Matrix II

Off-Grid Inverter



10kW / 15kW

Transformer-based
Built-in 600/900V MPPT
Built-in Multiple MPPT Trackers
Two AC inputs & Two AC outputs

Matrix II is an advanced all-in-one transformer-based inverter purpose-built for off-grid applications, featuring a high-efficiency inverter charger with a 600/900V MPPT solar charge controller. The inverter offers dual AC inputs and outputs for automatic connection to the active power source. Outperforming conventional transformer-based inverters, Matrix II transformer-based off-grid inverter maximizes solar energy use by preferentially powering loads and charging batteries, minimizing waste.

Enhanced Flexibility

- AC Coupling and DC Coupling
- Parallel up to 3 units, 45kW
- Two AC inputs and two AC outputs
- Built-in 600/900V MPPT solar charge controller for easy installation and lower cable costs
- Built-in multiple MPPT trackers for flexible system design and higher yields
- AGS function, Power Control & Power Assist

Superior Reliability

- Transformer-based, high surge power
- 0ms ultra-fast switch to battery power
- Maximize solar energy utilization and minimize energy waste
- Minimize the impact of loads on batteries when the grid is available

Easy O&M

- System wake-up when the AC or PV is regained
- Bluetooth-based setup and local monitoring via TBB Nova APP
- Local monitoring via E4 LCD Monitor
- Remote monitoring and control via Nova Web & APP

Model	Matrix II 10.0S Pro-R	Matrix II 15.0S Pro-R
Product topology	Transformer based	
Power Assist / Grid feedback	Yes / Yes	
AC input range	175~265VAC / 45Hz~55Hz@50Hz (normal), 55Hz~65Hz@60Hz (normal)	
AC input Current (transfer switch) (A)	2x100	2x100
Inverter		
Nominal battery voltage / Input voltage	48V / 42~68V	
AC output voltage / frequency	220/230/240VAC ± 2% / 50/60Hz ± 0.1%	
Harmonic distortion	<2%	
Cont. output power at 25°C (VA)	10000	15000
Max output power (30min) at 25°C (W)	10000	15000
Cont. output power at 25°C / 40°C / 65°C (W)	8000 / 7000 / 6000	13000 / 10000 / 7500
Peak power (W) / Surge	30000 / 300%	45000 / 300%
Maximum efficiency	96%	
Zero load power (W)	40	60
Charger		
Charge voltage 'absorption' (V) / 'float' (V)	57.6 / 55.2	
Battery types	AGM / GEL / OPzV / Lead-Carbon / Flooded / Traction / Lithium	
Max AC charge current (A)	140	200
Temperature compensation	Yes	
Solar Charge Controller		
Max output current(A)	300	400
Maximum PV open circuit voltage (V)	600	900
PV operating voltage range (V)	120-600	160-900
MPPT voltage range (V)	80-525	80-720
Maximum charge Power	17500W @ 57.6V total 5000W @ 57.6V per tracker	23000W @ 57.6V total 8000W @ 57.6V per tracker
Number of MPPT trackers	4	
Maximum PV input / short circuit current per tracker	20+20+20+20 / 25+25+25+25	
Allowable maximum PV panel power per tracker	8000+8000+8000+8000	10000+10000+10000+10000
Charge voltage 'absorption' (V) / 'float' (V)	Default: 57.6 / 55.2	
Charger voltage range (V)	40-60	
Maximum efficiency / MPPT efficiency	97% / >99.9%	
PV array insulation resistance detection	Integrated	
Protection	a) battery voltage too high; b) battery voltage too low; c) temperature too high; d) PV reverse polarity; e) surge	
General Data		
Main Output (AC Out1) Current (A)	100	100
Auxiliary Output (AC Out2) Current (A)	50	
Transfer time	0ms (<15ms in Weak AC source Mode)	
Remote on-off / Programmable relay	Yes / 3x (30Vdc/3A or 250Vac/3A)	
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 operation	
ComMON communication port	For remote monitoring and system integration	
Operating temperature range / Relative humidity	-40°C~+65°C / 95% without condensation	
Altitude (m)	3500	
Mechanical Data		
Battery Connection / AC Connection	Bolts M8 (2+2) / Bolts M6	
PV connection	Bolts M3	
Dimension (mm) (max) / Net Weight (kg)	725*520*320 (Excluding connectors and brackets) / 90	725*520*320 (Excluding connectors and brackets) / 108
Cooling / Protection Category	Forced fan / IP20	
Standards		
Safety	EN-IEC 62477-1, EN-IEC 62109-1, EN-IEC 62109-2, EN-IEC 62040-1	
EMC	EN-IEC 61000-6-1, EN-IEC 61000-6-2, EN 61000-6-3, EN 61000-6-4	