

# Three Phase Hybrid Storage Inverter

## 3-7 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 7kW, compatible with high voltage batteries.

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

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

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

						
<b>AI EMS</b> Electricity Pricing & Automation	<b>WIDE RANGE</b> Voltage Range (80-450V)	<b>PV OVERSIZE</b> 1.5 Times PV Oversize	<b>MAX. 18.5A</b> String Current Up To 18.5A	<b>UPS FUNCTION</b> Switch Time < 10ms	<b>COMPACT</b> Compact Design	<b>GENERATOR</b> Generator Backup Support
	Support for Time-of-use Optimization 		Build in Anti-feed-in Function 		Configurable Operation Modes 	100% unbalanced output, each phase 
	AFCI (Optional) & Rapid Shutdown Ready 		Smart Monitoring & Remote Firmware Upgrade 			

Technical Data	AF3K-MTHA	AF4K-MTHA	AF5K-MTHA	AF6K-MTHA	AF7K-MTHA
<b>PV Input</b>					
Max. DC Input Power (kW)	5	6	7.5	9	10.5
Max. PV Voltage (V)	600				
Rated DC Input Voltage (V)	400				
DC Input Voltage Range (V)	120-600				
MPPT Voltage Range (V)	100-550				
Full MPPT Range(V)	120-550	150-550	200-550	250-550	300-550
Start-up Voltage (V)	120				
Max. DC Input Current (A)	18.5 x2				
Max. Short Current(A)	25 x2				
No. of MPPT Tracker / Strings	2/2				
<b>Battery Port</b>					
Battery Nominal Voltage (V)	200	200	200	300	300
Battery Voltage Range (V)	80-450				
Max. Charge/Discharge Current (A)	30				
Max. Charge/Discharge Power (kW)	3	4	5	6	7
Charging Curve	3 Stages				
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery				
<b>AC Grid</b>					
Nominal AC Output Power (kW)	3	4	5	6	7
Max. AC Input/Output Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	10.5 / 7.7
Max. AC Output Current (A)	10.5	13.5	17	21.5	25
Nominal AC Voltage (V)	3P+PE/3P 133/230				
Nominal AC Frequency (Hz)	50/60				
Power Factor	1 (-0.8-0.8 adjustable)				
Current THD (%)	<3%				
<b>AC Load Output (Back-up)</b>					
Nominal Output Power (kVA)	3	4	5	6	7
Nominal Output Voltage (V)	3P+PE/3P 133/230				
Nominal Output Frequency (Hz)	50/60				
Nominal Output Current (A)	7.6	10.1	12.6	15.1	7.6
Peak Output Power	3.3kVA, 60s	4.4kVA, 60s	5.5kVA, 60s	6.6kVA, 60s	7.7kVA, 60s
THDV (with linear load)	<3%				
Switching Time (ms)	<10				
<b>Efficiency</b>					
Europe Efficiency	97.50%				
Max. Efficiency	98.00%	98.20%	98.30%	98.00%	
Battery Charge/Discharge Efficiency	98.00%				
<b>Protection</b>					
Reverse Polarity Protection	Yes				
Over Current / Voltage Protection	Yes				
Anti-islanding Protection	Yes				
AC Short-circuit Protection	Yes				
Leakage Current Detection	Yes				
Ground Fault Monitoring	Yes				
Grid Monitoring	Yes				
Enclosure Protect Level	IP66				
AC/DC surge protection	Type II				
<b>General Data</b>					
Dimensions (W x H x D, mm)	370 x 598.5 x 192mm				
Weight (kg)	22kg				
Topology	Transformerless				
Cooling Concept	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				
Certification & Approvals	EN50549-1, C10/C11, IEC62109-1, IEC62109-2, IEC62477-1				
EMC	EN61000-6-2, EN61000-6-3				

# 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 high voltage batteries.

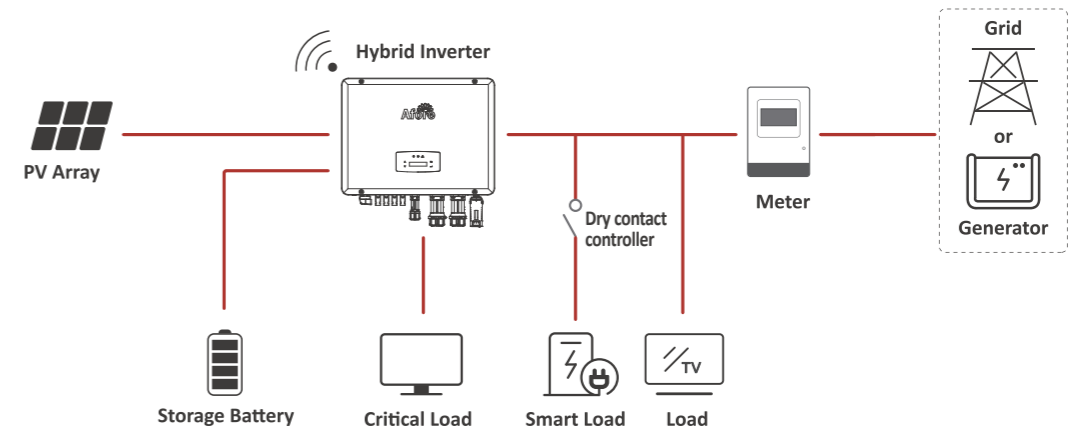
Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from public grid.

