GOODWE PARALLEL STORAGE SOLUTION

VER 02, UPDATED ON OCT 20, 2020

General Introduction

Paralleling system of GoodWe three phase hybrid inverter is a solution for system capacity extension from 15kW up to 100kW. The solution is adopted for:

1. GoodWe ET and BT series inverters (2~10 pieces in parallel)
2. For self-use scenarios only
3. Residential and minor commercial applications

Required Devices

Inverter	Make sure ARM version is 14 or higher
SEC1000S	Make sure version is 03 or higher
CTs	The secondary side shall be 5A

▶ **ET/BT Inverter (2~10 pieces)**   ▶ **SEC1000S (1 Piece)**   ▶ **CT (3 pieces)**

NOTE

The CTs for the system are not always provided from GoodWe, please choose CTs for the paralleling system based on the requirement in the system.
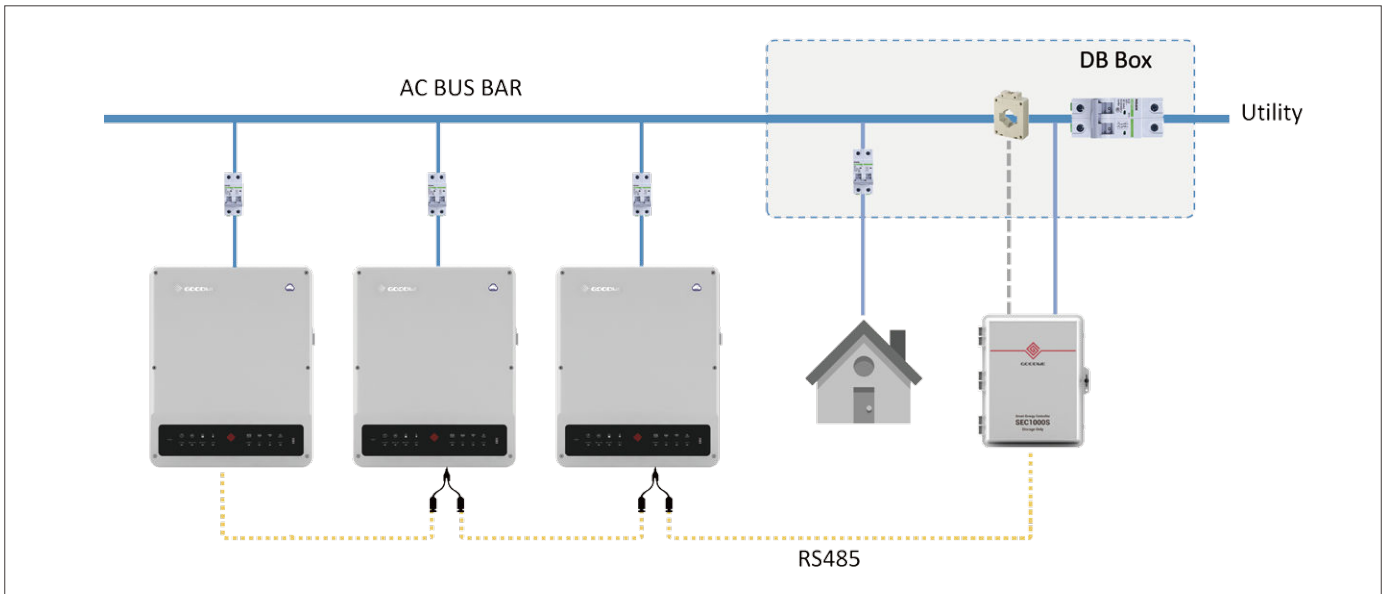
System Wiring

Please notice that the **paralleling is only on grid side** of ET/BT inverters. Backup or battery side cannot be paralleled.

- **General Wiring System**

Here we take parallel system of 3 ETs as example.

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● Communication Wiring System

There are three COM ports on SEC1000S (COM1, COM2, COM3) to communicate with paralleled inverters. The paralleled inverters must be daisy chain to the COM ports evenly.

