



ABI SOLAR BALKAN

Nemanjina 12

Ban .Karlovac

0668101080

[www.abisolar.rs](http://www.abisolar.rs)

[sales@abisolar.rs](mailto:sales@abisolar.rs)



**PV String Inverter**  
**PV Storage Inverter**



## About Us

Afore je vodeći dobavljač PV invertera iz Kine, sa više od dvanaest godina posvećenog iskustva u istraživanju i razvoju PV invertera i proizvodnji, Afore invertori su instalirani u Evropi, Australiji, Kini, Indiji, Japanu, Severnoj Americi i Južnoj Americi, susrećući se sa potrebe globalnih korisnika.

Pružamo mono i trofazne visokoeфикаsne PV pretvarače za kapacitet od 1kV do 60kV, skladišne pretvarače i sve-u-jednom proizvode za skladištenje. Svi naši pretvarači su integrisani sa pametnim sistemom za nadzor.

Našim partnerima i korisnicima nudimo ne samo dobre proizvode, već i visokoeфикаsnu lokalnu podršku tokom čitavog životnog veka invertera. Uverite se da kupci dobijaju pouzdane povrate tako što ćete izabrati Afore!



**2010**

Afore New Energy Technology (Shanghai) Co. Ltd. was established.

**2011**

Afore inverter was installed in China's first residential solar PV system.

**2012**

Afore inverter showed up in Secrets of PV War, one episode of a large studio TV program Dialogue on CCTV-2.

**2013**

Afore was identified as high-tech enterprise by Shanghai government and becomes a member of Shanghai Solar Energy Society.

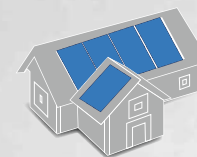
**2014**

Sales amount got continuous growth in Europe, Asia, Australia and other regions.

**2015**

The first light-weighted design three-phase PV string inverter (10 - 30kW) .

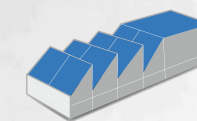
## Contents



### Monofazni PV Pretvarači

#### Stambeni sistemi

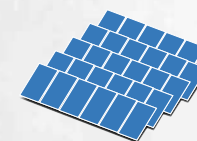
HNS1000TL-1, HNS1500TL-1, HNS2000TL-1, HNS2500TL-1, HNS3000TL-1, HNS3000TL, HNS3600TL, HNS4000TL, HNS5000TL, HNS6000TL, HNS7000TL, HNS8000TL, HNS9000TL, HNS10000TL



### Trofazni PV Pretvarači

#### Stambeni sistemi i mala preduzeća

BNT003KTL, BNT004KTL, BNT005KTL, BNT006KTL, BNT008KTL, BNT010KTL, BNT012KTL, BNT015KTL, BNT017KTL, BNT020KTL, BNT025KTL



### Trofazni PV Pretvarači

#### Preduzeća i solarne elektrane

BNT030KTL, BNT036KTL, BNT040KTL, BNT050KTL, BNT060KTL



### Hibridni Pretvarači

#### Stambeni sistemi

AF3K-DH, AF3.6K-DH, AF4K-DH, AF4.6K-DH, AF5K-DH, AF5.5K-DH, AF6K-DH, AF7K-DH, AF7.6K-DH, AF8K-DH, AF8.6K-DH, AF9.6K-DH

AF1k-SL-1, AF1.5k-SL-1, AF2k-SL-1, AF2.5k-SL-1, AF3k-SL-1, AF3.6k-SL-1, AF3k-SL, AF3.6k-SL, AF4k-SL, AF4.6k-SL, AF5k-SL, AF5.5k-SL, AF6k-SL

AF3K-T, AF4K-T, AF5K-T, AF6K-T, AF8K-T, AF10K-T, AF12K-T, AF15K-T, AF17K-T, AF20K-T

Battery Bank, All-in-one Solution



### Podrška monitoringu

Monitoring moduli, Monitoring usluge, Monitoring interfejs



49.5kw Fukuoka ,Japan



49.5kw Hiroshima, Japan



1.5MW Jiangsu,China



15kw Perth, Australia



15kw Perth, Australia



800kw Dongtai, China



2.0kw Dorchester, UK



2.0MW Jiangsu,China

0.8MW Dongtai, China



1.5MW Jiangsu,China



49.5kw Fukuoka ,Japan



4.0kw Cambridge, UK



1.3MW Dongtai, China



50kw Poland

## 2016

Successful launched 6.0-8.0kW single-phase PV inverters, continues to expand market share.

## 2017

Three phase 50-60kw inverters are launched, which have the highest water-proofing level IP68 fan in the industry.

## 2018

The 5th Generation Inverters and Hybrid Inverter (3-5kW) launched.

## 2019

Single-phase low-voltage hybrid storage inverter launched.

## 2020

The 6th Generation Inverters and single-phase high-voltage hybrid storage inverter launched.

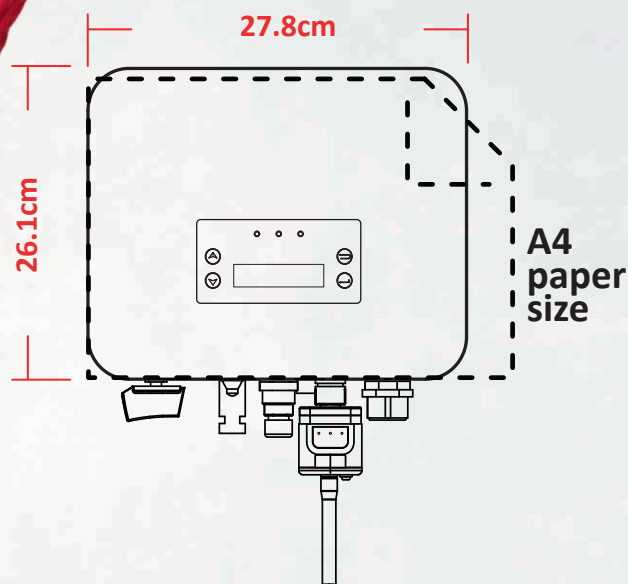
## 2021

ATON series three phase inverter 3-25kW and US Hybrid Storage Inverter 3-9.6kW launched.

Stambeni sistemi

# HNS-TL1

1-3 kW



Monofazni invertori serije Afore HNS su dizajnirani za stambene aplikacije PV sistema, snage od 1kW do 3kW. Svi modeli imaju jednostruko kućište sa aluminijumskom strukturom koja je eloksirana, što povećava izdržljivost i efikasno sprečava koroziju. Kućište od jednog tela može da obezbedi efikasno rasipanje toplote, što značajno poboljšava pouzdanost i produžava vek trajanja pretvarača.

Meni pretvarača se aktivira pomoću tastera na dodir senzora. Komunikacija uređaja je preko Wi-Fi modula (može se promeniti na Ethernet / GPRS). Proverite status sistema bilo kada i bilo gde preko onlajn portala ili APP-a.



**ANTI-FLOW**  
Anti-Feed-in Function

**Max.  
1.5**

**PV OVERSIZE**  
Max. 1.5 time  
PV Oversize Capacity



**PROTECTION**  
Multiple intelligent  
Protections



**SMART**  
Smart IV Curve Scanning



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



**CONFIGURATION**  
Quick & Easy  
Config. via Wi-Fi



**MODBUS**  
MODBUS  
Communication Ready

MPPT efikasnost > 99.9%



Dizajn bez ventilatora

Kompaktan i lak dizajn pretvarača



Brza i laka instalacija

Aktivna i reaktivna nadoknada snage, podesiv faktor snage



AC izlaz 1.1x konstantne operacije

PV Input Data	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1
Max. DC Power ( W )	1500	2250	3000	3750	4200
Max. DC Voltage ( V )	500	500	500	500	500
MPPT Voltage Range ( V )	50-500	50-500	50-500	50-500	50-500
MPPT Full Power Voltage Range ( V )	70-500	110-500	145-500	180-500	220-500
Rated Input Voltage ( V )	360				
Start-up Voltage ( V )	50				
Max. Input Current ( A )	14				
Max. Short Current ( A )	18				
No. of MPP Tracker / No. of PV String	1/1				
Input Connector Type	MC4				
AC Output Data	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1
Max. Output Power ( W )	1100	1650	2200	2750	3300
Nominal Output Power ( W )	1000	1500	2000	2500	3000
Max. Output Current ( A )	6	9	12	13	15
Nominal Output Voltage ( V )	L/N/PE, 220Vac, 230Vac, 240Vac				
Grid Voltage Range	180Vac-276Vac (According to local standard)				
Nominal Output Frequency ( Hz )	50/60				
Grid Frequency Range	45-55Hz/54-66Hz (According to local standard)				
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)				
Output Current THD	<3%				
Efficiency	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1
Max. Efficiency	97.50%	97.80%	98.10%	98.10%	98.13%
Euro Efficiency	96.60%	96.70%	96.80%	97.23%	97.56%
Protection	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1
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 III)				
Smart IV Curve Scanning	YES				
Quick Arc Fault Circuit Interruption	Optional				
General Data	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1
Dimensions (H x W x D, mm)	260 x 280 x 116				
Weight ( kg )	6				
Protection Degree	IP65				
Enclosure Material	Aluminum				
Ambient Temperature Range (°C)	-25 to 60				
Humidity Range	0-100%				
Topology	Transformerless				
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)				
Cooling Concept	Convection				
Noise Emission ( db )	<21				
Night Power Consumption ( W )	<0.2		<1		
Max. Operation Altitude ( m )	4000				
Certifications and Standards	HNS1000TL-1	HNS1500TL-1	HNS2000TL-1	HNS2500TL-1	HNS3000TL-1
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	IEC 60068, UL1741, EN62109				
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727				

Stambeni sistemi

# HNS-TL

3-6 kW



Monofazni invertori serije Afore HNS su dizajnirani za stambene aplikacije PV sistema, snage od 3kW do 6kW. Svi modeli imaju jednostruko kućište sa aluminijumskom strukturom koja je eloksirana, što povećava izdržljivost i efikasno sprečava koroziju. Opremljena spoljnim induktorima, kućišta od jednog tela mogu da obezbede efikasno rasipanje toplote, što značajno poboljšava pouzdanost i produžava vek trajanja invertera.

