ENERGY STORAGE SYSTEM SOLUTIONS

PV SYSTEM SOLUTIONS

Afore New Energy Technology (Shanghai) Co., Ltd.

Building 7, No.333 Wanfang Rd, Minhang District,
Shanghai, China. 201112

T +86-21-54326236
F +86-21-54326136
W www.aforenergy.com
E info@aforenergy.com

V1.04

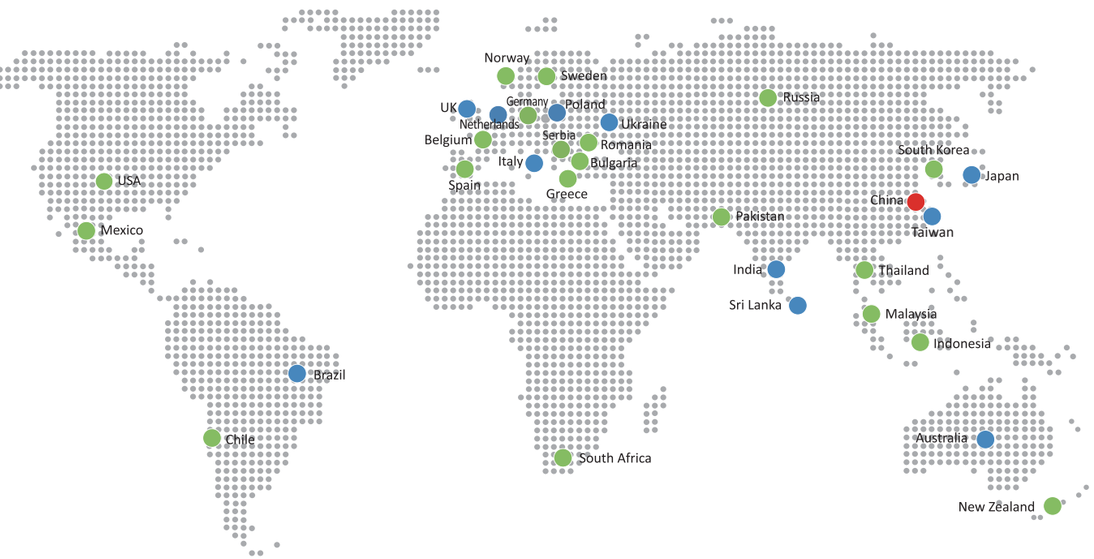
About Us

Afore is a leading PV inverter provider from China, with more than sixteen years dedicated experience in PV inverter R&D and manufacturing, Afore inverters have been installed in Europe, Australia, China, Taiwan, Sri Lanka, India, Japan, North America and South America, meeting the needs of global users.

We provide single and three-phase high-efficiency PV string inverters for a capacity of 1kW to 110kW, storage inverters (single phase 1-12kW, three phase 3-60kW, split phase 3-9.6kW, AC coupled), energy storage battery series (low voltage wall mounted series, high voltage stackable series) and all-in-one storage products. All of our inverters are integrated with smart monitoring system.

We offer not just good products, but also high-efficient local support to our partners and users throughout the inverter life span. Make sure the customers receive reliable returns by choosing Afore!

Global Market



Headquater Service Center Local Partner (Only the main ones are marked)

Contents

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

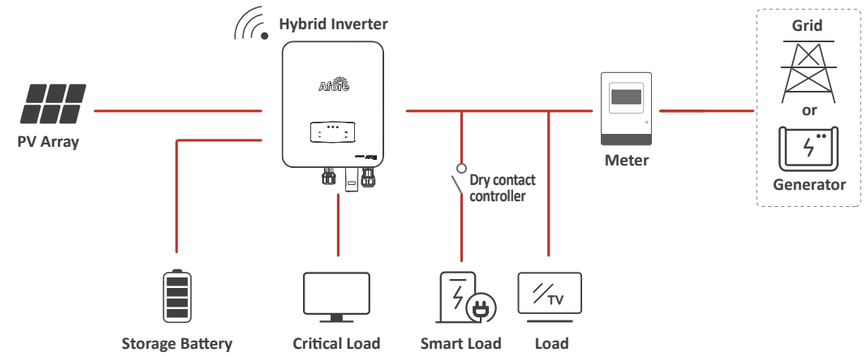
UPS FUNCTION
Switch Time < 10ms

PARALLEL
Max.6 Parallel Stacking

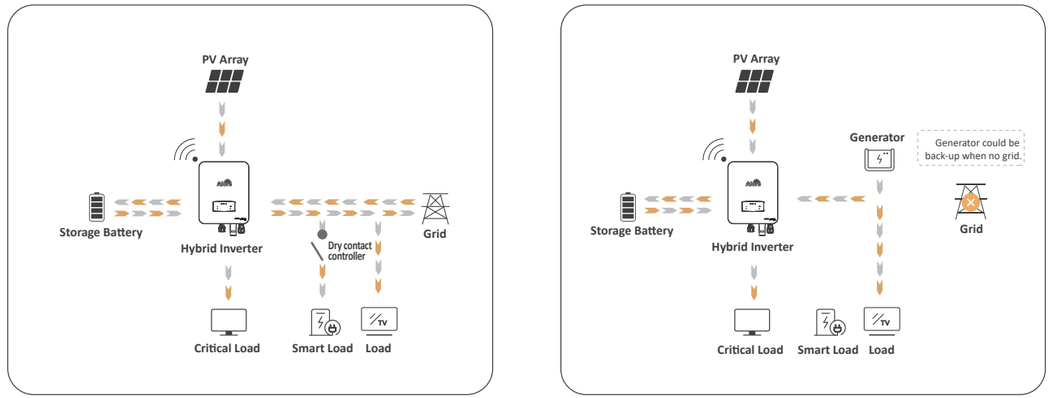
INPUT
Support Generator

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

For New Storage System:

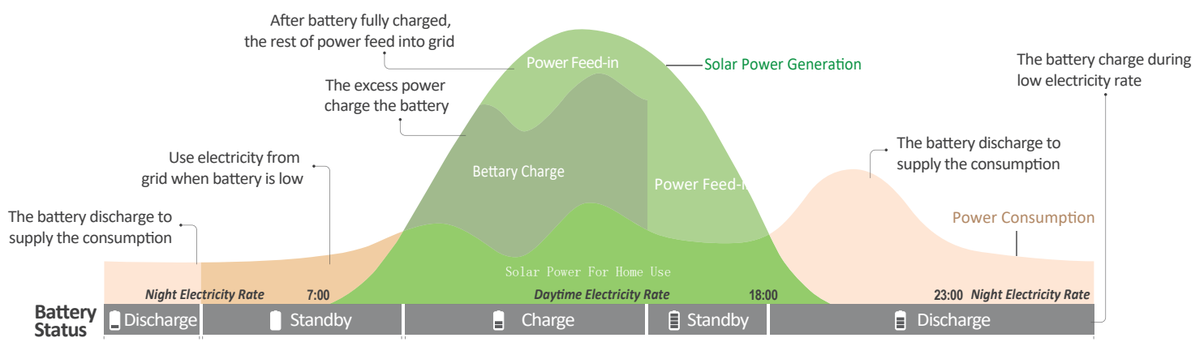


Optimizing Self-Consumption (on-grid) + Emergency Power Supply(off-grid)



