

Three Phase Hybrid Storage Inverter

3-17 kW Delta Voltage Series



The Afore three phase storage inverters delta voltage series are designed to increase energy independence for homeowners and commercial users. The power range is from 3.0kW to 17kW, compatible with high voltage 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), that enables the crucial loads power on during outages. Additionally, under the backup operation mode, the inverter provides you up to 150% peak output overloading.



WIDE RANGE
Voltage Range
(150-800V)



100% UNBALANCE
Support Unbalance Load

Max. 1.5

PV OVERSIZE
1.5 Times PV Oversize

Max. 40A

MAX. 40A_{dc}
String Current Up To 40A

<10 ms

UPS FUNCTION
Switch Time < 10ms



INPUT
Support Generator

Support for Time-of-use Optimization

Configurable Operation Modes

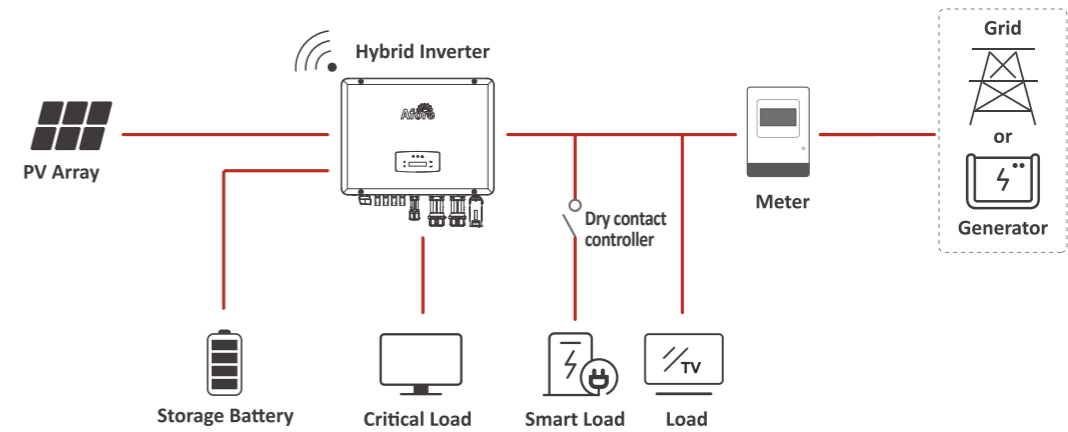
AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

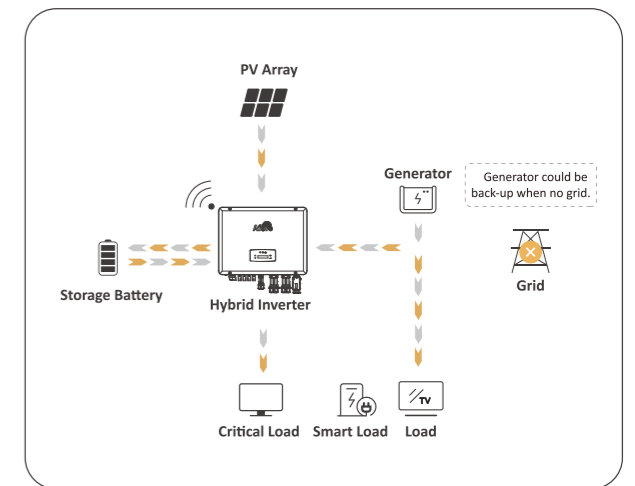
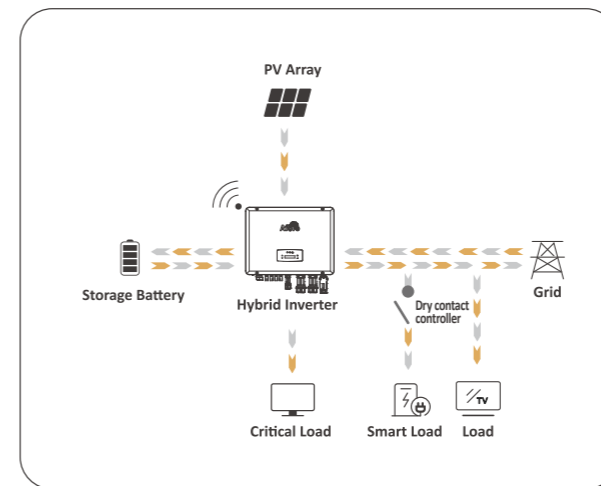
100% unbalanced output, each phase;
200% unbalanced output, each phase (Below 10kW)

Smart Monitoring & Remote Firmware Upgrade

For New Storage System:

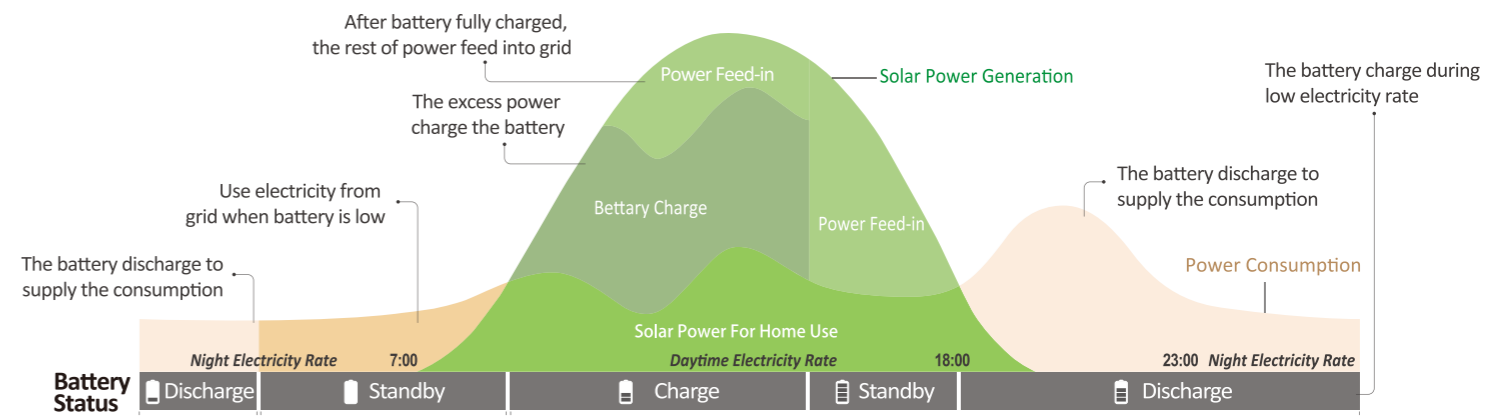


Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



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.



■ Technical Data	AF3K-THA	AF4K-THA	AF5K-THA	AF6K-THA	AF3K-THC	AF4K-THC
PV Input						
Max. DC Input Power (kW)	5	6	7.5	9	5	6
Max. PV Voltage (V)	1000					
Rated DC Input Voltage (V)	400					
DC Input Voltage Range (V)	150-1000					
MPPT Voltage Range (V)	150-850					
Full MPPT Range(V)	200-850					
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	200	200	250	100	100
Battery Voltage Range (V)	150-600			80-600		
Max. Charge/Discharge Current (A)	30			50		
Max. Charge/Discharge Power (kW)	3	4	5	6	3	4
Charging Curve	3 Stages					
Compatible Battery Type	Li-ion / Sodium-ion battery					
AC Grid						
Nominal AC Output Power (kW)	3000	4000	5000	6000	3000	4000
Max. AC Input/Output Power (kVA)	4500	6000	7500	9000	4500	6000
Max. AC Output Current (A)	10.5	13.5	17	21.5	10.5	13.5
Nominal AC Voltage (V)	3P+N+PE/3P+PE 133/ 220 or 230					
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 (VA)	3000	4000	5000	6000	3000	4000
Nominal Output Voltage (V)	3P+N+PE/3P+PE 133/230					
Nominal Output Frequency (Hz)	50/60					
Nominal Output Current (A)	7.6	10.1	12.6	15.1	7.6	10.1
Peak Output Power	3300VA, 60s	4400VA, 60s	5500VA, 60s	6600VA, 60s	3300VA, 60s	4400VA, 60s
THDV (with linear load)	<3%					
Switching Time (ms)	<10					
Efficiency						
Europe Efficiency	97.50%					
Max. Efficiency	98.00%	98.20%	98.30%	98.00%	98.00%	98.20%
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						
Dimensions (W x H x D, mm)	558 x 535 x 260 mm					
Weight (kg)	29kg					
Topology	Transformerless					
Cooling Concept	Natural Convection	Intelligent Fan				
Relative 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					

■ Technical Data	AF5K-THC	AF6K-THC	AF8K-THA	AF10K-THA	AF12K-THA	AF15K-THA	AF17K-THA	
PV Input								
Max. DC Input Power (kW)	7.5	9	12	15	18	22.5	25.5	
Max. PV Voltage (V)	1000							
Rated DC Input Voltage (V)	400							
DC Input Voltage Range (V)	150-1000							
MPPT Voltage Range (V)	150-850							
Full MPPT Range(V)	200-850			250-850		300-850		
Start-up Voltage (V)	160							
Max. DC Input Current (A)	20x2		20+32		32x2		40x2	
Max. Short Current(A)	30x2		30+48		48x2		60x2	
No. of MPPT Tracker / Strings	2/2		2/3		2/4		2/4	
Battery Port								
Battery Nominal Voltage (V)	150	150	200	250	300	350	400	
Battery Voltage Range (V)	80-600			150-600				
Max. Charge/Discharge Current (A)	50			60				
Max. Charge/Discharge Power (kW)	5	6	8	10	12	15	17	
Charging Curve	3 Stages							
Compatible Battery Type	Li-ion / Sodium-ion battery							
AC Grid								
Nominal AC Output Power (kW)	5000	6000	8000	10000	12000	15000	17000	
Max. AC Input/Output Power (kVA)	7500	9000	12000	15000	18000	22500	25500	
Max. AC Output Current (A)	17	21.5	27	30	32	40	48	
Nominal AC Voltage (V)	3P+N+PE/3P+PE 133/ 220 or 230							
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 (VA)	5000	6000	8000	10000	12000	15000	17000	
Nominal Output Voltage (V)	3P+N+PE/3P+PE 133/230							
Nominal Output Frequency (Hz)	50/60							
Nominal Output Current (A)	12.6	15.1	20.1	25.1	30.1	37.6	42.7	
Peak Output Power	5500VA, 60s	6600VA, 60s	8800VA, 60s	11000VA, 60s	13200VA, 60s	16500VA, 60s	18700VA, 60s	
THDV (with linear load)	<3%							
Switching Time (ms)	<10							
Efficiency								
Europe Efficiency	97.50%			97.80%		98.00%		98.10%
Max. Efficiency	98.20%	98.30%		98.50%				
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								
Dimensions (W x H x D, mm)	558 x 535 x 260 mm							
Weight (kg)	29kg					36kg		
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)	<5							
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G							
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