Meni invertera se aktivira pomoću tastera na dodir senzora. Komunikacija uređaja je preko Wi-Fi modula (može se promeniti na Ethernet / GPRS). Proverite status sistema bilo kada i bilo gde preko onlajn portala ili APP-a.



**ANTI-FLOW**  
Anti-Feed-in Function



**PV OVERSIZE**  
Max. 1.5 time  
PV Oversize Capacity



**PROTECTION**  
Multiple intelligent  
Protections



**SMART**  
Smart IV Curve Scanning



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



**CONFIGURATION**  
Quick & Easy  
Config. via Wi-Fi



**MODBUS**  
MODBUS  
Communication Ready

MPPT efikasnost > 99.9%



Dva MPPT dizajna



Aktivna i reaktivna nadoknada snage, podesiv faktor snage



Dizajn bez ventilatora



Brza i laka instalacija



Visok kvalitet izlazne snage i mali THDI



PV Input Data	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL
Max. DC Power ( W )	4500	5400	6000	7000	8400
Max. DC Voltage ( V )	600	600	600	600	600
MPPT Voltage Range ( V )	70-550	70-550	70-550	70-550	70-550
MPPT Full Power Voltage Range ( V )	110-550	130-550	145-550	180-550	220-550
Rated Input Voltage ( V )	360				
Start-up Voltage ( V )	70				
Max. Input Current ( A )	14 x 2				
Max. Short Current ( A )	18 x 2				
No. of MPP Tracker / No. of PV String	2/2				
Input Connector Type	MC4				
AC Output Data	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL
Max. Output Power ( W )	3300	3960	4400	5500	6600
Nominal Output Power ( W )	3000	3600	4000	5000	6000
Max. Output Current ( A )	15	17.5	20	24	28.7
Nominal Output Voltage ( V )	L/N/PE, 220Vac, 230Vac, 240Vac				
Grid Voltage Range	180Vac-276Vac (According to local standard)				
Nominal Output Frequency ( Hz )	50/60				
Grid Frequency Range	45-55Hz/54-66Hz (According to local standard)				
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)				
Output Current THD	<3%				
Efficiency	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL
Max. Efficiency	98.20%	98.20%	98.20%	98.20%	98.20%
Euro Efficiency	97.80%	97.82%	97.85%	97.90%	97.92%
Protection	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL
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 III)	
Smart IV Curve Scanning				YES	
Quick Arc Fault Circuit Interruption				Optional	
General Data	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL
Dimensions (H x W x D, mm)	370 x 350 x 142				
Weight ( kg )	11				
Protection Degree	IP65				
Enclosure Material	Aluminum				
Ambient Temperature Range ( °C )	-25 to 60				
Humidity Range	0-100%				
Topology	Transformerless				
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)				
Cooling Concept	Convection				
Noise Emission ( db )	<28				
Night Power Consumption ( W )	<1				
Max. Operation Altitude ( m )	4000				
Certifications and Standards	HNS3000TL	HNS3600TL	HNS4000TL	HNS5000TL	HNS6000TL
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	IEC 60068, UL1741, EN62109				
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727				

Residential HNS series

# HNS-TL

7-10 kW



Monofazni invertori serije Afore HNS su dizajnirani za stambene primene PV sistema, snage od 7kW do 10kW. Svi modeli imaju jednostruko kućište sa aluminijumskom strukturom koja je eloksirana, što povećava izdržljivost i efikasno sprečava koroziju. Opremljena spoljnim induktorima, kućišta od jednog tela mogu da obezbede efikasno rasipanje toplote, što značajno poboljšava pouzdanost i produžava vek trajanja invertera.

Meni pretvarača se aktivira pomoću tastera na dodir senzora. Komunikacija uređaja je preko Wi-Fi modula (može se promeniti na Ethernet / GPRS). Proverite status sistema bilo kada i bilo gde preko onlajn portala ili APP-a.



**ANTI-FLOW**  
Anti-Feed-in Function



**PV OVERSIZE**  
Max. 1.5 time  
PV Oversize Capacity



**PROTECTION**  
Multiple intelligent  
Protections



**SMART**  
Smart IV Curve Scanning



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



**CONFIGURATION**  
Quick & Easy  
Config. via Wi-Fi



**MODBUS**  
MODBUS  
Communication Ready

MPPT efikasnost > 99.9%



Dizajn bez ventilatora



Dva MPPT dizajna



Brza i laka instalacija



Aktivna i reaktivna nadoknada snage, podesiv faktor snage



Visok kvalitet izlazne snage i mali THDI





PV Input Data	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL
Max. DC Power ( W )	9800	11200	12600	14000
Max. DC Voltage ( V )	600			
MPPT Voltage Range ( V )	70-550			
MPPT Full Power Voltage Range ( V )	220-550			
Rated Input Voltage ( V )	360			
Start-up Voltage ( V )	70			
Max. Input Current ( A )	14+26		26+26	
Max. Short Current ( A )	18+35		35+35	
No. of MPP Tracker / No. of PV String	2/3		2/4	
Input Connector Type	MC4			

AC Output Data	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL
Max. Output Power ( W )	7700	8800	9900	11000
Nominal Output Power ( W )	7000	8000	9000	10000
Max. Output Current ( A )	33.6	38.3	45	50
Nominal Output Voltage ( V )	L/N/PE, 220Vac, 230Vac, 240Vac			
Grid Voltage Range	180Vac-276Vac (According to local standard)			
Nominal Output Frequency ( Hz )	50/60			
Grid Frequency Range	45-55Hz/54-66Hz (According to local standard)			
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)			
Output Current THD	<3%			

Efficiency	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL
Max. Efficiency	98.20%	98.20%	98.32%	98.40%
Euro Efficiency	97.95%	98.00%	98.00%	98.10%

Protection	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL
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 III)			
Smart IV Curve Scanning	YES			
Quick Arc Fault Circuit Interruption	Optional			

General Data	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL
Dimensions (H x W x D, mm)	510 x 370 x 167			
Weight ( kg )	17		19	
Protection Degree	IP65			
Enclosure Material	Aluminum			
Ambient Temperature Range (°C)	-25 to 60			
Humidity Range	0-100%			
Topology	Transformerless			
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)			
Cooling Concept	Convection			
Noise Emission ( db )	<40			
Night Power Consumption ( W )	<1			
Max. Operation Altitude ( m )	4000			

Certifications and Standards	HNS7000TL	HNS8000TL	HNS9000TL	HNS10000TL
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	IEC 60068, UL1741, EN62109			
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727			

Stambeni sistemi i mala preduzeća

# BNT

3-25 kW

# ATON

Series

## Spremnost | Sigurnost | Efikasnost



Trofazni invertori serije Afore BNT dizajnirani su za stambene i male komercijalne PV sisteme, snage od 3kW do 25kW. Svi modeli imaju jednostruko kućište sa aluminijumskom strukturom koja je eloksirana, što povećava izdržljivost i efikasno sprečava koroziju. Opremljena spoljnim induktorima, kućišta od jednog tela mogu da obezbede efikasno rasipanje toplote, što značajno poboljšava pouzdanost i produžava vek trajanja invertera.

Komunikacija uređaja je preko Wi-Fi modula (može se promeniti na Ethernet / GPRS). Proverite status sistema bilo kada i bilo gde preko onlajn portala ili APP-a.

-  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

PV Input Data	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
Max. DC Power ( W )	5100	6000	7500	9000	12000	15000
Max. DC Voltage ( V )	1100					
MPPT Voltage Range ( V )	150 - 1000					
MPPT Full Power Voltage Range ( V )	200 - 850		250 - 850		300 - 850	500 - 850
Rated Input Voltage ( V )	620					
Start-up Voltage ( V )	150					
Max. Input Current ( A )	15 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	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
Max. Output Power ( W )	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	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
Max. Efficiency	98.30%					98.70%
Euro Efficiency	97.61%	97.65%	98.00%	98.05%		98.23%

Protection	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
PV Reverse Polarity Protection	YES					
PV Insulation Resistance Detection	YES					
AC Short Circuit Protection	YES					
AC Over Current Protection	YES					
AC Over Voltage Protection	YES					
Anti-Islanding Protection	YES					
Residual Current Detection	YES					
Over Temperature Protection	YES					
Integrated DC switch	YES					
Surge Protection	Integrated (Type II)					
Smart IV Curve Scanning	YES					
Quick Arc Fault Circuit Interruption	Optional					

General Data	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
Dimensions (H x W x D, mm)	510 x 370 x 167			510 x 370 x 192		
Weight ( kg )	16			15		
Protection Degree	IP65					
Enclosure Material	Aluminum					
Ambient Temperature Range (°C)	-25 to 60					
Humidity Range	0 -100%					
Topology	Transformerless					
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)					
Cooling Concept	Convection			Intelligent fan cooling		
Noise Emission ( db )	<30					
Night Power Consumption ( W )	<1					
Max. Operation Altitude ( m )	≤4000					

Certifications and Standards	BNT003KTL	BNT004KTL	BNT005KTL	BNT006KTL	BNT008KTL	BNT010KTL
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	IEC 60068, UL1741, EN62109					
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727					

PV Input Data	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
Max. DC Power ( W )	18000	19500	22500	25500	30000	37500
Max. DC Voltage ( V )	1100					
MPPT Voltage Range ( V )	150 - 1000					
MPPT Full Power Voltage Range ( V )	500 - 850					
Rated Input Voltage ( V )	620					
Start-up Voltage ( V )	150					
Max. Input Current ( A )	15 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	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
Max. Output Power ( W )	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	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
Max. Efficiency	98.70%			98.75%		
Euro Efficiency	98.23%			98.35%		

