



# ENERGY STORAGE SYSTEM SOLUTIONS PV SYSTEM SOLUTIONS



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# Single Phase Hybrid Storage Inverter

1-3.6 kW



The Afore AF low voltage series storage Inverters are designed to increase energy independence for homeowners. The power range is from 1kW to 3.6kW, compatible with low voltage (40-60V) batteries.

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

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.



**AI EMS**  
Electricity Pricing & Automation



**PV OVERSIZE**  
2 Times PV Oversize



**MPPT CHANNELS**  
Up to 2 MPPT Channels



**UPS FUNCTION**  
Switch Time < 10ms



**PARALLEL**  
Max.6 Parallel Stacking



**INPUT**  
Support Generator

Support for Time-of-use Optimization

Configurable Operation Modes

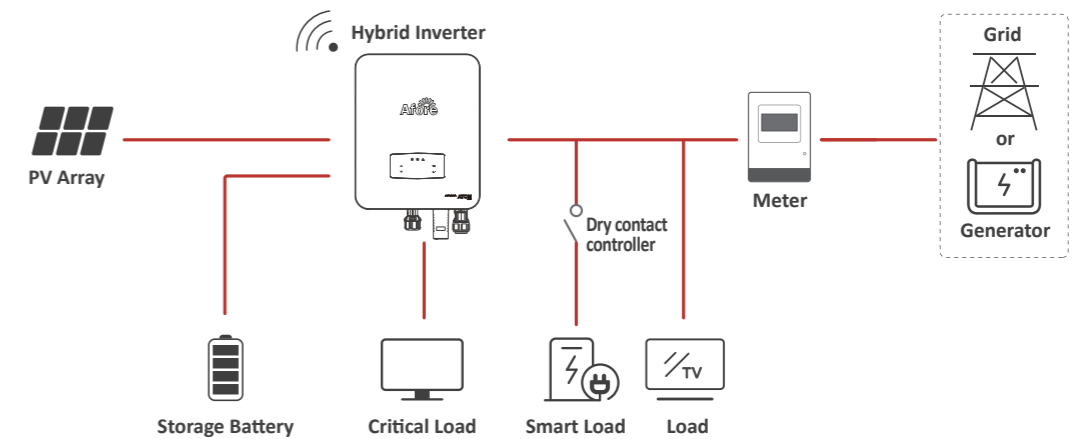
AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

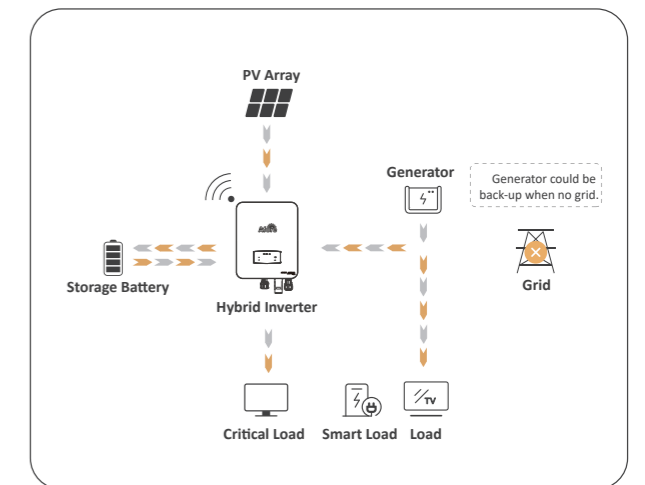
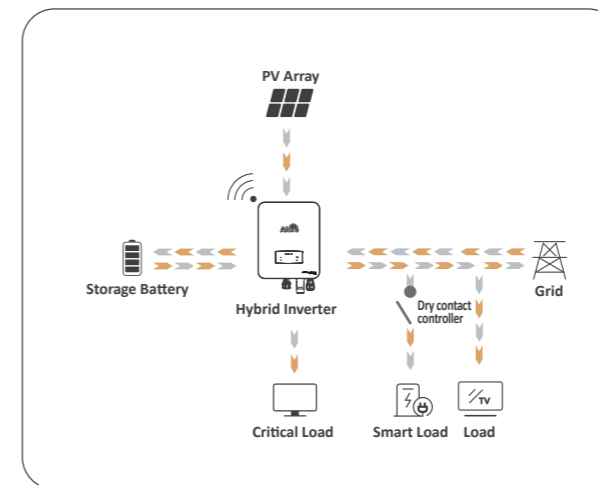
Compact Size and Easy Installation

Smart Monitoring & Remote Firmware Upgrade

For New Storage System:

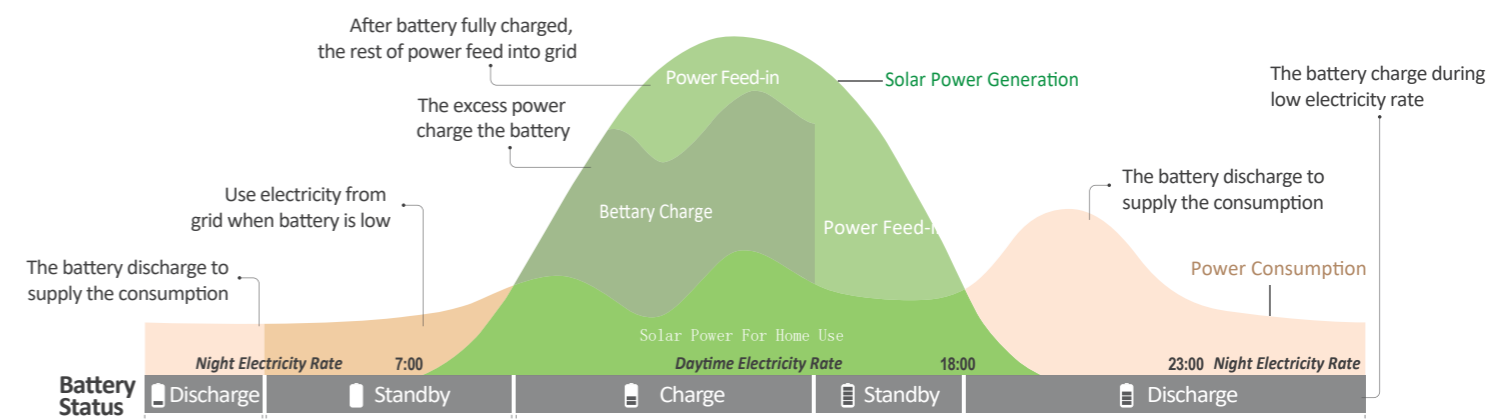


Optimizing Self-Consumption (on-grid) + Emergency Power Supply(off-grid)



## Optimizing Self-Consumption Mode

With home energy storage installed, home owners 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	AF1K-SL-1	AF1.5K-SL-1	AF2K-SL-1	AF2.5K-SL-1
<b>PV Input</b>				
Max. Input Power (kW)	2	3	4	5
Max. PV Voltage (V)		550		
MPPT Range (V)		80 - 500		
Normal Voltage (V)		360		
Startup Voltage (V)		100		
Max. Input Current (A)		18.5 x 1		
Max. Short Current (A)		26 x 1		
No. of MPP Tracker / No. of PV String		1 / 1		
<b>Battery Port</b>				
Max. Charge/Discharge Power (kW)	1.0	1.5	2.0	2.5
Max. Charge/Discharge Current (A)	25	40	50	63
Battery Normal Voltage (V)		51.2		
Battery Voltage Range (V)		40 - 60		
Battery Type		Li-ion / Lead-acid etc.		
<b>AC Grid</b>				
Max Continuous Current (A)	5.0	7.0	10.0	12.0
Max Continuous Power (kVA)	1.0	1.5	2.0	2.5
Nominal Grid Current (A)	4.6 / 4.4	6.9 / 6.6	9.1 / 8.7	11.4 / 10.9
Nominal Grid Voltage (V)		198 to 242 @ 220 / 207 to 253 @ 230		
Nominal Grid Frequency (Hz)		50 / 60		
Power Factor		1 default (adjustable from 0.8 leading to 0.8 lagging)		
Current THD (%)		< 3		
<b>AC Load Output</b>				
Max Continuous Current (A)	5.0	7.0	10.0	12.0
Max Continuous Power (kVA)	1.0	1.5	2.0	2.5
Max Peak Current (A) (10min)	6.9 / 6.6	10.5 / 10.0	13.7 / 13.1	17.3 / 16.6
Max Peak Power (kVA) (10min)	1.5	2.3	3.0	3.8
Nominal AC Voltage L-N (V)		220 / 230		
Nominal AC Frequency (Hz)		50 / 60		
Switching Time (ms)		Seamless		
Voltage THD (%)		< 3		
<b>Efficiency</b>				
CEC Efficiency (%)		97.0		
Max. Efficiency (%)		97.6		
PV to Bat. Efficiency (%)		98.1		
Bat. between AC Efficiency (%)		96.8		
<b>Protection</b>				
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		
<b>General Data</b>				
Dimensions (W x H x D, mm)		370 x 535 x 192		
Weight (kg)		17		
Topology		Transformerless		
Cooling		Natural Convection		
Relative 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, Sunspec		
Certification & Approvals	NRS097, G98, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1			
EMC		EN61000-6-2, EN61000-6-3		

■ Technical Data	AF3K-SL-1	AF3.6K-SL-1	AF3K-SL	AF3.6K-SL
<b>PV Input</b>				
Max. Input Power (kW)	6	7.2	6	7.2
Max. PV Voltage (V)		550		
MPPT Range (V)		80 - 500		
Normal Voltage (V)		360		
Startup Voltage (V)		100		
Max. Input Current (A)		18.5 x 1		18.5 x 2
Max. Short Current (A)		26 x 1		26 x 2
No. of MPP Tracker / No. of PV String		1 / 1		2 / 2
<b>Battery Port</b>				
Max. Charge/Discharge Power (kW)	3.0	3.6	3.0	3.6
Max. Charge/Discharge Current (A)		80		
Battery Normal Voltage (V)		51.2		
Battery Voltage Range (V)		40 - 60		
Battery Type		Li-ion / Lead-acid etc.		
<b>AC Grid</b>				
Max Continuous Current (A)	14.0	17.0	14.0	17.0
Max Continuous Power (kVA)	3.0	3.6	3.0	3.6
Nominal Grid Current (A)	13.7 / 13.1	16.4 / 15.7	13.7 / 13.1	16.4 / 15.7
Nominal Grid Voltage (V)		198 to 242 @ 220 / 207 to 253 @ 230		
Nominal Grid Frequency (Hz)		50 / 60		
Power Factor		1 default (adjustable from 0.8 leading to 0.8 lagging)		
Current THD (%)		< 3		
<b>AC Load Output</b>				
Max Continuous Current (A)	14.0	17.0	14.0	17.0
Max Continuous Power (kVA)	3.0	3.6	3.0	3.6
Max Peak Current (A) (10min)	20.5 / 19.6	24.6 / 23.5	20.5 / 19.6	24.6 / 23.5
Max Peak Power (kVA) (10min)	4.5	5.4	4.5	5.4
Nominal AC Voltage L-N (V)		220 / 230		
Nominal AC Frequency (Hz)		50 / 60		
Switching Time (ms)		Seamless		
Voltage THD (%)		< 3		
<b>Efficiency</b>				
CEC Efficiency (%)		97.0		
Max. Efficiency (%)		97.6		
PV to Bat. Efficiency (%)		98.1		
Bat. between AC Efficiency (%)		96.8		
<b>Protection</b>				
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		
<b>General Data</b>				
Dimensions (W x H x D, mm)		370 x 535 x 192		
Weight (kg)		17		
Topology		Transformerless		
Cooling		Natural Convection		
Relative 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, Sunspec		
Certification & Approvals	NRS097, G98, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1			
EMC		EN61000-6-2, EN61000-6-3		

# Single Phase Hybrid Storage Inverter

## 4-6 kW Plus Series



The Afore AF low voltage series storage Inverters are designed to increase energy independence for homeowners. The power range is from 4kW to 6kW, compatible with low voltage (40-60V) batteries.