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
PV Input				
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			
Battery Port				
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.			
AC Grid				
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			
AC Load Output				
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) (10s)	6.9 / 6.6	10.5 / 10.0	13.7 / 13.1	17.3 / 16.6
Max Peak Power (kVA) (10s)	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)	< 10			
Voltage THD (%)	< 3			
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			
Anti-Islanding Protection	Yes			
AC Short Circuit Protection	Yes			
Residual Current Detection	Yes			
Ground Fault Monitoring	Yes			
Insulation Resister Detection	Yes			
PV Arc Detection	Optional			
Enclosure Protect Level	IP66 / NEMA4X			
AC/DC surge protection	Type II			
General Data				
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
PV Input				
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	
Battery Port				
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.			
AC Grid				
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			
AC Load Output				
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) (10s)	20.5 / 19.6	24.6 / 23.5	20.5 / 19.6	24.6 / 23.5
Max Peak Power (kVA) (10s)	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)	< 10			
Voltage THD (%)	< 3			
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			
Anti-Islanding Protection	Yes			
AC Short Circuit Protection	Yes			
Residual Current Detection	Yes			
Ground Fault Monitoring	Yes			
Insulation Resister Detection	Yes			
PV Arc Detection	Optional			
Enclosure Protect Level	IP66 / NEMA4X			
AC/DC surge protection	Type II			
General Data				
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 (Optional)
- 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
PV Input					
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		
Battery Port					
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.		
AC Grid					
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		
AC Load Output					
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) (10s)	27.3 / 26.1	31.4 / 30	34.1 / 32.7	37.8 / 36.1	41.0 / 39.2
Max Peak Power (kVA) (10s)	6.0	6.9	7.5	8.3	9.0
Nominal AC Voltage L-N (V)			220 / 230		
Nominal AC Frequency (Hz)			50 / 60		
Switching Time (ms)			< 10		
Voltage THD (%)			< 3		

Efficiency	
CEC Efficiency (%)	97.0
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
Anti-Islanding Protection	Yes
AC Short Circuit Protection	Yes
Residual Current Detection	Yes
Ground Fault Monitoring	Yes
Insulation Resister Detection	Yes
PV Arc Detection	Optional
Enclosure Protect Level	IP66 / NEMA4X
AC/DC surge protection	Type II
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
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

Single Phase Hybrid Storage Inverter

8-12 kW

The Afore AF low voltage series storage Inverters are designed to increase energy independence for homeowners. The power range is from 8kW 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.

AI EMS
Electricity Pricing & Automation

MAX. 370A
Max. Charge/ Discharge Current 370A

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

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

Technical Data	AF8K-SLP	AF9K-SLP	AF10K-SLP	AF11K-SLP	AF12K-SLP
PV Input					
Max. Input Power (kW)	16	18	20	22	24
Max. PV Voltage (V)			900		
MPPT Range (V)			80 - 800		
Normal Voltage (V)			650		
Startup Voltage (V)			100		
Max. Input Current (A)			26 + 18.5		
Max. Short Current (A)			34 + 24		
No. of MPP Tracker / No. of PV String			2 / 3		
Battery Port					
Max. Power (kW) (10s)	12	13.5	15	16.5	18
Max. Current (A) (10s)	250	280	310	340	370
Max. Continuous Current (A)	175	200	220	240	270
Battery Normal Voltage (V)			51.2		
Battery Voltage Range (V)			40 - 60		
Battery Type			Li-ion / Lead-acid etc.		
AC Grid					
Max Continuous Current (A)	55 / 38.5	61.5 / 43.5	68.5 / 48	70 / 53	70 / 57.5
Max Continuous Power (kVA)	12 / 8	13.5 / 9	15 / 10	15 / 11	15 / 12
Nominal Grid Current (A)	36.4 / 34.8	41 / 39.2	45.5 / 43.5	50 / 47.9	54.6 / 52.2
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		
AC Load Output					
Max Continuous Current (A)	38.5	43.5	48	53	57.5
Max Continuous Power (kVA)	8	9	10	11	12
Max Peak Current (A) (10s)	55	61.5	68.5	75	82
Max Peak Power (kVA) (10s)	12	13.5	15	16.5	18
Nominal AC Voltage L-N (V)			220 / 230		
Nominal AC Frequency (Hz)			50 / 60		
Switching Time (ms)			< 10		
Voltage THD (%)			< 3		
Efficiency					
CEC Efficiency (%)			96.8		
Max. Efficiency (%)			98.1		
Protection					
PV Reverse Polarity Protection			Yes		
Over Current/Voltage Protection			Yes		
Anti-Islanding Protection			Yes		
AC Short Circuit Protection			Yes		
Residual Current Detection			Yes		
Ground Fault Monitoring			Yes		
Insulation Resister Detection			Yes		
PV Arc Detection			Optional		
Rapid Shut Down			Optional		
Enclosure Protect Level			IP66		
AC/DC surge protection			Type II		
General Data					
Dimensions (W x H x D, mm)			410 x 600 x 260		
Weight (kg)			35		
Topology			Transformerless		
Cooling			Intelligent Fan		
Relative Humidity			0 - 100 %		
Operating Temperature Range (°C)			-25 - 60		
Operating Altitude (m)			< 3000		
Standby Consumption (W)			< 40		
Mounting			Wall Bracket		
Communication with RSD			SUNSPEC		
Display & Communication Interfaces			LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec		

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	Optional
Ingress protection (IP)	IP66
Protective Class	Class I
Inverter Isolation	Non-isolated (PV - AC - BAT)
Overvoltage 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

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	-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℃ 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	-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℃ 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 Temperature	Charging	0~55°C
	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℃ 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

3-15 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 3kW to 15kW, 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. 470A
Max. Charge/ Discharge Current 470A

100% UNBALANCE
Support Unbalance Load

MPPT CHANNELS
Up to 2 MPPT Channels

UPS FUNCTION
Switch Time < 10ms

PARALLEL
Max.6 Parallel Stacking

INPUT
Support Generator

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

Technical Data	AF3K-TL	AF4K-TL	AF5K-TL	AF6K-TL	AF8K-TL	AF10K-TL	AF12K-TL	AF15K-TL
PV Input								
Max. Input Power (kW)	6	8	10	12	16	20	24	30
Max. PV Voltage (V)	900							
MPPT Range (V)	80 - 800							
Normal Voltage (V)	650							
Startup Voltage (V)	100							
Max. Input Current (A)	18.5 x 2					26 + 18.5		
Max. Short Current (A)	26 x 2					34 + 24		
No. of MPP Tracker / No. of PV String	2 / 1					2 / 2		
Battery Port								
Max. Power (kW) (10s)	4.5	6	7.5	9	12	15	18	18
Max. Current (A) (10s)	105	135	165	200	250	310	370	470
Max. Continuous Current (A)	70	90	110	135	175	220	270	330
Battery Normal Voltage (V)	51.2							
Battery Voltage Range (V)	40 - 60							
Battery Type	Li-ion / Lead-acid etc.							
AC Grid								
Max Continuous Current (A)	8 / 5.5	10.5 / 7	13 / 8.5	16 / 10.5	20 / 13.5	26 / 17	32 / 21.5	40.5 / 27
Max Continuous Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5
Nominal Grid Current (A)	4.6 / 4.4	6.1 / 5.8	7.6 / 7.3	9.1 / 8.7	12.2 / 11.6	15.2 / 14.5	18.2 / 17.4	22.8 / 21.8
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							
AC Load Output								
Max Continuous Current (A)	5.3	7	8.5	10.5	13.5	17	21.5	27
Max Continuous Power (kVA)	3	4	5	6	8	10	12	15
Max Peak Current (A) (10s)	7	9.5	11.5	14	18.5	23	27.5	34.5
Max Peak Power (kVA) (10s)	4.5	6	7.5	9	12	15	18	22.5
Nominal AC Voltage L-N (V)	380 / 400							
Nominal AC Frequency (Hz)	50 / 60							
Switching Time (ms)	< 10							
Voltage THD (%)	< 3							
Efficiency								
CEC Efficiency (%)	96.8							
Max. Efficiency (%)	98.1							
Protection								
PV Reverse Polarity Protection	Yes							
Over Current/Voltage Protection	Yes							
Anti-Islanding Protection	Yes							
AC Short Circuit Protection	Yes							
Residual Current Detection	Yes							
Ground Fault Monitoring	Yes							
Insulation Resister Detection	Yes							
PV Arc Detection	Optional							
Rapid Shut Down	Optional							
Enclosure Protect Level	IP66							
AC/DC surge protection	Type II							
General Data								
Dimensions (W x H x D, mm)	410 x 600 x 260							
Weight (kg)	35							
Topology	Transformerless							
Cooling	Intelligent Fan							
Relative Humidity	0 - 100 %							
Operating Temperature Range (°C)	-85							
Operating Altitude (m)	< 3000							
Standby Consumption (W)	< 40							
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. 18.5Adc
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 (Optional)
- Build in Anti-feed-in Function
- 100% unbalanced output, each phase
- Smart Monitoring & Remote Firmware Upgrade