Protection	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
PV Reverse Polarity Protection	YES					
PV Insulation Resistance Detection	YES					
AC Short Circuit Protection	YES					
AC Over Current Protection	YES					
AC Over Voltage Protection	YES					
Anti-Islanding Protection	YES					
Residual Current Detection	YES					
Over Temperature Protection	YES					
Integrated DC switch	YES					
Surge Protection	Integrated (Type II)					
Smart IV Curve Scanning	YES					
Quick Arc Fault Circuit Interruption	Optional					

General Data	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
Dimensions (H x W x D, mm)	510 x 370 x 192			535 x 370 x 192		
Weight ( kg )	15	17		19		
Protection Degree	IP65					
Enclosure Material	Aluminum					
Ambient Temperature Range (°C)	-25 to 60					
Humidity Range	0 -100%					
Topology	Transformerless					
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)					
Cooling Concept	Intelligent fan cooling					
Noise Emission ( db )	<40					<51
Night Power Consumption ( W )	<1					
Max. Operation Altitude ( m )	≤4000					

Certifications and Standards	BNT012KTL	BNT013KTL	BNT015KTL	BNT017KTL	BNT020KTL	BNT025KTL
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	IEC 60068, UL1741, EN62109					
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727					

Preduzeća i solarne elektrane

# BNT

## 30-60 kW



Trofazni invertori serije Afore BNT dizajnirani su za komercijalne sisteme i elektrane, snage od 30kW do 60kW. Svi modeli dolaze sa aluminijumskim kućištem koje je elokirano, povećava izdržljivost i efikasno sprečava koroziju. Opremljen spoljnim induktorima, obezbeđuje efikasno rasipanje toplote, što značajno poboljšava pouzdanost i produžava vek trajanja invertera. Meni pretvarača se aktivira pomoću tastera na dodir senzora.

Komunikacija uređaja je preko Vi-Fi modula (može se promeniti na Ethernet / GPRS). Proverite status sistema bilo kada i bilo gde preko onlajn portala ili APP-a.

Max.  
**20A**

**MAX. 20A<sub>dc</sub>**  
String Current Up To 20A

Max.  
**1.5**

**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 efikasnost > 99.9%



Pametna kontrola za merenje temperature



Aktivna i reaktivna nadoknada snage, podesiv faktor snage



IP 68 Ventilator za hlađenje



Tip II DC & AC Zaštita od groma



AC izlaz 1.1x konstantne operacije

PV Input Data	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
Max. DC Power ( W )	45000	54000	60000	75000	90000
Max. DC Voltage ( V )	1100				
MPPT Voltage Range ( V )	200 - 1000				
MPPT Full Power Voltage Range ( V )	500 - 850				
Rated Input Voltage ( V )	620				
Start-up Voltage ( V )	200				
Max. Input Current ( A )	38 x 3			40 x 3	38 x 4
Max. Short Current ( A )	48 x 3			48 x 3	48 x 4
No. of MPP Tracker / No. of PV String	3/6			3/7	4/8
Input Connector Type	MC4				
AC Output Data	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
Max. Output Power ( W )	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	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
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	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
PV Reverse Polarity Protection				YES	
PV Insulation Resistance Detection				YES	
AC Short Circuit Protection				YES	
AC Over Current Protection				YES	
AC Over Voltage Protection				YES	
Anti-Islanding Protection				YES	
Residual Current Detection				YES	
Over Temperature Protection				YES	
Integrated DC switch				YES	
Surge Protection	Integrated (Type II)				
Smart IV Curve Scanning				YES	
Quick Arc Fault Circuit Interruption	Optional				
General Data	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
Dimensions (H x W x D, mm)	712 x 427 x 232				
Weight ( kg )	42		43	45	51
Protection Degree	IP65				
Enclosure Material	Aluminum				
Ambient Temperature Range ( °C )	-25 to 60				
Humidity Range	0 - 100%				
Topology	Transformerless				
Communication Interface	RS485 / WiFi / Wire Ethernet / GPRS (optional)				
Cooling Concept	Intelligent Fan Cooling				
Noise Emission ( db )	<51			<55	
Night Power Consumption ( W )	<1				
Max. Operation Altitude ( m )	≤4000				
Certifications and Standards	BNT030KTL	BNT036KTL	BNT040KTL	BNT050KTL	BNT060KTL
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	IEC 60068, UL1741, EN62109				
Grid-connection	IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727				

# Single Phase Hybrid Inverter

1 - 6 kW for Low Voltage Battery



Afore AF niskonaponski invertori za skladištenje su dizajnirani da povećaju energetska nezavisnost za vlasnike kuća. Raspon snage je od 1kW do 6kW, kompatibilan sa niskonaponskim (40-60V) baterijama.

Upravljanje energijom je zasnovano na strukturi tarifa za vreme korišćenja i potražnje, što značajno smanjuje količinu energije koja se kupuje iz javne mreže.

Zahvaljujući funkciji UPS-a (prekidač < 10ms), omogućava rad ključnih sistema tokom nestanka. Pored toga, u režimu rezervnog rada, pretvarač vam omogućava do 150% opterećenja na izlazu.

AF niskonaponski pretvarači za skladištenje integrisani sa prekidom strujnog kruga sa greškom luka (AFCI) i brzim isključivanjem.

Max.  
1.5

**PV OVERSIZE**  
1.5 Times PV Oversize

2  
MPPT

**MPPT CHANNELS**  
Up to 2 MPPT Channels

<10  
ms

**UPS FUNCTION**  
Switch Time < 10ms



**PARALLEL**  
Max.6 Parallel Stacking



**MULTIPLE INPUTS**  
Support Generator & Wind Turbines

Podrška za Time-of-use Optimizaciju



Ugrađena Anti-feed-in funkcija



Podesivi modovi operacije



Mala veličina i laka instalacija



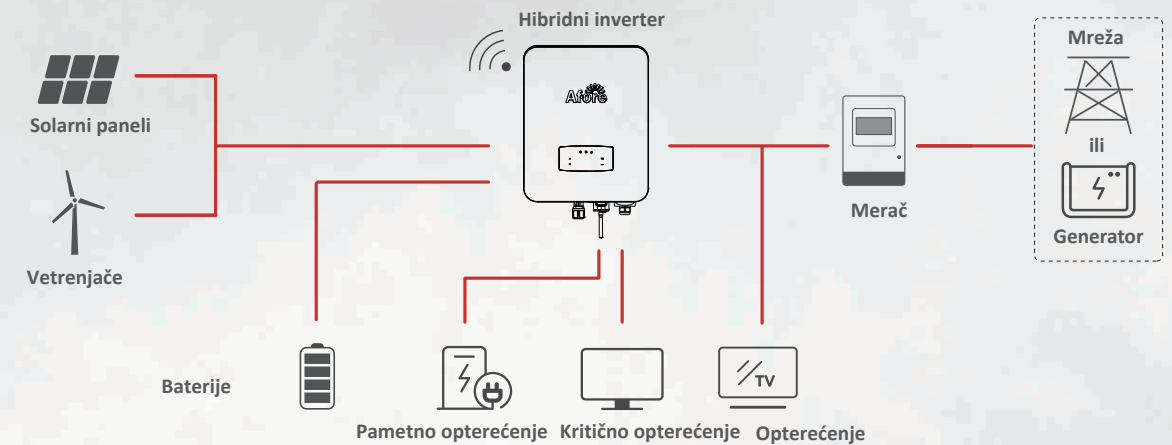
Arc Fault Circuit Interrupter (AFCI)



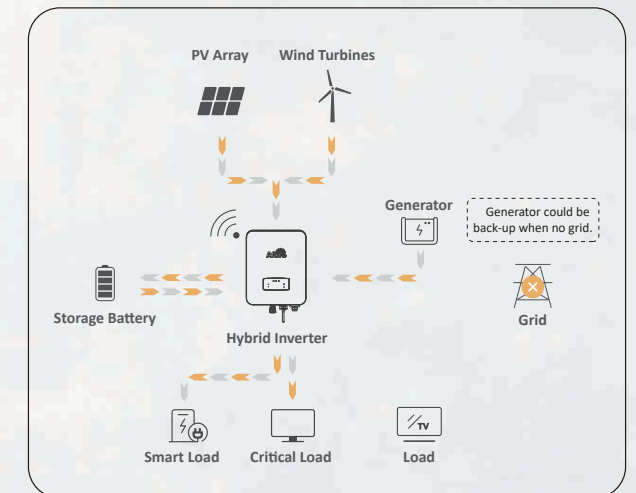
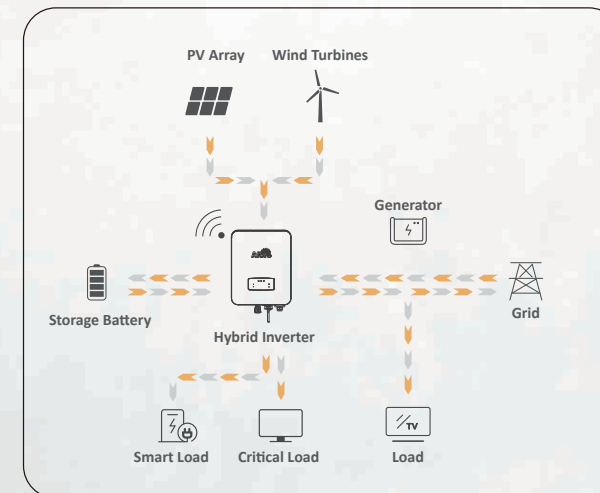
Pametan Monitoring & Unapređenje softvera na daljinu



Za nove sisteme:

