Why Choose ATESS Integrated Storage Inverter?

Introduction

Energy storage system is playing an increasingly important role in the global energy market for load leveling, renewable energy cooperation, compensation of power line loss, power compensation, power quality improvement, stand-alone operation, and peak shaving. Distributed energy storage, as an important form of solar storage, shows a strong momentum of development in today's market. Photovoltaic plus energy storage, with no doubt, will be the mainstream of future energy.

With 7 years of penetration in the global energy market, ATESS inverters have been installed in more than 33 countries around the globe. In the thriving storage market, the most developed hybrid storage inverter of ATESS, the HPS series model, has emerged with its flexible configuration, versatile operation mode, stable and efficient outstanding performance since it came into the market in 2015.

Features of ATESS HPS

ATESS HPS series storage inverter ranges from 5kw-150kw per unit, which is recommended to be applied for household, industrial, and commercial users with a capacity under 300 kW.

1) High-voltage battery design

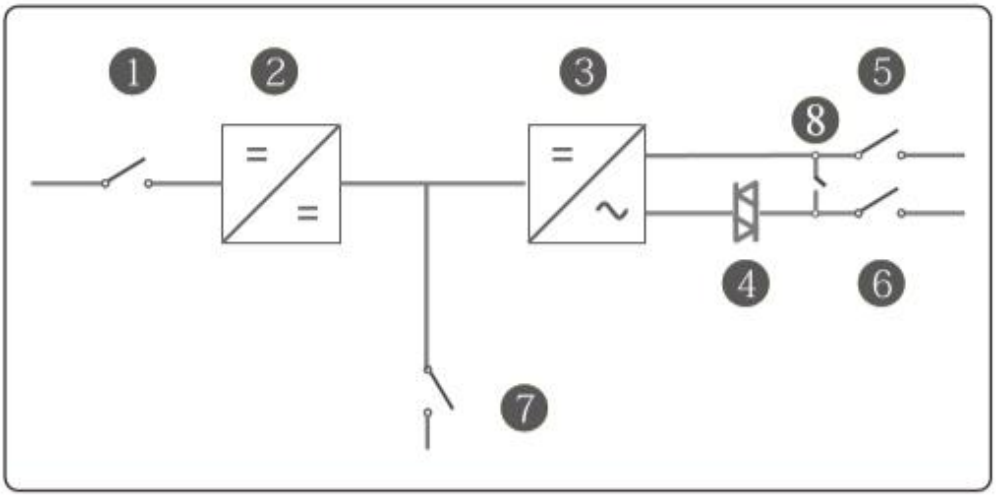
DC(battery and PV)

Max PV Open-circuit voltage	1000V DC	1000V DC	1000V DC	1000V DC	1000V DC
MAX PV power	45kWp	75kWp	150kWp	180kWp	225kWp
PV MPPT voltage range	480V-800V DC	480V-800V DC	480V-800V DC	480V-800V DC	480V-800V DC
Recommended nominal battery	420 V	420 V	420 V	420 V	420 V
Battery voltage range	352-600V	352-600V	352-600V	352-600V	352-600V
Max.charge power	45kW	75kWp	150kWp	180kWp	225kWp
Max.discharge power	30kW	50kW	100kW	120kW	150kW
Max.charge current	127A	213A	426A	511A	639A
Max.discharge current	85A	142A	285A	340A	425A

It makes the capacity of the energy storage system easily expandable, and allows the system to work with a smaller rate of charge/discharge, which is conducive to the health of the battery and also saves cable cost. It can also reduce the number of paralleled battery strings for the large capacity bank, so as to reduce the influence of string imbalance caused by too many parallel batteries and increase its life span.

2) Integrated on/off-grid solution

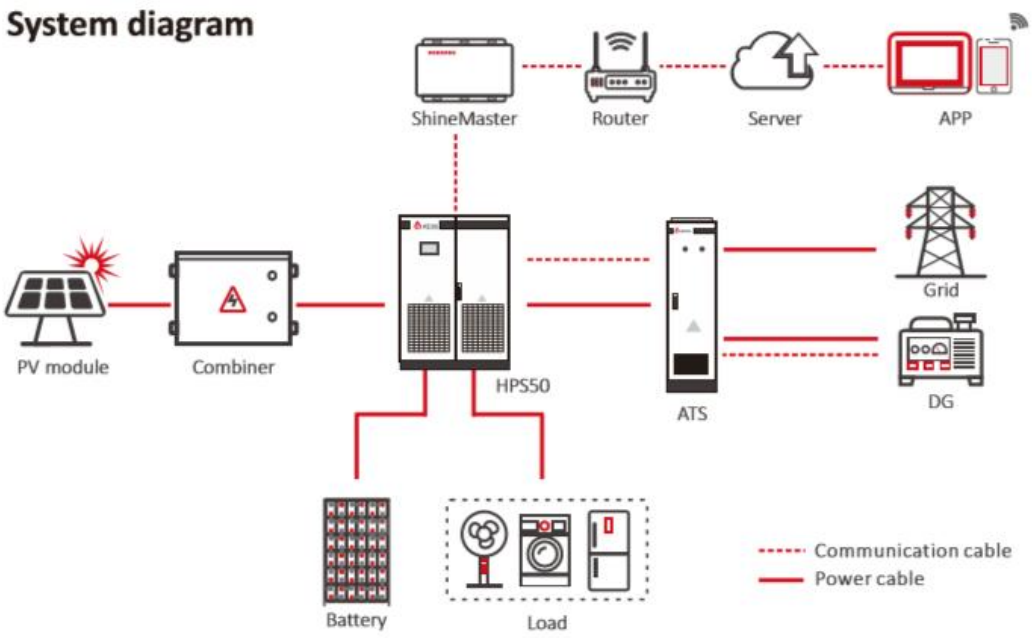
Block Diagram



1. PV breaker
2. PV controller
3. Bidirectional Inverter
4. Transfer switch
5. Load breaker
6. Grid breaker
7. Battery breaker
8. Bypass switch

HPS supports the simultaneous connection of battery, load, power grid, and solar energy. Compared with the traditional controller inverter separate design, it can save cost and equipment installation space. Also, it is more instrumental in centralized management and monitoring, and improves the overall efficiency of the system, as well as ensure the easiness of installation and maintenance, inbuild transfer switch realizes seamless switching from off grid to on-grid, and bypass switch can ensure uninterrupted supply for load when the equipment is in maintenance.

3) Programmable working mode



In on-grid mode, there are load-first mode, battery-first mode, economic mode, and peak shaving mode for options, the zero-export function could be enabled in either mode. In off-grid mode, PV supplies priority to the load, and the battery is supplementary. Moreover, it is also a diesel generator compatible. Compared with the traditional controller and inverter separated design, complex control logic and diversified application scenarios are easier to realize by HPS.

4) Easily expandable design

HPS can be paralleled up to two units to expand the system capacity up to 300kW, supporting a maximum 1.5 times of PV capacity oversize. On one hand, it covers a wider range of capacity requirements; on the other hand, it solves the energy waste caused by inverter capacity redundancy under the circumstance of small load and large PV capacity. In addition, paralleled HPS can handle PV arrays of different orientations individually, thus improving the flexibility of PV array configuration and system power generation efficiency. Compared with the traditional controller inverter separated design, wiring is much easier, plus the setting of master-slave mode, which really simplifies the control method and makes it more convenient to use.

In conclusion, ATESS HPS is an ideal option for an energy optimization solution with the least system investment. Its robust and powerful design is user-friendly and can meet multifarious requirements.