

Quick Installation Guide

— Diesel Generator
Matched with HP3-5~30kW
Inverter

1. Application Scenario

For areas with unstable grid, no grid at the installation site or where a diesel generator has been prepared already, Livoltek HP3 series photovoltaic energy storage inverter can be matched with a diesel generator to improve the stability of electricity supply.

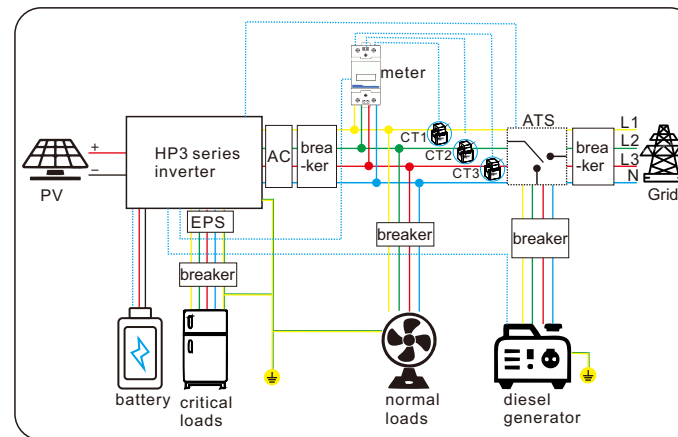
Advantages of This Solution

- a. It is economical. The diesel generator supplies power to the loads and the HP3 series inverter supplies excess power or controls the diesel generator to recharge the battery.
- b. Livoltek HP3 series inverter in different rated power can be matched with a diesel generator in a parallel system.
- c. Livoltek HP3 series inverter supports the start-up and shut-down of the diesel generator manually and automatically.

2. Single Inverter with a Diesel Generator

A HP3 series inverter is matched with a diesel generator.

2.1 System Diagram



2.2 Communication Connection

2.2.1 ATS Communication Connection

Prepare a communication cable, connect one end of the cable to the PAL port of the inverter and the other end to the terminals of the ATS.

Inverter Side

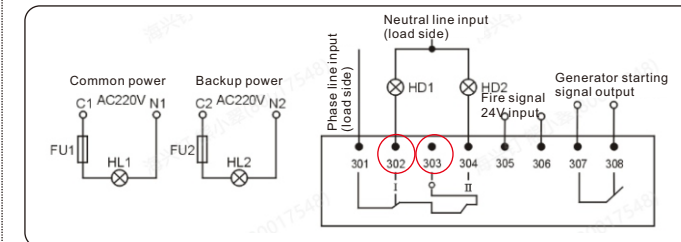
Connect one end of the cable to the pin3 and pin4 of the PAL port.

Pin definition of PAL port

Pin	Pin Definition
3	DI+
4	DI-

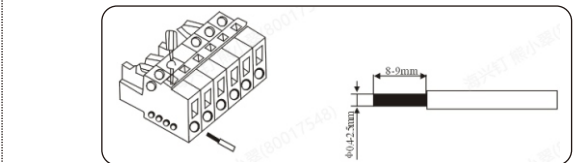
ATS Side

Connect the other end of the cable to the common power supply feedback signal of a specific type of ATS connected. Here below 302 and 303 terminal (common power supply feedback signal) of this kind of ATS is taken for an example.



Warning! Customers must select ATS with feedback signals.

Cable Wiring and Connection



Warning! DO NOT connect to the high-voltage feedback signal terminals of the ATS, otherwise, the inverter may be damaged.

2.2.2 Inverter and Generator Communication Connection

Inverter Side

Prepare a communication cable, connect one end of the cable to the pin5 and pin6 of the MULTI port.

Pin	Pin Definition
5	DO1
6	COM1

* If the diesel generator selected cannot or do not need to be controlled by the inverter, customers do not need to connect to the pin5 and pin6 of the MULTI port of the inverter.

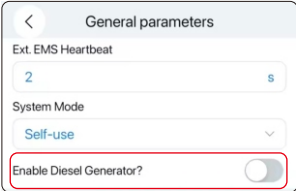
Diesel Generator Side

Connect the other end of the cable to the corresponding terminals of the generator. Please refer to the user manual of a specific diesel generator for the communication connection.

2.3 Setting

Refer to the user manual of a HP3 series inverter to download, register and log in **My Livoltek APP** and do some general settings. Enter the diesel generator setting interface with the following path:
Site → **Power Flow (your inverter site)** → **Setting**
→ **Advanced Settings (password for installers only)**
→ **Energy Management** → **General parameters**

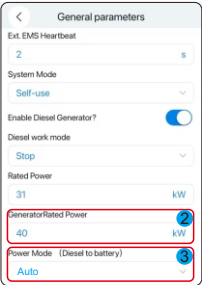
1 Turn on the diesel generator switch to connect the communication between the inverter and the diesel generator. Enable this function and other settings come out.