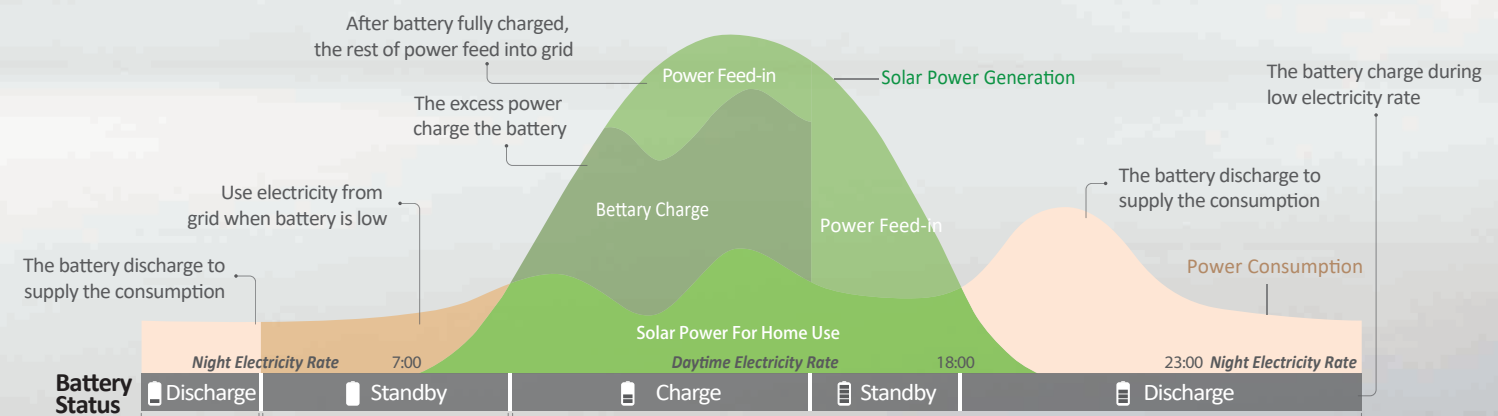


Optimizacija Potrošnje (na mreži) + Napon u slučaju nestanka (van mreže)



## Optimizacija Potrošnje

Sa instaliranim kućnim skladištem energije, vlasnici kuća mogu takođe moći da pređu sa paušalne tarife za električnu energiju na tarifu po meri korišćenja. Za područja i regione gde se može primeniti vrhunsko brijanje.



PV Input	AF1K-SL-1	AF1.5K-SL-1	AF2K-SL-1	AF2.5K-SL-1	AF3K-SL-1	AF3.6K-SL-1
Max. Input Power (kW)	1.5	2.3	3.0	3.8	4.5	5.4
Max. PV Voltage (V)	550					
MPPT Range (V)	80 - 500					
Full MPPT Range (V)	80 - 500	90 - 500	120 - 500	150 - 500	170 - 500	210 - 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	3.0	3.6
Max. Charge/Discharge Current (A)	25	40	50	63	80	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)	5.0	7.0	10.0	12.0	14.0	17.0
Max Continuous Power (kVA)	1.0	1.5	2.0	2.5	3.0	3.6
Nominal Grid Current(A)	4.6 / 4.4	6.9 / 6.6	9.1 / 8.7	11.4 / 10.9	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	0.999 (Adjustable from 0.8 overexcited to 0.8 underexcited)					
Current THD (%)	< 3					
AC Load Output	AF1K-SL-1	AF1.5K-SL-1	AF2K-SL-1	AF2.5K-SL-1	AF3K-SL-1	AF3.6K-SL-1
Max Continuous Current (A)	5.0	7.0	10.0	12.0	14.0	17.0
Max Continuous Power (kVA)	1.0	1.5	2.0	2.5	3.0	3.6
Max Peak Current (A) (10min)	6.9 / 6.6	10.5 / 10.0	13.7 / 13.1	17.3 / 16.6	20.5 / 19.6	24.6 / 23.5
Max Peak Power (kVA) (10min)	1.5	2.3	3.0	3.8	4.5	5.4
Nominal AC Current (A)	4.6 / 4.4	6.9 / 6.6	9.1 / 8.7	11.4 / 10.9	13.7 / 13.1	16.4 / 15.7
Nominal AC Voltage L-N (V)	220 / 230					
Nominal AC Frequency (Hz)	50 / 60					
Switching Time (s)	Seamless					
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	AF1K-SL-1	AF1.5K-SL-1	AF2K-SL-1	AF2.5K-SL-1	AF3K-SL-1	AF3.6K-SL-1
PV Reverse Polarity Protection	Yes					
Over Current/Voltage Protection	Yes					
Anti-Islanding Protection	Yes					
AC Short Circuit Protection	Yes					
Residual Current Detection	Yes					
Ground Fault Monitoring	Yes					
Insulation Resister Detection	Yes					
PV Arc Detection	Yes					
Enclosure Protect Level	IP65 / NEMA4X					
General Data	AF1K-SL-1	AF1.5K-SL-1	AF2K-SL-1	AF2.5K-SL-1	AF3K-SL-1	AF3.6K-SL-1
Dimensions (L x W x H, mm)	513 x 370 x 192					
Weight (kg)	17					
Topology	Transformerless					
Cooling	Intelligent Fan					
Relatively Humidity	0 - 100 %					
Operating Temperature Range (°C)	- 25 to 60					
Operating Altitude (m)	< 4000					
Noise Emission (dB)	< 25					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G					
Certification & Approvals	NRS97, G98/G99, EN50549-1, C10/C11, AS 4777, VDE-AR-N4105, VDE0126, IEC62040, IEC62109-1, IEC62109-2					
EMC	EN61000-6-2, EN61000-6-3					

PV Input	AF3K-SL	AF3.6K-SL	AF4K-SL	AF4.6K-SL	AF5K-SL	AF5.5K-SL	AF6K-SL
Max. Input Power (kW)	4.5	5.4	6.0	6.9	7.5	8.3	9.0
Max. PV Voltage (V)	550						
MPPT Range (V)	80 - 500						
Full MPPT Range (V)	90 - 500	110 - 500	120 - 500	130 - 500	150 - 500	160 - 500	170 - 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)	3.0	3.6	4.0	4.6	4.8	4.8	4.8
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	19.0	22.0	23.0	26.0	28.0
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5	6.0
Nominal Grid Current(A)	13.7 / 13.1	16.4 / 15.7	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	0.999 (Adjustable from 0.8 overexcited to 0.8 underexcited)						
Current THD (%)	< 3						
AC Load Output	AF3K-SL	AF3.6K-SL	AF4K-SL	AF4.6K-SL	AF5K-SL	AF5.5K-SL	AF6K-SL
Max Continuous Current (A)	14.0	17.0	19.0	22.0	23.0	26.0	28.0
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5	6.0
Max Peak Current (A) (10min)	20.5 / 19.6	24.6 / 23.5	27.3 / 26.1	31.4 / 30	34.1 / 32.7	37.8 / 36.1	41.0 / 39.2
Max Peak Power (kVA) (10min)	4.5	5.4	6.0	6.9	7.5	8.3	9.0
Nominal AC Current (A)	13.7 / 13.1	16.4 / 15.7	18.2 / 17.4	21.0 / 20.0	22.8 / 21.8	25.0 / 24.0	27.3 / 26.1
Nominal AC Voltage L-N (V)	220 / 230						
Nominal AC Frequency (Hz)	50 / 60						
Switching Time (s)	Seamless						
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	AF3K-SL	AF3.6K-SL	AF4K-SL	AF4.6K-SL	AF5K-SL	AF6K-SL	AF6K-SL
PV Reverse Polarity Protection	Yes						
Over Current/Voltage Protection	Yes						
Anti-Islanding Protection	Yes						
AC Short Circuit Protection	Yes						
Residual Current Detection	Yes						
Ground Fault Monitoring	Yes						
Insulation Resister Detection	Yes						
PV Arc Detection	Yes						
Enclosure Protect Level	IP65 / NEMA4X						
General Data	AF3K-SL	AF3.6K-SL	AF4K-SL	AF4.6K-SL	AF5K-SL	AF6K-SL	AF6K-SL
Dimensions (L x W x H, mm)	513 x 370 x 192						
Weight (kg)	17						
Topology	Transformerless						
Cooling	Intelligent Fan						
Relatively Humidity	0 - 100 %						
Operating Temperature Range (°C)	- 25 to 60						
Operating Altitude (m)	< 4000						
Noise Emission (dB)	< 25						
Standby Consumption (W)	< 10						
Mounting	Wall Bracket						
Communication with RSD	SUNSPEC						
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G						
Certification & Approvals	NRS97, G98/G99, EN50549-1, C10/C11, AS 4777, VDE-AR-N4105, VDE0126, IEC62040, IEC62109-1, IEC62109-2						
EMC	EN61000-6-2, EN61000-6-3						

# Three phase Hybrid Inverter

3-20kW

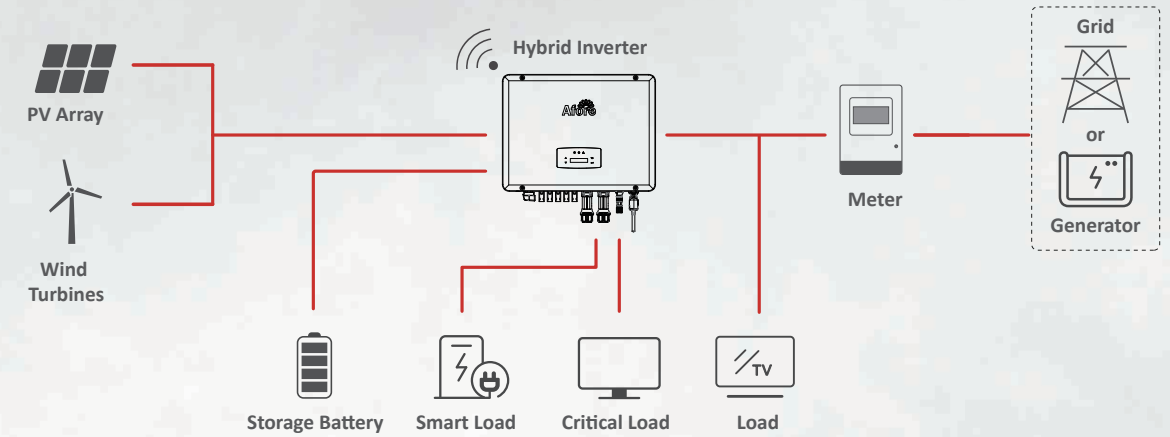


The Afore AF Series three phase storage inverters are designed to increase energy independence for homeowners and commercial users. The power range is from 3.0kW to 20kW, compatible with high voltage (150-800V) batteries.