> ▶ Communication cable length of each daisy-chain is 1000m
> ▶ Each COM port connect max 4 pieces inverters in daisy chain

Connect cables between inverter EMS port and COM port on SEC1000S. On EMS port it is RJ45 connectors and on SEC1000S COM ports, you have to split out 1st and 2nd pins to port A and B of any COM 1, COM2 or COM3.
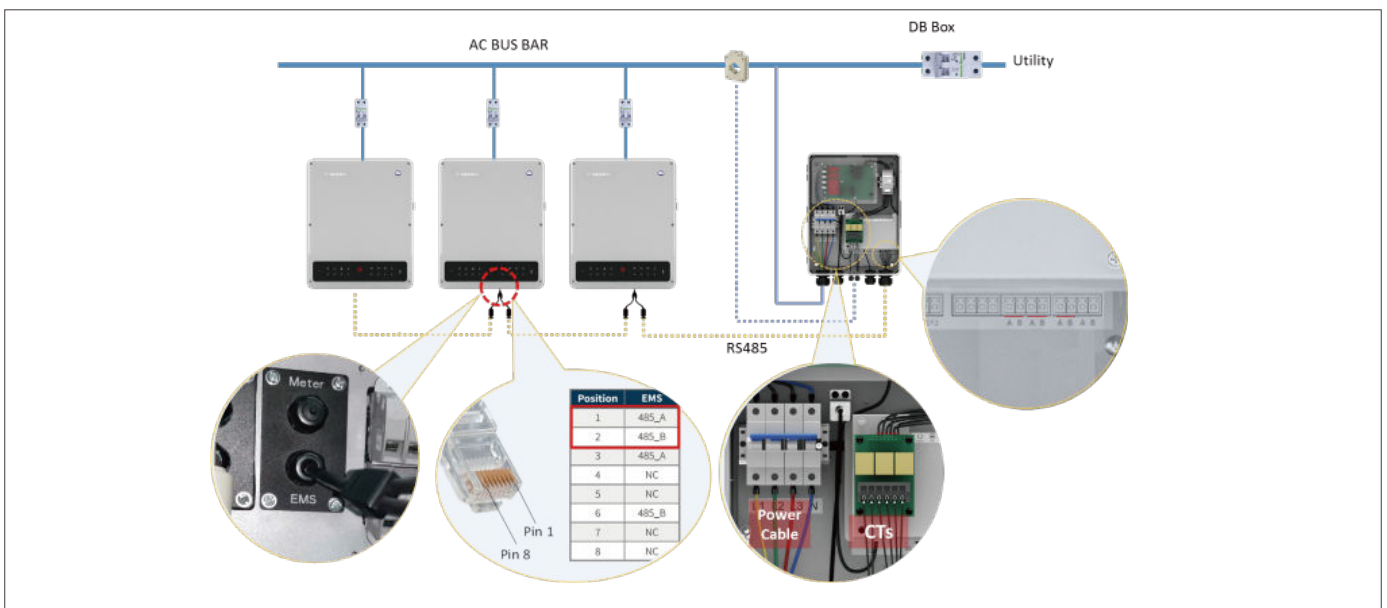
In ET/BT paralleling system, the Smart Meter (GM3000) in the component box of each inverter is not to used. Thus the "To Meter" cable attached on each inverter is not used either. Please leave the cable on the inverter. And if you cut the "To Meter" cable off, please make sure the gland is sealed for water-proof.
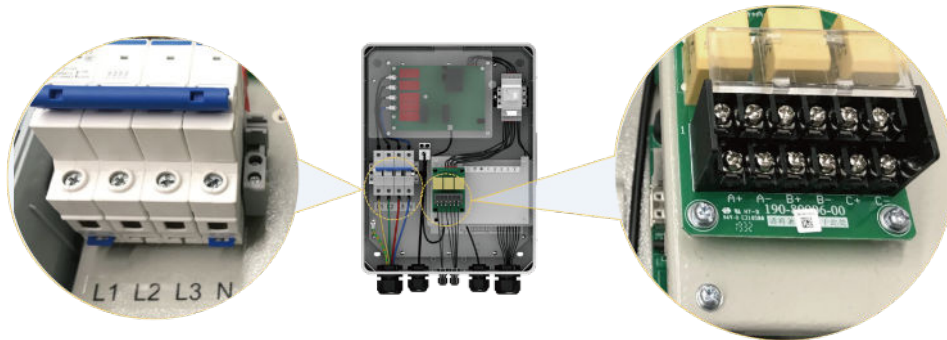
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- **CT and Power Cable on SEC1000S**

Power cables on SEC1000S is to power SEC1000S up and detect grid voltage as well. So the power cable shall be connected correspondingly with CTs.

