

Three Phase PV String Inverter

3-15 kW Low-voltage Series



The Afore Three-phase string inverters Low-voltage Series are designed for commercial and power plant PV system applications, rating from 3kW to 15kW. All models with aluminum housings 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 (can be changed to Ethernet / GPRS). Check the system status anytime and anywhere via online portal APP.



MPPT Range
Wide MPPT Range



PV OVERSIZE
1.5 Times PV Oversize



UNIBODY
One-piece Aluminum Housing



PROTECTION
Build-in SPD Type II



SMART
Smart IV Curve Scanning



UPDATE
Remote Firmware Update

Quick Arc Fault circuit interruption (Optional)



WiFi standard



Compact design



Multiple intelligent protections



Compatible with bifacial modules



String level monitoring



PV Input Data	BNT003KTA	BNT004KTA	BNT005KTA	BNT006KTA	BNT008KTA	BNT010KTA	BNT012KTA	BNT015KTA
Max. DC Power (W)	5100	6000	7500	9000	12000	15000	18000	22500
Max. DC Voltage (V)	750							
MPPT Voltage Range (V)	150 - 600							
MPPT Full Power Voltage Range (V)	220 - 600							330 - 600
Rated Input Voltage (V)	380						400	
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 x 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	BNT003KTA	BNT004KTA	BNT005KTA	BNT006KTA	BNT008KTA	BNT010KTA	BNT012KTA	BNT015KTA
Max. Output Power (W)	3300	4400	5500	6600	8800	11000	13200	16500
Nominal Output Power (W)	3000	4000	5000	6000	8000	10000	12000	15000
Max. Output Current (A)	10.5	13.5	17	21.5	27	30	32	40
Nominal Output Voltage (V)	3P+N+PE / 3P+PE 133 / 230							
Grid Voltage Range	180-260Vac (According to local standard)							
Nominal Output Frequency (Hz)	50 / 60							
Grid Frequency Range	45-55 / 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	BNT003KTA	BNT004KTA	BNT005KTA	BNT006KTA	BNT008KTA	BNT010KTA	BNT012KTA	BNT015KTA
Max. Efficiency	97.50%		98.00%			98.10%		98.40%
Euro Efficiency	97.00%		97.40%	97.50%			97.80%	
Protection	BNT003KTA	BNT004KTA	BNT005KTA	BNT006KTA	BNT008KTA	BNT010KTA	BNT012KTA	BNT015KTA
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	BNT003KTA	BNT004KTA	BNT005KTA	BNT006KTA	BNT008KTA	BNT010KTA	BNT012KTA	BNT015KTA
Dimensions (W x H x D, mm)	370 x 510 x 167		370 x 510 x 192			370 x 535 x 192		
Weight (kg)	16		16		17		19	
Protection Degree	IP65							
Enclosure Material	Aluminum							
Ambient Temperature Range (°C)	-25 - +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			<40			<51	
Night Power Consumption (W)	<1							
Max. Operation Altitude (m)	2000							
Certifications and Standards	BNT003KTA	BNT004KTA	BNT005KTA	BNT006KTA	BNT008KTA	BNT010KTA	BNT012KTA	BNT015KTA
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							

Three Phase PV String Inverter

17-30 kW Low-voltage Series



The Afore Three-phase string inverters Low-voltage Series are designed for commercial and power plant PV system applications, rating from 17kW to 30kW. All models with aluminum housings 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 (can be changed to Ethernet / GPRS). Check the system status anytime and anywhere via online portal APP.

Max. 20A MAX. 20Adc 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
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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

PV Input Data	BNT017KTA	BNT020KTA	BNT025KTA	BNT030KTA
Max. DC Power (W)	25500	30000	37500	45000
Max. DC Voltage (V)	750			
MPPT Voltage Range (V)	200 - 700			
MPPT Full Power Voltage Range (V)	310 - 600	320 - 600	300 - 600	
Rated Input Voltage (V)	400			
Start-up Voltage (V)	150	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	BNT017KTA	BNT020KTA	BNT025KTA	BNT030KTA
Max. Output Power (W)	18700	22000	27500	33000
Nominal Output Power (W)	17000	20000	25000	30000
Max. Output Current (A)	48	60	80	96
Nominal Output Voltage (V)	3P+N+PE / 3P+PE 133/230			
Grid Voltage Range	180-260Vac (According to local standard)			
Nominal Output Frequency (Hz)	50/60			
Grid Frequency Range	45-55 / 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	BNT017KTA	BNT020KTA	BNT025KTA	BNT030KTA
Max. Efficiency	98.40%			
Euro Efficiency	98.00%	98.10%		
Protection	BNT017KTA	BNT020KTA	BNT025KTA	BNT030KTA
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)			
General Data	BNT017KTA	BNT020KTA	BNT025KTA	BNT030KTA
Dimensions (W x H x D, mm)	450 x 485 x 210	710 x 470 x 236		
Weight (kg)	26	44	51	
Protection Degree	IP65			
Enclosure Material	Aluminum			
Ambient Temperature Range (°C)	-25 - +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)	2000			
Certifications and Standards	BNT017KTA	BNT020KTA	BNT025KTA	BNT030KTA
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			