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

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.



**AI EMS**  
Electricity Pricing  
& Automation



**MAX. 120A**  
Max. Charge/  
Discharge Current 120A



**PV OVERSIZE**  
2 Times PV Oversize



**MPPT CHANNELS**  
Up to 2 MPPT Channels



**UPS FUNCTION**  
Switch Time < 10ms



**PARALLEL**  
Max.6 Parallel Stacking

Support for Time-of-use Optimization

Configurable Operation Modes

AFCI (Optional) & Rapid Shutdown Ready

The charging and discharging power of the battery is greater

Build in Anti-feed-in Function

Compact Size and Easy Installation

Smart Monitoring & Remote Firmware Upgrade

Off-grid mode, with a larger load capacity, the maximum load can be 6KVA

Technical Data	AF4K-SLP	AF4.6K-SLP	AF5K-SLP	AF5.5K-SLP	AF6K-SLP
<b>PV Input</b>					
Max. Input Power (kW)	8	9.2	10	11	12
Max. PV Voltage (V)	550				
MPPT Range (V)	80 - 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				
<b>Battery Port</b>					
Max. Charge/Discharge Power (kW)	4.0	4.6	5.0	5.5	6.0
Max. Charge/Discharge Current (A)	120				
Battery Normal Voltage (V)	51.2				
Battery Voltage Range (V)	40 - 60				
Battery Type	Li-ion / Lead-acid etc.				
<b>AC Grid</b>					
Max Continuous Current (A)	19.0	22.0	23.0	26.0	28.0
Max Continuous Power (kVA)	4.0	4.6	5.0	5.5	6.0
Nominal Grid Current (A)	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	1 default (adjustable from 0.8 leading to 0.8 lagging)				
Current THD (%)	< 3				
<b>AC Load Output</b>					
Max Continuous Current (A)	19.0	22.0	23.0	26.0	28.0
Max Continuous Power (kVA)	4.0	4.6	5.0	5.5	6.0
Max Peak Current (A) (10min)	27.3 / 26.1	31.4 / 30	34.1 / 32.7	37.8 / 36.1	41.0 / 39.2
Max Peak Power (kVA) (10min)	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)	Seamless				
Voltage THD (%)	< 3				
<b>Efficiency</b>					
CEC Efficiency (%)	97.0				
Max. Efficiency (%)	97.6				
PV to Bat. Efficiency (%)	98.1				
Bat. between AC Efficiency (%)	96.8				
<b>Protection</b>					
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				
<b>General Data</b>					
Dimensions (W x H x D, mm)	370 x 535 x 192				
Weight (kg)	20.5				
Topology	Transformerless				
Cooling	Intelligent Fan				
Relative 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, Sunspec				
Certification & Approvals	NRS097, G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1				
EMC	EN61000-6-2, EN61000-6-3				

# Off-Grid Inverter

## Single Phase / 6 kW



The Afore AF low voltage series storage Inverters are designed to increase energy independence for homeowners. The power is 6 kW and is compatible with low-voltage (40-60 V) batteries.

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

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.



**AI EMS**  
Electricity Pricing  
& Automation



**MAX. 120A**  
Max. Charge/  
Discharge Current 120A



**PV OVERSIZE**  
2 Times PV Oversize



**MPPT CHANNELS**  
Up to 2 MPPT Channels



**BATTERY**  
Support  
Li-ion / Lead-acid

### Technical Data

AF6K-1L

PV Input	
Max. Input Power (kW)	12
Max. PV Voltage (V)	550
MPPT Range (V)	80 - 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)	6
Max. Charge/Discharge Current (A)	120
Battery Normal Voltage (V)	51.2
Battery Voltage Range (V)	40 - 60
Battery Type	Li-ion / Lead-acid etc.
AC Charge (Grid and Generator)	
Max. Continuous Current (A)	28
Max. Continuous Power (kVA)	6
Nominal Grid Current (A)	26.1
Nominal Grid Voltage (V)	L/N/PE, 220Vac, 230Vac
Nominal Grid Frequency (Hz)	50 / 60
Power Factor	1
AC Output	
Nominal Current (A)	26.1
Max. Continuous Current (A)	28
Max. Continuous Power (kVA)	6
Max. Continuous Apparent Power (kVA)	6
Nominal AC Voltage (V)	L/N/PE, 220Vac, 230Vac
Nominal AC Frequency (Hz)	50 / 60
Power Factor	1
Output Voltage Waveform	Pure Sine Wave
Overload Capacity	1.5 times / 10S
THDV	3%
Max Parallel Nr.	6
Efficiency	
CEC Efficiency (%)	97.0
Max. Efficiency (%)	97.6
PV to Bat. Efficiency (%)	98.1
Bat. between AC Efficiency (%)	96.8
Protection	
PV Reverse Polarity Protection	Yes
Over Current/Voltage Protection	Yes
AC Short Circuit Protection	Yes
Residual Current Detection	Yes
Ground Fault Monitoring	Yes
Insulation Resister Detection	Yes
PV Arc Detection	Yes
Ingress protection (IP)	IP66
Protective Class	Class I
Inverter Isolation	Non-isolated (PV - AC - BAT)
Oversvoltage Category	OVC III (AC Main), OVC II (DC)
Surge protection	Surge III
General Data	
Dimensions (W x H x D, mm)	370 x 535 x 192
Weight (kg)	20.5
Topology	Transformerless
Cooling	Intelligent Fan
Relative Humidity	0 - 100 %
Operating Temperature Range (°C)	- 25 to 60 (Derating 45)
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, Sunspec

# Single Phase Hybrid Storage Inverter

7-12 kW






The Afore AF low voltage series storage Inverters are designed to increase energy independence for homeowners. The power range is from 7kW to 12kW, compatible with low voltage (40-60V) batteries.

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

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.

						
<b>AI EMS</b> Electricity Pricing & Automation	<b>MAX. 370A</b> Max. Charge/Discharge Current 370A	<b>PV OVERSIZE</b> 2 Times PV Oversize	<b>MPPT CHANNELS</b> Up to 2 MPPT Channels	<b>UPS FUNCTION</b> Switch Time < 10ms	<b>PARALLEL</b> Max.6 Parallel Stacking	<b>INPUT</b> Support Generator

- |  |  |
|--|--|
| Higher Yields                           |  Build in Anti-feed-in Function             |
| Support for Time-of-use Optimization    |  Compact Size and Easy Installation         |
| Configurable Operation Modes            |  Smart Monitoring & Remote Firmware Upgrade |
| AFCI (Optional) & Rapid Shutdown Ready  |  |

Technical Data	AF7K-SL	AF8K-SL	AF9K-SL	AF10K-SL	AF11K-SL	AF12K-SL
<b>PV Input</b>						
Max. Input Power (kW)	14	16	18	20	22	24
Max. PV Voltage (V)	950					
MPPT Range (V)	80 - 900					
Normal Voltage (V)	650					
Startup Voltage (V)	100					
Max. Input Current (A)	26 + 18.5					
Max. Short Current (A)	32 + 25					
No. of MPP Tracker / No. of PV String	2 / 2					
<b>Battery Port</b>						
Max. Charge/Discharge Power (kW)	10.5	12	13.5	15	16.5	18
Max. Charge/Discharge Current (A)	220	250	280	310	340	370
Normal Charge/Discharge Current(A)	180	200	230	250	275	300
Battery Normal Voltage (V)	51.2					
Battery Voltage Range (V)	40 - 60					
Battery Type	Li-ion / Lead-acid etc.					
<b>AC Grid</b>						
Max Continuous Current (A)	32	37	41	46	50	55
Max Continuous Power (kVA)	7	8	9	10	11	12
Nominal Grid Current (A)	32 / 31	37 / 35	41 / 39	46 / 44	50 / 48	55 / 52
Nominal Grid Voltage (V)	220 / 230					
Nominal Grid Frequency (Hz)	50 / 60					
Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3					
<b>AC Load Output</b>						
Max Continuous Current (A)	32	37	41	46	50	55
Max Continuous Power (kVA)	7	8	9	10	11	12
Max Peak Current (A) (60s)	48 / 46	55.5 / 52.5	61.5 / 58.5	68 / 66	75 / 72	82 / 78
Max Peak Power (kVA) (60s)	10.5	12	13.5	15	16.5	18
Nominal AC Voltage L-N (V)	220 / 230					
Nominal AC Frequency (Hz)	50 / 60					
Switching Time (ms)	Seamless					
Voltage THD (%)	< 3					
<b>Efficiency</b>						
CEC Efficiency (%)	96.8					
Max. Efficiency (%)	98.1					
<b>Protection</b>						
PV Reverse Polarity Protection	Yes					
Bat. 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					
PV Arc Detection	Yes					
Enclosure Protect Level	IP66					
AC/DC surge protection	Type II					
<b>General Data</b>						
Dimensions (W x H x D, mm)	600 x 400 x 250					
Weight (kg)	30					
Topology	Transformerless					
Cooling	Intelligent Fan					
Relative Humidity	0 - 100 %					
Operating Temperature Range (°C)	-25 - 60					
Operating Altitude (m)	< 3000					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec					

# Wall-mounted Residential ESS



Wall-mounted or floor-standing



Safe LFP cells and smart BMS



Scalable up to 30kWh

## Model AF5000W-LP

Parameter		
Total Energy		5.22kWh
Usable Energy		4.96kWh
Voltage		44.8~57.6Vdc
Nominal Voltage		51.2Vd.c.
Rated Capacity		102Ah
Max.Charge Voltage		57.6Vd.c.
Nominal Discharging Current		60A
Nominal Charging Current		60A
Weight		47kg
Dimension(mm)(H*L*W)		680*480*180mm
Max.recommended DOD		95%
Operating Condition		Indoor or outdoor
Operating Temperature	Charging	0~50°C
Discharging Temperature		-15~50°C
Storage Temperature Range		> 1 month 0~35°C / ≤1 month -20~45°C
Humidity		15%~85%RH (No Condensation)
Over Voltage Category		II
Cooling Type		Natural cooling
Case Material		Metal
Installation		Wall-mounted or floor-standing
IP Rating		IP 66
Protective Class		I
Max.Connection Number		6P
Communication		CAN/ RS485
Battery Protection		Over-current/Over-voltage/Short circuit/ Under-voltage/Over temperature
Certificates		CE,IEC62619,IEC61000,IEC62040,IEC63056,UN38.3,MSDS

\*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.

# Wall-mounted Residential ESS



Large Capacity



Built-in BMS Protection



Reliable Backup Power



Reliable Operation



Optimal Management

## Model AF10000W-LA0

Parameter		
Total Energy		10.49kWh
Usable Energy		9.97kWh
Voltage		44.8~57.6Vdc
Nominal Voltage		51.2Vd.c.
Rated Capacity		57.6Vd.c.
Max.Charge Voltage		205Ah
Nominal Discharging Current		100A(1P) /160A(2P~6P)
Nominal Charging Current		100A(1P) /160A(2P~6P)
Weight		87kg
Dimension(mm)(H*L*W)		670*430*230mm
Max.recommended DOD		95%
Operating Condition		Indoor or outdoor
Operating Temperature	Charging	0~55°C
Discharging Temperature		-15~55°C
Standard Ambient Temperature Range		0~40°C
Storage Temperature Range		>1 month 0~35°C / ≤1 month -20~45°C
Humidity		15%~85%RH (No Condensation)
Over Voltage Category		II
Cooling Type		Natural cooling
Case Material		Metal
Installation		floor-standing
IP Rating		IP 66
Heating unit(optional)		130W
Protective Class		I
Max. Connection Number		6P
Communication		CAN / RS485 / Wifi
Battery Protection		Over-current/Over-voltage/Short circuit/ Under-voltage/Over-temperature
Certificates		CE,UN38.3,MSDS

\*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.