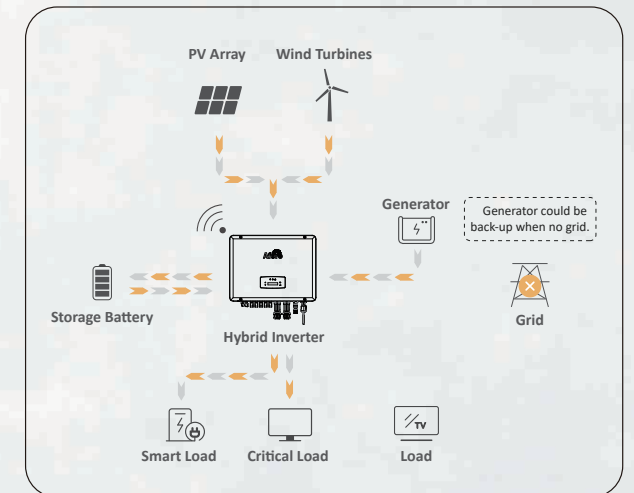
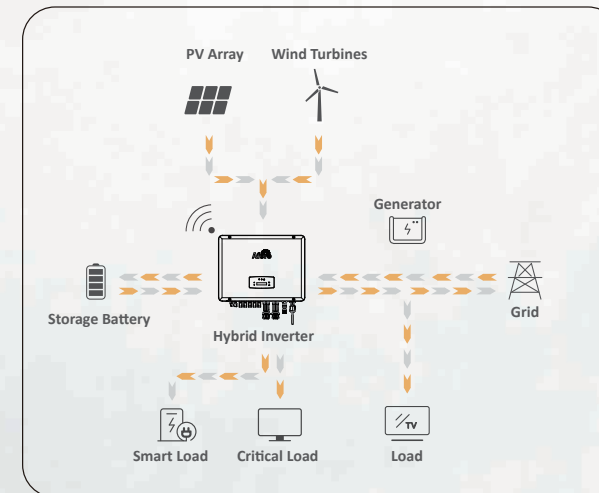
Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from public grid.

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

## For New Storage System:

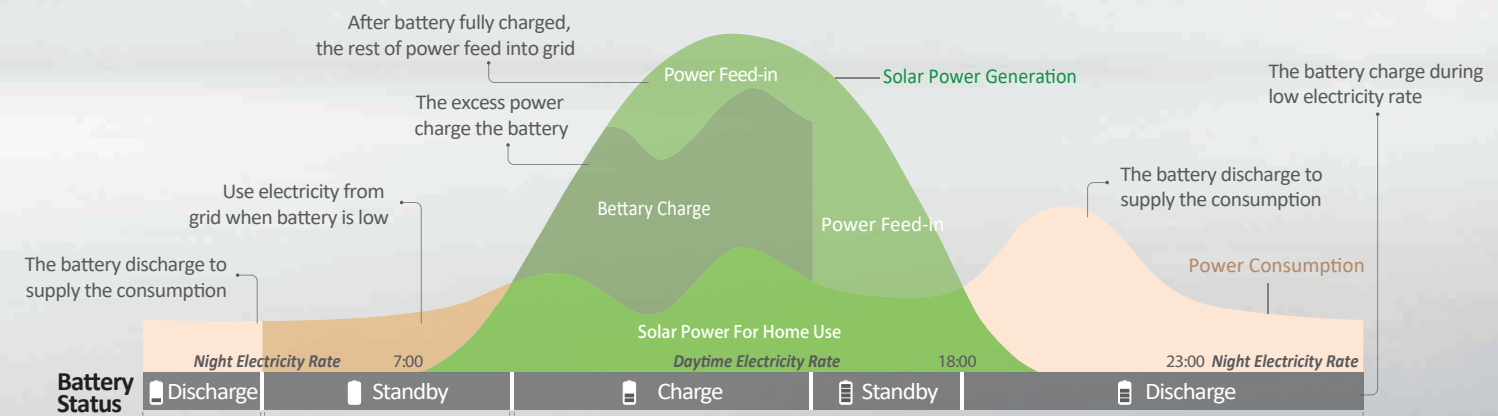


## Optimizing Self-Consumption (on-grid) + Emergency Power Supply(off-grid)



## Optimizing Self-Consumption Mode

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



**WIDE RANGE**  
Voltage Range  
(150-800V)



**UNBALANCE**  
Support Unbalance Load

**Max. 1.5**

**PV OVERSIZE**  
1.5 Times PV Oversize

**Max. 32A**

**MAX. 32A<sub>dc</sub>**  
String Current Up To 32A

**<10 ms**

**UPS FUNCTION**  
Switch Time < 10ms



**MULTIPLE INPUTS**  
Support Generator &  
Wind Turbines

Support for Time-of-use Optimization

Configurable Operation Modes

AFCI & Rapid Shutdown Ready

Build in Anti-feed-in Function

Compact Size and Easy Installation

Smart Monitoring & Remote Firmware Upgrade



PV Input	AF3K-T	AF4K-T	AF5K-T	AF6K-T	AF8K-T
Max. DC Input Power (kW)	5	6	7.5	9	12
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				
No. of MPPT Tracker	2				
Battery Port					
Battery Nominal Voltage (V)	200	200	200	250	300
Battery Voltage Range (V)	150-800				
Max. Charge/Discharge Current (A)	30				
Max. Charge/Discharge Power (W)	3.3K/3K	4.4K/4K	5.5K/5K	6.6K/6K	8.8K/8K
Charging Curve	3 Stages				
Compatible Battery Type	Li-ion / Lead-acid				
AC Grid Output					
Nominal AC Output Power (VA)	3000	4000	5000	6000	8000
Max. AC Input Power	4500	6000	7500	9000	12000
Max. AC Output Current (A)	5.3	7	8.5	10.5	13.5
Nominal AC Voltage (V)	230/400				
Nominal AC Frequency (Hz)	50/60				
Power Factor	1 (-0.8-0.8)				
Current THD (%)	<3%				
AC Load Output (Back-up)	AF3K-T	AF4K-T	AF5K-T	AF6K-T	AF8K-T
Nominal Output Power (VA)	3000	4000	5000	6000	8000
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
Peak Output Power	3300VA, 60s	4400VA, 60s	5500VA, 60s	6600VA, 60s	8800VA, 60s
THDV (with linear load)	<3%				
Switching Time (s)	<0.01S				
Efficiency	AF3K-T	AF4K-T	AF5K-T	AF6K-T	AF8K-T
Europe Efficiency	97.5%				
Max. Efficiency	98.0%				98.2%
Battery Charge/Discharge Efficiency	98%				
Protection					
Reverse Polarity Protection	Yes				
Over Current / Voltage Protection	Yes				
Anti-islanding Protection	Yes				
AC Short-circuit Protection	Yes				
Leakage Current Detection	Yes				
Ground Fault Monitoring	Yes				
Grid Monitoring	Yes				
Enclosure Protect Level	IP65/NEMA4X	IP65/NEMA5X	IP65/NEMA6X	IP65/NEMA7X	IP65/NEMA8X
General Data	AF3K-T	AF4K-T	AF5K-T	AF6K-T	AF8K-T
Dimensions (H x W x D) (mm)	558 x 426 x 250 mm				
Weight (kg)	28.5kg				
Topology	Transformerless				
Cooling Concept	Natural Convection				Intelligent Fan
Relatively Humidity	0-100%				
Operating Temperature Range (°C)	-25 to 60 °C				
Operating Altitude (m)	<4000				
Noise Emission (dB)	<30				
Standby Consumption (W)	<5				
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G				
Certification & Approvals	NRS97, G98/G99, EN50549-1, C10/C11, AS 4777, VDE-AR-N4105, VDE0126, IEC62040, IEC62109-1, IEC62109-2				
EMC	EN61000-6-2, EN61000-6-3				