2 Set the **GeneratorRated Power** in accordance with the rated power of the diesel generator connected.

3 Set **Power Mode (Diesel to battery)** :Manual, Auto and Disable.

a. Select **Manual** when the generator selected cannot communicate with the inverter. Customers manually turn on/off the diesel generator.
b. Select **Disable**, the generator can supply power for loads but not recharge the battery.
c. Select **Auto**, the communication between the inverter and the generator is connected. The generator can recharge the battery under the conditions set in **Diesel work mode**.



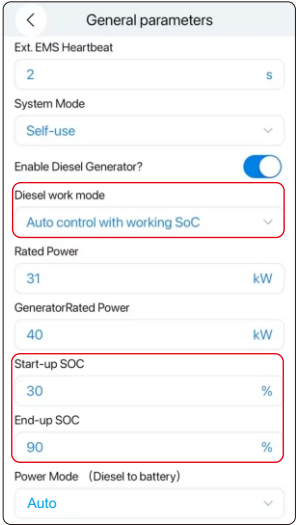
4 **Diesel work mode** is available only when **Auto** is set under **Power Mode**. Select **Stop**, **Start** or **Auto control with working SoC**.

a. Select **Stop** or **Start** to shut down and start the diesel generator through APP.

b. Select **Auto control with working SoC**, the generator automatically charges or stops charging the battery with **Start-up SOC** and **End-up SOC** value set.

* When the actual battery SoC is lower than the **Start-up SOC** set, the inverter controls the generator to charge the battery automatically.

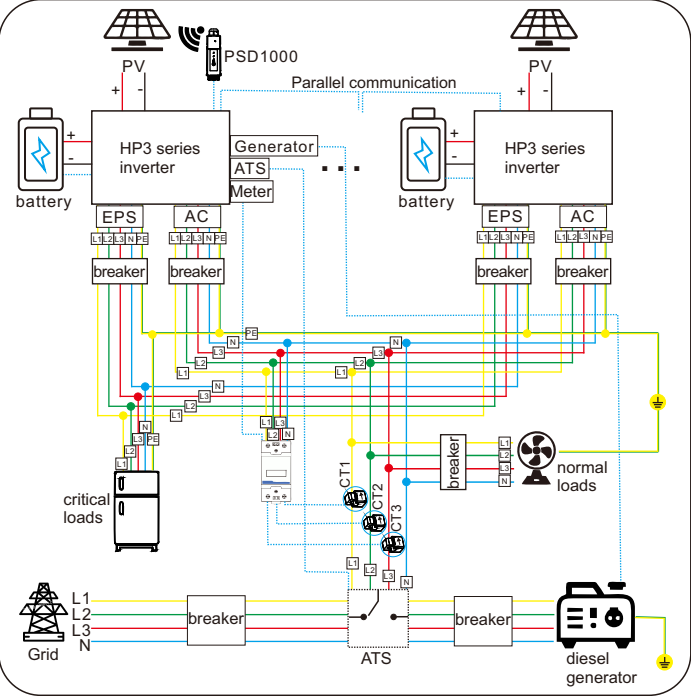
* When the generator charges the battery to the **End-up SOC** set, the generator automatically stops charging the battery.



3. Inverters in Parallel with a Diesel Generator

HP3 series inverters in parallel are matched with a diesel generator.

3.1 System Diagram



3.2 Communication Connection

3.2.1 ATS Communication Connection

Prepare a communication cable, connect one end of the cable to the PAL port of the inverter and the other end to the terminals of the ATS.

Inverter Side

Connect one end of the cable to the pin3 and pin4 of the PAL port of the **inverter connected with a PSD 1000**.

* When a diesel generator is connected to the parallel system, the pin4 (used for parallel communication) is used for ATS communication connection.

ATS Side

Connect the other end of the cable to the common power supply feedback signal of a specific type of ATS connected.

Warning!
1. DO NOT connect to the high-voltage feedback signal terminals of the ATS, otherwise, the inverter may be damaged.
2. Customers must select ATS with feedback signals.

3.2.2 Inverters in Parallel and Generator Communication Connection

Inverter Side

Prepare a communication cable, connect one end of the cable to the pin5 and pin6 of the MULTI port.

* If the diesel generator selected cannot or do not need to be controlled by the inverter, customers do not need to connect to the pin5 and pin6 of the MUTI port of the inverter.

Diesel Generator Side

Connect the other end of the cable to the corresponding terminals of the generator. Please refer to the user manual of a specific diesel generator for the communication connection.

3.3 Setting

Refer to the inverter user manual to download, register and log in **My Livoltek APP** and do some general settings. Enter the diesel generator setting interface with the following path:

Site → **PV-storage-Diesel(General)** → **PV-storage-Diesel(Device)** → **WIFI (master inverter connected)** → **Details**

Refer to 2.3 Setting to complete the following settings.

