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› Loom Solar Fusion 5kW 1-Phase On-Grid Solar Inverter User Manual

Loom Solar Fusion 5kW

Loom Solar Fusion 5kW 1-Phase On-Grid Solar Inverter User Manual

Model: Fusion 5kW | Brand: Loom Solar

1. PRODUCT OVERVIEW

The Loom Solar Fusion 5kW 1-Phase On-Grid Solar Inverter is designed for residential and small commercial solar power systems. It converts direct current (DC) electricity generated by solar panels into alternating current (AC) electricity for use in your home or to feed back into the utility grid. This inverter is engineered for high efficiency and reliable performance.



Image: Front view of the Loom Solar Fusion 5kW 1-Phase On-Grid Solar Inverter.

Key Features:

- **High Efficiency:** Converts DC from solar panels to AC with efficiency rates often exceeding 98%, maximizing energy usage.
- **Robust Design:** Designed to handle up to 5000 Watts of solar power, suitable for residential and small commercial applications.
- **Safety Features:** Includes over-voltage, short circuit, and reverse polarity protection to ensure safe operation.
- **AC/DC Lightning Protection:** Integrated protection against lightning strikes for both AC and DC circuits.
- **Reliable Heat Dissipation:** Advanced cooling mechanisms ensure stable operation and longevity.
- **Anti-Corrosion Alloy:** Constructed with materials resistant to corrosion, enhancing durability in various environments.

ON-GRID SOLAR INVERTER

5 kW Single-Phase Grid-Tie Inverter



Efficiency
98.1%



AC/Dc
Lightening
Protection



Reliable heat
Dissipation



Anti -
Corrosion
Alloy



Image: Visual representation of key features including 98.1% efficiency, AC/DC lightning protection, reliable heat dissipation, and anti-corrosion alloy.

2. SETUP AND INSTALLATION

Installation of the Loom Solar Fusion 5kW inverter requires electrical expertise. It is highly recommended that installation be performed by a certified solar professional to ensure safety, compliance with local electrical codes, and optimal system performance.

General Installation Steps:

- Site Selection:** Choose a well-ventilated location, protected from direct sunlight and extreme weather, with sufficient space for maintenance. The inverter has an IP65 rating for dust and water resistance, but optimal placement enhances lifespan.
- Mounting:** Securely mount the inverter to a sturdy wall or frame using appropriate hardware. Ensure proper clearance around the unit for airflow.
- DC Wiring:** Connect the DC input cables from the solar panels to the designated DC input terminals on the inverter. Observe correct polarity (+ and -).

4. **AC Wiring:** Connect the AC output cables from the inverter to your home's electrical panel and the utility grid connection point.
5. **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.
6. **System Check:** Before powering on, perform a thorough visual inspection and electrical checks to confirm all connections are secure and correct.

Refer to the detailed installation guide provided with the product packaging for specific wiring diagrams and safety instructions.

3. OPERATING INSTRUCTIONS

Once installed, the Loom Solar Fusion 5kW inverter operates largely automatically. It will begin converting solar energy into usable electricity when sufficient sunlight is available.

Starting the Inverter:

1. Ensure all DC and AC circuit breakers are in the OFF position.
2. Turn on the DC isolator switch located near the solar panels.
3. Turn on the AC circuit breaker in your electrical panel.
4. Turn on the DC switch on the inverter itself.
5. The inverter will perform a self-test and then begin operation, indicated by status lights on the front panel.

Monitoring Performance:

The Fusion 5kW inverter offers multiple ways to monitor its performance and your solar energy generation:

- **LED Display:** The inverter features an integrated LED display that shows real-time operational data, including power output, voltage, and status.
- **Mobile Application:** Utilize the dedicated mobile app for remote monitoring. This app connects via GPRS/Wifi Kit, WLAN, Ethernet, or 5G modes, providing detailed insights into your system's performance from anywhere.



Image: A smartphone displaying the online monitoring system for the solar inverter, showing energy generation data.



Image: Close-up view of the inverter's display panel and status indicators.

4. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Loom Solar Fusion 5kW inverter. While the inverter is designed for durability with IP65 protection, periodic checks are beneficial.

Recommended Maintenance:

- **Visual Inspection (Monthly):** Check the inverter and surrounding area for any signs of damage, loose connections, or obstructions to airflow. Ensure ventilation openings are clear.
- **Cleaning (Annually or as needed):** Gently clean the exterior of the inverter with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the unit is powered off before cleaning.
- **Connection Checks (Annually):** Have a qualified technician inspect all electrical connections (DC and AC) to ensure they are tight and free from corrosion.
- **Performance Monitoring:** Regularly check the inverter's performance data via the LED display or mobile app. Significant drops in output or frequent error messages may indicate an issue.