PV Input	AF10K-T	AF12K-T	AF15K-T	AF17K-T	AF20K-T
Max. DC Input Power (kW)	15	18	22.5	25.5	30
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	
No. of MPPT Tracker	2				
Battery Port					
Battery Nominal Voltage (V)	400	450	500	600	700
Battery Voltage Range (V)	150-800				
Max. Charge/Discharge Current (A)	30				
Max. Charge/Discharge Power (W)	11K/10K	13.2K/12K	16.5K/15K	18.7K/17K	22K/20K
Charging Curve	3 Stages				
Compatible Battery Type	Li-ion / Lead-acid				
AC Grid Output					
Nominal AC Output Power (VA)	10000	12000	15000	17000	20000
Max. AC Input Power	15000	18000	22500	25500	30000
Max. AC Output Current (A)	17	21.5	27	30	32
Nominal AC Voltage (V)	230/400				
Nominal AC Frequency (Hz)	50/60				
Power Factor	1 (-0.8-0.8)				
Current THD (%)	<3%				
AC Load Output (Back-up)	AF10K-T	AF12K-T	AF15K-T	AF17K-T	AF20K-T
Nominal Output Power (VA)	10000	12000	15000	17000	20000
Nominal Output Voltage (V)	230/400				
Nominal Output Frequency (Hz)	50/60				
Nominal Output Current (A)	14.5	17.4	21.8	24.8	29
Peak Output Power	11000VA, 60s	13200VA, 60s	16500VA, 60s	18700VA, 60s	22000VA, 60s
THDV (with linear load)	<3%				
Switching Time (s)	<0.01S				
Efficiency	AF10K-T	AF12K-T	AF15K-T	AF17K-T	AF20K-T
Europe Efficiency	97.5%				
Max. Efficiency	98.2%	98.3%			
Battery Charge/Discharge Efficiency	98%				
Protection					
Reverse Polarity Protection	Yes				
Over Current / Voltage Protection	Yes				
Anti-islanding Protection	Yes				
AC Short-circuit Protection	Yes				
Leakage Current Detection	Yes				
Ground Fault Monitoring	Yes				
Grid Monitoring	Yes				
Enclosure Protect Level	IP65/NEMA9X	IP65/NEMA10X	IP65/NEMA11X	IP65/NEMA12X	IP65/NEMA13X
General Data	AF10K-T	AF12K-T	AF15K-T	AF17K-T	AF20K-T
Dimensions (H x W x D) (mm)	558 x 426 x 250 mm				
Weight (kg)	28.5kg				
Topology	Transformerless				
Cooling Concept	Intelligent Fan				
Relatively Humidity	0-100%				
Operating Temperature Range (°C)	-25 to 60 °C				
Operating Altitude (m)	<4000				
Noise Emission (dB)	<30		<40		
Standby Consumption (W)	<5				
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G				
Certification & Approvals	NRS97, G98/G99, EN50549-1, C10/C11, AS 4777, VDE-AR-N4105, VDE0126, IEC62040, IEC62109-1, IEC62109-2				
EMC	EN61000-6-2, EN61000-6-3				

# AC Coupled Inverter

1-4.6 kW



Afore AC Coupled Inverter (1kW-4.6kW) suitable for both single-phase & three-phase systems. It can be fitted alongside string inverter, enabling you to upgrade to solar battery storage system without changing your current installation.

- 

**SEAMLESSLY SWITCH**  
Seamlessly Switch Time between EPS with Grid
- 





**SMART**  
Smart EMS/BMS
- 

**UNIBODY**  
One-piece Aluminum Housing
- 

**SAFETY**  
Proven Safety
- 

**Max. 80A**  
Max. 80A Battery Charge and Discharge Current
- 

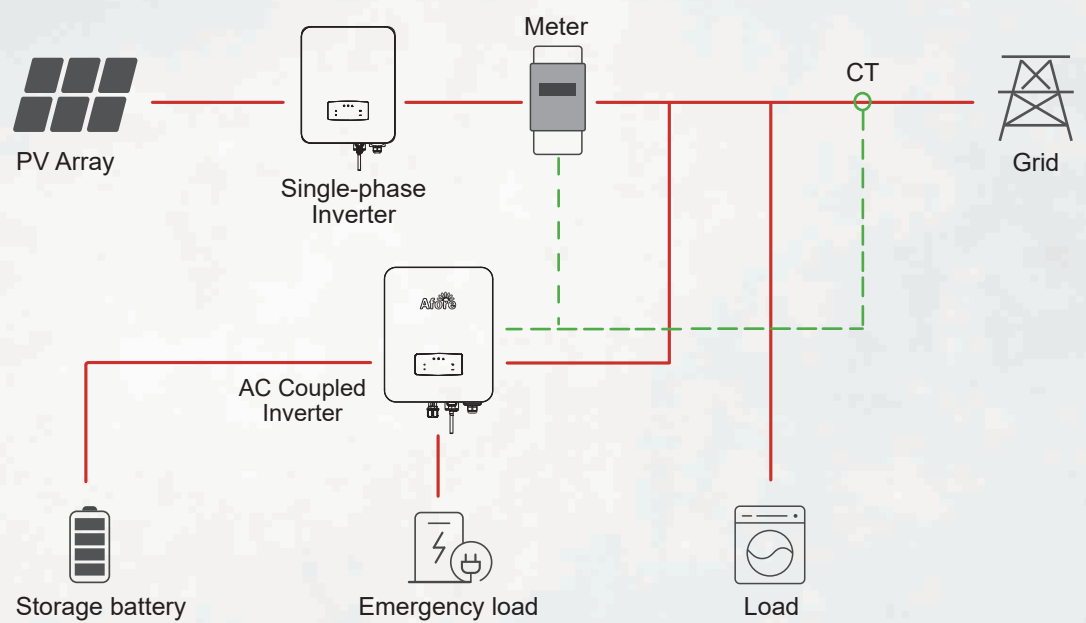
**SUPPORT**  
Island support

- 97.6% High Frequency Isolation Charge and Discharge Efficiency 
- Integrated WIFI Monitoring & Remote Parameter Setting 
-  Plug & Play, Easy Maintenance
-  IP 65 Water-resistant & Dustproof

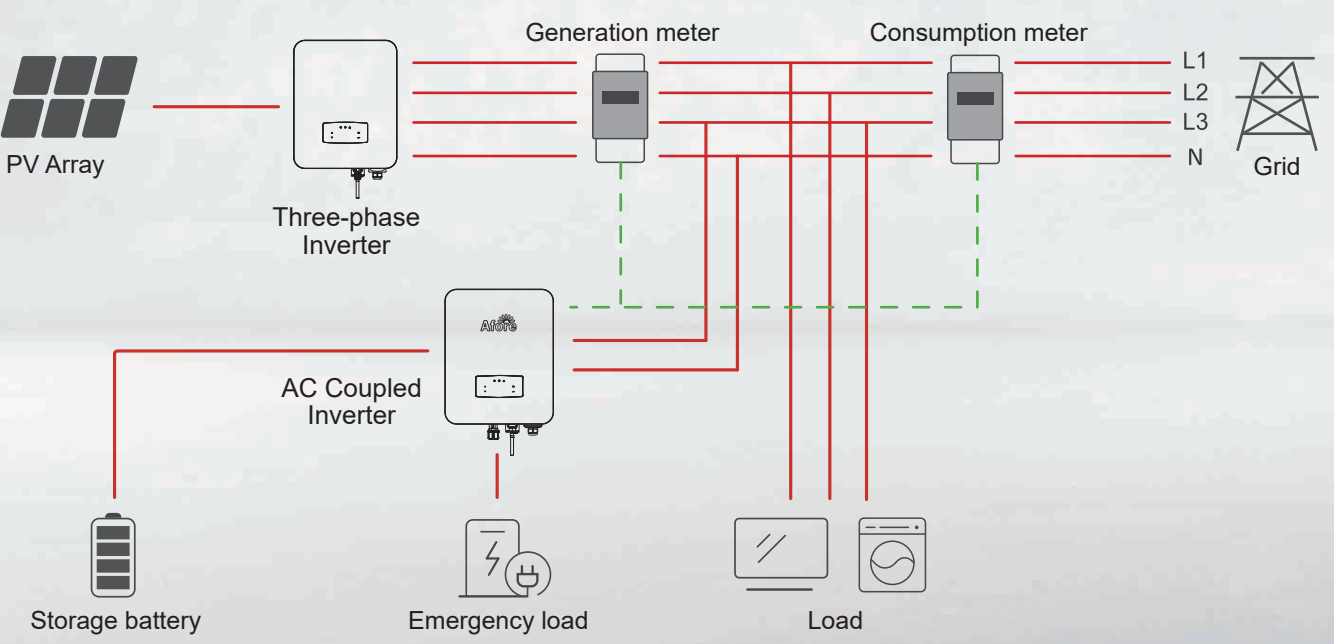
## Retrofitting Storage Solution on Existing Solar System:

Adding battery storage to an existing solar system enables home owners to store their solar PV generated electricity instead of exporting it to the grid. More savings on your electricity bill.

### Single Phase AC Coupled (Retro Fit)



### Three Phase AC Coupled (Retro Fit)



Battery	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0
Max. Charge/Discharge Power (kW)	1	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	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0
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	0.999 (Adjustable from 0.8 overexcited to 0.8 underexcited)			
Current THD (%)	< 3			

AC Load Output	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0
Max Continuous Current (A)	5.0	7.0	10.0	12.0
Max Continuous Power (kVA)	1.0	1.5	2.0	2.5
Max Peak Current (A) (10min)	6.9 / 6.6	10.5 / 10.0	13.7 / 13.1	17.1 / 16.4
Max Peak Power (kVA) (10min)	1.5	2.3	3.0	3.75
Nominal AC Current (A)	4.6 / 4.4	6.9 / 6.6	9.1 / 8.7	11.4 / 10.9
Nominal AC Voltage L-N (V)	220 / 230			
Nominal AC Frequency (Hz)	50 / 60			
Switching Time (s)	Seamless			
Voltage THD (%)	< 3			

Efficiency	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0
Max. Efficiency (%)	97.6			
Bat. between AC Efficiency (%)	96.8			

Protection	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0
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			
Enclosure Protect Level	IP65 / NEMA4X			

General Data	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0
Dimensions (L x W x H, mm)	513 x 370 x 192			
Weight	17			
Topology	Tranformer			
Cooling	Intelligent Fan			
Relatively Humidity	0 - 100 %			
Operating Temperature Range (°C)	- 25 to 60			
Operating Altitude (m)	< 4000			
Noise Emission (dB)	< 25			
Standby Consumption (W)	< 10			
Mounting	Wall Bracket			
Communication with RSD	SUNSPEC			
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G			
Certification & Approvals	NRS97, G98/G99, EN50549-1, C10/C11, AS 4777, VDE-AR-N4105, VDE0126, IEC62040, IEC62109-1, IEC62109-2			
EMC	EN61000-6-2, EN61000-6-3			

Battery	AF3K-SL-0	AF3.6K-SL-0	AF4K-SL-0	AF4.6K-SL-0
Max. Charge/Discharge Power (kW)	3.0	3.6	4.0	4.6
Max. Charge/Discharge Current (A)	80	80	80	80
Battery Normal Voltage (V)	51.2			
Battery Voltage Range (V)	40 - 60			
Battery Type	Li-ion/lead-acid etc.			

