



Total Microinverters Monitored

23 units



Suspected Underperforming

3 units



Solar Total (7-Day Displayed)

67.7 kWh



Grid Energy (7-Day Displayed)

15.27 kWh
\$2.12



Data Source

Home Assistant Energy Dashboard



Time Period

7-Day History (as shown in screenshots)

Energy Flow (How It Works)



Sunlight (PV Panels) → Microinverters (23 units) → Your Home (Loads) ↔ Utility Grid (Import / Export)

Earlier Displayed Period (Daily Snapshot)



Solar

33.91 kWh



Grid

7.07 kWh



Home

40.98 kWh



Self-Sufficiency

83%

23-INVERTER WEEK HISTORY — SCREENSHOT TRANSCRIPTION			
#	Inverter serial number	Energy (7 days)	Observation
1	450051821006967	1.91 kWh	Suspected intermittent shutdown
2	450051821006968	3.32 kWh	Normal range
3	450051821006976	0 kWh	NO PRODUCTION
4	450051821006985	3.20 kWh	Normal range
5	450051821006987	3.36 kWh	Normal range
6	450051821007008	3.33 kWh	Normal range
7	450051821007073	3.29 kWh	Normal range
8	450051821007306	3.25 kWh	Normal range
9	450051821007621	3.28 kWh	Normal range
10	450051821009236	3.28 kWh	Normal range
11	450051821009237	3.32 kWh	Normal range
12	450051821009924	3.24 kWh	Normal range
13	450051821009968	0.09 kWh	NEAR-ZERO PRODUCTION
14	450051821009971	3.26 kWh	Normal range
15	450051821009973	3.29 kWh	Normal range
16	450051821009975	3.29 kWh	Normal range
17	450051821010130	3.28 kWh	Normal range
18	450051821010146	3.34 kWh	Normal range
19	450051821010204	3.27 kWh	Normal range
20	450051821010230	3.26 kWh	Normal range
21	450051821010231	3.31 kWh	Normal range
22	450051821010232	3.28 kWh	Normal range
23	450051821010598	3.25 kWh	Normal range
Solar total (all inverters)		67.7 kWh	



THREE UNITS TO PRIORITIZE

Based on 7-day history and observed behavior



450051821006976

0 kWh

Suspected non-producing

NO OUTPUT

No production in 7-day history.



450051821009968

0.09 kWh

Suspected near-zero production

NEAR-ZERO

Very low production in 7-day history.



450051821006967

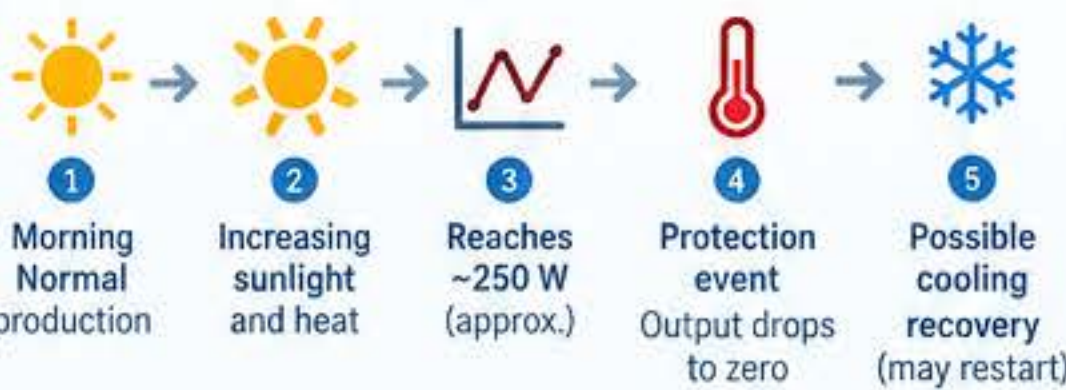
1.91 kWh

Intermittent shutdown

INTERMITTENT

Normal in morning. Reaches ~250 W, then drops to zero around noon to 1–2 PM despite good sunlight.

OBSERVED SHUTDOWN SEQUENCE (Inverter 006967)



1 Morning Normal production → 2 Increasing sunlight and heat → 3 Reaches ~250 W (approx.) → 4 Protection event Output drops to zero → 5 Possible cooling recovery (may restart)



THERMAL PROTECTION IS A LEADING HYPOTHESIS, NOT A CONFIRMED DIAGNOSIS.

Other causes (DC input, AC grid, wiring, junction box, etc.) should also be investigated.

POSSIBLE CAUSES FOR SHUTDOWN



Overtemperature
Internal sensor protection



DC Input Issue
Voltage / current out of range



AC Grid Issue
Voltage / frequency protection



MC4 / Junction Box
Loose connection, heat-related issue



Inverter Fault
Check logs and error codes

FREEDOM POWER CHECKLIST

- Confirm serial numbers and panel locations
- Check inverter fault codes and status
- Capture DC input and AC output behavior (before/after shutdown)
- Verify temperature correlation and automatic restart
- Inspect MC4 connectors, junction box, and wiring
- Determine if replacement microinverters are required

Note: Values are from Home Assistant screenshots and may be rounded. This report is for troubleshooting assistance and is not a confirmed hardware diagnosis.



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