Technical Data	AF3K-MTH	AF4K-MTH	AF5K-MTH	AF6K-MTH	AF8K-MTH	AF10K-MTH	AF12K-MTH	AF15K-MTH
PV Input								
Max. DC Input Power (kW)	6	8	10	12	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)	18.5x2							
Max. Short Current(A)	25 x2							
No. of MPPT Tracker / Strings	2/2							
Battery Port								
Battery Nominal Voltage (V)	350	350	350	350	350	350	450	500
Battery Voltage Range (V)	80-600							
Max. Charge/Discharge Current (A)	30							
Max. Charge/Discharge Power (kW)	3	4	5	6	8	10	12	15
Charging Curve	3 Stages							
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery							
AC Grid								
Nominal AC Output Power (kW)	3	4	5	6	8	10	12	15
Max. AC Input/Output Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5
Max. AC Output Current (A)	5.3	7	8.5	10.5	13.5	17	21.5	27
Nominal AC Voltage (V)	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 (kVA)	3	4	5	6	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)	4.4	5.8	7.3	8.7	11.6	14.5	17.4	21.8
Peak Output Power	3.3kVA, 60s	4.4kVA, 60s	5.5kVA, 60s	6.6kVA, 60s	8.8kVA, 60s	11kVA, 60s	13.2kVA, 60s	16.5kVA, 60s
THDV (with linear load)	<3%							
Switching Time (ms)	<10							
Efficiency								
Europe Efficiency	97.50%							
Max. Efficiency	98.00%				98.20%		98.30%	
Battery Charge/Discharge Efficiency	98.00%							
Protection								
Reverse Polarity Protection	Yes							
Over Current / Voltage Protection	Yes							
Anti-islanding Protection	Yes							
AC Short-ciruit 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							
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.

AI EMS
Electricity Pricing & Automation

BATTERY
Support Sodium metal chloride battery

WIDE RANGE
Voltage Range (150-800V)

100% UNBALANCE
Support Unbalance Load

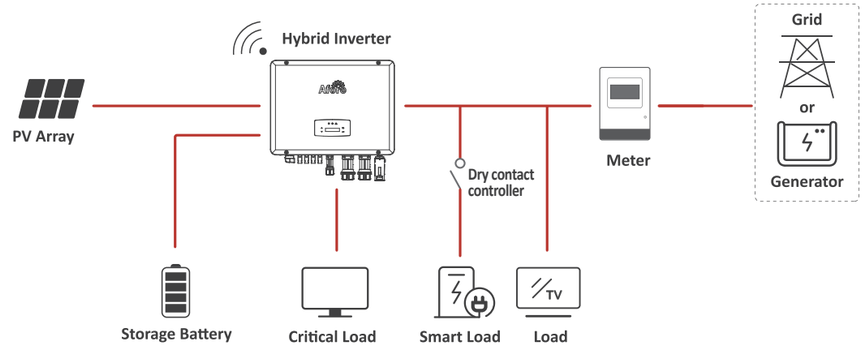
MAX. 40Adc
String Current Up To 40A

UPS FUNCTION
Switch Time < 10ms

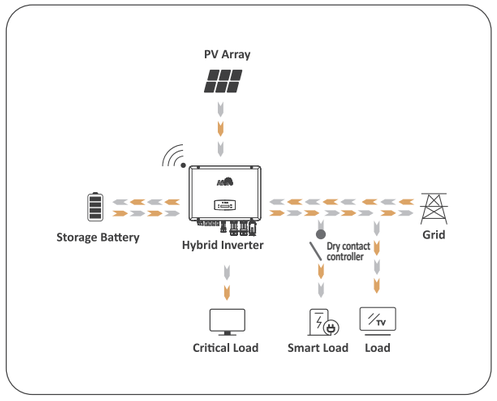
INPUT
Support Generator

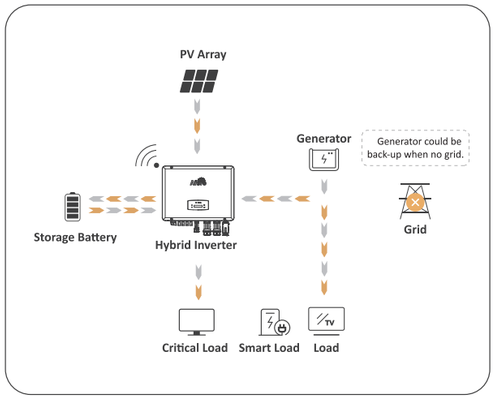
- Support for Time-of-use Optimization
- Configurable Operation Modes
- AFCI (Optional) & Rapid Shutdown Ready (Optional)
- Build in Anti-feed-in Function
- 100% unbalanced output, each phase; 200% unbalanced output, each phase (≤ 10kW)
- Smart Monitoring & Remote Firmware Upgrade

For New Storage System:



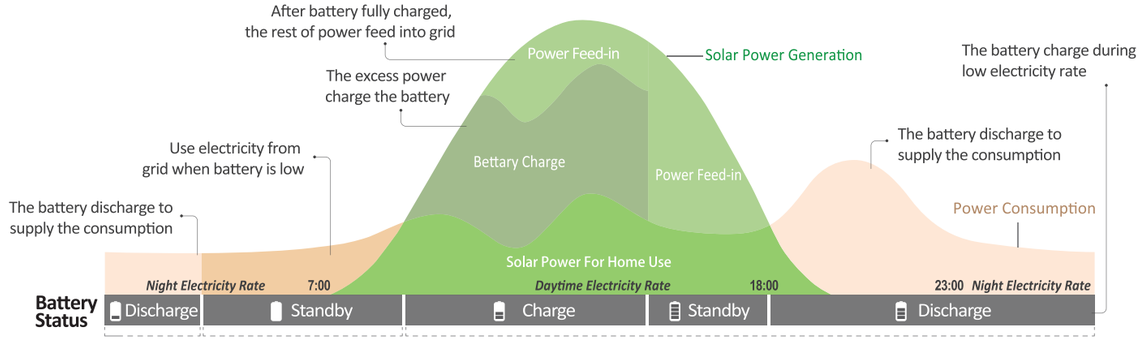
Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)





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-TH	AF4K-TH	AF5K-TH	AF6K-TH	AF8K-TH	AF10K-TH
PV Input						
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					
Battery Port						
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					
AC Grid						
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 Frenquency (Hz)	50/60					
Power Factor	1（-0.8-0.8 adjustable）					
Current THD (%)	<3%					
AC Load Output (Back-up)						
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					
Efficiency						
Europe Efficiency	97.50%					
Max. Efficiency	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-ciruit 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)	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
PV Input						
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	
Battery Port						
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					
AC Grid						
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 Frenquency (Hz)	50/60					
Power Factor	1（-0.8-0.8 adjustable）					
Current THD (%)	<3%					
AC Load Output (Back-up)						
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					
Efficiency						
Europe Efficiency	97.50%		97.80%		98.00%	98.10%
Max. Efficiency	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-ciruit 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)	558 x 535 x 260 mm					
Weight (kg)	29kg				36kg	
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	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.

AI EMS
Electricity Pricing & Automation

BATTERY
Support Sodium metal chloride battery

MIN. 80V
Battery Voltage Minimum 80V

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

100% UNBALANCE
Support Unbalance Load

MAX. 20Adc
String Current Up To 20A

UPS FUNCTION
Switch Time < 10ms

- Support for Time-of-use Optimization
- Configurable Operation Modes
- AFCI (Optional) & Rapid Shutdown Ready (Optional)
- Build in Anti-feed-in Function
- 100% unbalanced output, each phase; 200% unbalanced output, each phase (≤ 10kW)
- Smart Monitoring & Remote Firmware Upgrade

Technical Data	AF3K-THP	AF4K-THP	AF5K-THP	AF6K-THP	AF8K-THP	AF10K-THP	AF12K-THP
PV Input							
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						
Battery Port							
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						
AC Grid							
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 Frenquency (Hz)	50/60						
Power Factor	1（-0.8-0.8 adjustable）						
Current THD (%)	<3%						
AC Load Output (Back-up)							
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	8.8VA, 60s	11VA, 60s	13.2kVA, 60s
THDV (with linear load)	<3%						
Switching Time (ms)	<10						
Efficiency							
Europe Efficiency	97.50%						
Max. Efficiency	98.00%				98.20%		98.30%
Battery Charge/Discharge Efficiency	98.00%						
Protection							
Reverse Polarity Protection	Yes						
Over Current / Voltage Protection	Yes						
Anti-islanding Protection	Yes						
AC Short-ciruit 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)	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.