# Movable Residential ESS



Large Capacity



Built-in BMS Protection



Reliable Backup Power



High Quality 360° Wheels



Reliable Operation



Optimal Management

## Model AF16000W-LZ

Parameter		
Total Energy		16.07kWh
Usable Energy		15.27kWh
Voltage		44.8~57.6Vd.c.
Nominal Voltage		51.2Vd.c.
Rated Capacity		314Ah
Max.Charge Voltage		57.6Vd.c.
Nominal Discharging Current		150A(1P) /160A(2P~6P)
Nominal Charging Current		150A(1P) /160A(2P~6P)
Weight		120kg
Dimension(mm)(H*L*W)		800*680*230mm
Max.recommended DOD		95%
Operating Condition		Indoor or outdoor
Operating	Charging	0~55°C
Temperature	Discharging	-15~55°C
Standard Ambient Temperature Range		0~40°C
Storage Temperature Range		0°C to 40°C @60+25% Relative Humidity
Humidity		15% ~ 85%RH (No Condensation)
Over Voltage Category		II
Cooling Type		Natural cooling
Case Material		Metal
Installation		Floor-standing
IP Rating		IP 66
Heating unit(optional)		150W
Protective Class		I
Max. Connection Number		6P
Communication		CAN / RS485
WiFi		Yes
Battery Protection		Over-current/Over-voltage/Short circuit/ Under-voltage/Over-temperature
Certificates		CE,UN38.3,MSDS

\*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.

# Three Phase Hybrid Storage Inverter

## 7-12 kW (LV Battery Supported)










The Afore AF low voltage series storage Inverters are designed to increase energy independence for homeowners. The power range is from 7kW to 12kW, compatible with low voltage (40-60V) batteries.









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

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.

						
<b>AI EMS</b> Electricity Pricing & Automation	<b>MAX. 370A</b> Max. Charge/Discharge Current 370A	<b>100% UNBALANCE</b> Support Unbalance Load	<b>2 MPPT CHANNELS</b> Up to 2 MPPT Channels	<b>UPS FUNCTION</b> Switch Time < 10ms	<b>PARALLEL</b> Max.6 Parallel Stacking	<b>INPUT</b> Support Generator

Higher Yields 	 48V low voltage battery, transformer isolation design
Support for Time-of-use Optimization 	 Build in Anti-feed-in Function
Configurable Operation Modes 	 Compact Size and Easy Installation
AFCI (Optional) & Rapid Shutdown Ready 	 Smart Monitoring & Remote Firmware Upgrade

Technical Data	AF7K-TL	AF8K-TL	AF9K-TL	AF10K-TL	AF11K-TL	AF12K-TL
<b>PV Input</b>						
Max. Input Power (kW)	14	16	18	20	22	24
Max. PV Voltage (V)	950					
MPPT Range (V)	80 - 900					
Normal Voltage (V)	650					
Startup Voltage (V)	100					
Max. Input Current (A)	26 + 18.5					
Max. Short Current (A)	32 + 25					
No. of MPP Tracker / No. of PV String	2 / 2					
<b>Battery Port</b>						
Max. Charge/Discharge Power (kW)	10.5	12	13.5	15	16.5	18
Max. Charge/Discharge Current (A)	220	250	280	310	340	370
Normal Charge/Discharge Current(A)	180	200	230	250	275	300
Battery Normal Voltage (V)	51.2					
Battery Voltage Range (V)	40 - 60					
Battery Type	Li-ion / Lead-acid etc.					
<b>AC Grid</b>						
Max Continuous Current (A)	11	12	14	15	17	18
Max Continuous Power (kVA)	7	8	9	10	11	12
Nominal Grid Current (A)	11 / 10.5	12 / 11.5	14 / 13	15 / 14.5	17 / 16	18 / 17.5
Nominal Grid Voltage (V)	380 / 400					
Nominal Grid Frequency (Hz)	50 / 60					
Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3					
<b>AC Load Output</b>						
Max Continuous Current (A)	11	12	14	15	17	18
Max Continuous Power (kVA)	7	8	9	10	11	12
Max Peak Current (A) (60s)	22 / 21	24 / 23	28 / 26	30 / 29	34 / 32	36 / 35
Max Peak Power (kVA) (60s)	10.5	12	13.5	15	16.5	18
Nominal AC Voltage L-N (V)	380 / 400					
Nominal AC Frequency (Hz)	50 / 60					
Switching Time (ms)	Seamless					
Voltage THD (%)	< 3					
<b>Efficiency</b>						
CEC Efficiency (%)	96.8					
Max. Efficiency (%)	98.1					
<b>Protection</b>						
PV Reverse Polarity Protection	Yes					
Bat. 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					
PV Arc Detection	Yes					
Enclosure Protect Level	IP66					
AC/DC surge protection	Type II					
<b>General Data</b>						
Dimensions (W x H x D, mm)	600 x 400 x 250					
Weight (kg)	30					
Topology	Transformerless					
Cooling	Intelligent Fan					
Relative Humidity	0 - 100 %					
Operating Temperature Range (°C)	-25 - 60					
Operating Altitude (m)	< 3000					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec					

# 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.

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.



**AI EMS**  
Electricity Pricing & Automation



**WIDE RANGE**  
Voltage Range (80-600V)



**PV OVERSIZE**  
2 Times PV Oversize



**MAX. 18.5A<sub>dc</sub>**  
String Current Up To 18.5A



**UPS FUNCTION**  
Switch Time < 10ms



**COMPACT**  
Compact Design



**GENERATOR**  
Generator Backup Support

Support for Time-of-use Optimization

Configurable Operation Modes

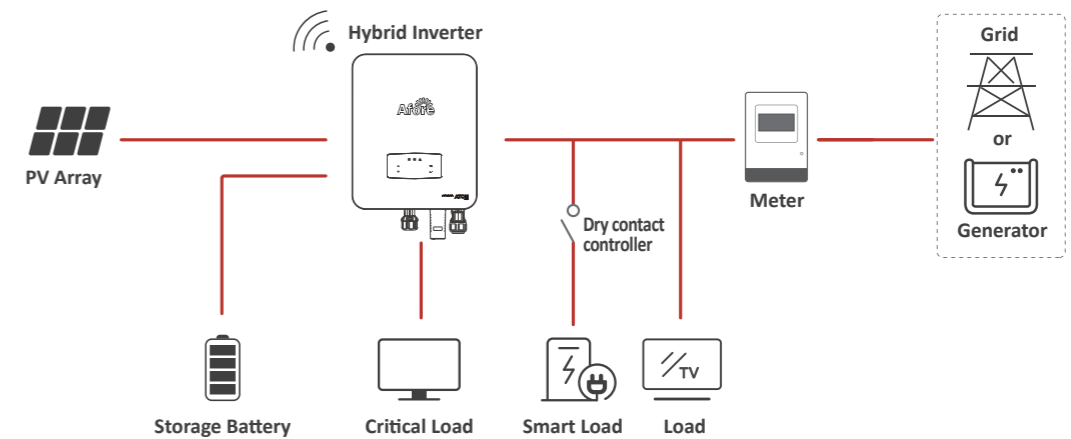
AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

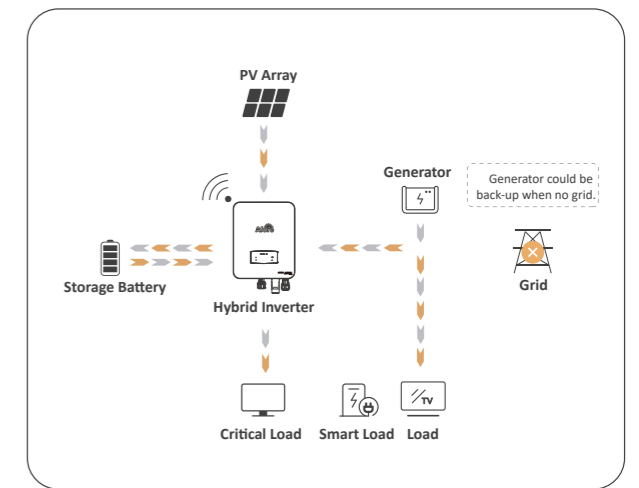
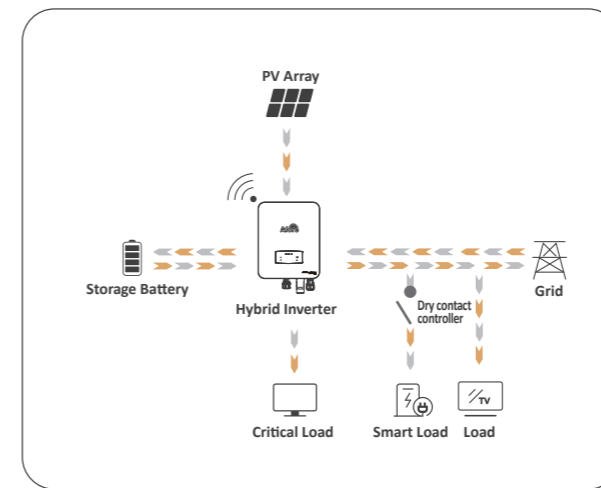
100% unbalanced output, each phase

Smart Monitoring & Remote Firmware Upgrade

For New Storage System:

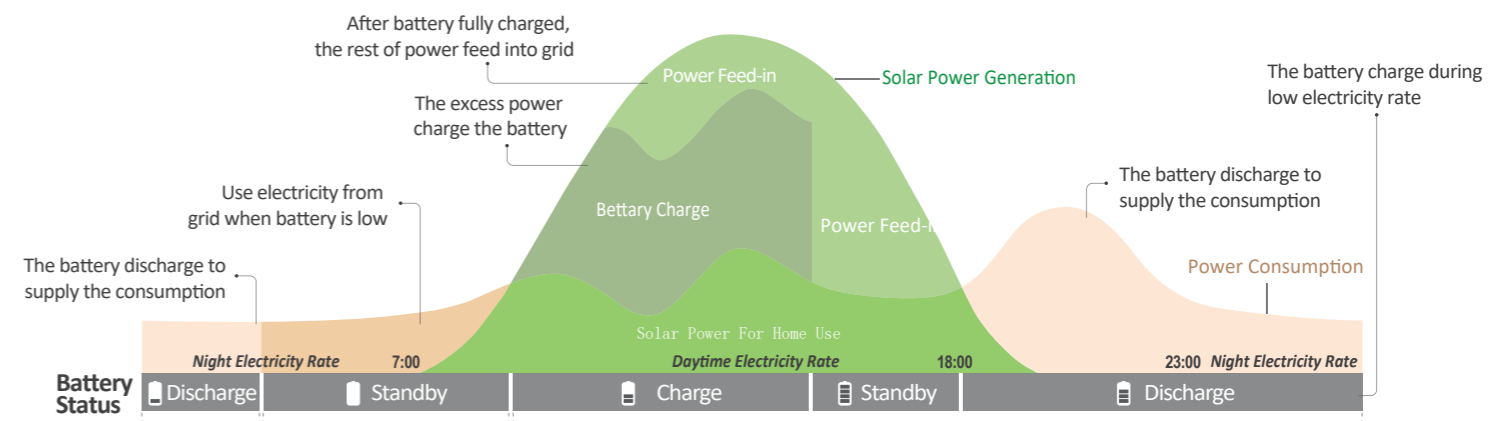


Optimizing Self-Consumption (on-grid) + Emergency Power Supply(off-grid)



