

Three Phase Hybrid Storage Inverter

3-15 kW



The Afore AF series three phase storage inverters are designed to increase energy independence for homeowners and commercial users. The power range is from 3.0kW to 15kW, 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), 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
(80-600V)

Max. 1.5
1.5 Times PV Oversize

Max. 18.5A
MAX. 18.5A_{dc}
String Current Up To 18.5A

<10 ms
UPS FUNCTION
Switch Time < 10ms

COMPACT
Compact Design

EMS
EMS PORT READY
External EMS Support

GENERATOR
Generator Backup Support

Support for Time-of-use Optimization

Configurable Operation Modes

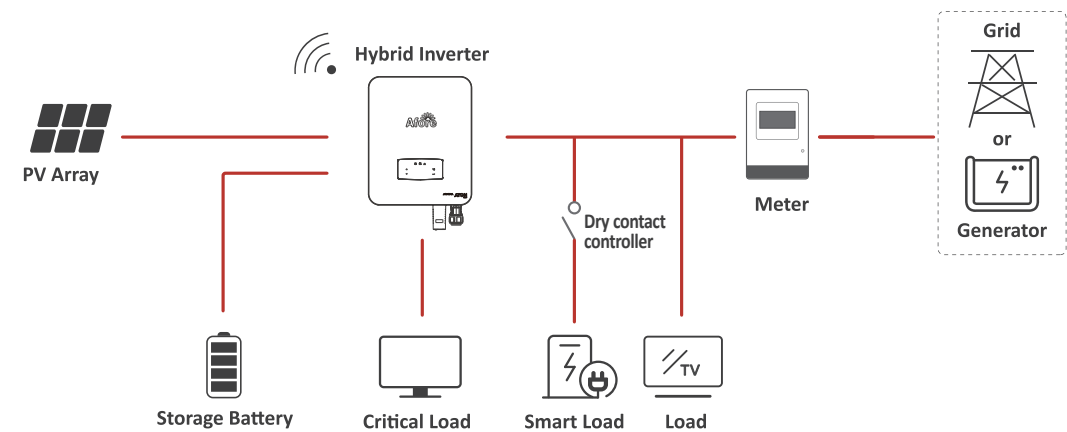
AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

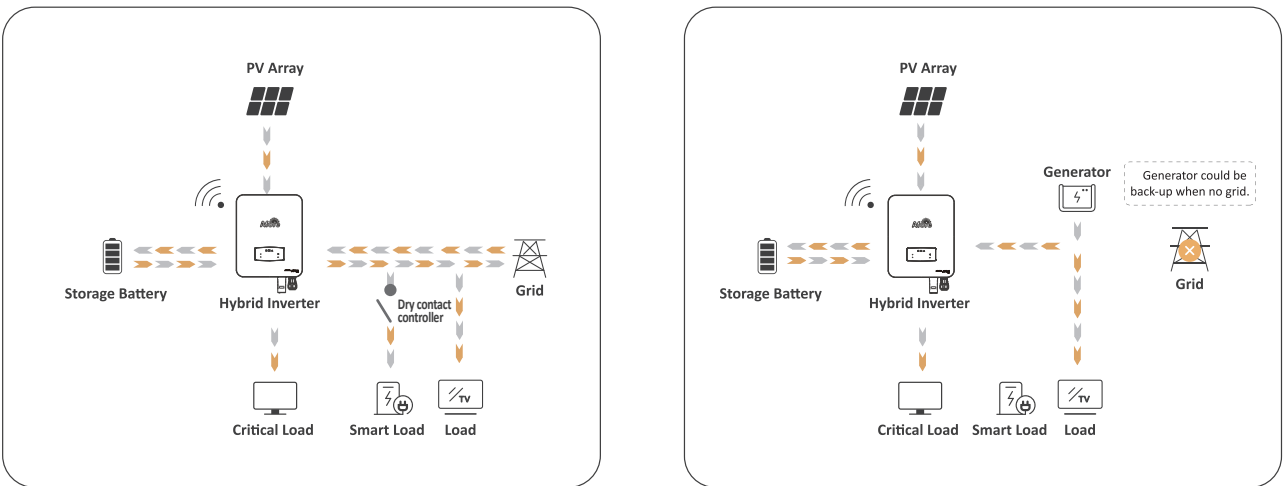
100% unbalanced output, each phase

Smart Monitoring & Remote Firmware Upgrade

For New Storage System:

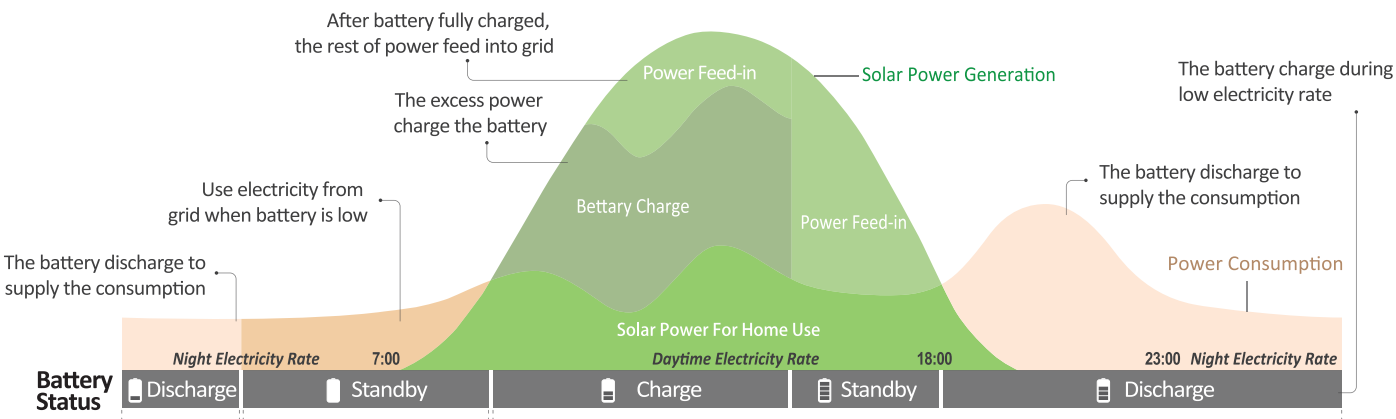


Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



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-MTH	AF4K-MTH	AF5K-MTH	AF6K-MTH
PV Input				
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)	18.5 x 2			
Max. Short Current(A)	25 x 2			
No. of MPPT Tracker / Strings	2/2			
Battery Port				
Battery Nominal Voltage (V)	350	350	350	350
Battery Voltage Range (V)	80 - 600			
Max. Charge/Discharge Current (A)	30			
Max. Charge/Discharge Power (kW)	3	4	5	6
Charging Curve	3 Stages			
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery			
AC Grid				
Nominal AC Output Power (kW)	3	4	5	6
Max. AC Input/Output Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6
Max. AC Output Current (A)	5.3	7	8.5	10.5
Nominal AC Voltage (V)	3P+N+PE/3P+PE 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
Nominal Output Voltage (V)	3P+N+PE/3P+PE 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				
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	IP66			
AC/DC surge protection	Type II			
General Data				
Dimensions (W x H x D, mm)	370 x 598.5 x 192mm			
Weight (kg)	22kg			
Topology	Transformerless			
Cooling Concept	Natural Convection			
Relatively Humidity	0 - 100 %			
Operating Temperature Range (°C)	- 25 to 60 °C			
Operating Altitude (m)	< 4000			
Noise Emission (dB)	< 40			
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	AF8K-MTH	AF10K-MTH	AF12K-MTH	AF15K-MTH
PV Input				
Max. DC Input Power (kW)	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)	300 - 850	500 - 850		
Start-up Voltage (V)	160			
Max. DC Input Current (A)	18.5 x 2			
Max. Short Current(A)	25 x 2			
No. of MPPT Tracker / Strings	2/2			
Battery Port				
Battery Nominal Voltage (V)	350	350	450	500
Battery Voltage Range (V)	80 - 600			
Max. Charge/Discharge Current (A)	30			
Max. Charge/Discharge Power (kW)	8	10	12	15
Charging Curve	3 Stages			
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery			
AC Grid				
Nominal AC Output Power (kW)	8	10	12	15
Max. AC Input/Output Power (kVA)	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5
Max. AC Output Current (A)	13.5	17	21.5	27
Nominal AC Voltage (V)	3P+N+PE/3P+PE 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)	8000	10000	12000	15000
Nominal Output Voltage (V)	3P+N+PE/3P+PE 230/400			
Nominal Output Frequency (Hz)	50 / 60			
Nominal Output Current (A)	11.6	14.5	17.4	21.8
Peak Output Power	8800VA, 60s	11000VA, 60s	13200VA, 60s	16500VA, 60s
THDV (with linear load)	< 3 %			
Switching Time (ms)	< 10			
Efficiency				
Europe Efficiency	97.50%			
Max. Efficiency	98.20%	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)	370 x 598.5 x 192mm			
Weight (kg)	22kg			
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)	< 40			
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			