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

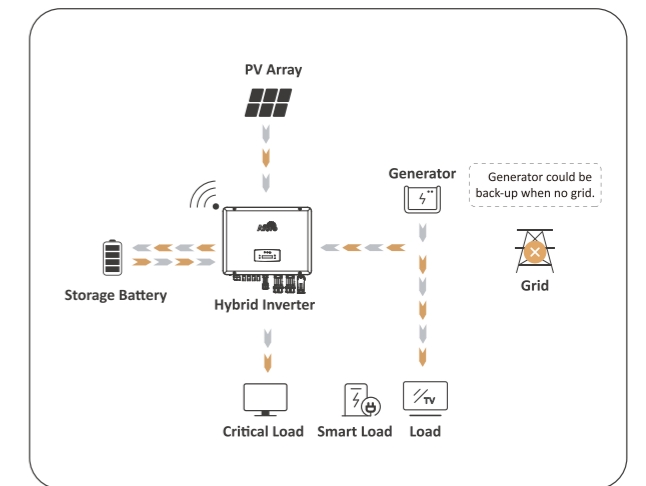
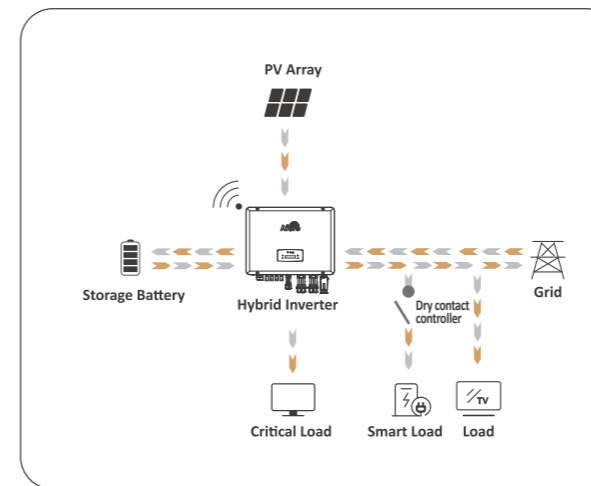
The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically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

 <b>AI EMS</b> Electricity Pricing & Automation	 <b>BATTERY</b> Support Sodium metal chloride battery	 <b>WIDE RANGE</b> Voltage Range (150-600V)	 <b>100% UNBALANCE</b> Support Unbalance Load	 <b>Max. 40A</b> String Current Up To 40A	 <b>&lt;10 ms</b> Switch Time < 10ms	 <b>INPUT</b> Support Generator
Support for Time-of-use Optimization 			Build in Anti-feed-in Function 			
Configurable Operation Modes 			100% unbalanced output, each phase; 200% unbalanced output, each phase (Below 10kW) 			
AFCI (Optional) & Rapid Shutdown Ready 			Smart Monitoring & Remote Firmware Upgrade 			

For New Storage System:

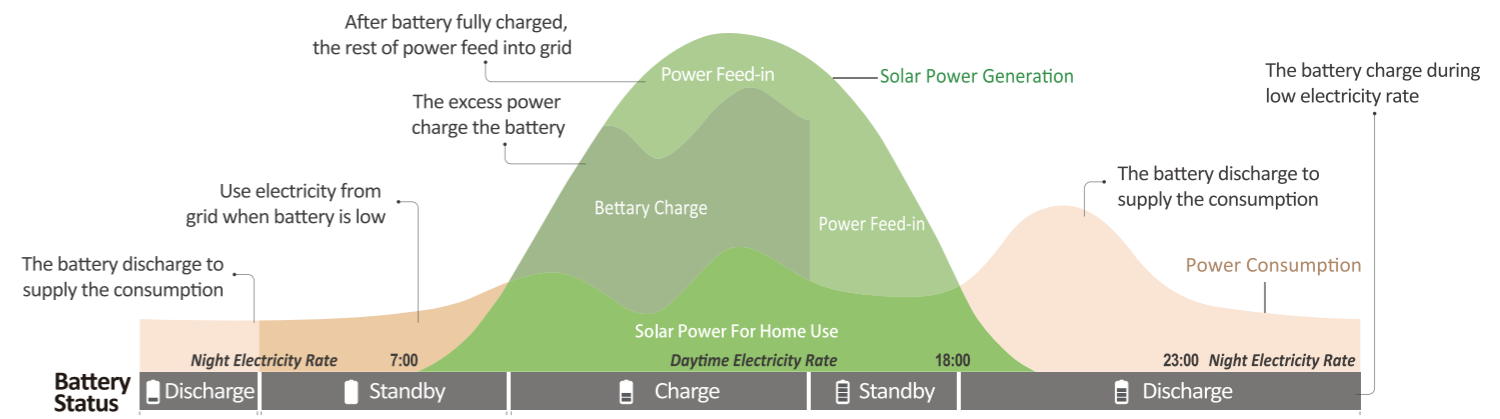


### Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



### Optimizing Self-Consumption Mode

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



■ Technical Data	AF3K-THA	AF4K-THA	AF5K-THA	AF6K-THA	AF3K-THC	AF4K-THC
<b>PV Input</b>						
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					
<b>Battery Port</b>						
Battery Nominal Voltage (V)	200	200	200	250	100	100
Battery Voltage Range (V)	150-600			80-600		
Max. Charge/Discharge Current (A)	30			50		
Max. Charge/Discharge Power (kW)	3	4	5	6	3	4
Charging Curve	3 Stages					
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery					
<b>AC Grid</b>						
Nominal AC Output Power (W)	3000	4000	5000	6000	3000	4000
Max. AC Input/Output Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	4.5 / 3.3	6 / 4.4
Max. AC Output Current (A)	10.5	13.5	17	21.5	10.5	13.5
Nominal AC Voltage (V)	3P+PE/3P 133/230					
Nominal AC Frequency (Hz)	50/60					
Power Factor	1 (-0.8-0.8) adjustable					
Current THD (%)	<3%					
<b>AC Load Output (Back-up)</b>						
Nominal Output Power (kVA)	3	4	5	6	3	4
Nominal Output Voltage (V)	3P+PE/3P 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	3.3kVA, 60s	4.4kVA, 60s	5.5kVA, 60s	6.6kVA, 60s	3.3kVA, 60s	4.4kVA, 60s
THDV (with linear load)	<3%					
Switching Time (ms)	<10					
<b>Efficiency</b>						
Europe Efficiency	97.50%					
Max. Efficiency	98.00%	98.20%	98.30%	98.00%	98.20%	
Battery Charge/Discharge Efficiency	98.00%					
<b>Protection</b>						
Reverse Polarity Protection	Yes					
Over Current / Voltage Protection	Yes					
Anti-islanding Protection	Yes					
AC Short-circuit Protection	Yes					
Leakage Current Detection	Yes					
Ground Fault Monitoring	Yes					
Grid Monitoring	Yes					
Enclosure Protect Level	IP65					
AC/DC surge protection	Type II					
<b>General Data</b>						
Dimensions (W x H x D, mm)	558 x 535 x 260 mm					
Weight (kg)	29kg					
Topology	Transformerless					
Cooling Concept	Natural Convection			Intelligent Fan		
Relative Humidity	0-100%					
Operating Temperature Range (°C)	-25 to 60 °C					
Operating Altitude (m)	<4000					
Noise Emission (dB)	<30					
Standby Consumption (W)	<5					
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G					
Certification & Approvals	EN50549-1, C10/C11, IEC62109-1, IEC62109-2					
EMC	EN61000-6-2, EN61000-6-3					

■ Technical Data	AF5K-THC	AF6K-THC	AF8K-THA	AF10K-THA	AF12K-THA	AF15K-THA	AF17K-THA
<b>PV Input</b>							
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			
<b>Battery Port</b>							
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			60			
Max. Charge/Discharge Power (kW)	5	6	8	10	12	15	17
Charging Curve	3 Stages						
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery						
<b>AC Grid</b>							
Nominal AC Output Power (W)	5000	6000	8000	10000	12000	15000	17000
Max. AC Input/Output Power (kVA)	7.5 / 5.5	9 / 6.6	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5	25.5 / 18.7
Max. AC Output Current (A)	17	21.5	27	30	32	40	48
Nominal AC Voltage (V)	3P+PE/3P 133/230						
Nominal AC Frequency (Hz)	50/60						
Power Factor	1 (-0.8-0.8) adjustable						
Current THD (%)	<3%						
<b>AC Load Output (Back-up)</b>							
Nominal Output Power (kVA)	5	6	8	10	12	15	17
Nominal Output Voltage (V)	3P+PE/3P 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	5.5kVA, 60s	6.6kVA, 60s	8.8kVA, 60s	11kVA, 60s	13.2kVA, 60s	16.5kVA, 60s	18.7kVA, 60s
THDV (with linear load)	<3%						
Switching Time (ms)	<10						
<b>Efficiency</b>							
Europe Efficiency	97.50%		97.80%		98.00%		98.10%
Max. Efficiency	98.20%	98.30%		98.50%			
Battery Charge/Discharge Efficiency	98.00%						
<b>Protection</b>							
Reverse Polarity Protection	Yes						
Over Current / Voltage Protection	Yes						
Anti-islanding Protection	Yes						
AC Short-circuit Protection	Yes						
Leakage Current Detection	Yes						
Ground Fault Monitoring	Yes						
Grid Monitoring	Yes						
Enclosure Protect Level	IP65						
AC/DC surge protection	Type II						
<b>General Data</b>							
Dimensions (W x H x D, mm)	558 x 535 x 260 mm						
Weight (kg)	29kg		36kg				
Topology	Transformerless						
Cooling Concept	Natural Convection			Intelligent Fan			
Relative 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	EN50549-1, C10/C11, IEC62109-1, IEC62109-2						
EMC	EN61000-6-2, EN61000-6-3						