## Optimizing Self-Consumption Mode

With home energy storage installed, home owners 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
<b>PV Input</b>				
Max. DC Input Power (kW)	6	8	10	12
Max. PV Voltage (V)		1000		
Rated DC Input Voltage (V)		620		
DC Input Voltage Range (V)		150 - 1000		
MPPT Voltage Range (V)		150 - 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		
<b>Battery Port</b>				
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		
<b>AC Grid</b>				
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 Frequency (Hz)		50 / 60		
Power Factor		1 (-0.8-0.8 adjustable)		
Current THD (%)		< 3%		
<b>AC Load Output (Back-up)</b>				
Nominal Output Power (kVA)	3	4	5	6
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	3.3kVA, 60s	4.4kVA, 60s	5.5kVA, 60s	6.6kVA, 60s
THDV (with linear load)		< 3%		
Switching Time (ms)		< 10		
<b>Efficiency</b>				
Europe Efficiency		97.50%		
Max. Efficiency		98.00%		
Battery Charge/Discharge Efficiency		98.00%		
<b>Protection</b>				
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		
<b>General Data</b>				
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		
Standby Consumption (W)		< 5		
Display & Communication Interfaces		LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec		
Certification & Approvals		EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1		
EMC		EN61000-6-2, EN61000-6-3		

Technical Data	AF8K-MTH	AF10K-MTH	AF12K-MTH	AF15K-MTH
<b>PV Input</b>				
Max. DC Input Power (kW)	16	20	24	30
Max. PV Voltage (V)		1000		
Rated DC Input Voltage (V)		620		
DC Input Voltage Range (V)		150 - 1000		
MPPT Voltage Range (V)		150 - 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		
<b>Battery Port</b>				
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		
<b>AC Grid</b>				
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 Frequency (Hz)		50 / 60		
Power Factor		1 (-0.8-0.8 adjustable)		
Current THD (%)		< 3%		
<b>AC Load Output (Back-up)</b>				
Nominal Output Power (kVA)	8	10	12	15
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	8.8kVA, 60s	11kVA, 60s	13.2kVA, 60s	16.5kVA, 60s
THDV (with linear load)		< 3%		
Switching Time (ms)		< 10		
<b>Efficiency</b>				
Europe Efficiency		97.50%		
Max. Efficiency	98.20%	98.00%	98.30%	
Battery Charge/Discharge Efficiency		98.00%		
<b>Protection</b>				
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		
<b>General Data</b>				
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		
Standby Consumption (W)		< 5		
Display & Communication Interfaces		LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec		
Certification & Approvals		EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1		
EMC		EN61000-6-2, EN61000-6-3		

# Three Phase Hybrid Storage Inverter

3-30 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 30kW, compatible with high voltage (150-800V) batteries.

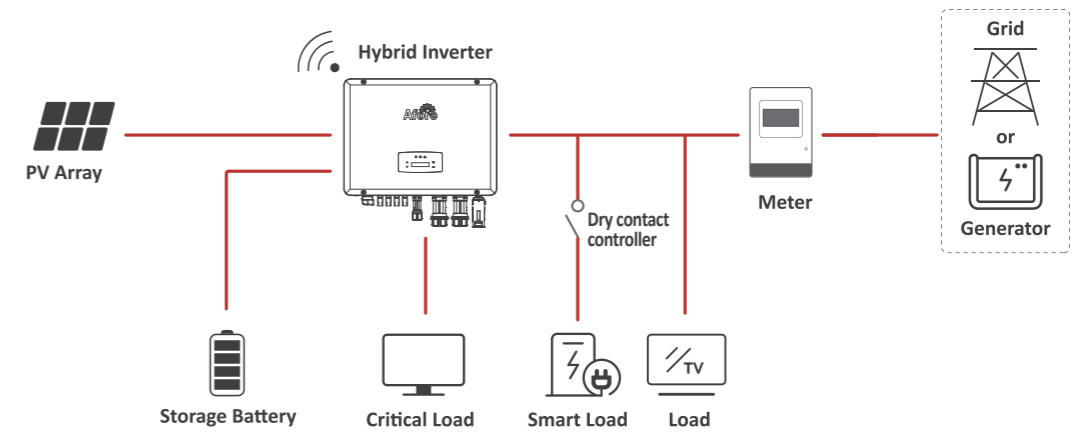
Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from public grid.

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.

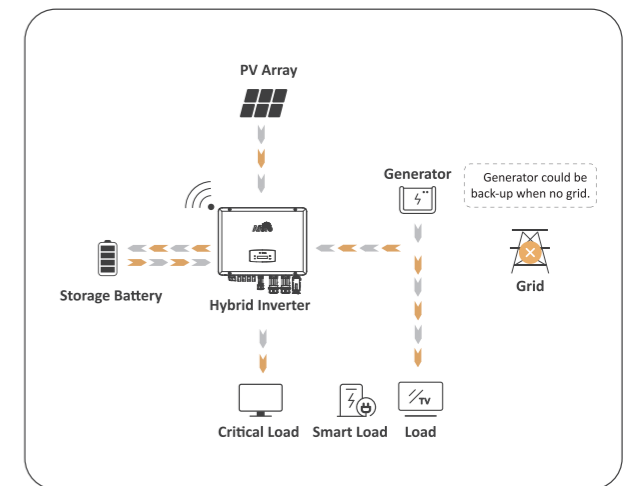
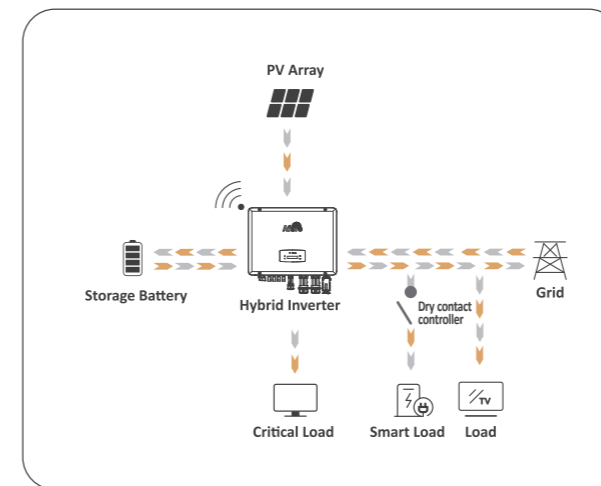
The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.

 <b>AI EMS</b> Electricity Pricing & Automation	 <b>BATTERY Support</b> Sodium metal chloride battery	 <b>WIDE RANGE</b> Voltage Range (150-800V)	 <b>100% UNBALANCE</b> Support Unbalance Load	 <b>Max. 40A</b> MAX. 40Aac String Current Up To 40A	 <b>&lt;10 ms</b> UPS FUNCTION Switch Time < 10ms	 <b>INPUT</b> Support Generator
Support for Time-of-use Optimization 			Build in Anti-feed-in Function 			
Configurable Operation Modes 			100% unbalanced output, each phase; 200% unbalanced output, each phase (≤ 10kW) 			
AFCI (Optional) & Rapid Shutdown Ready 			Smart Monitoring & Remote Firmware Upgrade 			

For New Storage System:

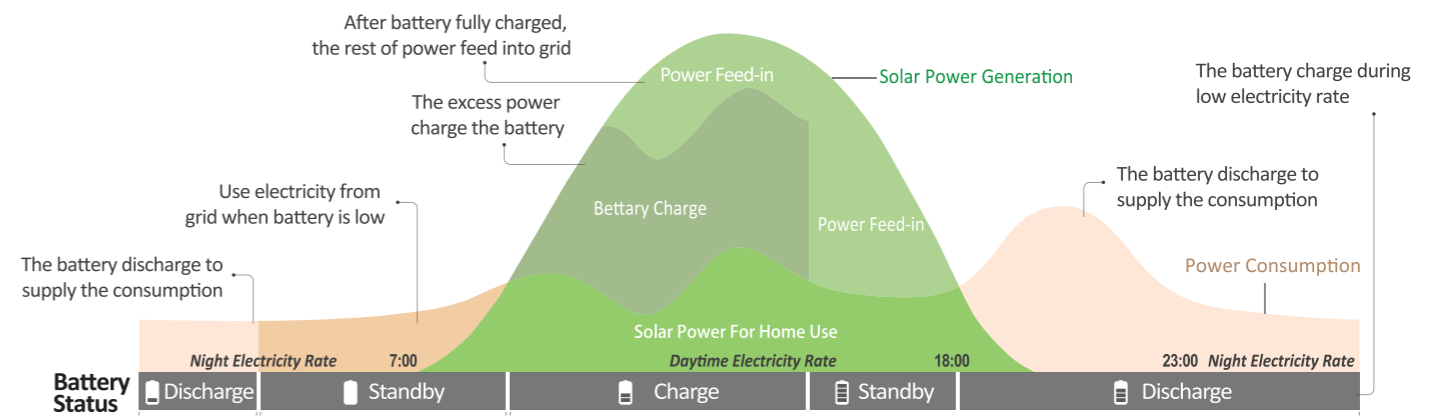


## Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



## 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-TH	AF4K-TH	AF5K-TH	AF6K-TH	AF8K-TH	AF10K-TH
<b>PV Input</b>						
Max. DC Input Power (kW)	6	8	10	12	16	20
Max. PV Voltage (V)	1000					
Rated DC Input Voltage (V)	620					
DC Input Voltage Range (V)	150-1000					
MPPT Voltage Range (V)	150-850					
Start-up Voltage (V)	160					
Max. DC Input Current (A)	20x2					
Max. Short Current(A)	30x2					
No. of MPPT Tracker / Strings	2/2					
<b>Battery Port</b>						
Battery Nominal Voltage (V)	200	200	200	250	300	400
Battery Voltage Range (V)	150-800					
Max. Charge/Discharge Current (A)	30					
Max. Charge/Discharge Power (kW)	3	4	5	6	8	10
Charging Curve	3 Stages					
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery					
<b>AC Grid</b>						
Nominal AC Output Power (kW)	3	4	5	6	8	10
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
Max. AC Output Current (A)	5.3	7	8.5	10.5	13.5	17
Nominal AC Voltage (V)	230/400					
Nominal AC Frequency (Hz)	50/60					
Power Factor	1 (-0.8-0.8 adjustable)					
Current THD (%)	<3%					
<b>AC Load Output (Back-up)</b>						
Nominal Output Power (kVA)	3	4	5	6	8	10
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
Peak Output Power	3.3kVA, 60s	4.4kVA, 60s	5.5kVA, 60s	6.6kVA, 60s	8.8kVA, 60s	11kVA, 60s
THDV (with linear load)	<3%					
Switching Time (ms)	<10					
<b>Efficiency</b>						
Europe Efficiency	97.50%					
Max. Efficiency	98.00%			98.20%		
Battery Charge/Discharge Efficiency	98.00%					
<b>Protection</b>						
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					
<b>General Data</b>						
Dimensions (W x H x D, mm)	558 x 535 x 260 mm					
Weight (kg)	29kg					
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, Sunspec					
Certification & Approvals	NRS097, G98, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1					
EMC	EN61000-6-2, EN61000-6-3					

■ Technical Data	AF12K-TH	AF15K-TH	AF17K-TH	AF20K-TH	AF25K-TH	AF30K-TH
<b>PV Input</b>						
Max. DC Input Power (kW)	24	30	34	40	50	51
Max. PV Voltage (V)	1000					
Rated DC Input Voltage (V)	620					
DC Input Voltage Range (V)	150-1000					
MPPT Voltage Range (V)	150-850					
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		
<b>Battery Port</b>						
Battery Nominal Voltage (V)	450	500	400	500	500	550
Battery Voltage Range (V)	150-800					
Max. Charge/Discharge Current (A)	30	50	50	50	60	60
Max. Charge/Discharge Power (kW)	12	15	17	20	25	30
Charging Curve	3 Stages					
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery					
<b>AC Grid</b>						
Nominal AC Output Power (kW)	12	15	17	20	25	30
Max. AC Input/Output Power (kVA)	18 / 13.2	22.5 / 16.5	25.5 / 18.7	30 / 22	37.5 / 27.5	45 / 33
Max. AC Output Current (A)	21.5	27	30	32	40	48
Nominal AC Voltage (V)	230/400					
Nominal AC Frequency (Hz)	50/60					
Power Factor	1 (-0.8-0.8 adjustable)					
Current THD (%)	<3%					
<b>AC Load Output (Back-up)</b>						
Nominal Output Power (kVA)	12	15	17	20	25	30
Nominal Output Voltage (V)	230/400					
Nominal Output Frequency (Hz)	50/60					
Nominal Output Current (A)	17.4	21.8	24.7	29	36.3	43.5
Peak Output Power	13.2kVA, 60s	16.5kVA, 60s	18.7kVA, 60s	22kVA, 60s	27.5kVA, 60s	33kVA, 60s
THDV (with linear load)	<3%					
Switching Time (ms)	<10					
<b>Efficiency</b>						
Europe Efficiency	97.50%		97.80%		98.10%	
Max. Efficiency	98.30%			98.50%		
Battery Charge/Discharge Efficiency	98.00%					
<b>Protection</b>						
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					
<b>General Data</b>						
Dimensions (W x H x D, mm)	558 x 535 x 260 mm					
Weight (kg)	29kg			36kg		
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, Sunspec					
Certification & Approvals	NRS097, G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1					
EMC	EN61000-6-2, EN61000-6-3					

# 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 and 120-650V) 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.

