

Apollo Matrix

- Solar Hybrid Inverter -



Apollo Matrix is an all-in-one transformer-based solar hybrid inverter ideal for backup power, off-grid and residential ESS use, combining an inverter charger, an MPPT solar charge controller and a high-speed automatic transfer switch in one enclosure, handling high surge loads easily, ensuring efficient energy use in complex systems. Outperforming conventional transformer-based inverters, Apollo Matrix transformer-based hybrid inverter maximizes solar energy use by preferentially powering loads, charging batteries, and feeding surplus back to the grid, minimizing waste.

Additionally, Apollo Matrix supports maximizing energy self-consumption, grid feed-in for utility credits, retrofitting existing PV system, and optimizing bills with peak shaving and time-of-use strategies.

Superior Reliability

- Transformer-based, high surge power
- 0-2ms ultra-fast switch to battery power
- Maximize solar energy utilization and minimize energy waste
- AGS, Power Control & Power Assist

Enhanced Flexibility

- Parallel and three-phase up to 9 units, 45kW
- AC Coupling and DC Coupling
- Two AC outputs for smart load management
- Compatible with mainstream lithium battery brands and generators

ESS Capabilities

- Maximize self-consumption
- Lower electricity bills via peak shaving & time-of-use
- Grid feed-in for utility credits
- AC Coupling retrofit capability

Easy O&M

- All-in-one design for easy installation
- Local monitoring via E4 LCD Monitor
- Remote monitoring and control via Nova Web & APP

Model	Apollo Matrix 3.0M	Apollo Matrix 3.0S	Apollo Matrix 5.0S
Power Assist	Yes		
Feedback into Grid	Yes		
AC inputs	Input voltage range: 175~265 VAC, Input frequency: 45~65Hz		
AC input Current	32A (transfer switch)		50A (transfer switch)
Inverter			
Nominal battery voltage (VDC)	24	48	
Input voltage range (VDC)	21~34	42~68	
Output	Voltage: 220/230/240 VAC ± 2%, Frequency: 50/60 Hz ± 0.1%		
Harmonic distortion	<2%		
Cont. output power at 25°C (VA)	3000	3000	5000
Max Output power at 25°C (W)	3000	3000	5000
Peak power (W)	9000	9000	15000
Maximum efficiency	94%	95%	96%
Zero load power (W)	14	14	18
Charger			
Charge voltage 'absorption'/'float' (V)	28.8 / 27.6	57.6 / 55.2	
Battery types	AGM / GEL / OPzV / Lead-Carbon / Flooded / Traction / Lithium		
Battery Charge current (A)	80	40	70
Temperature compensation	Yes		
Solar Charger Controller			
Max output current (A)	60	60	90
Maximum PV power (W)	2000	4000	6000
PV open circuit voltage (V)	150		
MPPT voltage range (V)	65~145		
PV short circuit current (A)	18	35	54
MPPT charger maximum efficiency	98%		
MPPT efficiency	99.5%		
Protection	a) output short circuit; b) overload; c) battery voltage too high; d) battery voltage too low; e) temperature too high; f) input voltage out of range		
General Data			
AC Out Current (A)	AC Out1 Current: 32 AC Out2 Current: 32		AC Out1 Current: 50 AC Out2 Current: 32
Transfer time	<0ms (<15ms when Weak Grid Mode)		
Remote on-off	Yes		
Programmable relay	2x		
Protection	a) output short circuit; b) overload; c) battery voltage too high; d) battery voltage too low; e) temperature too high; f) input voltage out of range; g) input voltage ripple too high; h) Fan block		
ComSync communication port	For parallel and three phase operation		
ComMON communication port	For remote monitoring and system integration		
Operating temperature range	-20 ~ +65°C		
Storage temperature range	-40 ~ +70°C		
Relative humidity in operation	95% without condensation		
Altitude (m)	2000		
Mechanical Data			
Dimension (mm)	499*272*144	499*272*144	570*310*154
Net Weight (kg)	20	20	32
Cooling	Forced fan		
Protection index	IP21		
Standards			
Safety	EN-IEC 62477-1, EN-IEC 62109-1, EN-IEC 62109-2		
EMC	EN-IEC 61000-6-1, EN-IEC 61000-6-2, EN 61000-6-3, EN 61000-3-11, EN 61000-3-12		
Grid Regulation	NRS 097-2-1:2017, NTS 2.1 (A)*, RD 1699*		
Approval	CEC-Listed		

* Coming soon