AI EMS
Electricity Pricing & Automation

BATTERY
Support Sodium metal chloride battery

WIDE RANGE
Voltage Range (150-800V)

100% UNBALANCE
Support Unbalance Load

MAX. 40Adc
String Current Up To 40A

UPS FUNCTION
Switch Time < 10ms

INPUT
Support Generator

- Support 280AH, 315AH battery system
- Support for Time-of-use Optimization
- Configurable Operation Modes
- AFCI (Optional) & Rapid Shutdown Ready (Optional)
- 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
PV Input					
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)			40x4		
Max. Short Current(A)			48x4		
No. of MPPT Tracker / Strings			4/8		
Battery Port					
Battery Nominal Voltage (V)			500		
Battery Voltage Range (V)			150-800		
Max. Charge/Discharge Current (A)			120		
Max. Charge/Discharge Power (kW)	36	40	45	50	60
Charging Curve			3 Stages		
Compatible Battery Type			Li-ion / Lead-acid / Sodium metal chloride battery		
AC Grid					
Nominal AC Output Power (kW)	36	40	45	50	60
Max. AC Input/Output Power (kVA)	54 / 39.6	60 / 44	67.5 / 49.5	75 / 55	90 / 66
Max. AC Output Current (A)	60.5	67	75.5	83.5	96
Nominal AC Voltage (V)			230/400		
Nominal AC Frenquency (Hz)			50/60		
Power Factor			1（-0.8-0.8 adjustable）		
Current THD (%)			<3%		
AC Load Output (Back-up)					
Nominal Output Power (kVA)	36	40	45	50	60
Nominal Output Voltage (V)			230/400		
Nominal Output Frequency (Hz)			50/60		
Max. AC Output Current (A)	60.5	67	75.5	83.5	96
Peak Output Power	39.6kVA, 60s	44kVA, 60s	49.5kVA, 60s	55kVA, 60s	66kVA, 60s
THDV (with linear load)			3%		
Switching Time (ms)			<10		
Efficiency					
Europe Efficiency	98.20%	98.30%	98.30%	98.30%	98.30%
Max. Efficiency			98.60%		
Battery Charge/Discharge Efficiency			99.00%		
Protection					
Reverse Polarity Protection			Yes		
Over Current / Voltage Protection			Yes		
Anti-islanding Protection			Yes		
AC Short-ciruit Protection			Yes		
Leakage Current Detection			Yes		
Ground Fault Monitoring			Yes		
Grid Monitoring			Yes		
Enclosure Protect Level			IP66		
AC/DC surge protection			Type II		
General Data					
Dimensions (W x H x D, mm)			867 x 715 x 306 mm		
Weight (kg)			81kg		
Topology			Transformerless		
Cooling Concept			Intelligent Fan		
Relative Humidity			0-100%		
Operating Temperature Range (°C)			-25 to 60 °C		
Operating Altitude (m)			<4000		
Standby Consumption (W)			<100		
Display & Communication Interfaces			LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G, Sunspec		
Certification & Approvals			EN50549-1, C10/C11, VDE-AR-N4105, IEC62109-1, IEC62109-2, IEC62477-1		
EMC			EN61000-6-2, EN61000-6-4		

Stack-mounted Residential ESS

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

Model	AF10000W-HN	AF15000W-HN	AF20000W-HN	AF25000W-HN	AF30000W-HN	AF35000W-HN	AF40000W-HN
Parameter							
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 ℃						
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
Parameter	
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

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.

AI EMS
Electricity Pricing & Automation

PV OVERSIZE
2 Times PV Oversize

MPPT CHANNELS
Up to 3 MPPT Channels

UPS FUNCTION
Switch Time < 10ms

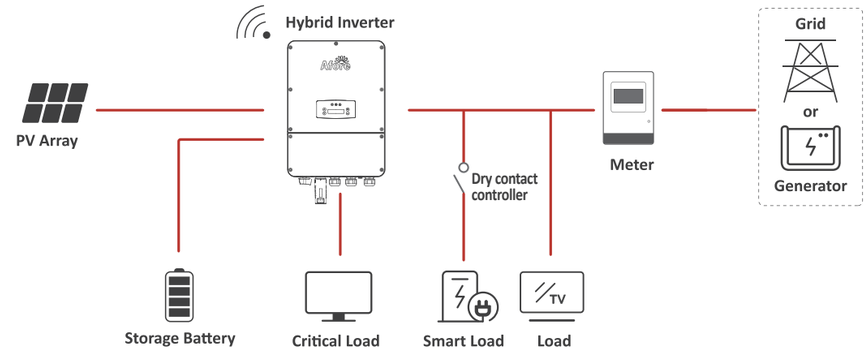
PARALLEL
Max.6 Parallel Stacking

INPUT
Support Generator

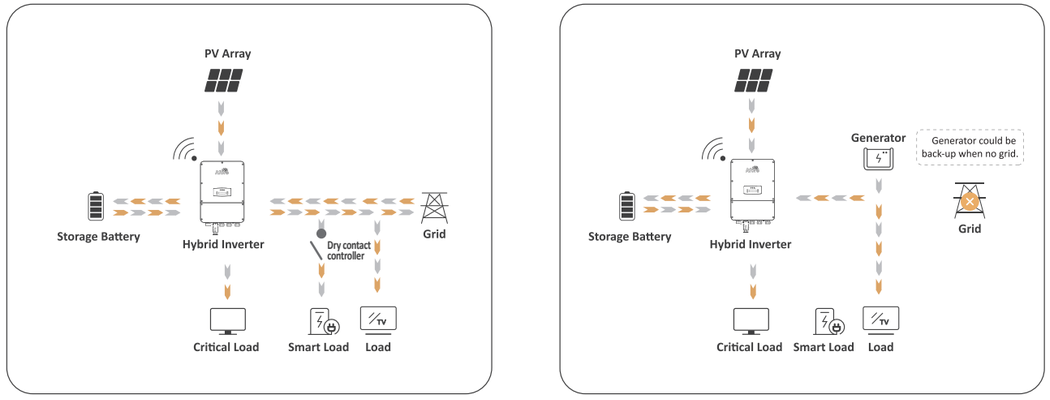
SPLIT-PHASE
Support Split-phase (120/240Vac) Grid

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

For New Storage System:

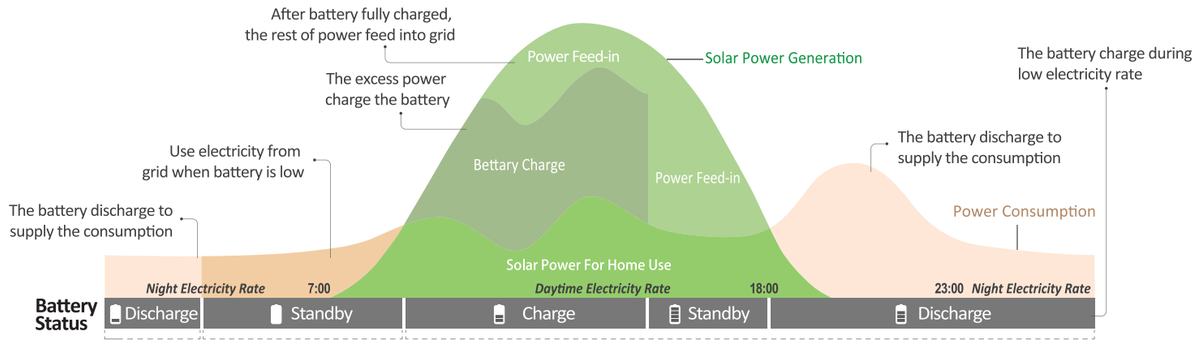


Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



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	AF3K-DH	AF3.6K-DH	AF4K-DH	AF4.6K-DH	AF5K-DH	AF5.5K-DH
PV Input						
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					
Battery Port						
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.					
AC Grid						
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					
Gen Input & AC Load Output						
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) (10s)	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) (10s)	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					
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					
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	Optional					
Rapid Shut Down	Optional					
Protection Degree	NEMA4X					
AC/DC surge protection	Type II					
General Data						
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	Tranformerless					
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
PV Input						
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				
Battery Port						
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.					
AC Grid						
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					
Gen Input & AC Load Output						
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) (10s)	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) (10s)	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					
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					
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	Optional					
Rapid Shut Down	Optional					
Protection Degree	NEMA4X					
AC/DC surge protection	Type II					
General Data						
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	Tranformerless					
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
PV Input Data														
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			
AC Output Data														
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%			
Efficiency														
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%
Protection														
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 Scaning	YES					YES					YES			
Quick Arc Fault Circuit interruption	Optional					Optional					Optional			
General Data														
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		18	
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		Intelligent fan cooling	
Night Power Consumption (W)	<0.2	<0.2	<1	<1	<1	<1					<1			
Max. Operation Altitude (m)	4000					4000					4000			
Certifications and Standards														
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

