

# AF-DH Series / 3-9.6kW

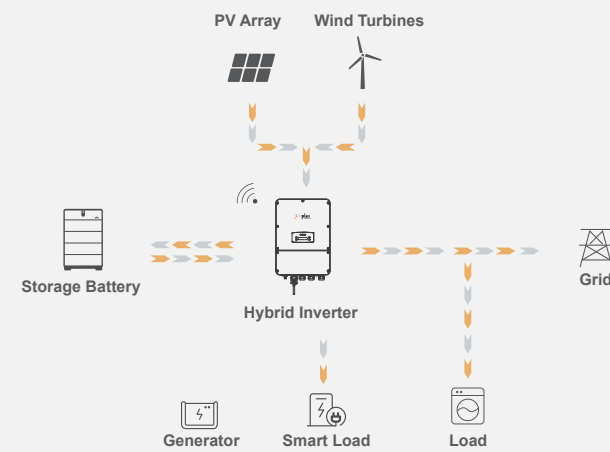
Residential Split Phase Hybrid Inverter



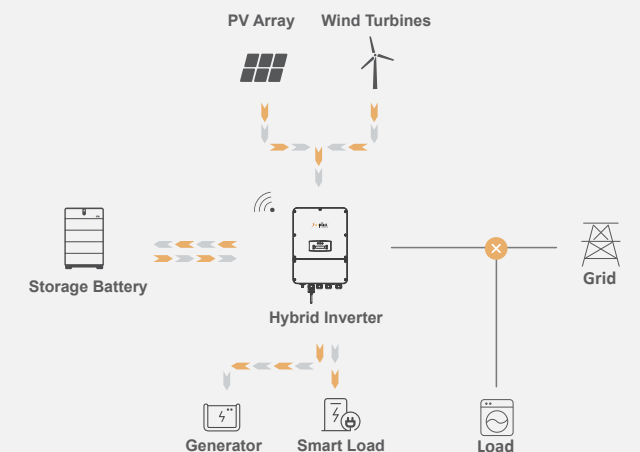
- Max. 1.5**  
1.5 Times PV Oversize
- 3 MPPT**  
Up to 3 MPPT Channels
- Support Split-phase (120/240Vac) Grid
- <10ms**  
Switch Time < 10ms
- Max.6 Parallel Stacking
- Support Generator & Wind Turbines

