



## ENERGY STORAGE SYSTEM SOLUTIONS PV SYSTEM SOLUTIONS



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# 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)

Max.  
1.5


**PV OVERSIZE**  
1.5 Times PV Oversize

Max.  
18.5A


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

<10  
ms

**UPS FUNCTION**  
Switch Time < 10ms



**COMPACT**  
Compact Design





**GENERATOR**  
Generator Backup Support


Support for Time-of-use Optimization

Configurable Operation Modes

AFCI (Optional) & Rapid Shutdown Ready

 Build in Anti-feed-in Function

 100% unbalanced output, each phase

 Smart Monitoring & Remote Firmware Upgrade

| ■ 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)            | 5  | 6           | 7.5         | 9           | 12              | 15         | 18           | 22.5         |  |  |  |  |  |  |  |  |
| Max. PV Voltage (V)                 | 1000   |             |             |             |                 |            |              |              |  |  |  |  |  |  |  |  |
| Rated DC Input Voltage (V)          | 620  |             |             |             |                 |            |              |              |  |  |  |  |  |  |  |  |
| DC Input Voltage Range (V)          | 150-1000   |             |             |             |                 |            |              |              |  |  |  |  |  |  |  |  |
| MPPT Voltage Range (V)              | 150-850  |             |             |             |                 |            |              |              |  |  |  |  |  |  |  |  |
| Full MPPT Range(V)                  | 200-850  |             | 250-850     |             | 300-850         |            | 500-850      |              |  |  |  |  |  |  |  |  |
| 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                     | 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/G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, VDE0126, IEC62109-1, IEC62109-2, IEC62477-1 |             |             |             |                 |            |              |              |  |  |  |  |  |  |  |  |
| EMC                                 | EN61000-6-2, EN61000-6-3   |             |             |             |                 |            |              |              |  |  |  |  |  |  |  |  |

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# 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. 40A**  
String Current Up To 40A