ATON SERIES

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
PV Input Data						
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					
AC Output Data						
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%					
Efficiency						
Max. Efficiency	98.30%					98.70%
Euro Efficiency	97.61%	97.65%	98.00%	98.05%		98.23%
Protection						
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 Scaning	YES					
Quick Arc Fault Circuit Interruption	Optional					
General Data						
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					
Certifications and Standards						
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
PV Input Data						
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	
Max. Short Current (A)	25 x 2		30 + 48		48 x 2	
No. of MPP Tracker / No. of PV String	2/2		2/3		2/4	
Input Connector Type	MC4					
AC Output Data						
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%					
Efficiency						
Max. Efficiency	98.70%				98.75%	
Euro Efficiency	98.23%				98.35%	
Protection						
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 Scaning	YES					
Quick Arc Fault Circuit Interruption	Optional					
General Data						
Dimensions (W x H x D, mm)	370 x 535 x 192					
Weight (kg)	16	17			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					
Certifications and Standards						
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.

MAX. 20Adc
String Current Up To 20A

PV OVERSIZE
Max. 1.5 Time
PV Oversize Input

PROTECTION
Multiple Intelligent Protections

ANTI-FLOW
Anti-Feed-in Function

Wi-Fi
Wi-Fi Standard, Ethernet/GPRS Optional

CONFIGURATION
Quick & Easy Config. via Wi-Fi

MODBUS
MODBUS Communication Ready

- MPPT efficiency > 99.9%
- Intelligent Temperature Control System
- Active and reactive power compensation, adjust power factor
- IP 68 Cooling Fan
- Type II DC & AC lightning protection
- AC output 1.1x continuous operation

Technical Data	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
PV Input Data					
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
Max. Short Current (A)	48 x 2	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
Input Connector Type	MC4				
AC Output Data					
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%				
Efficiency					
Max. Efficiency	98.50%	98.65%	98.65%	98.80%	99.00%
Euro Efficiency	98.10%	98.20%	98.25%	98.45%	98.50%
Protection					
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 Scaning	YES				
Quick Arc Fault Circuit Interruption	Optional				
General Data					
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				
Certifications and Standards					
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.

SMART
Intelligent string monitoring,
Smart I-V curve scan

PROTECTION
Type II DC &
AC Lighting Protection

MAX. 38Adc
String Current Up to 38A

PV OVERSIZE
>1.5 Time
PV Oversize Input

POWER FACTOR
Active and Reactive
Power Compensation

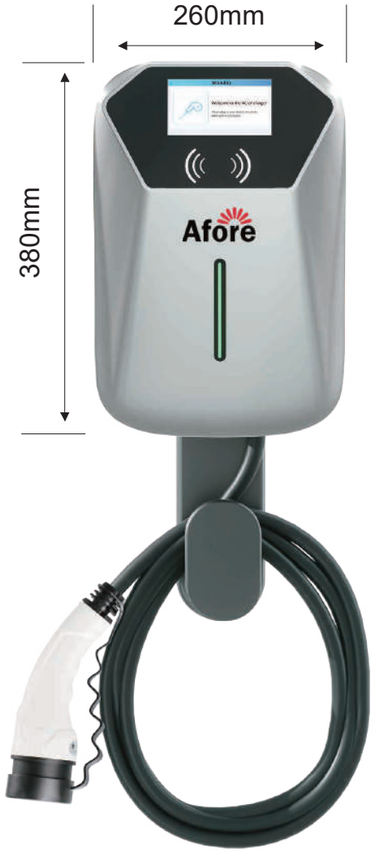
ANTI-FLOW
Anti-Feed-in Function

- 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
PV Input Data						
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					
AC Output Data						
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%					
Efficiency						
Max. Efficiency	99.00%					
Euro Efficiency	98.30%				98.40%	
Protection						
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 Scaning	YES					
Quick Arc Fault Circuit Interruption	Optional					
General Data						
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					
Certifications and Standards						
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					

EV Charger

AFCE7-32/11-16/22-32



7kW/11kW/22kW

IP65/IK08

APP Control

Smart Protections

TYPE 1

TYPE 2

Model	AFCE7-32	AFCE11-16	AFCE22-32
Parameter			
Power Supply	1P+N+PE	3P+N+PE	3P+N+PE
Rated Voltage	220-240V AC	380-415V AC	380-450V AC
Rated Current	Max 32A(6-32A adjustable)	Max 16A(6-16A adjustable)	Max 32A(6-32A adjustable)
Frequency	50/60Hz	50/60Hz	50/60Hz
Output Voltage	220-240V AC	380-415V AC	380-415V AC
Maximum Current	32A	16A	32A
Rated Power	7 kw	11kw	22 kw
Charging Port	Type 2 Cable / GBT Type Cable / Type 1 cable		
Cable Length	5/7/10 M Optional		
Cover Material	PC+Siloxane Alloy		
LED Indicator	Red/Blue/Green		
LCD Display	4.3" LCD Display		
RFID Reader	MIFARE ISO/IEC 14443-A		
Start Mode	Plug-in & Charge/RFID Card /APP		
Emergency Stop	Support		
Wifi	Optional		
3G/4G/5G	Optional		
Ethernet	Optional		
Bluetooth	Support		
Communication Protocol	OCPP1.6J (support upgrade to OCPP2.0) Optional		
Residual Current Protection	Type A+6mA DC (Equal to Type B) / Type A		
IP Degree	IP65		
Impact protection	IK08		
Multiple Protection	Over/Under Current Protection , Short Circuit Protection, Ground Protection , Surge Protection, Over/Under Voltage Protection, Over/Under Temperature Protection		
Certification Standard	EN IEC 61851-1:2019; EN 62752:2016/A1:2020， EN IEC 61851-21-2:2021; EN IEC 61000-6-1:2019 ， EN IEC 61000-6-3:2021		
Warranty	2 Years		
Installation	Wall-Mounting (Column Optional)		
Work Temperature	-30℃~50℃		
Storage Temperature	-40℃~70℃		
Work Humidity	5% -95%RH		
Work Altitude	<2000M		
Weight	3.9kgs	4.2kgs	5.2kgs
Optional Color	Silver/Dark Grey		
Standby Power	≤3W	≤6W	≤6W

PV Module Optimizer
650W/850W

By utilizing module-level power optimization technology, Afore module PV optimizer can recover power generation caused by module mismatch, including orientation, shading, soiling, snow remnant, bifacial application, etc. And increase the system power generation by 5% to 30%.

