

ONE SOL-MAX AIO INVERTER

Real-World Solar Production and Load-Handling Capability

Field data from July 2026 compared with the inverter specification

15 kW Maximum allowed PV array power	11.4 kW Maximum continuous AC output with PV available	10 kW Maximum continuous AC output from batteries only
100 A Grid pass-through capacity per 120/240 V split-phase system	107 kWh Solar energy produced in the real-data example	149 kWh Home energy used in the real-data example

A single Sol-Max AIO inverter is designed to manage a large residential solar array, battery storage, backed-up loads, and grid interaction in one integrated platform. The two field screenshots in this article show what that capability looks like in actual operation: one day with 107 kWh of solar production and another day with 149 kWh of home energy use.

Important distinction: kW is instantaneous power; kWh is accumulated energy over time. A system can produce or consume far more kWh in a day than its instantaneous kW rating.

Real-World Solar Production: 107 kWh in One Day

The Solar Energy screen for July 16, 2026 records 107.0 kWh of total solar generation. Of that energy, 78.0 kWh went directly to loads and 29.0 kWh charged the battery. No solar energy was exported to the grid during the recorded period.

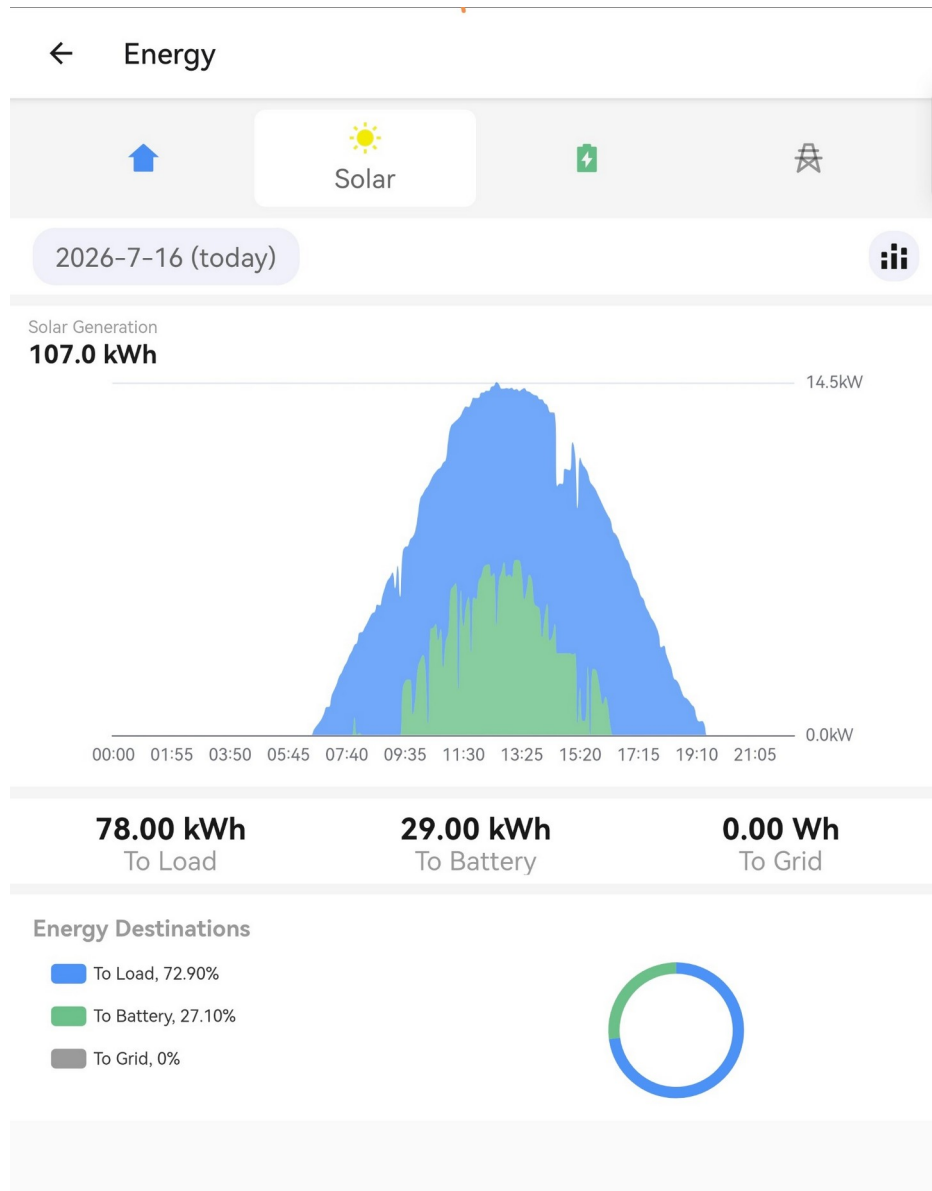


Figure 1. Solar production on July 16, 2026: 107 kWh total, with 78 kWh serving loads and 29 kWh charging the battery.

What the Solar Graph Demonstrates

- The graph approaches 14.5 kW near midday, close to the inverter's 15 kW maximum allowed PV-array rating.
- All 107 kWh was used on site: 72.9% served loads and 27.1% charged the battery.
- The 0 Wh "To Grid" value confirms that all recorded solar energy went to local loads or charging.
- Three independent MPPT inputs allow the inverter to manage multiple PV subarrays. The rated MPPT input-current limits are 30 A on MPPT 1 and 22 A each on MPPT 2 and MPPT 3.

Real-World Load Handling: 149 kWh of Home Use

The Load Energy screen for July 13, 2026 records 149.0 kWh of total home energy consumption. The system supplied 56.0 kWh from solar, 12.0 kWh from the battery, and 81.0 kWh from the grid or generator source.