**UPS FUNCTION**  
Switch Time < 10ms

**INPUT**  
Support Generator

Support for Time-of-use Optimization

Configurable Operation Modes

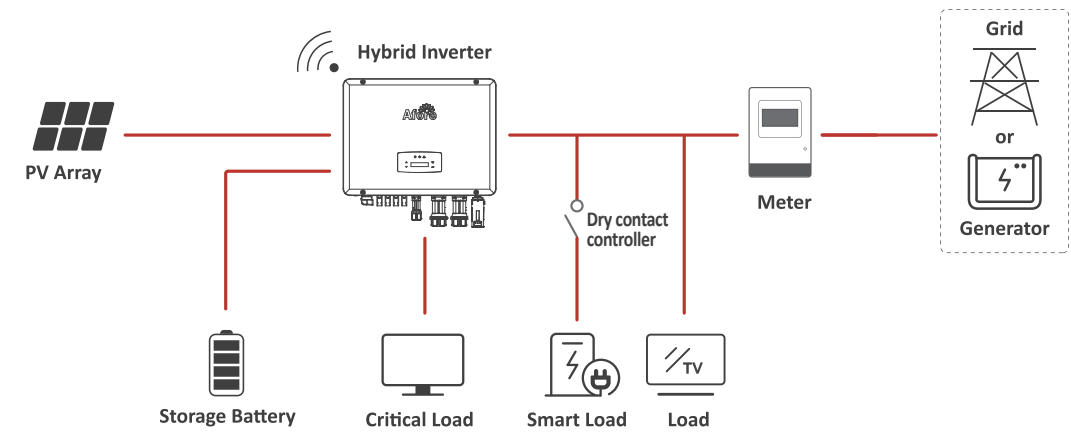
AFCI (Optional) & Rapid Shutdown Ready

Build in Anti-feed-in Function

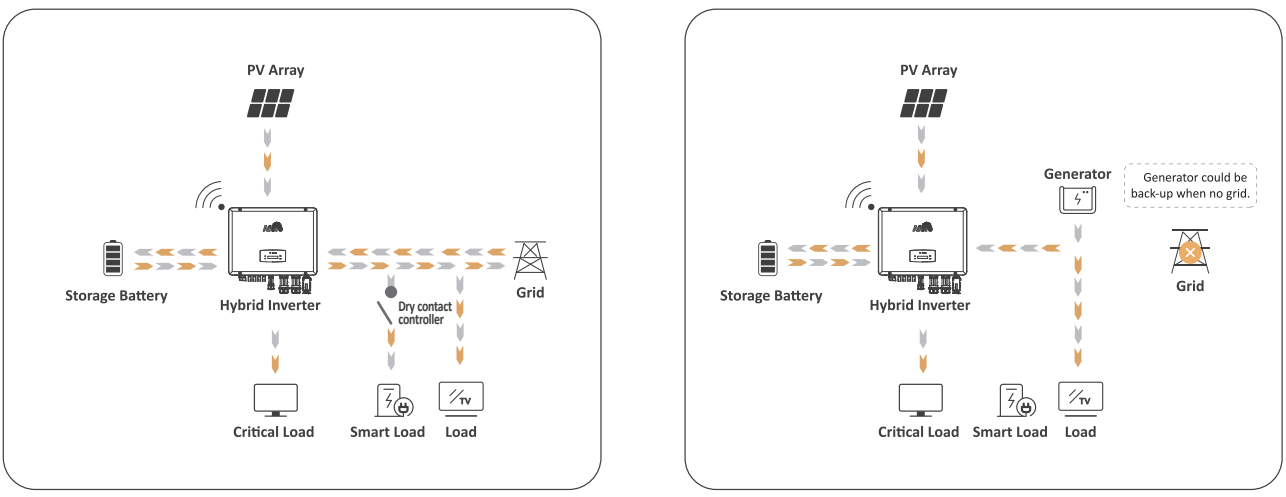
100% unbalanced output, each phase;  
200% unbalanced output, each phase (≤ 10kW)

Smart Monitoring & Remote Firmware Upgrade

For New Storage System:

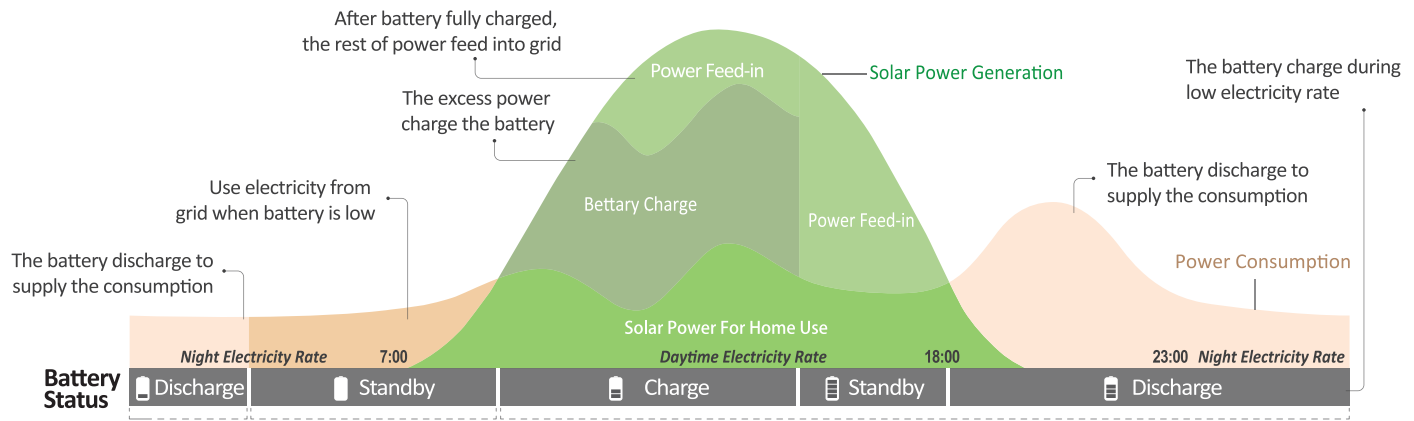


Optimizing Self-Consumption (on-grid) + Emergency Power Supply (off-grid)



### 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)            | 5  | 6           | 7.5         | 9               | 12          | 15         |
| Max. PV Voltage (V)                 | 1000   |             |             |                 |             |            |
| Rated DC Input Voltage (V)          | 620  |             |             |                 |             |            |
| DC Input Voltage Range (V)          | 150-1000   |             |             |                 |             |            |
| MPPT Voltage Range (V)              | 150-850  |             |             |                 |             |            |
| Full MPPT Range(V)                  | 200-850  |             |             | 250-850         | 300-850     | 500-850    |
| 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-circuit Protection         | Yes  |             |             |                 |             |            |
| Leakage Current Detection           | Yes  |             |             |                 |             |            |
| Ground Fault Monitoring             | Yes  |             |             |                 |             |            |
| Grid Monitoring                     | Yes  |             |             |                 |             |            |
| Enclosure Protect Level             | IP65   |             |             |                 |             |            |
| 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, VDE0126, 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)            | 18   | 22.5         | 25.5         | 30         | 37.5         | 45         |
| Max. PV Voltage (V)                 | 1000   |              |              |            |              |            |
| Rated DC Input Voltage (V)          | 620  |              |              |            |              |            |
| DC Input Voltage Range (V)          | 150 - 1000   |              |              |            |              |            |
| MPPT Voltage Range (V)              | 150 - 850  |              |              |            |              |            |
| Full MPPT Range(V)                  | 500 - 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-circuit Protection         | Yes  |              |              |            |              |            |
| Leakage Current Detection           | Yes  |              |              |            |              |            |
| Ground Fault Monitoring             | Yes  |              |              |            |              |            |
| Grid Monitoring                     | Yes  |              |              |            |              |            |
| Enclosure Protect Level             | IP65   |              |              |            |              |            |
| 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, VDE0126, 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.