Three Phase Hybrid Storage Inverter

3-17 kW Delta Voltage Series

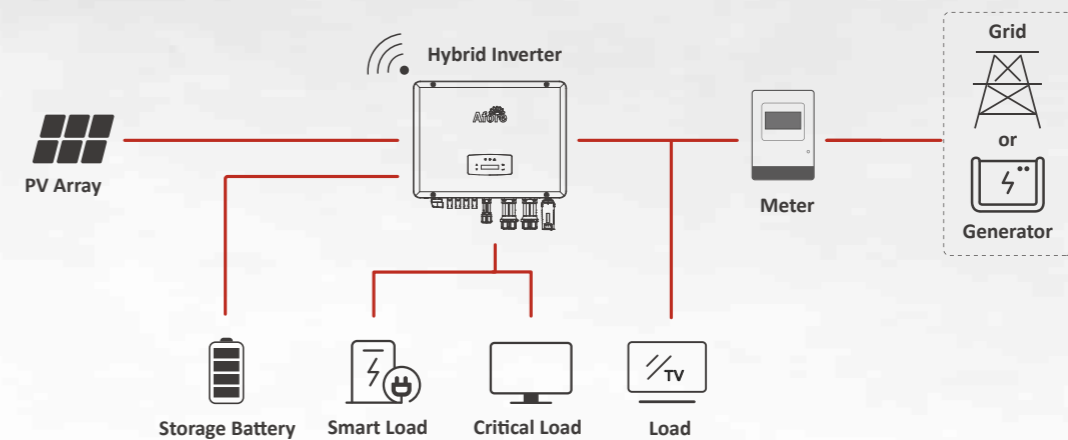


The Afore three phase storage inverters delta voltage series are designed to increase energy independence for homeowners and commercial users. The power range is from 3.0kW to 17kW, compatible with low voltage (150-800V) batteries.

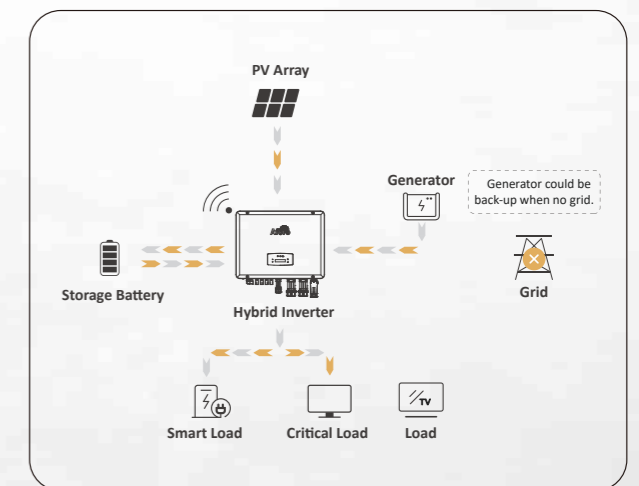
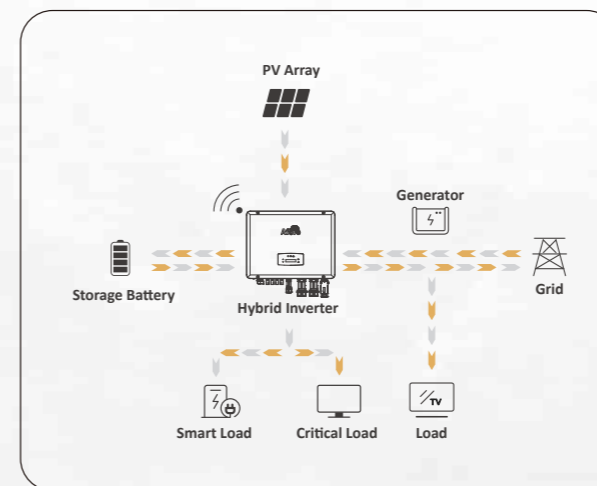
Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from public grid.

