Application Note:
Configuring Single-Phase Output on a Sol-Ark Residential Inverter

Overview

This guide explains how to configure your inverter for single-phase output and select the correct output voltage. Proper configuration ensures safe operation and prevents damage to connected loads.

When programmed correctly, the inverter supplies the selected single-phase voltage while operating on inverter power. When grid power is present and accepted, the inverter matches the grid voltage and phase and passes grid power to the loads.

Before You Begin

Be sure that:

- You have access to the inverter display or configuration interface on MySolArk.
- You know the required voltage rating and frequency of your connected loads.
- All wiring and installation comply with applicable electrical codes and safety standards.
- The internal neutral of the inverter is disconnected, and the internal neutral wire(s) of the inverter are sealed.
- The L1 load terminal wires are connected to the energized terminal of the load panel, and L2 is connected to the neutral terminal of the load panel.

Important: Connecting loads with voltage ratings that do not match the inverter's output voltage may result in equipment damage.

Wiring the Inverter for Single-Phase Output

Wire the load terminals correctly before you enable single-phase mode in the inverter settings.

The inverter has two output terminals, L1 and L2. In single-phase mode, the programmed output voltage is divided equally between L1 and L2. Each leg carries half of the programmed voltage. The voltage measured between L1 and L2 equals the programmed output voltage.

Connect L1 and L2 from the inverter's load terminals to the matching terminals in the load or distribution panel. Connect inverter terminal L1 to the energized terminal of the load panel. Connect inverter terminal L2 to the neutral bus bar. The inverter's internal neutral wire(s) must be disconnected and sealed.

Make sure all wiring connections are secure and rated for the inverter's current and voltage. Verify that all connected loads can operate at the programmed output voltage.

Follow all local electrical codes and installation requirements. After completing the wiring, use the step-by-step configuration instructions on the next page to set the required output voltage in the **Grid Setup** menu.

Incorrect wiring or loads with the wrong voltage rating may cause equipment damage, inverter faults, or unsafe operation.

Step-by-Step Configuration Instructions

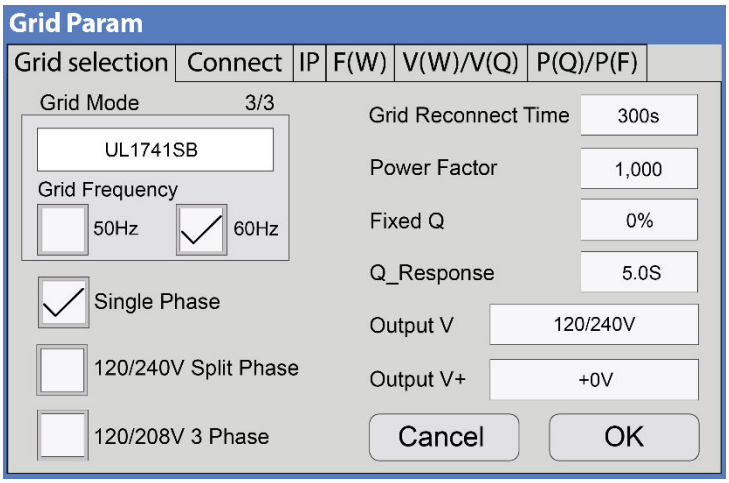
Step 1: Access the Grid Setup menu.

a. On the inverter display, navigate to **Settings**.
b. Select Grid Setup.
c. Open the **Grid Selection** tab.

Step 2: Select Single Phase Mode.

a. On the **Grid Selection** tab, select the **Single Phase** check box.

This enables the inverter to operate in single-phase output mode.



Step 3: Select the Output Voltage.

a. Choose the **output voltage** based on your load requirements. Available options include:

- 120 V (not supported)
- 127 V (not supported)
- 200 V
- 220 V
- 230 V
- 240 V

Warning: Sol-Ark split-phase inverter models do **not** support 120 V or 127 V output. Do not configure these models for either voltage. Doing so may cause improper operation or equipment damage.

b. After you select a voltage, the inverter will supply that voltage while operating in inverter mode.
c. Click **OK** to save.

The inverter will sound an alarm and display fault code **F13** (**Grid Mode Change**). The alarm should clear after 5 minutes. The inverter should then show a normal status light and operate in single-phase mode.

How Output Voltage Works

When the Inverter is Supplying Power

- The inverter will supply the voltage selected in the settings.
- This applies when the inverter is powering loads in island mode.

When the Grid is Present and Accepted

- The inverter will automatically synchronize with the grid when the grid is within the acceptable range set in the grid settings.
- The inverter will pass grid power through to the loads.
- The output voltage and phase will match the grid supply, not the inverter's programmed output voltage.

This is normal operation and allows the inverter to switch between inverter power and grid power.

Important Safety and Compatibility Notes

Verify Load Compatibility

- **Always** confirm that connected equipment matches the selected inverter voltage.
- The inverter divides the programmed output voltage equally between L1 and L2. Each side carries half the programmed voltage.
- Incorrect voltage selection can cause:
  - Equipment damage
  - Overheating
  - Premature failure
- **GFCI devices** may trip unexpectedly when the inverter is operating in single-phase mode.

Passthrough Behavior

- The programmed voltage applies only when the inverter is supplying power.
- When grid power is present and accepted, the inverter follows the grid voltage.

Recommended Verification Procedure

After configuration:

1. Confirm the selected voltage in the inverter settings.
2. Measure the output voltage with a multimeter while the inverter is supplying power.
3. Verify that connected loads operate normally.
4. If applicable, confirm proper operation both with and without grid power.

Document Revision History

Rev.	Date	Author	Description of Changes
1	08/24/2026	Jharen Poole	Document created