



INV047 | INV048

RIIO SUN INVERTER

3KVA-M

MPPT 24V

3KVA-S

MPPT 48V

OVERVIEW

Riio Sun is a powerful all-in-one solar inverter equipped with a high-performance sine wave inverter, AC charger, on MPPT solar charge controller, and a high-speed transfer switch. Its professional MPPT technology can Maximise and regulate the use of solar energy to charge batteries efficiently. The transformer-based design makes it worry-free to start up motor loads. Its built-in high-speed automatic transfer switch ensures you uninterpretable power supply all the time, which makes it an ideal solution for backup power and basic off-grid applications.

Its ECO mode can also be used to prolong the battery backup time while maintaining loads' normal operation. Thanks to its power assist and power control function, it works well with limited AC sources such as generators or limited grid. Riio Sun can automatically adjust its charging current by taking loads into account to protect the AC source from overload. Once the temporary peak power appears, it can also discharge the battery to supply power to compensate the insufficient part of the limited AC source.

FEATURES & BENEFITS

- All-in-one design for easy installation and reduce hardware costs
- Ideal for DC Coupled PV System, Power backup system, solar hybrid system
- Transformer-based design and high surge capacity for all kinds of heavy loads
- Built-in MPPT solar charger controller to Maximise the use of green solar energy
- Ultra-short transfer time (0.4ms) to protect mission-critical loads like server and ATM
- Built-in ECO Mode to prolong the battery backup time (45% energy saving at max)
- Power assist function enables limited AC to power heavy loads
- Compatible with mainstream lithium battery brands
- TBB premium II battery charging management
- Built-in battery SOC estimation
- Equalisation charging program available for flooded and OPZS battery
- Extremely high inverter efficiency up to 94%
- Extremely high MPPT efficiency up to 98%
- Remote monitoring and control via NOVA Web & APP
- Fully programmable by APP

OFF GRID INVERTERS

RIIO SUN	3KVA-M	3KVA-S
Product Code	INV047	INV048
Product Topology	Transformer-based	
Generator power assist	Yes	
AC input voltage range (VAC)	175-265	
AC input Frequency range (Hz)	45-65	
AC input Current (transfer switch) (A)	32	
INVERTER		
Nominal battery voltage (V)	24	48
Input voltage range (V)	21~34	42~68
AC output voltage (VAC)	220/230/240 +/- 2%	
AC output Frequency (Hz)	50/60 ±1%	
Harmonic distortion	< 2%	
Load Power factor	1.0	
	3000	3000
Max Output power at 25°C (W)	3000	3000
Peak power (W) for 3 sec	6000	6000
Surge	300%	
Maximum efficiency	91%	93%
Zero load power (W)	17	17
CHARGER		
Charge voltage 'absorption' (V)	28.8	57.6
Charge voltage 'float' (V)	27.6	55.2
Battery types	AGM / GEL / OPZV / Lead-Carbon / Li-ion / Flooded / Traction / TBB SUPER-L	
Max AC charge current (A)	70	35
Temperature compensation	Yes	
SOLAR CHARGE CONTROLLER		
Max output current (A)	60	60
Maximum PV power (W)	2000	4000
PV open circuit voltage (V)	150	
MPPT voltage range (V)	65~145	
Max. PV short circuit current (A)	18	35
Charge voltage 'absorption' (V)	28.8	57.6
Charge voltage 'float' (V)	27.6	55.2
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	
CAN BUS Communication Port	For communication with the lithium battery	
GENERAL DATA		
Output (AC Out) Current (A)	32	
Transfer time	4ms (<15ms in Weak AC source Mode)	
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	
General purpose com. Port	RS485 (GPRS, WLAN optional with Kinergy)	
Operating temperature range	-20°C to 65°C	
Relative humidity in operation	95% without condensation	
Altitude (m)	2000	
MECHANICAL DATA		
Dimension (mm) (ma)	499x272x144	
Net weight (kg)	18	
Warranty	2 Years + 1 Year*	

*Add 1 Year to your warranty when you link your product to the NOVA App