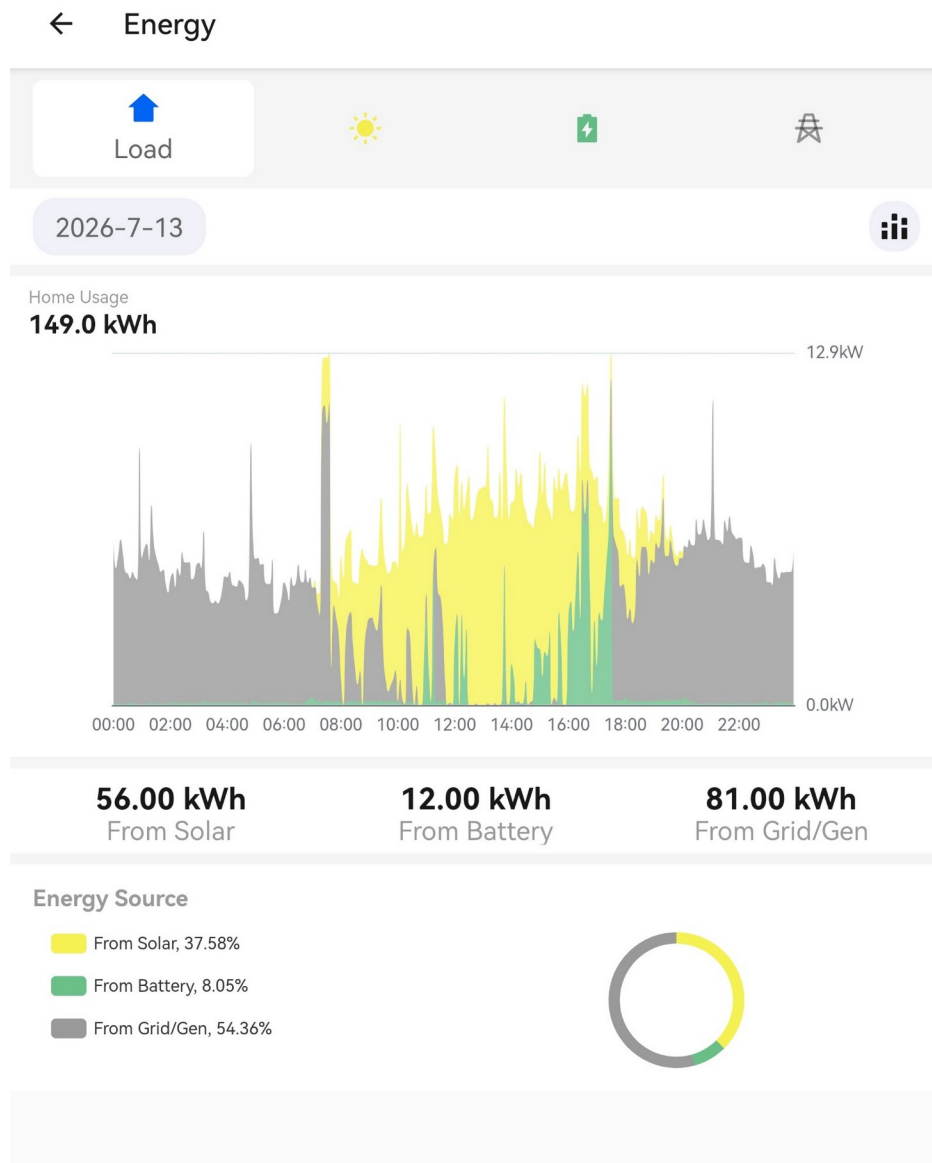


Figure 2. Home usage on July 13, 2026: 149 kWh total, supplied by solar, battery, and grid/generator energy.

How One Inverter Supports a Large Home Load

The load graph reaches approximately 12.9 kW. This does not mean the inverter was continuously converting 12.9 kW from the battery. When the grid or generator is available, the inverter can pass power through its integrated 100 A transfer path while simultaneously contributing solar and battery power according to the selected operating mode.

At 240 V, a 100 A pass-through path represents up to approximately 24 kW of grid-supported load capacity. This is separate from the inverter's own continuous conversion ratings of 11.4 kW with PV available and 10 kW from batteries only.

What One Sol-Max AIO Inverter Can Handle

Capability	Published Rating	Meaning in Practice
PV array	Up to 15,000 W STC	The real-data graph approached 14.5 kW of instantaneous solar production.
PV energy	Site- and weather-dependent	The example produced 107 kWh in one day.
Inverter AC output with PV	11,400 W continuous	Available when PV and battery resources are supporting the inverter output.
Battery-only AC output	10,000 W continuous	The continuous limit when the system is operating from batteries without PV contribution.
Short-duration off-grid surge	14,000 VA for 60 seconds; over 15,000 VA for 1 second	Helps start motors and other loads with brief surge demand.
Grid pass-through	100 A at 120/240 V	Allows the backed-up load panel to use grid power above the inverter conversion rating while the grid is present.
Stacking	Up to 9 inverters	Additional inverters can be paralleled for larger systems.

Why the Two Screenshots Matter

