current (A)	5.3	7	8.5	10.5
Nominal AC Voltage (V)	230/400			
Nominal AC Frequency (Hz)	50/60			
Power Factor	1 (-0.8-0.8)			
Current THD (%)	<3%			
AC Load Output (Back-up)				
Nominal Output Power (VA)	3000	4000	5000	6000
Nominal Output Voltage (V)	230/400			
Nominal Output Frequency (Hz)	50/60			
Nominal Output Current (A)	4.4	5.8	7.3	8.7
Peak Output Power	3300VA, 60s	4400VA, 60s	5500VA, 60s	6600VA, 60s
THDV (with linear load)	<3%			
Switching Time (ms)	<10			
Efficiency	AF3K-THP	AF4K-THP	AF5K-THP	AF6K-THP
Europe Efficiency	97.50%			
Max. Efficiency	98.00%			
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	IP65			
General Data	AF3K-THP	AF4K-THP	AF5K-THP	AF6K-THP
Dimensions (W x H x D, mm)	558 x 535 x 260 mm			
Weight (kg)	29kg			
Topology	Transformerless			
Cooling Concept	Intelligent Fan			
Relatively Humidity	0-100%			
Operating Temperature Range (°C)	-25 to 60 °C			
Operating Altitude (m)	<4000			
Noise Emission (dB)	<30			
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, IEC621109-1, IEC62109-2			
EMC	EN61000-6-2, EN61000-6-3			

PV Input	AF8K-THP	AF10K-THP	AF12K-THP
Max. DC Input Power (kW)	12	15	18
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)	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)	200	250	300
Battery Voltage Range (V)	80-600	120-650	
Max. Charge/Discharge Current (A)	50		
Max. Charge/Discharge Power (W)	8K	10K	12K
Charging Curve	3 Stages		
Compatible Battery Type	Li-ion / Lead-acid		
AC Grid Output	AF8K-THP	AF10K-THP	AF12K-THP
Nominal AC Output Power (VA)	8000	10000	12000
Max. AC Input Power	12000	15000	18000
Max. AC Output Current (A)	13.5	17	21.5
Nominal AC Voltage (V)	230/400		
Nominal AC Frequency (Hz)	50/60		
Power Factor	1 (-0.8-0.8)		
Current THD (%)	<3%		
AC Load Output (Back-up)			
Nominal Output Power (VA)	8000	10000	12000
Nominal Output Voltage (V)	230/400		
Nominal Output Frequency (Hz)	50/60		
Nominal Output Current (A)	11.6	14.5	17.4
Peak Output Power	8800VA, 60s	11000VA, 60s	13200VA, 60s
THDV (with linear load)	<3%		
Switching Time (ms)	<10		
Efficiency	AF8K-THP	AF10K-THP	AF12K-THP
Europe Efficiency	97.50%		
Max. Efficiency	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	IP65		
General Data	AF8K-THP	AF10K-THP	AF12K-THP
Dimensions (W x H x D, mm)	558 x 535 x 260 mm		
Weight (kg)	29kg		
Topology	Transformerless		
Cooling Concept	Intelligent Fan		
Relatively Humidity	0-100%		
Operating Temperature Range (°C)	-25 to 60 °C		
Operating Altitude (m)	<4000		
Noise Emission (dB)	<30		
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, IEC621109-1, IEC62109-2		
EMC	EN61000-6-2, EN61000-6-3		