

12000XP

Increased Power Update

App Note

OVERVIEW

The latest update to the 12000XP inverter (model #: IV-15000-XP-IN-01) introduces a higher output capacity to better support demanding electrical loads. This document outlines the key enhancements and provides important operational notes to help ensure proper setup and optimal performance.

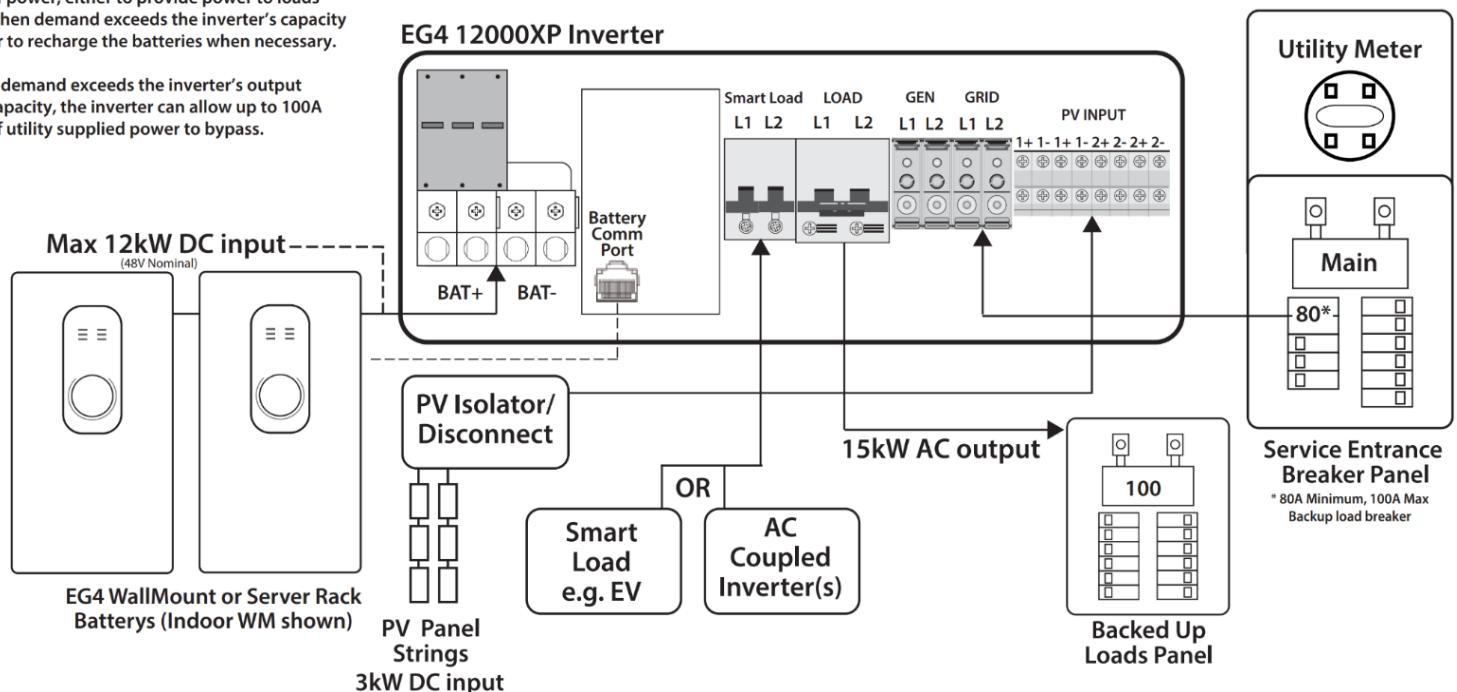
INCREASED OUTPUT

The 12000XP now supports up to **15kW of AC output**, increasing the available amperage at 240V from **50A to 62.5A**. This upgrade allows the inverter to handle larger critical load panels more effectively.

To deliver 15kW output, the inverter draws power from both the **batteries and solar (PV) sources**. This is necessary because the inverter's battery circuitry alone supports a maximum continuous draw of **12kW**.

The EG4 12000XP Off-Grid Inverter is capable of powering loads independently without drawing power from the grid. When operating in self-consumption mode, the utility grid is treated as a backup source of power, either to provide power to loads when demand exceeds the inverter's capacity or to recharge the batteries when necessary.

If demand exceeds the inverter's output capacity, the inverter can allow up to 100A of utility supplied power to bypass.



The image above illustrates the operation which supports 15kW AC Output



NOTE:

This firmware update is only applicable to the 12000XP model #: IV-15000-XP-IN-01. This feature is not compatible with previous models.

KEY CONSIDERATIONS FOR OPERATION

OFF-GRID OPERATION [NO GRID PRESENT]

- **Load $\leq$ 15kW (Battery + PV):** Inverter powers the load using combined battery and solar (PV) energy.
- **Load $>$ 15kW (Battery + PV):** Inverter supports the load until an overload timeout occurs. Then it shuts off, waits 5 minutes, and attempts to restart. This cycle repeats if overload continues.
- **Load $\leq$ 12kW (Battery Only):** Inverter powers the load using battery alone.
- **Load $>$ 12kW (Battery Only):** Same overload behavior as above—temporary support, shutdown, wait period, and retry cycle.

STANDALONE OPERATION [GRID CONNECTED]

- **Load $\leq$ 15kW (Battery + PV):** Inverter powers the load independently without drawing from the grid.
- **Load $>$ 15kW (Battery + PV):** Grid supplies the full load. PV power is used to charge the battery.
- **Load $\leq$ 12kW (Battery Only):** Inverter powers the load independently without grid input.
- **Load $>$ 12kW (Battery Only):** Grid supplies the full load. PV power continues to charge the battery.

OVERVIEW OF TRANSFER BETWEEN INVERTER AND GRID POWER:

The 12000XP inverter operates in a **self-consumption mode**, using PV and batteries to support connected loads. The utility grid is used only as a **backup source**, either to power loads when demand exceeds the inverter's capacity or to recharge the batteries when needed.

When the power demand from connected loads exceeds the inverter's capacity, the system automatically switches to **grid bypass mode**. In this mode,

- The **grid supplies all power directly to the loads**; this function operates in complete isolation from the inverter's output.
- The inverter's output **cannot operate at the same time as the grid**, ensuring safe separation between power sources.
 - This is due to internal relays and logic, which prevent inverter output from operating in conjunction with grid input.

SUMMARY

The 12000XP inverter supports both off-grid and grid-connected operation, managing power from batteries, solar (PV), and the grid based on load demand. It can supply up to 15kW using battery and PV power, but if demand exceeds available capacity, it either temporarily supports the load or shifts fully to grid power, depending on the configuration.