Together, the two examples show the difference between solar-production capability and whole-home load capability. The solar screen demonstrates that one inverter can process a large PV array and direct more than 100 kWh of solar energy in a day. The load screen demonstrates that the same inverter can coordinate solar, battery, and grid or generator power to support a high-energy-use home.

The inverter's 11.4 kW continuous conversion rating should be used for off-grid load design and battery-backed operation. The 100 A pass-through rating explains how the system can support higher instantaneous home demand when an AC source is present. Proper load analysis, battery sizing, conductor sizing, and breaker coordination remain essential for every installation.

Conclusion: The field data confirms that a single Sol-Max AIO inverter can manage a near-15 kW PV array, produce more than 100 kWh of solar energy in a day, and coordinate a 149 kWh/day home load through solar, battery, and grid/generator power.

Technical Reference and Notes

Source specifications: Sol-Max AIO inverter specification sheet, Version 1.3, January 2026. Published ratings include 15 kW maximum allowed PV power, 11.4 kW maximum continuous AC output, 10 kW continuous battery-only output, and 100 A grid pass-through.

Field data: Sol-Max app screenshots dated July 13 and July 16, 2026. App values are system-level readings and may include grid/generator pass-through in addition to inverter-converted power.

Installation note: Actual performance depends on PV design, battery capability, temperature, grid conditions, load profile, firmware, and programmed settings. Follow the approved installation manual, electrical code, utility requirements, and battery specifications.