

## ContainerPower Energy Solutions

# Balance shaft solar inverter



## Overview

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What is a balanced output inverter?

Considering the stored power in the battery, the balanced output system utilizes only 60% of the solar energy, leading users to still incur high electricity bills. On the other hand, the utilization rate of the balanced output inverter reaches 95%, minimizing the need to draw power from the grid.

What is an unbalanced output inverter?

Unbalanced output inverter allocates solar energy based on actual phase loads, rather than exchanging with the grid. Excess power is stored in the battery after meeting load demands, significantly enhancing solar self-consumption rates before injecting surplus energy into the grid.

What is balanced output in a 3 phase inverter?

For a three-phase inverter, balanced output implies that the power distributed by the inverter should be evenly divided among the three phases. Ideally, the power or current imbalance between any two phases should be below 1%, with a maximum tolerance of 5%. What is unbalanced output?

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How does a solar panel inverter work?

Assuming both the rated power of the solar panel arrays and the inverter are 10 kW, and a battery with a charging and discharging power of 3 kW is connected, the inverter prioritizes power distribution as follows: Load > Battery > Grid. The loads on phases L1, L2, and L3 are 3kW, 1kW, and 2.5kW respectively.

What is a balance of system (BOS) inverter?

It's a vital Balance of System (BOS) component and includes functions like Maximum Power Point Tracking (MPPT) and anti-islanding protection. At the

heart of modern inverters are semiconductor switches—most commonly SiC (Silicon Carbide) and GaN (Gallium Nitride) MOSFETs—known for superior efficiency and high-frequency performance.

How much power imbalance should a 3 phase inverter have?

Ideally, the power or current imbalance between any two phases should be below 1%, with a maximum tolerance of 5%. What is unbalanced output?

In the context of unbalanced output in three-phase inverters, a greater level of imbalance is tolerated.

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