# Three Phase Hybrid Storage Inverter

## 20-36 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 20kW to 36kW, compatible with high voltage batteries.

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

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

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

 <b>AI EMS</b> Electricity Pricing & Automation	 <b>BATTERY</b> Support Sodium metal chloride battery	 <b>WIDE RANGE</b> Voltage Range (150-600V)	 <b>100% UNBALANCE</b> Support Unbalance Load	 <b>Max. 40A</b> String Current Up To 40A	 <b>&lt;10 ms</b> Switch Time < 10ms	 <b>INPUT</b> Support Generator
Support 280AH, 315AH battery system	Support for Time-of-use Optimization	Configurable Operation Modes	AFCI (Optional) & Rapid Shutdown Ready	2 times AC Oversize	Build in Anti-feed-in Function	100% unbalanced output, each phase
				Smart Monitoring & Remote Firmware Upgrade		

■ Technical Data	AF20K-THA	AF25K-THA	AF30K-THA	AF36K-THA
<b>PV Input</b>				
Max. DC Input Power (kW)	30	37.5	45	54
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	200-850	200-850	240-850
Start-up Voltage (V)	160			
Max. DC Input Current (A)	40x4			
Max. Short Current(A)	48x4			
No. of MPPT Tracker / Strings	4/8			
<b>Battery Port</b>				
Battery Nominal Voltage (V)	200	250	300	320
Battery Voltage Range (V)	150-600			
Max. Charge/Discharge Current (A)	120			
Max. Charge/Discharge Power (kW)	20	25	30	36
Charging Curve	3 Stages			
Compatible Battery Type	Li-ion / Lead-acid / Sodium metal chloride battery			
<b>AC Grid</b>				
Nominal AC Output Power (kW)	20	25	30	36
Max. AC Input/Output Power (kVA)	30 / 22	37.5 / 27.5	45 / 33	51 / 36
Max. AC Output Current (A)	58	72.5	87	96
Nominal AC Voltage (V)	3P+PE/3P 133/230			
Nominal AC Frequency (Hz)	50/60			
Power Factor	1 (-0.8-0.8 adjustable)			
Current THD (%)	<3%			
<b>AC Load Output (Back-up)</b>				
Nominal Output Power (kVA)	20	25	30	36
Nominal Output Voltage (V)	3P+PE/3P 133/230			
Nominal Output Frequency (Hz)	50/60			
Max. AC Output Current (A)	58	72.5	87	96
Peak Output Power	22kVA, 60s	27.5kVA, 60s	33kVA, 60s	39.6kVA, 60s
THDV (with linear load)	5%			
Switching Time (ms)	<10			
<b>Efficiency</b>				
Europe Efficiency	98.20%	98.30%	98.30%	98.30%
Max. Efficiency	98.60%			
Battery Charge/Discharge Efficiency	98.30%			
<b>Protection</b>				
Reverse Polarity Protection	Yes			
Over Current / Voltage Protection	Yes			
Anti-islanding Protection	Yes			
AC Short-circuit Protection	Yes			
Leakage Current Detection	Yes			
Ground Fault Monitoring	Yes			
Grid Monitoring	Yes			
Enclosure Protect Level	IP66			
AC/DC surge protection	Type II			
<b>General Data</b>				
Dimensions (W x H x D, mm)	867 x 715 x 306 mm			
Weight (kg)	81kg			
Topology	Transformerless			
Cooling Concept	Intelligent Fan			
Relative Humidity	0-100%			
Operating Temperature Range (°C)	-25 to 60 °C			
Operating Altitude (m)	<4000			
Standby Consumption (W)	<100			
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G			
Certification & Approvals	EN50549-1, C10/C11, IEC62109-1, IEC62109-2			
EMC	EN61000-6-2, EN61000-6-4			