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:

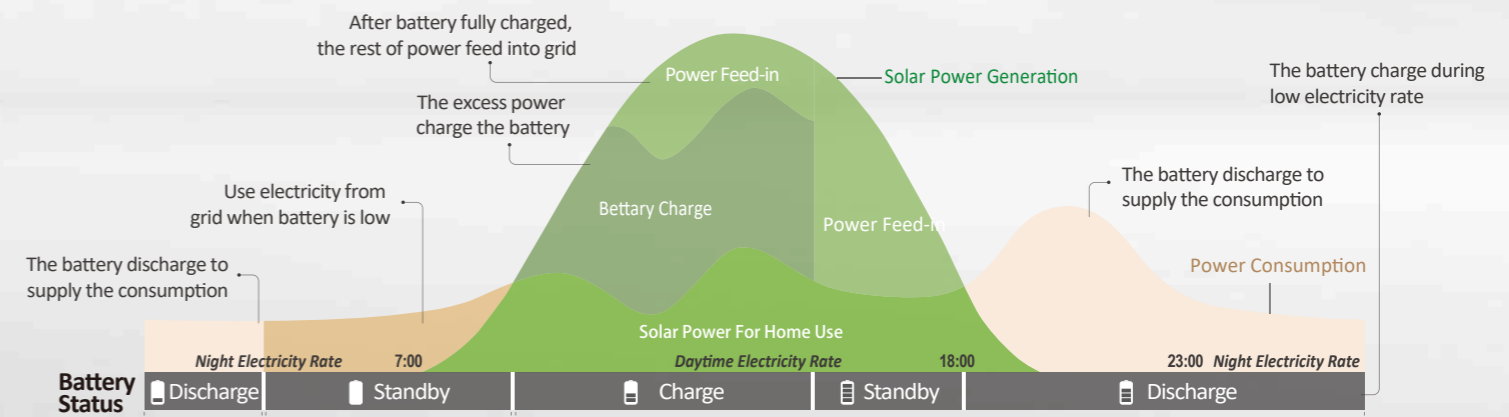


Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



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)



100% UNBALANCE
Support Unbalance Load



Max. 1.5
PV OVERSIZE
1.5 Times PV Oversize



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



<10 ms
UPS FUNCTION
Switch Time < 10ms



INPUT
Support Generator

Support for Time-of-use Optimization

Configurable Operation Modes

AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

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

Smart Monitoring & Remote Firmware Upgrade

PV Input	AF3K-THA	AF4K-THA	AF5K-THA	AF6K-THA	AF3K-THC	AF4K-THC
Max. DC Input Power (kW)	5	6	7.5	9	5	6
Max. PV Voltage (V)	1000					
Rated DC Input Voltage (V)	400					
DC Input Voltage Range (V)	150-1000					
MPPT Voltage Range (V)	150-850					
Full MPPT Range(V)	200-850					
Start-up Voltage (V)	160					
Max. DC Input Current (A)	20x2					
Max. Short Current(A)	30x2					
No. of MPPT Tracker / Strings	2/2					
Battery Port						
Battery Nominal Voltage (V)	200	200	200	250	100	100
Battery Voltage Range (V)	150-600			80-600		
Max. Charge/Discharge Current (A)	30					
Max. Charge/Discharge Power (kW)	3	4	5	6	3	4
Charging Curve	3 Stages					
Compatible Battery Type	Li-ion / Sodium-ion battery					
AC Grid	AF3K-THA	AF4K-THA	AF5K-THA	AF6K-THA	AF3K-THC	AF4K-THC
Nominal AC Output Power (VA)	3000	4000	5000	6000	3000	4000
Max. AC Power (VA)	4500	6000	7500	9000	4500	6000
Max. AC Output Current (A)	10.5	13.5	17	21.5	10.5	13.5
Nominal AC Voltage (V)	3P+N+PE/3P+PE 133/230					
Nominal AC Frequency (Hz)	50/60					
Power Factor	1 (-0.8-0.8) adjustable					
Current THD (%)	<3%					
AC Load Output (Back-up)						
Nominal Output Power (VA)	3000	4000	5000	6000	3000	4000
Nominal Output Voltage (V)	3P+N+PE/3P+PE 133/230					
Nominal Output Frequency (Hz)	50/60					
Nominal Output Current (A)	7.6	10.1	12.6	15.1	7.6	10.1
Peak Output Power	3300VA, 60s	4400VA, 60s	5500VA, 60s	6600VA, 60s	3300VA, 60s	4400VA, 60s
THDV (with linear load)	<3%					
Switching Time (ms)	<10					
Efficiency	AF3K-THA	AF4K-THA	AF5K-THA	AF6K-THA	AF3K-THC	AF4K-THC
Europe Efficiency	97.50%					
Max. Efficiency	98.00%	98.20%	98.30%	98.00%	98.00%	98.20%
Battery Charge/Discharge Efficiency	98.00%					
Protection						
Reverse Polarity Protection	Yes					
Over Current / Voltage Protection	Yes					
Anti-islanding Protection	Yes					
AC Short-circuit Protection	Yes					
Leakage Current Detection	Yes					
Ground Fault Monitoring	Yes					
Grid Monitoring	Yes					
Enclosure Protect Level	IP65					
General Data	AF3K-THA	AF4K-THA	AF5K-THA	AF6K-THA	AF3K-THC	AF4K-THC
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					
Noise Emission (dB)	<30					
Standby Consumption (W)	<5					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G					
Certification & Approvals	NRS097, G98/G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, VDE0126, IEC62109-1, IEC62109-2					
EMC	EN61000-6-2, EN61000-6-3					