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.

						
<b>AI EMS</b> Electricity Pricing & Automation	<b>BATTERY</b> Support Sodium metal chloride battery	<b>MIN. 80V</b> Battery Voltage Minimum 80V	<b>MAX. 50A</b> Max. Charge/Discharge Current 50A	<b>100% UNBALANCE</b> Support Unbalance Load	<b>MAX. 20A</b> String Current Up To 20A	<b>UPS FUNCTION</b> Switch Time < 10ms
Support for Time-of-use Optimization 			Build in Anti-feed-in Function 			
Configurable Operation Modes 			100% unbalanced output, each phase; 200% unbalanced output, each phase (≤ 10kW) 			
AFCI (Optional) & Rapid Shutdown Ready 			Smart Monitoring & Remote Firmware Upgrade 			

Technical Data	AF3K-THP	AF4K-THP	AF5K-THP	AF6K-THP	AF8K-THP	AF10K-THP	AF12K-THP
<b>PV Input</b>							
Max. DC Input Power (kW)	6	8	10	12	16	20	24
Max. PV Voltage (V)	1000						
Rated DC Input Voltage (V)	620						
DC Input Voltage Range (V)	150 - 1000						
MPPT Voltage Range (V)	150 - 850						
Start-up Voltage (V)	160						
Max. DC Input Current (A)	20x2						
Max. Short Current(A)	30x2						
No. of MPPT Tracker / Strings	2/2						
<b>Battery Port</b>							
Battery Nominal Voltage (V)	100	100	100	150	200	250	300
Battery Voltage Range (V)	80 - 600			120 - 650			
Max. Charge/Discharge Current (A)	50						
Max. Charge/Discharge Power (kW)	3	4	5	6	8	10	12
Charging Curve	3 Stages						
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery						
<b>AC Grid</b>							
Nominal AC Output Power (kW)	3	4	5	6	8	10	12
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
Max. AC Output Current (A)	5.3	7	8.5	10.5	13.5	17	21.5
Nominal AC Voltage (V)	230 / 400						
Nominal AC Frequency (Hz)	50 / 60						
Power Factor	1 (-0.8 - 0.8 adjustable)						
Current THD (%)	<3%						
<b>AC Load Output (Back-up)</b>							
Nominal Output Power (kVA)	3	4	5	6	8	10	12
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
Peak Output Power	3.3kVA, 60s	4.4kVA, 60s	5.5kVA, 60s	6.6kVA, 60s	8.8kVA, 60s	11kVA, 60s	13.2kVA, 60s
THDV (with linear load)	<3%						
Switching Time (ms)	<10						
<b>Efficiency</b>							
Europe Efficiency				97.50%			
Max. Efficiency	98.00%					98.30%	
Battery Charge/Discharge Efficiency	98.00%						
<b>Protection</b>							
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						
<b>General Data</b>							
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, Sunspec						
Certification & Approvals	NRS097, G98/G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1						
EMC	EN61000-6-2, EN61000-6-3						

# Three Phase Hybrid Storage Inverter

## 36-60 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 36kW to 60kW, compatible with high voltage (150-800V) 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.

The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.

						
<b>AI EMS</b> Electricity Pricing & Automation	<b>BATTERY</b> Support Sodium metal chloride battery	<b>WIDE RANGE</b> Voltage Range (150-800V)	<b>100% UNBALANCE</b> Support Unbalance Load	<b>MAX. 40A</b> String Current Up To 40A	<b>UPS FUNCTION</b> Switch Time < 10ms	<b>INPUT</b> Support Generator
Support 280AH, 315AH battery system	Support for Time-of-use Optimization	Configurable Operation Modes	ACFI (Optional) & Rapid Shutdown Ready	2 times AC Oversize	Build in Anti-feed-in Function	100% unbalanced output, each phase
				Smart Monitoring & Remote Firmware Upgrade		

Technical Data	AF36K-TH	AF40K-TH	AF45K-TH	AF50K-TH	AF60K-TH
<b>PV Input</b>					
Max. DC Input Power (kW)	72	80	90	100	100
Max. PV Voltage (V)	1000				
Rated DC Input Voltage (V)	620				
DC Input Voltage Range (V)	150-1000				
MPPT Voltage Range (V)	150-850				
Start-up Voltage (V)	160				
Max. DC Input Current (A)	40 x 4				
Max. Short Current(A)	48 x 4				
No. of MPPT Tracker / Strings	4/8				
<b>Battery Port</b>					
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				
<b>AC Grid</b>					
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%				
<b>AC Load Output (Back-up)</b>					
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				
<b>Efficiency</b>					
Europe Efficiency	98.20%	98.30%	98.30%	98.30%	98.30%
Max. Efficiency	98.60%				
Battery Charge/Discharge Efficiency	99.00%				
<b>Protection</b>					
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				
<b>General Data</b>					
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	EN50549-1, C10/C11, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1				
EMC	EN61000-6-2, EN61000-6-4				

# Stack-mounted Residential ESS



Model	AF10000W-HN	AF15000W-HN	AF20000W-HN	AF25000W-HN	AF30000W-HN	AF35000W-HN	AF40000W-HN
<b>Parameter</b>							
Battery Type	LFP						
Number of Connection	2pcs	3pcs	4pcs	5pcs	6pcs	7pcs	8pcs
Total Energy	10.44kWh	15.66kWh	20.88kWh	26.11kWh	31.33kWh	36.55kWh	41.77kWh
Usable Energy	9.92kWh	14.88kWh	19.84kWh	24.81kWh	29.77kWh	34.73kWh	39.69kWh
Max.Parallel Connections	8P						
Voltage	102.4 Vd.c.	153.6 Vd.c.	204.8 Vd.c.	256 Vd.c.	307.2 Vd.c.	358.4 Vd.c.	409.6 Vd.c.
Nominal Charging Voltage	115.2 Vd.c.	172.8 Vd.c.	230.4 Vd.c.	288 Vd.c.	345.6 Vd.c.	403.2 Vd.c.	460.8 Vd.c.
Max. Charging Current	50A						
Nominal Discharging Current	50A						
Discharge Cut-off Voltage	89.6 Vd.c.	134.4 Vd.c.	179.2 Vd.c.	224 Vd.c.	268.8 Vd.c.	313.6 Vd.c.	358.4 Vd.c.
Battery Efficiency	95%						
Battery Protection	Over-current/Over-voltage/Short-circuit/Under-voltage/Over temperature						
Maximum Recommended DOD	95%						
Communication	CAN,RS485						
IP Rating	IP66						
Operating Temperature	-15~50 °C						
Altitude	≤5,000m						
Humidity	15% ~ 85%RH (No condensation)						
Dimension	(720±2)* (420±2)* (616±3)mm	(720±2)* (420±2)* (766±5)mm	(720±2)* (420±2)* (916±7)mm	(720±2)* (420±2)* (1066±9)mm	(720±2)* (420±2)* (1216±11)mm	(720±2)* (420±2)* (1366±13)mm	(720±2)* (420±2)* (1566±13)mm
Net Weight	(116±3)kg	(163±5)kg	(210±7)kg	(257±9)kg	(304±11)kg	(351±13)kg	(398±13)kg
Heating Unit	51.2V/65W*4						
Certificates	CE-EMC,IEC62619,IEC62477,IEC62040,IEC62100,IEC60068-2-52,IEC60730,UN38.3,MSDS						
Installation	Stacked Installation						

Model	AF5000W-HM
<b>Parameter</b>	
Total Energy	5.22 kWh
Usable Energy*	4.96 kWh
Voltage Range	44.8~57.6 Vd.c
Nominal Voltage	51.2 V
Max.Charging Voltage	57.6 V
Max.Continuous Charging Current	50 A
Max.Continuous Discharge Current	50 A
DOD	95%
Dimension ((L*W*H),mm)	(720±2)*(420±2)*(174±3)mm
Net Weight	(47±2)kg
Operating Condition	Indoor or outdoor
Operating Temperature	-15~50 °C
Humidity	15% ~ 85%RH (No condensation)
Configuration	(8S)2S
Heating Unit	51.2V/65W*4



### SAFETY

LFP Battery, Intelligent BMS and protective hardware providing complete protection



### ACCURACY

Dynamic SOC calibration



### COMPATIBILITY

Suitable for most mainstream inverters



### EASY INSTALLATION

Scalable up to 64 packs

# Split Phase Hybrid Storage Inverter

3-9.6 kW















The Afore AF series storage inverters are designed to increase energy independence for homeowners. The power range is from 3.0kW to 9.6kW, compatible with high voltage (80-495V) batteries.

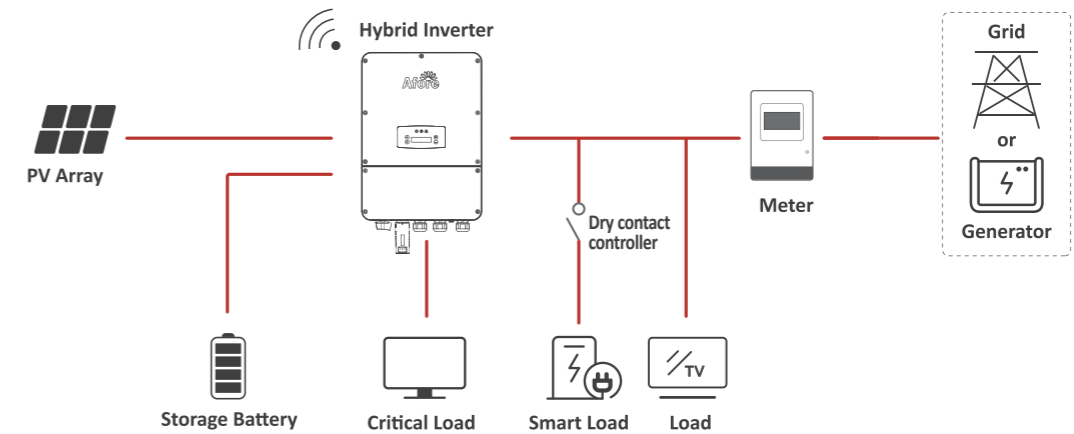
Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from public grid.