- CT_A (A+/A-) connect to the same phase with L1
- CT_B (B+/B-) connect to the same phase with L2
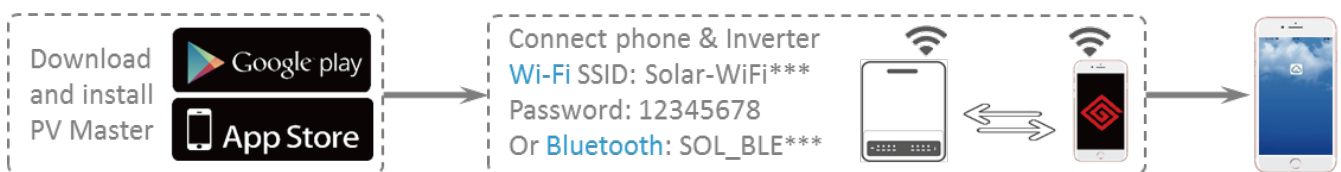- CT_C (C+/C-) connect to the same phase with L3

NOTE

Please also keep the right direction of CTs according to the installation instructions of CTs you choose.
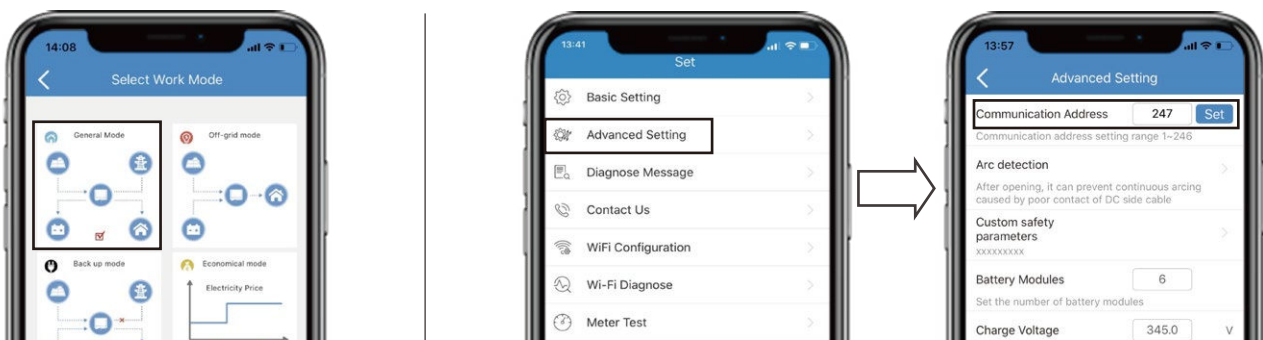
System Commissioning

- **Commissioning of ET/BT inverters**

Use GoodWe PV Master App to do the commissioning of each inverter separately via WiFi or bluetooth signal from each inverter.

Download and install PV Master — Google play — App Store

Connect phone & Inverter
Wi-Fi SSID: Solar-WiFi***
Password: 12345678
Or Bluetooth: SOL_BLE***

NOTE

▶ The commissioning of each inverter happens separately one by one.

▶ The basic settings in PV master shall be executed by selecting safety code, battery type and work mode (General Mode only) etc. and after which, to set different communication addresses (1~10) for all inverters.

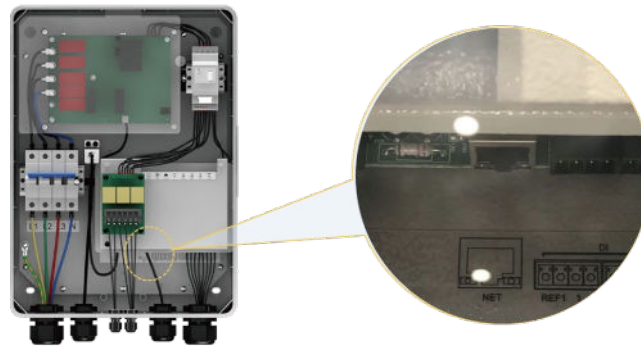▶ The communication address of each inverter CANNOT be the same.

- **Commissioning of SEC1000S**

Use ProMate software program to set CT ratio and system capacity.

1. Connect your laptop to SEC1000S on NET port by a net cable

2. Commissioning on ProMate

A. If the status shows "Connection Success" and the SN and software version show up, it means the connection between the laptop and SEC1000S succeed.

B. If the "Inverter List" column shows up the serial no. of all the inverters connected in the parallel system (may need few minutes to read all), it means inverters and SEC1000S communication succeed.

