



## Solar Hybrid Inverter

# Apollo Matrix

3kW / 5kW

Support feeding energy back into the grid  
Parallel and three-phase capability

Apollo Matrix is an all-in-one solar hybrid inverter combining an inverter charger, an MPPT solar charge controller and a high-speed automatic transfer switch in one enclosure, designed for various applications, including off grid and residential ESS applications, to ensure the most efficient energy consumption even in an extremely complicated system. Its high surge capability makes it capable to deal with the initial currents of the high-demanding appliances, such as air conditioner, water pump, washing machine, freezer etc.

It's capable to expand system capacity up to 45kW with 9 units in parallel and three-phase operation. It supports feeding energy back into the grid for residential ESS application. In an off-grid application, thanks to its power assist and power control function, it works well with poor generators. Apollo Matrix can automatically adjust its charging current by taking loads into account to protect the generator from overload. Once the temporary peak power appears, it can also discharge the battery to supply power to compensate the insufficient part of the generator.

- All-in-one design for easy installation
- Transformer based low frequency battery inverter, reliable for heavy loads running
- Maximum self-consumption, no more worries about rising electricity prices
- Peak shaving: discharging batteries at peak hours, to reduce your electricity bills
- "Time of use" function, support 8 different time periods for charging and discharging battery
- AC coupling possibility to update existing solar system to energy storage system
- Compatible with mainstream lithium battery brands
- Feed-in-tariff(optional): feeding overproduced energy to the grid and get paid
- Ensure uninterruptible operation during weak solar generation or grid failure in 0-2ms
- Support max. 9 units paralleled and three-phase application
- Two AC outputs for load management
- Flexible and smart management of various power sources including PV, grid, batteries and generator
- Local monitoring and control on E4 LCD monitor
- Remote monitoring and control on NOVA Web or APP anywhere anytime via Wi-Fi communication

Model No.	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 $\pm$ 2%, Frequency: 50/60 Hz $\pm$ 0.1%		
Harmonic distortion	<2%		
Power factor	1.0		
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' (V) / 'float' (VDC)	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*
* Coming soon	