Higher Energy Yield

Module-level Monitoring

Rapid Shutdown (Optional)

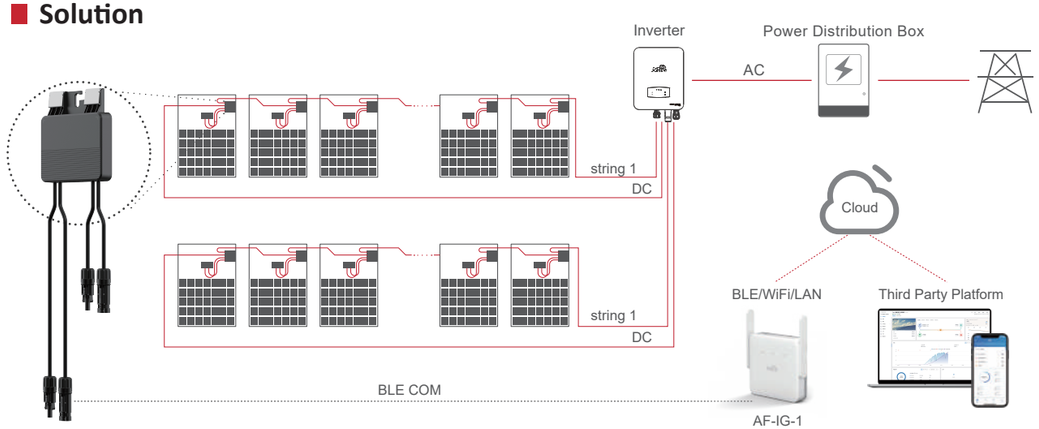
Easy Install & Config

Smart Monitoring & Troubleshooting

30-year Design Life

Model	AF-MPO650	AF-MPO850
Input Parameter		
Peak Conversion Efficiency	99.50%	99.50%
Rate Input Power	650Wp	850Wp
Max. Input Voltage	70V	70V
Max. Input Current	16A	20A
MPPT Voltage Range	10-70 V	10-70 V
Output Parameter		
Max. Output Power	650Wp	850Wp
Max. Output Voltage	65V	65V
Max. Output Current	16A	20A
COM Parameter		
Communication Type	BLE Mesh	BLE Mesh
Max. Distance	300m	300m
No. of Single Network Connection	300	300
Others		
Dimension (mm)	130.3*102.2*22.7	130.3*102.2*22.7
Weight (with cable-standard configuration)	711g	868g
Installation	Screw+Clip	Screw+Clip
Connector	NIU A4 max/QC/MC4	NIU A4 max/QC/MC4
Cable	4mm²/10-12AWG	4mm²/10-12AWG
Working Temperature	-40℃~+85℃	-40℃~+85℃
IP Grade	IP68	IP68
Certification Standard	CE/RoHs/REACH/TUV	CE/RoHs/REACH/TUV

Solution



PV Optimizer Gateway

AF-IG-1 is specially designed for residential, small-sized C&I scenario with multiple device access. It supports diverse device types, such as module PV optimizers, inverters, batteries, meters, and etc. It supports data transmission via Ethernet and WiFi. This helps users improve the efficiency of remote monitoring and management.

Bluetooth Network | **Real-Time Monitoring** | **Remote Updates** | **Ethernet & WiFi** | **Data-Driven O&M** | **Certified Iot Security**

Model	AF-IG-1
Communication Parameters	
LoRa Operating Frequency	868MHz
Ethernet	1 channel 10/100M adaptative
WiFi Specification	WiFi 6（IEEE802.11b/g/n/ax）
WiFi Operationg Frequency	2400 ~ 2483.5MHz
BLE Standard	BLE 5.3
BLE Operating Frequency	2400 ~ 2483.5MHz
BLE Mesh Standard	BLE 5.0
BLE Mesh Operating Frequency	2.402GHz-2.480GHz
Antenna Type	External/internal antenna
Hardware Parameters	
Size (L×W ×H)	122.5mm×90mm×24.5mm
Installation	Wall Mounted/Flat
Operating Voltage	DC 5V±5%
Operating Power	＜4W
External Interface	RJ45 Ethernet port, RJ45 port (no light) with RS485 interface, TypeC power input port
Input Power	5V 2A
Reset Button	× 1
Indicator Light	LoRa status indicator light Server connection status indicator light Serial port connection indicator light
Data Storage	Default configuration 8MB
Operating Temperature	-20℃~+50℃
Operating Humidity	10%-70% RH no condensation
Storage Temperature	-40℃~+90℃
Storage Humidity	<40% RH no condensation
Software Parameters	
Access Number of Optimizer via BLE Mesh	300 Units
Serial Port Communication Rate	Default: 9600bps (1200-115200bps configurable)
Data Upload Frequency	Default: 5 minutes
User Configuration	Local/Remote configuration
Firmware Upgrade	Remote upgrade
Reboot Mechanism	Software and hardware watchdog timer
Breakpoint Resuming	Supported

R290 Monoblock Heat Pump

Full-DC Inverter Air-Water

The Afore ThermaX R290 Monobloc Air Source Heat Pump uses the eco-friendly R290 refrigerant, achieving A+++ efficiency and a SCOP above 5.0. It is available with a single or dual fan and delivers heating capacities from 6kW to 22kW to suit a wide range of heating needs.

It provides stable, reliable performance, features Wi-Fi smart control, and operates with ultra-low noise, ensuring year-round comfort and convenience.

DC Inverter
High efficiency Full DC Inverter technology

Wi-Fi Smart Control
Intelligent remote control via Wi-Fi

−25 °C
Reliable operation down to −25 °C

75 °C
Maximum outlet water temperature 75°C

Monoblock
One-piece design for easy installation

Smart Grid
Compatible with Smart Grid systems

Ultra-Low Noise
Ultra-quiet operation

- Intelligent scheduling and load management
- Configurable operating modes for heating, cooling, and DHW
- Optimized low-noise operation
- One-piece design with simplified installation
- Intelligent monitoring and remote parameter management
- Thermal disinfection function for ACS

Technical data

Model			AF-P6-B	AF-P9-B	AF-P12-B	AF-P15-B	AF-P10-TB	AF-P15-TB	AF-P18-TB	AF-P22-TB
Power supply		V/Ph/Hz	220-240/1/50				380-415/3/50			
Heating[1]	Capacity	kW	6.45	9.00	12.00	15.00	12.00	15.00	18.00	22.00
	Rated input	kW	1.32	1.86	2.53	3.33	2.53	3.33	3.83	4.94
	COP	/	4.90	4.85	4.75	4.50	4.75	4.50	4.70	4.45
Heating[2]	Capacity	kW	6.65	9.00	12.00	15.00	12.00	15.00	18.00	22.00
	Rated input	kW	1.73	2.43	3.33	4.29	3.33	4.29	4.80	6.20
	COP	/	3.85	3.70	3.60	3.50	3.60	3.50	3.75	3.55
Heating[3]	Capacity	kW	6.30	9.00	12.00	15.00	12.00	15.00	18.00	22.00
	Rated input	kW	1.97	2.86	4.00	5.26	4.00	5.26	5.71	7.21
	COP	/	3.20	3.15	3.00	2.85	3.00	2.85	3.15	3.05
Cooling[4]	Capacity	kW	6.50	9.00	12.00	15.00	12.00	15.00	18.00	20.00
	Rated input	kW	1.31	1.91	2.61	3.57	2.61	3.57	3.88	4.59
	EER	/	4.95	4.70	4.60	4.20	4.60	4.20	4.64	4.36
Cooling[5]	Capacity	kW	6.00	9.00	12.00	14.00	12.00	14.00	18.00	20.00
	Rated input	kW	1.90	2.95	4.00	4.91	4.00	4.91	5.81	7.02
	EER	/	3.15	3.05	3.00	2.85	3.00	2.85	3.10	2.85
Seasonal space heating energy efficiency class[6]	Outlet water temp. at 35°C	/	A+++						A+++	
	Outlet water temp. at 55°C	/	A++						A+++	
Refrigerant	Type (GWP)	/	R290 (3)							
	Charged volume	kg	0.7	0.92	1.4				2.17	
Sound power level[7] (ERP)		dB	52	55	56	57	56	57	55	56
Sound pressure level[7] (1 m) (ERP)		dB(A)	39	42	43	44	43	44	42	43
Sound power level[7] (day mode)		dB	64	67	69	71	69	71	69	71
Sound pressure level[7] (1 m) Day		dB(A)	50	53	55	57	55	57	55	56
Net dimensions (W × D × H)		mm	1000*450*725	1000*520*857					1218*497*1568	
Packaging dimension (W × D × H)		mm	1110*475*870	1180*560*1005					1330*590*1721	
Net weight / Gross weight		kg	75/89	100/117	117/134		125/142		185/210	
Water piping connection		mm	R1"		R1-1/4"					
Ambient temp. range	Cooling	°C	-5 ~ 43							
	Heating	°C	-25 ~ 35							
	Domestic hot water	°C	-25 ~ 43							
Outlet water temp. setting range	Cooling	°C	5 ~ 25							
	Heating	°C	25 ~ 75							
	Domestic hot water	°C	20 ~ 70							
Backup electric heater[8]	Optional installation	kW	3/9	3/9	3/9	3/9	3/9	3/9	3/9	3/9
	Power steps	/	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Power Supply 3 kW	V/Ph/Hz	220-240/1/50							
	Power Supply 6 kW	V/Ph/Hz	380-415/3/50							