- 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

## Optimizing Self-Consumption (on-grid)

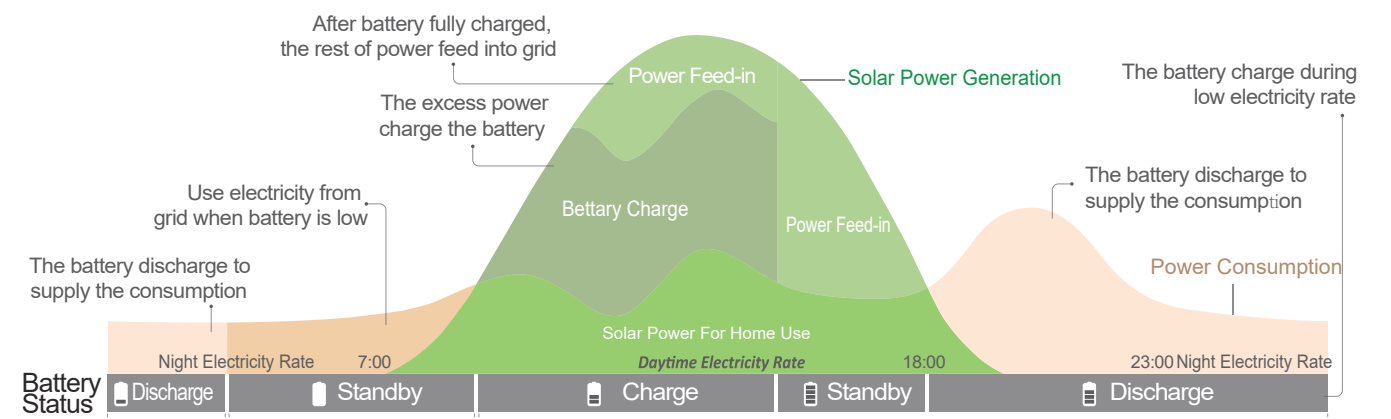


## Emergency Power Supply (off-grid)



## 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.



Input (PV)	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)	660					
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					
<b>Input (Battery)</b>						
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					
<b>Output (Grid)</b>						
Normal Power(kVA)	3.0	3.6	4.0	4.6	5.0	5.5
Normal 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	0.99 ( Adjustable from 0.8 overexcited to 0.8 underexcited )					
Current THD(%)	< 3					
<b>Output (Backup)</b>						
Normal Output 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
Normal Output Power(kVA)	3.0	3.6	4.0	4.6	5.0	5.5
Max. Output 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
Peak Output 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 Output Voltage L-L(V)	240 / 208					
Nominal Output Voltage L-N(V)	120 / 104					
Nominal Output Frequency(Hz)	60					
Switching Time(ms)	< 10					
Voltage THD(%)	< 3					
<b>Efficiency</b>						
CEC Efficiency(%)	97.0					
Max. Efficiency(%)	97.6					
PV to Bat. Efficiency(%)	98.1					
Bat. between AC Efficiency(%)	96.8					
<b>Protection</b>						
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					
Enclosure Protect Level	IP65 / NEMA4X					
<b>General Data</b>						
Dimensions (H x W x D)	560 x 400 x 229 mm / 22.0 x 15.7x 9.0 in					
Weight	25 kgs / 55 lbs					
Topology	Transformerless					
Cooling	Natural Convection					
Relatively Humidity	0 - 100 %					
Operating Temperature Range	- 25 ~ 60°C / - 77 ~ 140 °F					
Operating Altitude	< 4000m / < 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, CSA 22.2 No. 107-01, UL 1998, UL1699B, Rules21, HECO Rule 14					
EMC	FCC part15 CLASS B					

Input (PV)	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)	660					
MPPT Range(V)	80 - 550					
Normal Voltage(V)	360					
Startup Voltage(V)	100					
Max. Input Current(A)	15.5 x 2	15.5x 3				
Max. Short Current(A)	26.0 x 2	26.0x 3				
<b>Input (Battery)</b>						
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					
<b>Output (Grid)</b>						
Normal Power(kVA)	6.0	7.0	7.6	8.0	8.6	9.6
Normal 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	0.99 ( Adjustable from 0.8 overexcited to 0.8 underexcited )					
Current THD(%)	< 3					
<b>Output (Backup)</b>						
Normal Output 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
Normal Output Power(kVA)	6.0	7.0	7.6	8.0	8.6	9.6
Max. Output 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
Peak Output 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 Output Voltage L-L(V)	240 / 208					
Nominal Output Voltage L-N(V)	120 / 104					
Nominal Output Frequency(Hz)	60					
Switching Time(ms)	< 10					
Voltage THD(%)	< 3					
<b>Efficiency</b>						
CEC Efficiency(%)	97					
Max. Efficiency(%)	97.6					
PV to Bat. Efficiency(%)	98.1					
Bat. between AC Efficiency(%)	96.8					
<b>Protection</b>						
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					
Enclosure Protect Level	IP65 / NEMA4X					
<b>General Data</b>						
Dimensions (H x W x D)	560 x 400 x 229 mm / 22.0 x 15.7x 9.0 in					
Weight	25 kgs / 55 lbs					
Topology	Transformerless					
Cooling	Natural Convection	Intelligent Fan				
Relatively Humidity	0 - 100 %					
Operating Temperature Range	- 25 ~ 60°C / - 77 ~ 140 °F					
Operating Altitude	< 4000m / < 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, CSA 22.2 No. 107-01, UL 1998, UL1699B, Rules21, HECO Rule 14					
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