PV Input	AF5K-THC	AF6K-THC	AF8K-THA	AF10K-THA	AF12K-THA	AF15K-THA	AF17K-THA
Max. DC Input Power (kW)	7.5	9	12	15	18	22.5	25.5
Max. PV Voltage (V)	1000						
Rated DC Input Voltage (V)	400						
DC Input Voltage Range (V)	150-1000						
MPPT Voltage Range (V)	150-850						
Full MPPT Range(V)	200-850			250-850		300-850	
Start-up Voltage (V)	160						
Max. DC Input Current (A)	20x2		20+32		32x2		40x2
Max. Short Current(A)	30x2		30+48		48x2		60x2
No. of MPPT Tracker / Strings	2/2		2/3		2/4		2/4
Battery Port							
Battery Nominal Voltage (V)	150	150	200	250	300	350	400
Battery Voltage Range (V)	80-600			150-600			
Max. Charge/Discharge Current (A)	50						
Max. Charge/Discharge Power (kW)	5	6	8	10	12	15	17
Charging Curve	3 Stages						
Compatible Battery Type	Li-ion / Sodium-ion battery						
AC Grid Output	AF5K-THC	AF6K-THC	AF8K-THA	AF10K-THA	AF12K-THA	AF15K-THA	AF17K-THA
Nominal AC Output Power (VA)	5000	6000	8000	10000	12000	15000	17000
Max. AC Power (VA)	7500	9000	12000	15000	18000	22500	25500
Max. AC Output Current (A)	17	21.5	27	30	32	40	48
Nominal AC Voltage (V)	3P+N+PE/3P+PE 133/230						
Nominal AC Frequency (Hz)	50/60						
Power Factor	1 (-0.8-0.8) adjustable						
Current THD (%)	<3%						
AC Load Output (Back-up)							
Nominal Output Power (VA)	5000	6000	8000	10000	12000	15000	17000
Nominal Output Voltage (V)	3P+N+PE/3P+PE 133/230						
Nominal Output Frequency (Hz)	50/60						
Nominal Output Current (A)	12.6	15.1	20.1	25.1	30.1	37.6	42.7
Peak Output Power	5500VA, 60s	6600VA, 60s	8800VA, 60s	11000VA, 60s	13200VA, 60s	16500VA, 60s	18700VA, 60s
THDV (with linear load)	<3%						
Switching Time (ms)	<10						
Efficiency	AF5K-THC	AF6K-THC	AF8K-THA	AF10K-THA	AF12K-THA	AF15K-THA	AF17K-THA
Europe Efficiency	97.50%		97.80%			98.00%	
Max. Efficiency	98.20%	98.30%			98.50%		
Battery Charge/Discharge Efficiency	98.00%						
Protection							
Reverse Polarity Protection	Yes						
Over Current / Voltage Protection	Yes						
Anti-islanding Protection	Yes						
AC Short-circuit Protection	Yes						
Leakage Current Detection	Yes						
Ground Fault Monitoring	Yes						
Grid Monitoring	Yes						
Enclosure Protect Level	IP65						
General Data	AF5K-THC	AF6K-THC	AF8K-THA	AF10K-THA	AF12K-THA	AF15K-THA	AF17K-THA
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						
Noise Emission (dB)	<30			<40			
Standby Consumption (W)	<5						
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G						
Certification & Approvals	NRS097, G98/G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, VDE0126, IEC62109-1, IEC62109-2						
EMC	EN61000-6-2, EN61000-6-3						