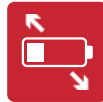
The Afore energy storage inverter features Smart Electricity Pricing & Automation, an energy management tool based on real-time electricity pricing strategies. It continuously monitors electricity price fluctuations and dynamically adjusts device operation accordingly. Operating 24/7 fully automatically 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. 20A**  
String Current Up To 20A





**<10 ms**  
UPS FUNCTION  
Switch Time < 10ms

- 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 (≤ 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)            | 5  | 6           | 7.5         | 9           | 12         | 15              | 18           |
| Max. PV Voltage (V)                 |  |             |             | 1000        |            |                 |              |
| Rated DC Input Voltage (V)          |  |             |             | 620         |            |                 |              |
| DC Input Voltage Range (V)          |  |             |             | 150-1000    |            |                 |              |
| MPPT Voltage Range (V)              |  |             |             | 150-850     |            |                 |              |
| Full MPPT Range(V)                  | 200-850  |             |             | 250-850     | 300-850    | 500-850         |              |
| 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             |  |             |             | IP65        |            |                 |              |
| 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, VDE0126, IEC62109-1, IEC62109-2, IEC62477-1 |             |             |             |            |                 |              |
| EMC                                 | EN61000-6-2, EN61000-6-3   |             |             |             |            |                 |              |



# Three Phase Hybrid Storage Inverter

## 36-50 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 50kW, 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. 40A**  
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

 2 times AC Oversize

 Build in Anti-feed-in Function

 100% unbalanced output, each phase

 Smart Monitoring & Remote Firmware Upgrade

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| ■ Technical Data                    | AF36K-TH   | AF40K-TH   | AF50K-TH   |
|-------------------------------------|--|--|------------|
| PV Input                            |  |  |            |
| Max. DC Input Power (kW)            | 54   | 60   | 75         |
| Max. PV Voltage (V)                 |  | 1000   |            |
| Rated DC Input Voltage (V)          |  | 620  |            |
| DC Input Voltage Range (V)          |  | 150-1000   |            |
| MPPT Voltage Range (V)              |  | 150-850  |            |
| Full MPPT Range(V)                  |  | 500-850  |            |
| Start-up Voltage (V)                |  | 160  |            |
| Max. DC Input Current (A)           |  | 40 x 4   |            |
| Max. Short Current(A)               |  | 48 x 4   |            |
| No. of MPPT Tracker / Strings       |  | 4/8  |            |
| 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   | 50         |
| Charging Curve                      |  | 3 Stages   |            |
| Compatible Battery Type             |  | Li-ion / Lead-acid / Sodium metal chloride battery |            |
| AC Grid                             |  |  |            |
| Nominal AC Output Power (kW)        | 36   | 40   | 50         |
| Max. AC Input/Output Power (kVA)    | 54 / 39.6  | 60 / 44  | 75 / 55    |
| Max. AC Output Current (A)          | 60.5   | 67   | 83.5       |
| 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)          | 36   | 40   | 50         |
| Nominal Output Voltage (V)          |  | 230/400  |            |
| Nominal Output Frequency (Hz)       |  | 50/60  |            |
| Max. AC Output Current (A)          | 60.5   | 67   | 83.5       |
| Peak Output Power                   | 39.6kVA, 60s   | 44kVA, 60s   | 55kVA, 60s |
| THDV (with linear load)             |  | 3%   |            |
| Switching Time (ms)                 |  | <10  |            |
| Efficiency                          |  |  |            |
| Europe Efficiency                   | 98.20%   | 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-circuit 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           | NRS097, G99, EN50549-1, C10/C11, AS4777.2, VDE-AR-N4105, VDE0126, IEC62109-1, IEC62109-2 |  |            |
| EMC                                 |  | EN61000-6-2, EN61000-6-4                           |            |

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