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

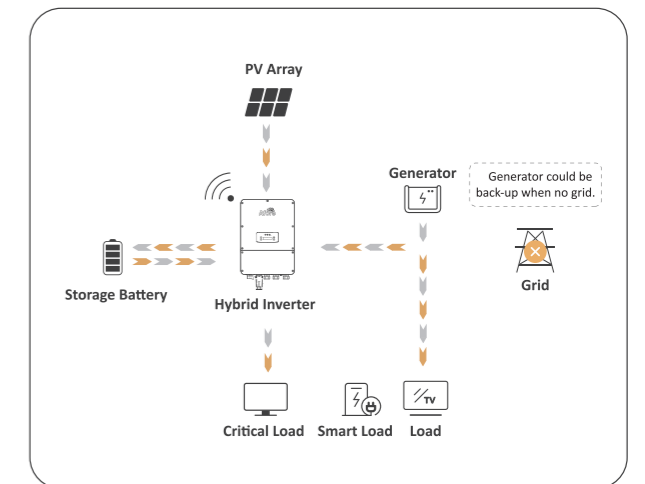
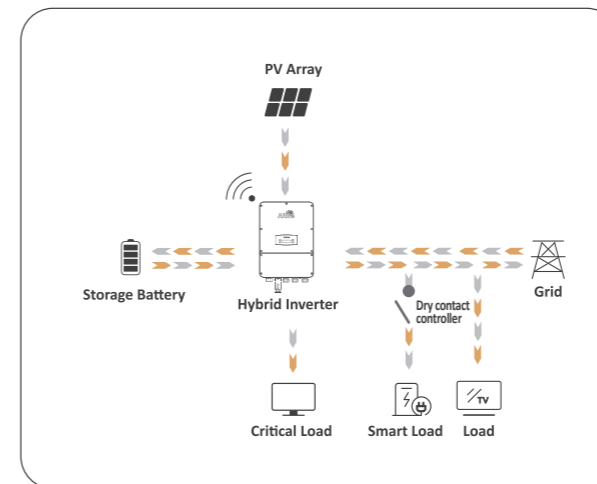
The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically without the need for manual intervention, it helps users optimize their electricity usage and reduce energy costs.

 <b>AI EMS</b> Electricity Pricing & Automation	 <b>Max. 2</b> <b>PV OVERSIZE</b> 2 Times PV Oversize	 <b>3</b> <b>MPPT</b> <b>CHANNELS</b> Up to 3 MPPT Channels	<10 ms icon" data-bbox="231 745 265 790"/> <b>&lt;10</b> <b>ms</b> <b>UPS FUNCTION</b> Switch Time < 10ms	 <b>PARALLEL</b> Max.6 Parallel Stacking	 <b>INPUT</b> Support Generator	 <b>SPLIT-PHASE</b> Support Split-phase (120/240Vac) Grid
	Support for Time-of-use Optimization 		Build in Anti-feed-in Function 		Configurable Operation Modes 	Compact Size and Easy Installation 
	AFCI (Optional) & Rapid Shutdown Ready 		Smart Monitoring & Remote Firmware Upgrade 			

For New Storage System:

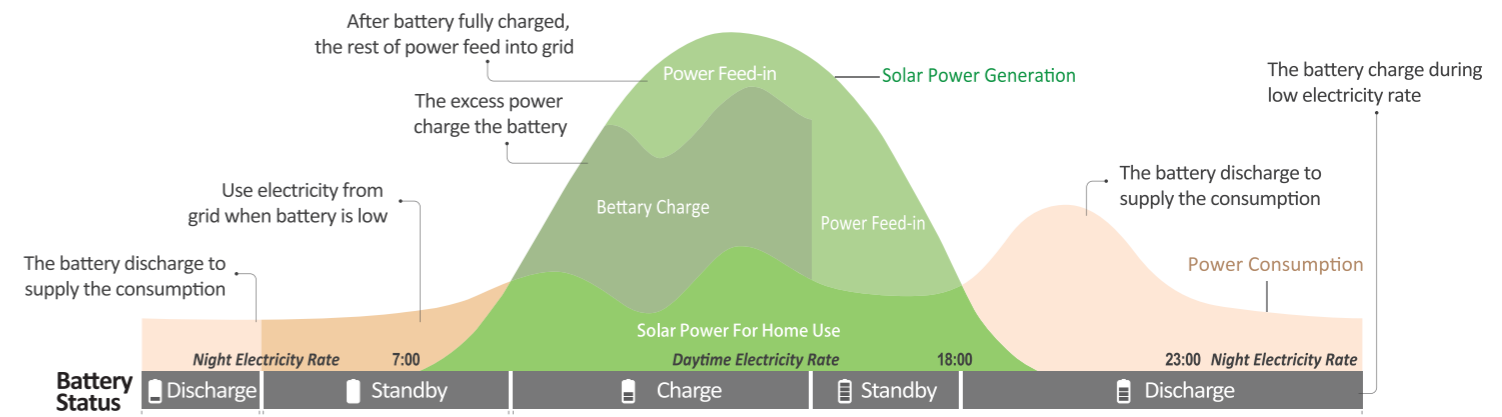


## Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



## Optimizing Self-Consumption Mode

With home energy storage installed, home owners 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-DH	AF3.6K-DH	AF4K-DH	AF4.6K-DH	AF5K-DH	AF5.5K-DH
<b>PV Input</b>						
Max. Input Power (kW)	6	7.2	8.0	9.2	10	11
Max. PV Voltage (V)	600					
MPPT Range (V)	80 - 550					
Normal Voltage (V)	360					
Startup Voltage (V)	100					
Max. Input Current (A)	18.5 x 2					
Max. Short Current (A)	26.0 x 2					
No. of MPP Tracker / No. of PV String	2 / 2					
<b>Battery Port</b>						
Max. Charge/Discharge Power (kW)	4.5 / 4.5	5.4 / 5.4	6.0 / 6.0	6.9 / 6.9	7.5 / 7.5	8.3 / 8.3
Max. Charge/Discharge Current (A)	50					
Battery Normal Voltage (V)	230					
Battery Voltage Range (V)	80 - 495					
Battery Type	Li-ion / Lead-acid etc.					
<b>AC Grid</b>						
Max Continuous Current (A)	15	17.5	19.5	22.5	24.5	27
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5
Nominal Grid Current (A)	12.5 / 14.5	15.0 / 17.4	17.0 / 19.3	19.5 / 22.2	20.9 / 24.1	23.0 / 26.5
Nominal Grid Voltage (V)	211 to 264 @ 240 / 183 to 229 @ 208					
Nominal Grid Frequency (Hz)	60					
Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3					
<b>Gen Input &amp; AC Load Output</b>						
Max. Continuous Current (A)	15	17.5	19.5	22.5	24.5	27
Max. Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5
Max. Peak Current (A) (10min)	18.8 / 21.7	22.5 / 26.0	25 / 28.9	28.8 / 33.2	31.3 / 36.1	34.6 / 39.9
Max. Peak Power (kVA) (10min)	4.5 / 4.5	5.4 / 5.4	6.0 / 6.0	6.9 / 6.9	7.5 / 7.5	8.3 / 8.3
Nominal AC Voltage L-L (V)	240 / 208					
Nominal AC Voltage L-N (V)	120 / 104					
Nominal AC Frequency (Hz)	60					
Switching Time (ms)	< 10					
Voltage THD (%)	< 3					
<b>Efficiency</b>						
CEC Efficiency (%)	97.0					
Max. Efficiency (%)	97.6					
PV to Bat. Efficiency (%)	98.1					
Bat. between AC Efficiency (%)	96.8					
<b>Protection</b>						
PV Reverse Polarity Protection	Yes					
Bat. 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					
Rapid Shut Down	Yes					
Protection Degree	NEMA4X					
AC/DC surge protection	Type II					
<b>General Data</b>						
Dimensions (W x H x D)	400 x 600 x 229 mm / 15.7 x 23.6 x 9.0 in					
Weight	25 kg / 55 lbs					
Topology	Transformerless					
Cooling	Intelligent Fan					
Relative Humidity	0 - 100 %					
Operating Temperature Range	- 25 to 60 °C / - 77 to 140 °F					
Operating Altitude	< 4000 m / < 13123 ft					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec					
Certification & Approvals	UL 1741 SA, UL 1741, UL1699B, UL 1998, IEEE1547, IEEE1547A, IEEE1547.1, CSA 22.2 No.107, Rule21, HECO Rule 14					
EMC	FCC part15 CLASS B					

■ Technical Data	AF6K-DH	AF7K-DH	AF7.6K-DH	AF8K-DH	AF8.6K-DH	AF9.6K-DH
<b>PV Input</b>						
Max. Input Power (kW)	12	14	15.2	16	17.2	19.2
Max. PV Voltage (V)	600					
MPPT Range (V)	80 - 550					
Normal Voltage (V)	360					
Startup Voltage (V)	100					
Max. Input Current (A)	18.5 x 2					18.5 x 3
Max. Short Current (A)	26.0 x 2					26.0 x 3
No. of MPP Tracker / No. of PV String	2 / 2					3 / 3
<b>Battery Port</b>						
Max. Charge/Discharge Power (kW)	9.0 / 9.0	10.5 / 10.3	11.4 / 10.3	11.5 / 10.3	11.5 / 10.3	11.5 / 10.3
Max. Charge/Discharge Current (A)	50					
Battery Normal Voltage (V)	230					
Battery Voltage Range (V)	80 - 495					
Battery Type	Li-ion / Lead-acid etc.					
<b>AC Grid</b>						
Max Continuous Current (A)	29.0	34.0	37	39	41.5	46.5
Max Continuous Power (kVA)	6.0	7.0	7.6	8.0	8.6	9.6
Nominal Grid Current (A)	25.0 / 28.9	29.2 / 33.7	31.7 / 36.6	33.4 / 38.5	35.9 / 41.4	40.0 / 46.2
Nominal Grid Voltage (V)	211 to 264 @ 240 / 183 to 229 @ 208					
Nominal Grid Frequency (Hz)	60					
Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3					
<b>Gen Input &amp; AC Load Output</b>						
Max. Continuous Current (A)	29.0	34.0	37	39	41.5	46.5
Max. Continuous Power (kVA)	6.0	7.0	7.6	8.0	8.6	9.6
Max. Peak Current (A) (10min)	37.5 / 43.3	43.8 / 49.5	47.5 / 49.5	47.9 / 49.5	47.9 / 49.5	47.9 / 49.5
Max. Peak Power (kVA) (10min)	9.0 / 9.0	10.5 / 10.3	11.4 / 10.3	11.5 / 10.3	11.5 / 10.3	11.5 / 10.3
Nominal AC Voltage L-L (V)	240 / 208					
Nominal AC Voltage L-N (V)	120 / 104					
Nominal AC Frequency (Hz)	60					
Switching Time (ms)	< 10					
Voltage THD (%)	< 3					
<b>Efficiency</b>						
CEC Efficiency (%)	97.0					
Max. Efficiency (%)	97.6					
PV to Bat. Efficiency (%)	98.1					
Bat. between AC Efficiency (%)	96.8					
<b>Protection</b>						
PV Reverse Polarity Protection	Yes					
Bat. 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					
Rapid Shut Down	Yes					
Protection Degree	NEMA4X					
AC/DC surge protection	Type II					
<b>General Data</b>						
Dimensions (W x H x D)	400 x 600 x 229 mm / 15.7 x 23.6 x 9.0 in					
Weight	25 kg / 55 lbs					
Topology	Transformerless					
Cooling	Intelligent Fan					
Relative Humidity	0 - 100 %					
Operating Temperature Range	- 25 to 60 °C / - 77 to 140 °F					
Operating Altitude	< 4000 m / < 13123 ft					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec					
Certification & Approvals	UL 1741 SA, UL 1741, UL1699B, UL 1998, IEEE1547, IEEE1547A, IEEE1547.1, CSA 22.2 No.107, Rule21, HECO Rule 14					
EMC	FCC part15 CLASS B					