For any internal maintenance or repairs, always contact authorized service personnel.

5. TROUBLESHOOTING

This section provides guidance for common issues you might encounter with your Loom Solar Fusion 5kW inverter. For complex problems, contact customer support.

Common Issues and Solutions:

Problem	Possible Cause	Solution
Inverter not producing power	No sunlight, DC switch off, AC breaker tripped, grid outage.	Check for sufficient sunlight. Ensure DC switch and AC breaker are ON. Verify grid status.
Low power output	Partial shading on panels, dirty panels, system fault.	Check for shading. Clean solar panels. Monitor for error codes.
Error code displayed	Internal fault, over-voltage, over-current, grid issue.	Note the error code and consult the detailed manual or contact customer support. Do not attempt to repair.
Inverter making unusual noise	Loose components, fan malfunction.	Power off the inverter and contact customer support immediately.

Always prioritize safety. Before performing any checks, ensure the inverter is completely disconnected from both DC and AC power sources.

6. SPECIFICATIONS

The following table details the technical specifications for the Loom Solar Fusion 5kW 1-Phase On-Grid Solar Inverter.






LOOM SOLAR		FUSION 51 PV Grid-tied Inverter
DC	Max. Input power	5000W + 10%
	Max. DC I/P (Vdc)	550V
	Max. MPPT Voltage Range	80-550V
	Max. Input Current	20A
AC	Rated AC Power	5000W
	Rated Grid Frequency	50Hz(±5%)
	Rated Grid Voltage	230V
	Rated output current	23.5 Amp
	Power Factor	0.8
Ingress Protection	IP65	
Operating ambient Temperature	(-25°C ~ +65°C)	
Scan QR-code	Manufactured by: Loom Solar Pvt. Ltd.	
	Plot no. 14/6, Mathura Road, Sector - 27B, Faridabad - 121003	
	Customer Support : 011 - 4003 6959	
	✉ service@loomsolar.com 🌐 www.loomsolar.com	
	   	
	To log a complaint or register the warranty	

Image: Detailed technical specifications for the Loom Solar Fusion 5kW inverter, including DC and AC parameters.

Specification	Value
Brand	Loom Solar
Model Name	Fusion 51 (Fusion 5kW)
Recommended Uses	Home, Office
Power Source	Solar Powered

Specification	Value
Wattage	5000 Watts
Voltage	290 Volts
Output Power	5000 Watts
Standby Power Shutoff / Efficiency	98%
Electrical Output Waveform	Pure Sine Wave
Frequency	50 Hz
Item Dimensions (L x W x H)	33L x 47.2W x 20.2H Centimeters
Item Weight	15 Kilograms
Ingress Protection (IP) Rating	IP65
Operating Ambient Temperature	-25°C ~ +65°C
Max. Input Power (DC)	5000W + 10%
Max. DC Input Voltage (Vdc)	550V
Max. MPPT Voltage Range	80-550V
Max. Input Current (DC)	20A
Rated AC Power	5000W
Rated Grid Frequency	50Hz (±5%)
Rated Grid Voltage	230V
Rated Output Current (AC)	23.5 Amp
Power Factor	0.8
Country of Origin	India

7. WARRANTY AND SUPPORT

The Loom Solar Fusion 5kW 1-Phase On-Grid Solar Inverter comes with a comprehensive warranty and dedicated customer support.

Warranty Information:

- **Standard Warranty:** This product includes a 5-year warranty from the date of purchase.
- **Extended Warranty:** Additional extended warranty plans are available for purchase (e.g., 1-Year or 2-Year Extended Warranty Plans by Onsitego).

To log a complaint or register your warranty, please visit the official warranty registration page: [Loom Solar Product Warranty Registration](#).

Customer Support:

For technical assistance, service requests, or any inquiries, please contact Loom Solar customer support:

- **Manufacturer Contact:** Loom Solar Private Limited
- **Email (Sales):** sales@loomsolar.com
- **Email (E-commerce):** ecommerce@loomsolar.com
- **Contact Number:** 8447921124, 8800264805
- **Customer Support (General):** 011 - 4003 6959

Please have your product model number (Fusion 5kW) and purchase details ready when contacting support.