Note

1. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 30°C, Water outlet 35°C;
2. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 40°C, Water outlet 45°C;
3. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 47°C, Water outlet 55°C;
4. Outdoor air temperature 35°C DB; Water inlet 23°C, Water outlet 18°C;
5. Outdoor air temperature 35°C DB; Water inlet 12°C, Water outlet 7°C;
6. Seasonal space heating energy efficiency class testes in average climate general conditions.
7. Testing standard: EN12102-1.
8. Backup electric heater is external installation
9. Relevant EU standards and legislation:
   EN 14511;
   EN 14825;
   EN 50564;
   EN 12102;
   (EU) No. 811/2013;
   (EU) No. 813/2013;
   OJ 2014/C 207/02:2014.

R290 Monoblock Heat Pump

Full-DC Inverter Air-Water with Hydro Box

Categories Air Source Heat Pump, R290, Residential Heat Pump

The Afore ThermaX R290 Monobloc Air Source Heat Pump uses the eco-friendly R290 refrigerant, achieving A+++ efficiency and a SCOP above 5.0. It is available with a single or dual fan and delivers heating capacities from 9kW to 15kW to suit a wide range of heating needs.

It provides stable, reliable performance, features Wi-Fi smart control, and operates with ultra-low noise, ensuring year-round comfort and convenience.

DC Inverter
High efficiency Full DC Inverter technology

Wi-Fi Smart Control
Intelligent remote control via Wi-Fi

−25 °C
Reliable operation down to −25 °C

75 °C
Maximum outlet water temperature 75°C

Monoblock
One-piece design for easy installation

Smart Grid
Compatible with Smart Grid systems

Ultra-Low Noise
Ultra-quiet operation

- Intelligent scheduling and load management
- Configurable operating modes for heating, cooling, and DHW
- Optimized low-noise operation
- One-piece design with simplified installation
- Intelligent monitoring and remote parameter management
- Thermal disinfection function for ACS

HyQube series

			AF-P9-A	AF-P12-TA	AF-P15-TA
Power supply		V/Ph/Hz	220-240/1/50	380-415/3/50	
Heating[1]	Capacity	kW	9.00	12.00	15.00
	Rated input	kW	1.86	2.53	3.33
	COP	/	4.85	4.75	4.50
Heating[2]	Capacity	kW	9.00	12.00	15.00
	Rated input	kW	2.43	3.33	4.29
	COP	/	3.70	3.60	3.50
Heating[3]	Capacity	kW	9.00	12.00	15.00
	Rated input	kW	2.86	4.00	5.26
	COP	/	3.15	3.00	2.85
Cooling[4]	Capacity	kW	9.00	12.00	15.00
	Rated input	kW	1.91	2.61	3.57
	EER	/	4.70	4.60	4.20
Cooling[5]	Capacity	kW	9.00	12.00	14.00
	Rated input	kW	2.95	4.00	4.91
	EER	/	3.05	3.00	2.85
Seasonal space heating energy efficiency class[6]	Outlet water temp. at 35°C	/	A+++		
	Outlet water temp. at 55°C	/	A++		
Refrigerante	Type (GWP)	/	R290 (3)		
	Charged volume	kg	0.92	1.4	1.4
Sound power level[7] (ERP)		dB	55	56	57
Sound pressure level[7] (1 m) (ERP)		dB(A)	42	43	44
Sound power level[7] (day mode)		dB	67	69	71
Sound pressure level[7] (1 m) Day		dB(A)	53	55	4.2
Net dimensions (W × D × H)		mm	1080 × 520 × 857		
Packaging dimension (W × D × H)		mm	1180 × 560 × 1005		
Net weight / Gross weight		kg	100 / 117	125 / 142	
Water piping connection		mm	R1"	R1-1/4"	
Ambient temp. range	Cooling	°C	-5 ~ 43		
	Heating	°C	-25 ~ 35		
	Domestic hot water	°C	-25 ~ 43		
Outlet water temp. setting range	Cooling	°C	5 ~ 25		
	Heating	°C	25 ~ 75		
	Domestic hot water	°C	20 ~ 70		

Hydro Box

Model		AF-P8-C
Power Supply	V/Ph/Hz	380 – 415 / 3 / 50
Space Heating water temp. Range	°C	25 ~ 75
Space Cooling water temp. Range	°C	5 ~ 25
Operation Ambient temp. Range	°C	-25 ~ 43
Water Connection	inch	1"
Water Pressure (Max)	bar	3
Water Pump Type	/	Shimge / DC Inverter / 9 m Head
Water Flow	L/min	6
Electric heater	kW	3 / 6 / 9 kW – 3 Levels
3 way valve	inch	1"
Sound Pressure Level at 1 meter	dB(A)	28
Net Dimension (L×W×H)	mm	1200 × 620 × 200
Gross Dimensions (L×W×H)	mm	1275 × 710 × 255
Net weight / Gross weight	kg	41 / 52

Note

1. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 30°C, Water outlet 35°C;
2. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 40°C, Water outlet 45°C;
3. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 47°C, Water outlet 55°C;
4. Outdoor air temperature 35°C DB; Water inlet 23°C, Water outlet 18°C;
5. Outdoor air temperature 35°C DB; Water inlet 12°C, Water outlet 7°C;
6. Seasonal space heating energy efficiency class testes in average climate general conditions.
7. Testing standard: EN12102-1.
8. Backup electric heater is external installation
9. Relevant EU standards and legislation:
   EN 14511;
   EN 14825;
   EN 50564;
   EN 12102;
   (EU) No. 811/2013;
   (EU) No. 813/2013;
   OJ 2014/C 207/02:2014.

All-in-One Air-to-Water Heat Pump

Full-DC Inverter Air-Water

RoHS compliant

The R290 All-in-One Air-to-Water Heat Pump is a split system designed for the European market, combining an outdoor heat pump unit with an indoor all-in-one hydraulic module that integrates buffer tank, DHW tank, pumps, valves, expansion vessels, and intelligent control.

By moving the entire water circuit indoors and keeping the refrigerant system outdoors, this solution delivers high safety, fast installation, and professional serviceability, while meeting Europe's growing demand for low-GWP, high-efficiency heat pump systems.

- Intelligent scheduling and load management
- Configurable operating modes for heating, cooling and DHW
- Optimized low-noise operation
- One-piece design with simplified installation
- Intelligent monitoring and remote parameter management
- Thermal disinfection function for ACS