**Single Phase  
PV String Inverter**  
1-3 kW



**Single Phase  
PV String Inverter**  
3-6 kW



**Single Phase  
PV String Inverter**  
7-10 kW



■ Technical Data	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL	
<b>PV Input Data</b>															
Max. DC Power ( W )	2000	3000	4000	5000	6000	6000	7200	8000	10000	12000	14000	16000	18000	20000	
Max. DC Voltage ( V )	500	500	500	500	500	600	600	600	600	600	600	600	600	600	
MPPT Voltage Range ( V )	50-500	50-500	50-500	50-500	50-500	70-550	70-550	70-550	70-550	70-550	70-550	70-550	70-550	70-550	
Rated Input Voltage ( V )			360				360					360			
Start-up Voltage ( V )			50				70					70			
Max. Input Current ( A )			18.5				18.5 x 2				18.5+26		26+26		
Max. Short Current ( A )			25				25 x 2				25+35		35+35		
No. of MPP Tracker / No. of PV String			1/1				2/2				2/3		2/4		
Input Connector Type			MC4				MC4					MC4			
<b>AC Output Data</b>															
Max. Output Power ( VA )	1100	1650	2200	2750	3300	3300	3960	4400	5500	6600	7700	8800	9900	11000	
Nominal Output Power ( W )	1000	1500	2000	2500	3000	3000	3600	4000	5000	6000	7000	8000	9000	10000	
Max. Output Current ( A )	6	9	12	13	15	15	17.5	20	24	28.7	33.6	38.3	45	50	
Nominal Output Voltage ( V )	L/N/PE, 220Vac, 230Vac, 240Vac					L/N/PE, 220Vac, 230Vac, 240Vac					L/N/PE, 220Vac, 230Vac, 240Vac				
Grid Voltage Range	180Vac-276Vac (According to local standard)					180Vac-276Vac (According to local standard)					180Vac-276Vac (According to local standard)				
Nominal Output Frequency ( Hz )	50/60					50/60					50/60				
Grid Frequency Range	45-55Hz/54-66Hz (According to local standard)					45-55Hz/54-66Hz (According to local standard)					45-55Hz/54-66Hz (According to local standard)				
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					1 default (adjustable from 0.8 leading to 0.8 lagging)					1 default (adjustable from 0.8 leading to 0.8 lagging)				
Output Current THD	<3%					<3%					<3%				
<b>Efficiency</b>															
Max. Efficiency	97.50%	97.80%	98.10%	98.10%	98.13%	98.20%	98.20%	98.20%	98.20%	98.20%	98.20%	98.20%	98.32%	98.40%	
Euro Efficiency	96.60%	96.70%	96.80%	97.23%	97.56%	97.80%	97.82%	97.85%	97.90%	97.92%	97.95%	98.00%	98.00%	98.10%	
<b>Protection</b>															
PV Reverse Polarity Protection			YES				YES					YES			
PV Insulation Resistance Detection			YES				YES					YES			
AC Short Circuit Protection			YES				YES					YES			
AC Over Current Protection			YES				YES					YES			
AC Over Voltage Protection			YES				YES					YES			
Anti-Islanding Protection			YES				YES					YES			
Residual Current Detection			YES				YES					YES			
Over Temperature Protection			YES				YES					YES			
Integrated DC switch			YES				YES					YES			
Surge Protection			Integrated (Type III)				Integrated (Type III)					Integrated (Type III)			
Smart IV Curve Scanning			YES				YES					YES			
Quick Arc Fault Circuit interruption			Optional				Optional					Optional			
<b>General Data</b>															
Dimensions (W x H x D, mm)	280 x 260 x 116					360 x 358 x 142					370 x 535 x 192				
Weight ( kg )	6					10					17				
Protection Degree	IP66					IP66					IP66				
Enclosure Material	Aluminum					Aluminum					Aluminum				
Ambient Temperature Range ( °C )	-25 - + 60					-25 - + 60					-25 - + 60				
Humidity Range	0-100%					0-100%					0-100%				
Topology	Transformerless					Transformerless					Transformerless				
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)					RS485 / WiFi / Wire Ethernet / GPRS (optional)					RS485 / WiFi / Wire Ethernet / GPRS (optional)				
Cooling Concept	Convection					Convection					Convection				
Night Power Consumption ( W )	<0.2	<0.2	<1	<1	<1		<1					<1			
Max. Operation Altitude ( m )	4000					4000					4000				
<b>Certifications and Standards</b>															
EMC Standard	EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-2, EN61000-3-3					EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-2, EN61000-3-3, EN61000-3-11, EN61000-3-12									
Safety Standard	UL1741, EN62109					UL1741, EN62109									
Grid-connection	IEEE1547, CSA C22, EN50549, RD1699, PORTARIA N° 140+515, G98, IEC61727					IEEE1547, CSA C22, EN50549, RD1699, PORTARIA N° 140+515, G99, IEC61727									

# Three Phase PV String Inverter

3-25 kW



## Smart | Safety | Efficient



The Afore BNT Series Three-phase string inverters are designed for residential and small commercial PV system applications, rating from 3kW to 25kW. All models have unibody housings with aluminum structure which is anodized, increasing durability and effectively prevents corrosion. Equipped with external inductors, the unibody housings can ensure efficient heat dissipation, which significantly improves the reliability and extends the life of the inverters.

Communication implements are via the Wi-Fi module (can be changed to Ethernet / GPRS). Check the system status anytime and anywhere via online portal or APP.

- Quick Arc Fault circuit interruption (Optional)
- WIFI standard
- Compact design
- Multiple intelligent protections
- Compatible with bifacial modules
- String level monitoring



**MPPT Range**  
Wide MPPT Range



**PV OVERSIZE**  
1.5 Times PV Oversize



**DC 1100V**  
Max. DC 1100V



**UNIBODY**  
One-piece  
Aluminum Housing



**PROTECTION**  
Build-in SPD Type II



**SMART**  
Smart IV Curve Scanning



**UPDATE**  
Remote Firmware Update

■ Technical Data	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
<b>PV Input Data</b>						
Max. DC Power ( W )	5100	6000	7500	9000	12000	15000
Max. DC Voltage ( V )	1100					
MPPT Voltage Range ( V )	150 - 1000					
Rated Input Voltage ( V )	620					
Start-up Voltage ( V )	150					
Max. Input Current ( A )	18.5 x 2					
Max. Short Current ( A )	25 x 2					
No. of MPP Tracker / No. of PV String	2/2					
Input Connector Type	MC4					
<b>AC Output Data</b>						
Max. Output Power ( VA )	3300	4400	5500	6600	8800	11000
Nominal Output Power ( W )	3000	4000	5000	6000	8000	10000
Max. Output Current ( A )	5.3	7	8.5	10.5	13.5	17
Nominal Output Voltage ( V )	3P+N+PE /3P+PE 230/400					
Grid Voltage Range	260Vac-519Vac (according to local standard)					
Nominal Output Frequency ( Hz )	50/60					
Grid Frequency Range	45-55Hz/55-65Hz(according to local standard)					
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Output Current THD	<3%					
<b>Efficiency</b>						
Max. Efficiency	98.30%					
Euro Efficiency	97.61%	97.65%	98.00%	98.05%	98.23%	98.70%
<b>Protection</b>						
PV Reverse Polarity Protection	YES					
PV Insulation Resistance Detection	YES					
AC Short Circuit Protection	YES					
AC Over Current Protection	YES					
AC Over Voltage Protection	YES					
Anti-Islanding Protection	YES					
Residual Current Detection	YES					
Over Temperature Protection	YES					
Integrated DC switch	YES					
Surge Protection	Integrated (Type II)					
Smart IV Curve Scanning	YES					
Quick Arc Fault Circuit Interruption	Optional					
<b>General Data</b>						
Dimensions ( W x H x D, mm )	370 x 535 x 192					
Weight ( kg )	16					
Protection Degree	IP66					
Enclosure Material	Aluminum					
Ambient Temperature Range (°C)	-25 to 60					
Humidity Range	0 -100%					
Topology	Transformerless					
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional) / Sunspec					
Cooling Concept	Convection ; Intelligent fan cooling					
Night Power Consumption ( W )	<1					
Max. Operation Altitude ( m )	≤4000					
<b>Certifications and Standards</b>						
EMC Standard	EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-2, EN61000-3-3, EN61000-3-11, EN61000-3-12					
Safety Standard	UL1741, EN62109					
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, RD1699, PORTARIA N° 140+515, G99, IEC61727					

■ Technical Data	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
<b>PV Input Data</b>						
Max. DC Power ( W )	18000	19500	22500	25500	30000	37500
Max. DC Voltage ( V )	1100					
MPPT Voltage Range ( V )	150 - 1000					
Rated Input Voltage ( V )	620					
Start-up Voltage ( V )	150					
Max. Input Current ( A )	18.5 x 2	20 + 32	32 x 2	32 x 2	32 x 2	32 x 2
Max. Short Current ( A )	25 x 2	30 + 48	48 x 2	48 x 2	48 x 2	48 x 2
No. of MPP Tracker / No. of PV String	2/2	2/3	2/4	2/4	2/4	2/4
Input Connector Type	MC4					
<b>AC Output Data</b>						
Max. Output Power ( VA )	13200	14300	16500	18700	22000	27500
Nominal Output Power ( W )	12000	13000	15000	17000	20000	25000
Max. Output Current ( A )	21.5	22	27	30	32	40
Nominal Output Voltage ( V )	3P+N+PE /3P+PE 230/400					
Grid Voltage Range	260Vac-519Vac (according to local standard)					
Nominal Output Frequency ( Hz )	50/60					
Grid Frequency Range	45-55Hz/55-65Hz(according to local standard)					
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Output Current THD	<3%					
<b>Efficiency</b>						
Max. Efficiency	98.70%					
Euro Efficiency	98.23%	98.35%	98.35%	98.35%	98.35%	98.75%
<b>Protection</b>						
PV Reverse Polarity Protection	YES					
PV Insulation Resistance Detection	YES					
AC Short Circuit Protection	YES					
AC Over Current Protection	YES					
AC Over Voltage Protection	YES					
Anti-Islanding Protection	YES					
Residual Current Detection	YES					
Over Temperature Protection	YES					
Integrated DC switch	YES					
Surge Protection	Integrated (Type II)					
Smart IV Curve Scanning	YES					
Quick Arc Fault Circuit Interruption	Optional					
<b>General Data</b>						
Dimensions ( W x H x D, mm )	370 x 535 x 192					
Weight ( kg )	16	17	19	19	19	19
Protection Degree	IP66					
Enclosure Material	Aluminum					
Ambient Temperature Range (°C)	-25 to 60					
Humidity Range	0 -100%					
Topology	Transformerless					
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional) / Sunspec					
Cooling Concept	Intelligent fan cooling					
Night Power Consumption ( W )	<1					
Max. Operation Altitude ( m )	≤4000					
<b>Certifications and Standards</b>						
EMC Standard	EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-2, EN61000-3-3, EN61000-3-11, EN61000-3-12					
Safety Standard	UL1741, EN62109					
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, RD1699, PORTARIA N° 140+515, G99, IEC61727					

# Three Phase PV String Inverter

## 30-60 kW



The Afore BNT Series Three-phase string inverters are designed for commercial and power plant PV system applications, rating from 30kW to 60kW. All models with aluminum housing which is anodized, increasing durability and effectively prevents corrosion. Equipped with external inductors, ensure efficient heat dissipation, which significantly improves the reliability and extends the life of the inverters.

The inverter menu is activated by sensor touch buttons. Communication implements are via the Wi-Fi module (which can be changed to Ethernet / GPRS). Check the system status anytime and anywhere via online portal or APP.