AC Grid	AF3K-SL-0	AF3.6K-SL-0	AF4K-SL-0	AF4.6K-SL-0
Max Continuous Current (A)	14.0	17.0	19.0	22.0
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6
Nominal Grid Current(A)	13.7 / 13.1	16.4 / 15.7	18.2 / 17.4	21.0 / 20.0
Nominal Grid Voltage (V)	198 to 242 @ 220 / 207 to 253 @ 230			
Nominal Grid Frequency (Hz)	50 / 60			
Power Factor	0.999 (Adjustable from 0.8 overexcited to 0.8 underexcited)			
Current THD (%)	< 3			

AC Load Output	AF3K-SL-0	AF3.6K-SL-0	AF4K-SL-0	AF4.6K-SL-0
Max Continuous Current (A)	14.0	17.0	19.0	22.0
Max Continuous Power (kVA)	3.0	3.6	4.0	4.6
Max Peak Current (A) (10min)	20.5 / 19.6	24.6 / 23.5	27.3 / 26.1	31.4 / 30.0
Max Peak Power (kVA) (10min)	4.5	5.4	6.0	6.9
Nominal AC Current (A)	13.7 / 13.1	16.4 / 15.7	18.2 / 17.4	21.0 / 20.0
Nominal AC Voltage L-N (V)	220 / 230			
Nominal AC Frequency (Hz)	50 / 60			
Switching Time (s)	Seamless			
Voltage THD (%)	< 3			

Efficiency	AF3K-SL-0	AF3.6K-SL-0	AF4K-SL-0	AF4.6K-SL-0
Max. Efficiency (%)	97.6			
Bat. between AC Efficiency (%)	96.8			

Protection	AF3K-SL-0	AF3.6K-SL-0	AF4K-SL-0	AF4.6K-SL-0
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			
Enclosure Protect Level	IP65 / NEMA4X			

General Data	AF3K-SL-0	AF3.6K-SL-0	AF4K-SL-0	AF4.6K-SL-0
Dimensions (L x W x H, mm)	513 x 370 x 192			
Weight	17			
Topology	Tranformer			
Cooling	Intelligent Fan			
Relatively Humidity	0 - 100 %			
Operating Temperature Range (°C)	- 25 to 60			
Operating Altitude (m)	< 4000			
Noise Emission (dB)	< 25			
Standby Consumption (W)	< 10			
Mounting	Wall Bracket			
Communication with RSD	SUNSPEC			
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G			
Certification & Approvals	NRS97, G98/G99, EN50549-1, C10/C11, AS 4777, VDE-AR-N4105, VDE0126, IEC62040, IEC62109-1, IEC62109-2			
EMC	EN61000-6-2, EN61000-6-3			

# Split Phase Hybrid Inverter

3-9.6 kW



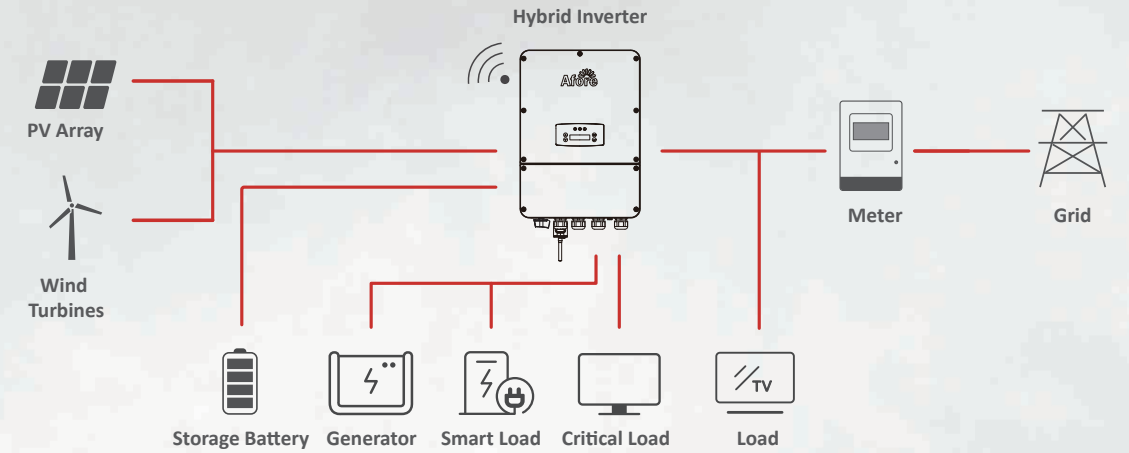
The Afore AF Series storage Inverters are designed to increase energy independence for homeowners. The power range is from 3.0kW to 9.6kW, compatible with high voltage (80-495V) batteries.

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

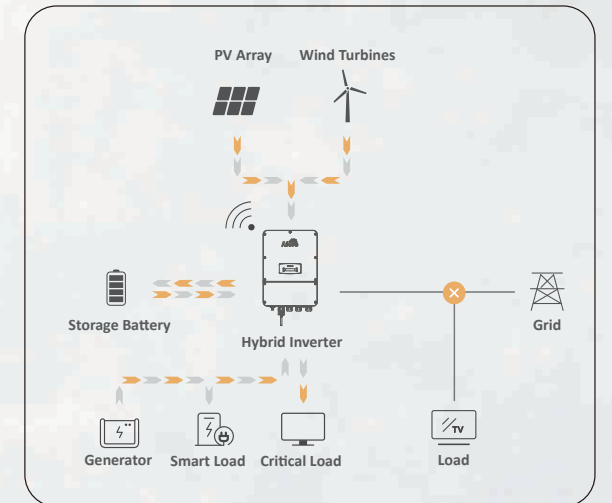
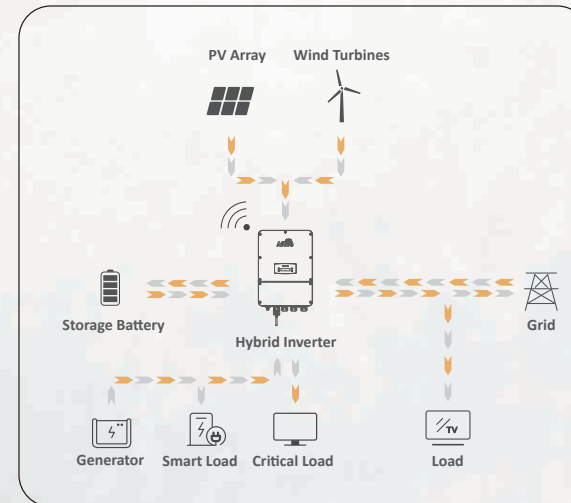
Thanks for the UPS function (switch time < 10ms), enables the crucial loads power on during outages. Additionally, under the backup operation mode, the inverter provides you up to 150% peak output overloading.

The AF Series storage inverters meet the US safety regulations, integrated with Arc Fault Circuit Interrupter (AFCI) and Rapid Shutdown.

