



Inverter Initial Diagnostic & Maintenance Guide

Solar Inverter



1. Check for Physical Damage

- Burnt Components: Scorch marks or discolouration.
- Loose Connections: Tight and unworn connections.
- Corrosion: Rust or corrosion on terminals/connectors.
- Physical Damage: Cracks, dents, or casing damage.
- Unusual Odours /Sounds: Burnt plastic smells; buzzing or popping noises.

2. Inspect Wiring

- Intact Wiring: Free from cuts, frays, or insulation damage.
- Properly Connected: Wires securely connected to terminals, connectors, and other components.
- Condition of Wires: No wear, cracking, or chafing; no exposed wiring.
- Correct Cable Size: Cables correctly rated for voltage and current.
- Grounding: grounding wires properly connected.

3. Power Supply Verification

3.1 Measure Input Voltage

- Solar Panel Voltage: Measure DC voltage from solar panels; compare with manual.
- Voltage Fluctuations: Ensure input voltage is stable and within acceptable range.
- Connections: Verify all wiring and connections are secure.

3.2 Measure Output Voltage

- Multi-meter: Check the output AC voltage.
- Expected Voltage: Ensure it matches the regional voltage (e.g., 120V or 230V).
- Rated Output: Confirm it aligns with inverter specifications; stable.
- Voltage Stability: Verify no fluctuations or sags under load.
- Load Handling: Ensure consistent performance without over voltage or under Voltage under different loads.

4. Indicator Lights and Displays

Indicator Lights:

DC->ON: Inverter detects DC input

DC->OFF: Low/None DC input voltage

AC->ON: Grid Connected

AC->OFF: Grid Unavailable

Normal->ON: Operating Normally

Normal->OFF: Stopped Operating

Alarm->ON: Detected faults or report faults

Alarm-> OFF: Under normal operation

Display Messages: Check digital display for system status.

Power and Load Indicators: Ensure accurate display of power generation and load.

Identify: Check the manual for error code explanations (e.g., F01 to F64).

Interpret: Understand the error (e.g., Overload, Over temperature) for Troubleshooting

Address:

- Manual Steps: Reset, check connections, ensure ventilation, Replace faulty parts.
- Support: Contact support if issues persist.

5. Functional Testing Checklist

Connect Load: Attach a known load (e.g., light bulb, fan) to the inverter.

Observe Power Delivery: Watch for issues like flickering lights or power cuts.

Inverter Performance:

- Ensure stable power without overheating or shutting down.
- Verify smooth handling of load changes. Measure Voltage:
- Use a multi-meter to check stable output voltage (e.g., 120V or 230V).
- Ensure no voltage fluctuations with load changes.

6. Environmental Factors Checklist

6.1 Temperature

- Ensure the inverter is operating within its specified temperature range.
- Check for any signs of overheating.

6.2 Ventilation

- Ensure adequate ventilation for the inverter.
- Check for dust or debris obstructions.

7. Software and Firmware Checklist

7.1 Firmware Updates

- Ensure the inverter's firmware is up to date.
- Check if issues can be resolved with a simple firmware update.

7.2 Configuration Settings

- Verify that the inverter's settings are correctly configured for the specific installation.

8. Diagnostic Tools Checklist

8.1 Multi-meter

- Use a multi-meter to measure voltage, current, and resistance at various points in the system.

8.2 Diagnostic Software

- Check if the inverter comes with diagnostic software.
- Use the software to obtain detailed information about the system's Performance and any issues.



THANK YOU