<b>Max. 20A</b> MAX. 20A dc String Current Up To 20A	<b>Max. 1.5</b> PV OVERSIZE Max. 1.5 Time PV Oversize Input	<b>PROTECTION</b> Multiple Intelligent Protections	<b>ANTI-FLOW</b> Anti-Feed-in Function	<b>Wi-Fi</b> Wi-Fi Standard, Ethernet/GPRS Optional	<b>CONFIGURATION</b> Quick & Easy Config. via Wi-Fi	<b>MODBUS</b> MODBUS Communication Ready
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MPPT efficiency > 99.9%	IP 68 Cooling Fan
Intelligent Temperature Control System	Type II DC & AC lightning protection
Active and reactive power compensation, adjust power factor	AC output 1.1x continuous operation

Technical Data	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
<b>PV Input Data</b>					
Max. DC Power ( W )	45000	54000	60000	75000	90000
Max. DC Voltage ( V )	1100				
MPPT Voltage Range ( V )	200 -1000				
Rated Input Voltage ( V )	620				
Start-up Voltage ( V )	200				
Max. Input Current ( A )	38 x 2	38 x 3	40 x 3	38 x 4	38 x 4
Max. Short Current ( A )	48 x 2	48 x 3	48 x 3	48 x 3	48 x 4
No. of MPP Tracker / No. of PV String	2/5	3/6	3/7	4/8	4/8
Input Connector Type	MC4				
<b>AC Output Data</b>					
Max. Output Power ( VA )	33000	39600	44000	55000	66000
Nominal Output Power ( W )	30000	36000	40000	50000	60000
Max. Output Current ( A )	48	60	65	80	96
Nominal Output Voltage ( V )	3P+N+PE /3P+PE 230/400				
Grid Voltage Range	260Vac-519Vac (according to local standard)				
Nominal Output Frequency ( Hz )	50/60				
Grid Frequency Range	45-55Hz/55-65Hz (according to local standard)				
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)				
Output Current THD	<3%				
<b>Efficiency</b>					
Max. Efficiency	98.50%	98.65%	98.65%	98.80%	99.00%
Euro Efficiency	98.10%	98.20%	98.25%	98.45%	98.50%
<b>Protection</b>					
PV Reverse Polarity Protection	YES				
PV Insulation Resistance Detection	YES				
AC Short Circuit Protection	YES				
AC Over Current Protection	YES				
AC Over Voltage Protection	YES				
Anti-Islanding Protection	YES				
Residual Current Detection	YES				
Over Temperature Protection	YES				
Integrated DC switch	YES				
Surge Protection	Integrated (Type II)				
Smart IV Curve Scanning	YES				
Quick Arc Fault Circuit Interruption	Optional				
<b>General Data</b>					
Dimensions (W x H x D, mm)	450 x 485 x 210	710 x 470 x 236			
Weight ( kg )	26	44	51		
Protection Degree	IP66				
Enclosure Material	Aluminum				
Ambient Temperature Range ( °C )	-25 to 60				
Humidity Range	0-100%				
Topology	Transformerless				
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional) / Sunspec				
Cooling Concept	Intelligent Fan Cooling				
Night Power Consumption ( W )	<1				
Max. Operation Altitude ( m )	≤4000				
<b>Certifications and Standards</b>					
EMC Standard	EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-11, EN61000-3-12				
Safety Standard	UL1741, EN62109				
Grid-connection	IEEE1547, CSA C22, EN50549, RD1699, PORTARIA N° 140+515, G99, IEC61727				














# Three Phase PV String Inverter

## 70-110 kW



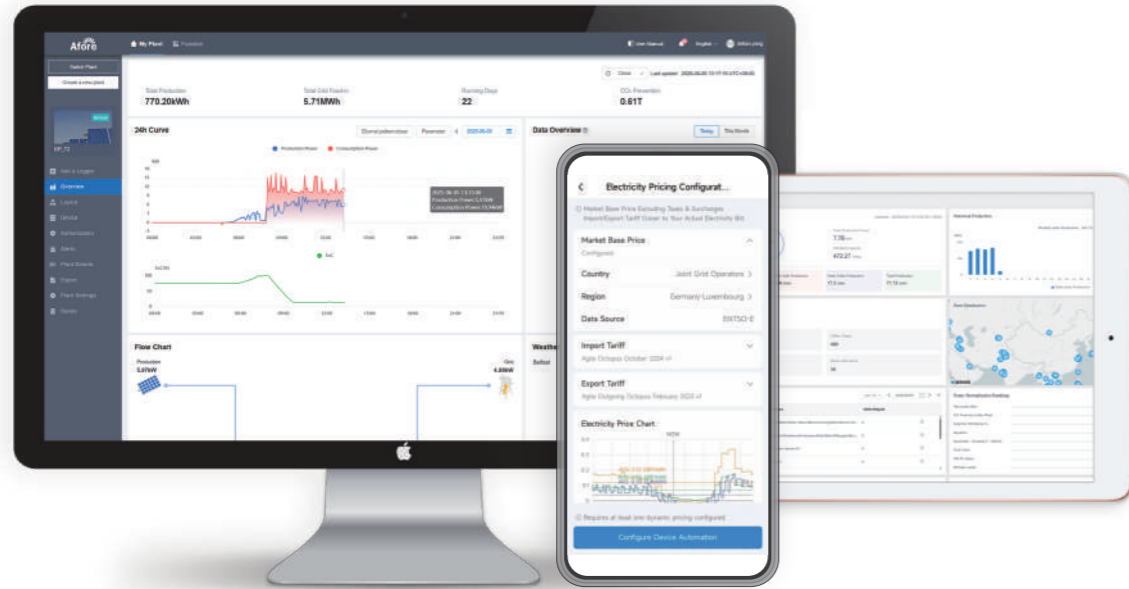
The Afore BNT Series Three-phase string inverters are designed for commercial and power plant PV system applications, rating from 70kW to 110kW. All models with aluminum housing which is anodized, increasing durability and effectively prevents corrosion. Equipped with external inductors, ensure efficient heat dissipation, which significantly improves the reliability and extends the life of the inverters.

The inverter menu is activated by sensor touch buttons. Communication implements are via the Wi-Fi module (which can be changed to Ethernet / GPRS). Check the system status anytime and anywhere via online portal or APP.

 <b>SMART</b> Intelligent string monitoring, Smart I-V curve scan	 <b>PROTECTION</b> Type II DC & AC Lighting Protection	 <b>MAX. 38A</b> String Current Up to 38A	>1.5 icon" data-bbox="275 725 308 770"/> <b>&gt;1.5</b> PV OVERSIZE >1.5 Time PV Oversize Input	 <b>POWER FACTOR</b> Active and Reactive Power Compensation	 <b>ANTI-FLOW</b> Anti-Feed-in Function		
IP68 Cooling Fan 		Compatible with 210 Solar Panel & bifacial module 		Arc Fault Circuit Interrupter (AFCI) (Optional) 		AC output 1.1x continuous operation 	
		Multiple Intelligent Protections 		Remote firmware upgrade with simple operation 		DC side supports "Y" connector 	
				Supports aluminium wire access to reduce cost 			

Technical Data	BNT070KTL	BNT075KTL	BNT080KTL	BNT090KTL	BNT100KTL	BNT110KTL
<b>PV Input Data</b>						
Max. DC Power ( kW )	105	112.5	120	135	150	165
Max. DC Voltage ( V )	1100					
MPPT Voltage Range ( V )	200 - 1000					
Rated Input Voltage ( V )	620					
Start-up Voltage ( V )	300					
Max. Input Current ( A )	38 x 6					
Max. Short Current ( A )	48 x 6					
No. of MPP Tracker / No. of PV String	6/12					
Input Connector Type	MC4					
<b>AC Output Data</b>						
Max. Output Power ( kVA )	77	82.5	88	99	110	110
Nominal Output Power ( kW )	70	75	80	90	100	110
Max. Output Current ( A )	111	120	127	143	158	159.5
Nominal Output Voltage ( V )	3P+N+PE / 3P+PE 230/400					
Grid Voltage Range	260Vac-519Vac (according to local standard)					
Nominal Output Frequency ( Hz )	50/60					
Grid Frequency Range	45-55Hz/55-66Hz(according to local standard)					
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Output Current THD	<3%					
<b>Efficiency</b>						
Max. Efficiency	99.00%					
Euro Efficiency	98.30%			98.40%		
<b>Protection</b>						
PV Reverse Polarity Protection	YES					
PV Insulation Resistance Detection	YES					
AC Short Circuit Protection	YES					
AC Over Current Protection	YES					
AC Over Voltage Protection	YES					
Anti-Islanding Protection	YES					
Residual Current Detection	YES					
Over Temperature Protection	YES					
Integrated DC switch	YES					
Surge Protection	Integrated (Type II)					
Smart IV Curve Scanning	YES					
Quick Arc Fault Circuit Interruption	Optional					
<b>General Data</b>						
Dimensions (W x H x D, mm)	983 x 610 x 318					
Weight ( kg )	78					
Protection Degree	IP66					
Enclosure Material	Aluminum					
Ambient Temperature Range ( °C )	-25 to 60					
Humidity Range	0 - 100%					
Topology	Transformerless					
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional) / Sunspec					
Cooling Concept	Intelligent fan cooling					
Night Power Consumption ( W )	<1					
Max. Operation Altitude ( m )	≤4000					
<b>Certifications and Standards</b>						
EMC Standard	EN/IEC 61000-6-2, EN/IEC 61000-6-4, EN61000-3-11, EN61000-3-12					
Safety Standard	UL1741, EN62109					
Grid-connection	IEEE1547, CSA C22, EN50549, PORTARIA N° 140+515, IEC61727					

# Monitoring AI—Electricity Pricing & Automation



Electricity Pricing & Automation is an energy management tool based on real-time electricity price strategy. It monitors electricity price fluctuations in real time and dynamically adjusts the operating status of equipment.

It runs automatically 24 hours a day, 7 days a week without manual intervention. It helps users optimize electricity usage and reduce electricity costs.



Electricity Pricing & Automation



Failure Alarm



PV System Information Push



Multiple Systems In One Account



PC Browser Android And ios



Real-time/ Historical Data Monitoring And Analysis



System Income Calculation



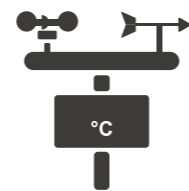
Wi-Fi / Ethernet / GPRS Data Sticker



Power Plant Data Logger

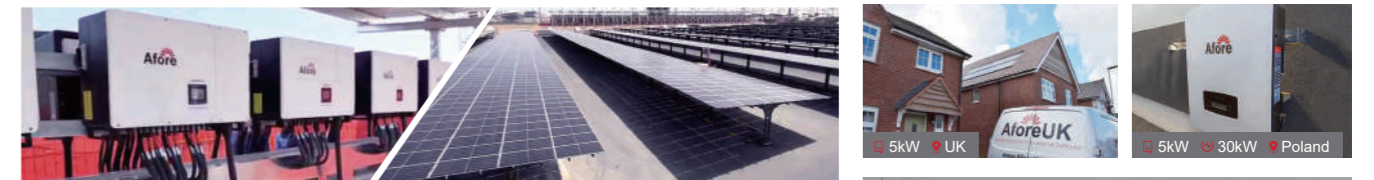
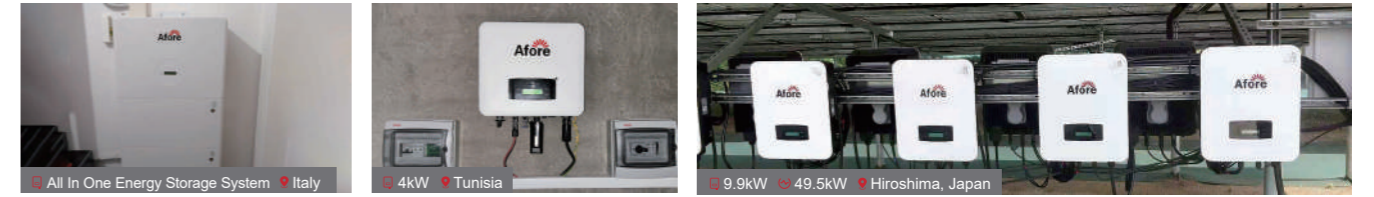


Zero injection Smart Meter(optional)



Weather Station

# Global Projects



6kW Battery: 10kW-h Vietnam

8.25kW Battery: 10kW-h Japan

6kW Battery: 8kW-h UK