## For New Storage System:

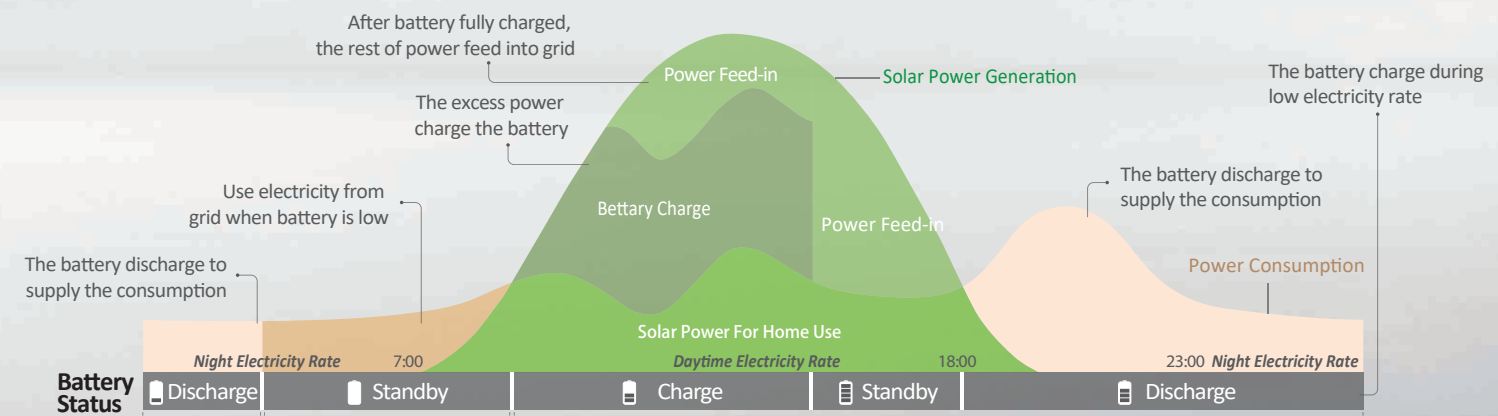


## Optimizing Self-Consumption (on-grid) + Emergency Power Supply(off-grid)



## 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.



Max. 1.5

**PV OVERSIZE**  
1.5 Times PV Oversize

3 MPPT

**MPPT CHANNELS**  
Up to 3 MPPT Channels

<10 ms

**UPS FUNCTION**  
Switch Time < 10ms



**PARALLEL**  
Max.6 Parallel Stacking



**MULTIPLE INPUTS**  
Support Generator & Wind Turbines



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

Support for Time-of-use Optimization

Configurable Operation Modes

AFCI & Rapid Shutdown Ready

Build in Anti-feed-in Function

Compact Size and Easy Installation

Smart Monitoring & Remote Firmware Upgrade

PV Input	AF3K-DH	AF3.6K-DH	AF4K-DH	AF4.6K-DH	AF5K-DH	AF5.5K-DH
Max. Input Power (kW)	4.5	5.4	6.0	6.9	7.5	8.3
Max. PV Voltage (V)	600					
MPPT Range (V)	80 - 550					
Normal Voltage (V)	360					
Startup Voltage (V)	100					
Max. Input Current (A)	15.5 x 2					
Max. Short Current (A)	26.0 x 2					
No. of MPP Tracker / No. of PV String	2 / 2					
Battery						
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					
AC Grid						
Max. Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5
Max. Continuous Current (A)	12.5 / 14.5	15.0 / 17.5	17.0 / 19.5	19.5 / 22.5	21.0 / 24	23.0 / 26.5
Nominal Grid Voltage (V)	211 to 264 @ 240 / 183 to 229 @ 208					
Nominal Grid Frequency (Hz)	60					
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3					
Gen Input&AC Back-up	AF3K-DH	AF3.6K-DH	AF4K-DH	AF4.6K-DH	AF5K-DH	AF5.5K-DH
Max. Continuous Current (A)	12.5 / 14.5	15.0 / 17.5	17.0 / 19.5	19.5 / 22.5	21.0 / 24.0	23.0 / 26.5
Max. Continuous Power (kVA)	3.0	3.6	4.0	4.6	5.0	5.5
Max. Peak Current (A) (10min)	18.8 / 21.7	22.5 / 26.0	25 / 28.9	28.8 / 33.2	31.3 / 36.1	34.6 / 39.9
Max. Peak Power (kVA) (10min)	4.5 / 4.5	5.4 / 5.4	6.0 / 6.0	6.9 / 6.9	7.5 / 7.5	8.3 / 8.3
Nominal AC Voltage L-L (V)	240 / 208					
Nominal AC Voltage L-O (V)	120 / 104					
Nominal AC Frequency L-O (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	AF3K-DH	AF3.6K-DH	AF4K-DH	AF4.6K-DH	AF5K-DH	AF5.5K-DH
PV Reverse Polarity Protection	Yes					
Bat. Reverse Polarity Protection	Yes					
Over Current/Voltage Protection	Yes					
Anti-Islanding Protection	Yes					
AC Short Circuit Protection	Yes					
Residual Current Detection	Yes					
Ground Fault Monitoring	Yes					
Insulation Resister Detection	Yes					
PV Arc Detection	Yes					
Rapid Shut Down	Yes					
Protection Degree	IP65 / NEMA4X					
General Data	AF3K-DH	AF3.6K-DH	AF4K-DH	AF4.6K-DH	AF5K-DH	AF5.5K-DH
Dimensions (H x W x D)	560 x 400 x 229 mm / 22.0 x 15.7 x 9.0 in					
Weight	25 kgs / 55 lbs					
Topology	Transformerless					
Cooling	Natural Convection					
Relatively Humidity	0 - 100 %					
Operating Temperature Range	- 25 to 60 °C / - 77 to 140 °F					
Operating Altitude	< 4000 m / < 13123 ft					
Noise Emission (dB)	< 25					
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, 4G					
Certification & Approvals	UL 1741 SA, UL 1741, UL1699B, UL 1998, IEEEE1547, IEEEE1547A, IEEEE1547.1, CSA 22.2 No.107, Rule21, HECO Rule 14					
EMC	FCC part15 CLASS B					

PV Input	AF6K-DH	AF7K-DH	AF7.6K-DH	AF8K-DH	AF8.6K-DH	AF9.6K-DH
Max. Input Power (kW)	9.0	10.5	11.4	12.0	12.9	15.0
Max. PV Voltage (V)	600					
MPPT Range (V)	80 - 550					
Normal Voltage (V)	360					
Startup Voltage (V)	100					
Max. Input Current (A)	15.5 x 2	15.5 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						
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					
AC Grid						
Max. Continuous Power (kVA)	6.0	7.0	7.6	8.0	8.6	9.6
Max. Continuous Current (A)	25.0 / 29.0	29.5 / 34.0	32.0 / 36.5	33.5 / 38.5	36.0 / 41.5	40.0 / 46.5
Nominal Grid Voltage (V)	211 to 264 @ 240 / 183 to 229 @ 208					
Nominal Grid Frequency (Hz)	60					
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)					
Current THD (%)	< 3					
Gen Input&AC Back-up	AF6K-DH	AF7K-DH	AF7.6K-DH	AF8K-DH	AF8.6K-DH	AF9.6K-DH
Max. Continuous Current (A)	25.0 / 29.0	29.5 / 34.0	32.0 / 36.5	33.5 / 38.5	36.0 / 41.5	40.0 / 46.5
Max. Continuous Power (kVA)	6.0	7.0	7.6	8.0	8.6	9.6
Max. Peak Current (A) (10min)	37.5 / 43.3	43.8 / 49.5	47.5 / 49.5	47.9 / 49.5	47.9 / 49.5	47.9 / 49.5
Max. Peak Power (kVA) (10min)	9.0 / 9.0	10.5 / 10.3	11.4 / 10.3	11.5 / 10.3	11.5 / 10.3	11.5 / 10.3
Nominal AC Voltage L-L (V)	240 / 208					
Nominal AC Voltage L-O (V)	120 / 104					
Nominal AC Frequency L-O (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	AF6K-DH	AF7K-DH	AF7.6K-DH	AF8K-DH	AF8.6K-DH	AF9.6K-DH
PV Reverse Polarity Protection	Yes					
Bat. Reverse Polarity Protection	Yes					
Over Current/Voltage Protection	Yes					
Anti-Islanding Protection	Yes					
AC Short Circuit Protection	Yes					
Residual Current Detection	Yes					
Ground Fault Monitoring	Yes					
Insulation Resister Detection	Yes					
PV Arc Detection	Yes					
Rapid Shut Down	Yes					
Protection Degree	IP65 / NEMA4X					
General Data	AF6K-DH	AF7K-DH	AF7.6K-DH	AF8K-DH	AF8.6K-DH	AF9.6K-DH
Dimensions (H x W x D)	560 x 400 x 229 mm / 22.0 x 15.7 x 9.0 in					
Weight	25 kgs / 55 lbs					
Topology	Transformerless					
Cooling	Natural Convection	Intelligent Fan				
Relatively Humidity	0 - 100 %					
Operating Temperature Range	- 25 to 60 °C / - 77 to 140 °F					
Operating Altitude	< 4000 m / < 13123 ft					
Noise Emission (dB)	< 25	< 40				
Standby Consumption (W)	< 10					
Mounting	Wall Bracket					
Communication with RSD	SUNSPEC					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, 4G					
Certification & Approvals	UL 1741 SA, UL 1741, UL1699B, UL 1998, IEEEE1547, IEEEE1547A, IEEEE1547.1, CSA 22.2 No.107, Rule21, HECO Rule 14					
EMC	FCC part15 CLASS B					

# Monitoring Device & Solution



Failure alarm



PV sytem  
information push



Multiple systems  
in one account



Cloud data  
synchronization



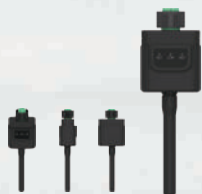
PC browser  
Android and IOS



Real-time/ Historical  
data monitoring and  
analysis



System Income  
Calculation



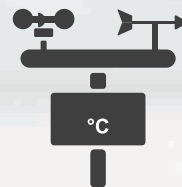
Wi-Fi / Ethernet / GPRS Data Sticker



Power Plant Data Logger



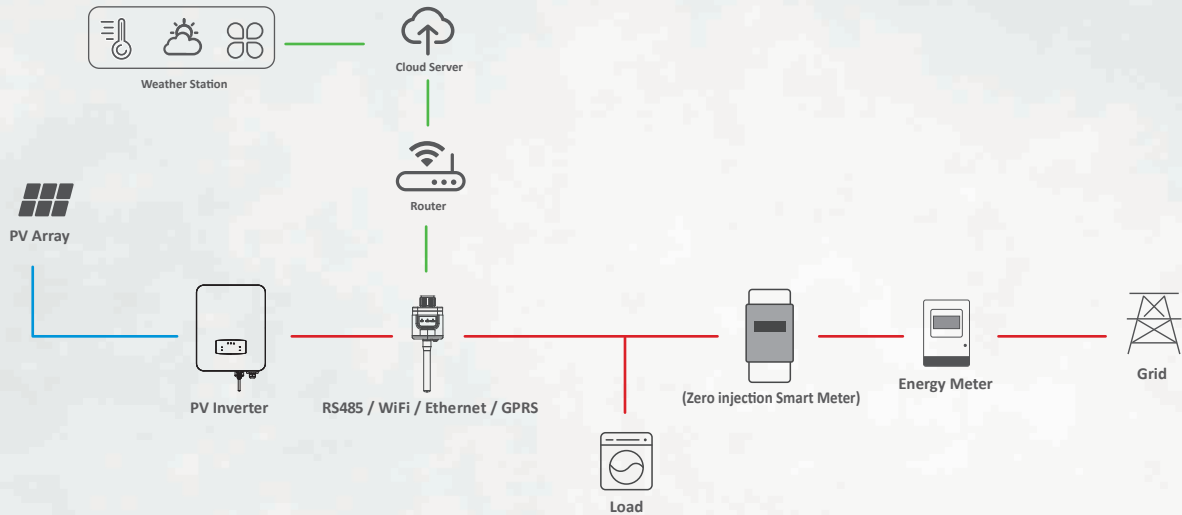
Zero injection Smart Meter(optional)



Weather Station

# PV System Monitoring Solution

## Single Inverter Monitoring Solution



## Multiply Inverters Monitoring Solution