DC Inverter
High efficiency Full DC Inverter technology

LCD Display
Display touchscreen LCD a colori

Wi-Fi Smart Control
Intelligent remote control via Wi-Fi

−25 °C
Reliable operation down to −25 °C

75 °C
Maximum outlet water temperature 75°C

Monoblock
One-piece design for easy installation

Smart Grid
Compatible with Smart Grid systems

Ultra-Low Noise
Ultra-quiet operation

Technical data

		AF-P8-C	AF-P10-C	AF-P12-C
Outdoor Unit(R290 DC Inverter Heating&Cooling&DHW Heat Pump):				
Prated Heating Capacity for SCOP Average Climate	kW	8.03	9.88	11.75
Pmax Heating Capacity @ AT: 7°C/6°C, WT: 30°C/35°C	kW	12	14	16
[Space Heating] Ambient Temp. (DB/WB): 7°C/6°C, Water Temp. (Inlet/Outlet): 30°C/35°C.				
Heating capacity	kW	3.07~8.11	4.05~10.29	4.53~12.01
Power input	kW	0.54~1.74	0.71~2.17	0.82~2.72
COP	/	5.68~4.66	5.70~4.73	5.54~4.42
[Space Heating] Ambient Temp. (DB/WB): 2°C/1°C, Water Temp. (Inlet/Outlet): 30°C/35°C.				
Heating capacity	kW	2.61~8.05	3.25~10.25	3.85~12.02
Power input	kW	0.49~1.98	0.60~2.47	0.73~3.04
COP	/	5.33~4.06	5.42~4.15	5.27~3.95
[Space Heating] Ambient Temp. (DB/WB): -7°C/ -8°C, Water Temp. (Inlet/Outlet): 30°C/35°C.				
Heating capacity	kW	1.69~7.96	2.10~9.32	2.49~11.65
Power input	kW	0.42~2.69	0.53~3.07	0.67~4.12
COP	/	4.00~2.96	3.98~3.03	3.71~2.83
[Space Heating] Ambient Temp. (DB/WB): 7°C/6°C, Water Temp. (Inlet/Outlet): 40°C/45°C.				
Heating capacity	kW	2.87~7.75	3.57~9.66	4.24~11.45
Power input	kW	0.62~2.09	0.78~2.63	0.99~3.34
COP	/	4.60~3.71	4.57~3.67	4.26~3.43
[Space Heating] Ambient Temp. (DB/WB): 7°C/6°C, Water Temp. (Inlet/Outlet): 47°C/55°C.				
Heating capacity	kW	2.67~7.07	3.33~9.05	3.94~11.01
Power input	kW	0.66~2.28	0.82~2.90	1.05~3.57
COP	/	4.06~3.10	4.04~3.12	3.76~3.08
[Space Cooling] Ambient Temp. (DB/WB): 35°C/24°C, Water Temp. (Inlet/Outlet): 23°C/18°C.				
Cooling capacity	kW	3.56~8.61	4.43~11.52	5.26~13.25
Power input	kW	0.56~2.54	0.70~3.36	0.89~4.11
EER	/	6.40~3.39	6.35~3.43	5.92~3.22
[Hot Water] Ambient Temp. (DB/WB): 20°C/15°C, Water Temp. from 15°C to 55°C.				
Heating capacity	kW	4.35	6.38	6.85
Power input	kW	0.96	1.48	1.61
COP	/	4.52	4.31	4.26
Max. Power input	kW	3.25	3.58	4.83
Max. Running current	A	14.10	15.60	21.00
Max. Outlet water temp.	°C		75	
Heating operating ambient temp. Range	°C		−25 ~ 43	
Cooling operating ambient temp. Range	°C		−5 ~ 43	
Power supply	/		220–240V ~ 50Hz	
Rated water flow	m³/h	1.39	1.70	2.02
Water pressure drop	kPa	10.8	17.3	22.3
Chassis heater	/		Yes	
Crankcase heater for compressor	/		Yes	
Plate heat exchanger heater	/		Yes	
Heater for expansion tank connecting pipe	/		Yes	
Expansion tank	L		5	
Compressor	/		Mitsubishi	
Circulating pump	/		SHIMGE	
Fan quantity	/		1	
Display	/		7 inch	
Wi-fi function	/		Yes	
Erp level (35°c)	/		A+++	
erp level (55°c)	/		A++	
erp level for dhw	/		A	
Refrigerant type	/		R290	
Sound pressure level at 1m	dB(A)	36~44	40~46	40~47
Sound power level	dB(A)	51~58	55~61	55~62
Water pipe connection	mm		G1"	
Water proof class	/		IPX4	
Net weight (kg)	kg	112	126.5	126.5
gross weight (kg)	kg	123	137	137
net dimensions(LxWxH)	mm		1257×440×892	
packing dimensions (LxWxH)	mm		1320×453×1008	

Technical data

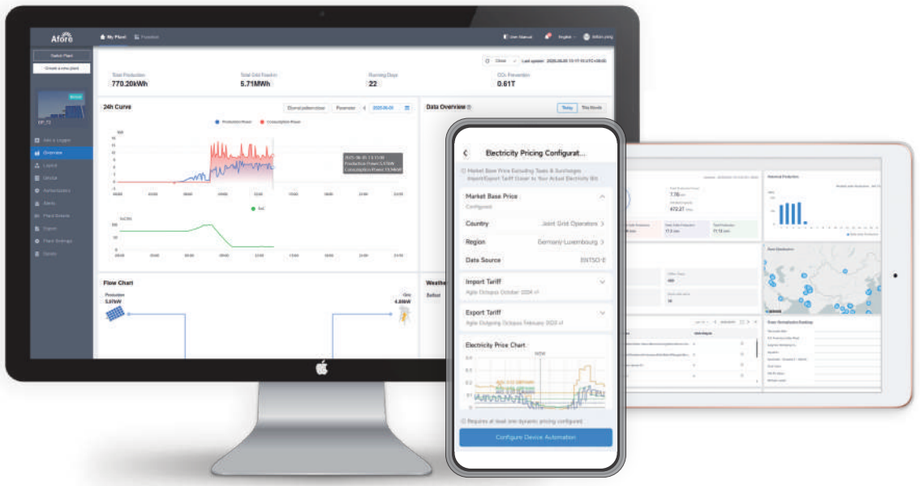
		AF-P8-C	AF-P10-C	AF-P12-C
Connections and Performance				
DHw Tank Supply Port	/		G3/4"	
DHW Tank Return Port	/		G1/2"	
Buffer Tank Supply/Return Port	/		G1"	
Heat Pump Supply/Return Port	/		G1"	
Water Refill Port	/		G3/4"	
Dimensions of DHW Heating Coil	m		Φ32 × 20	
Maximum Power [including Water Pump	kW		6.5	
Maximum Current [including Water Pump	A		28.26	
Sound Pressure Level at Im	dB(A)		36	
Sound Power Level	dB(A)		21	
Net Dimensions (LxWxH)	mm		597×620×2110	
Packing Dimension (LxWxH)	mm		647×670×2120	
Stop Valve for Expansion Tank	/		Yes	
Stop Valve for DHw Tank	/		Yes	
Stop Valve for Buffer Tank	/		Yes	

Nota

1. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 30°C, Water outlet 35°C;
2. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 40°C, Water outlet 45°C;
3. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 47°C, Water outlet 55°C;
4. Outdoor air temperature 35°C DB; Water inlet 23°C, Water outlet 18°C;
5. Outdoor air temperature 35°C DB; Water inlet 12°C, Water outlet 7°C;
6. Seasonal space heating energy efficiency class testes in average climate general conditions.
7. Testing standard: EN12102-1.
8. Backup electric heater is external installation
9. Relevant EU standards and legislation:
   EN 14511;
   EN 14825;
   EN 50564;
   EN 12102;
   (EU) No. 811/2013;
   (EU) No. 813/2013;
   OJ 2014/C 207/02:2014.

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 Sytem Information Push

Multiple Systems In One Account

PC Browser Andriod And Ios

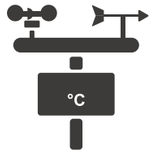
Real-time/ Historical Data Monitoring And Analysis

System Income Calculation

Wi-Fi / Ethernet / GPRS Data Sticker

Power Plant Data Logger

Zero injection Smart Meter(optional)



Weather Station

Global Projects


All In One Energy Storage System Italy


4kW Tunisia


9.9kW 49.5kW Hiroshima, Japan


60kW 240kW Sri Lanka


5kW Netherlands


10kW Sri Lanka

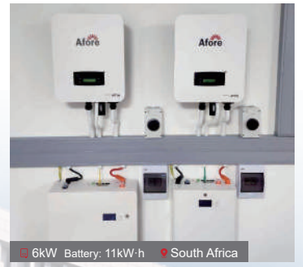
5kW UK


5kW 30kW Poland


3883kW Bahrain International Circuit


30kW Italy


6kW Italy


6kW Battery: 11kW·h South Africa


9.6kW Battery: 52kW·h 48kW Jamaica


9.9kW Battery: 85.2kW·h 59.4kW Japan


6kW Battery: 10kW·h Vietnam


8.25kW Battery: 10kW·h Japan


6kW Battery: 8kW·h UK