C. After all communication succeed, start to do commissioning for SEC1000S
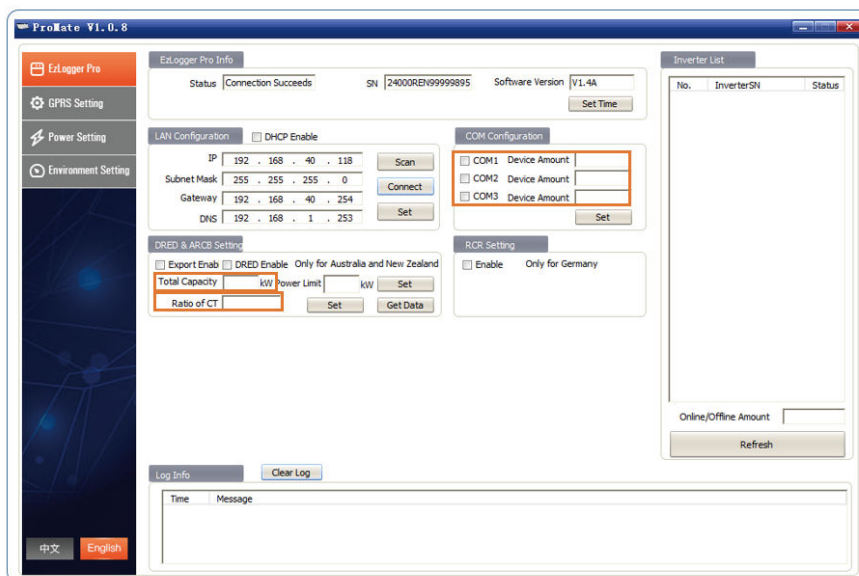

NOTE

1. Please make sure the "Total Capacity" and "Ratio of CT" are filled honestly. Otherwise the system may operate in an unexpected way.

2. If it needs export power limit of the system, then activate "Export Enable" and set "Power Limit Value" on ProMate interface and click "Set" behind that.

3. For export power limit function of the parallel system, it needs more than 5 seconds to limit the power. So please make sure the respond time meets the requirement of your project.

System Operation Logic

In the paralleling system, energy generated in this system is shared to support loads together. Loads on both on-grid and backup sides could be supported by solar energy drawn from multiple ETs or batteries in the system.
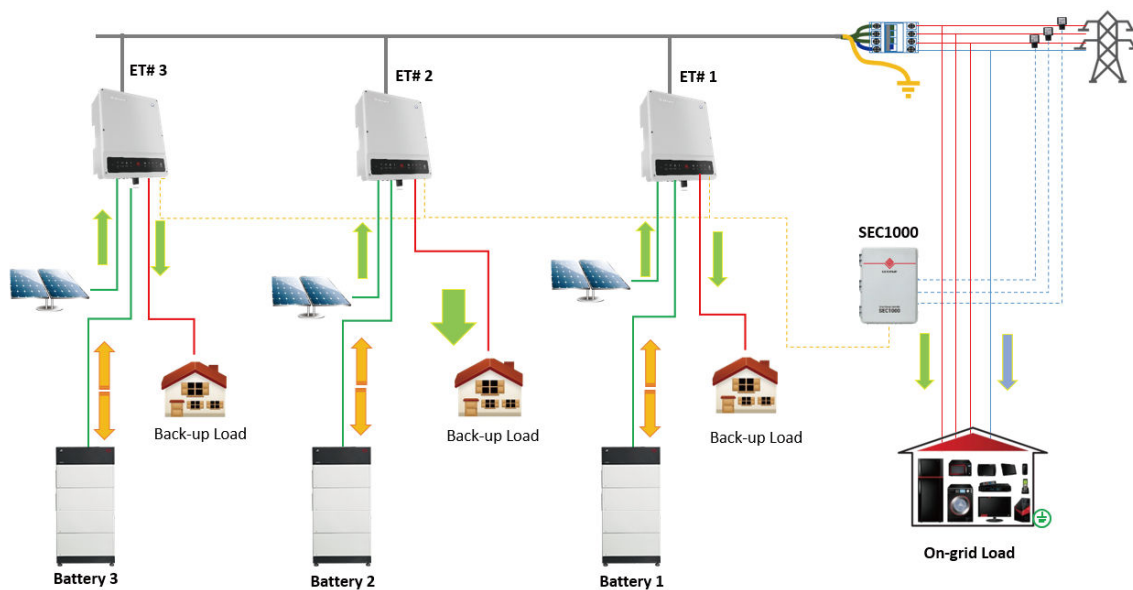
System Monitoring

SEC1000S is not for monitoring of the paralleling system. Monitoring of the system relies on the WiFi modules on each inverter. So you will have to do WiFi configuration (to connect to network) on each inverter separately to realize system monitoring. After proper WiFi configuration, the system data of inverters, batteries, grid data and loads will be accessible from GoodWe monitoring platform SEMS Portal. From the plant info page, you are able to check the following info.
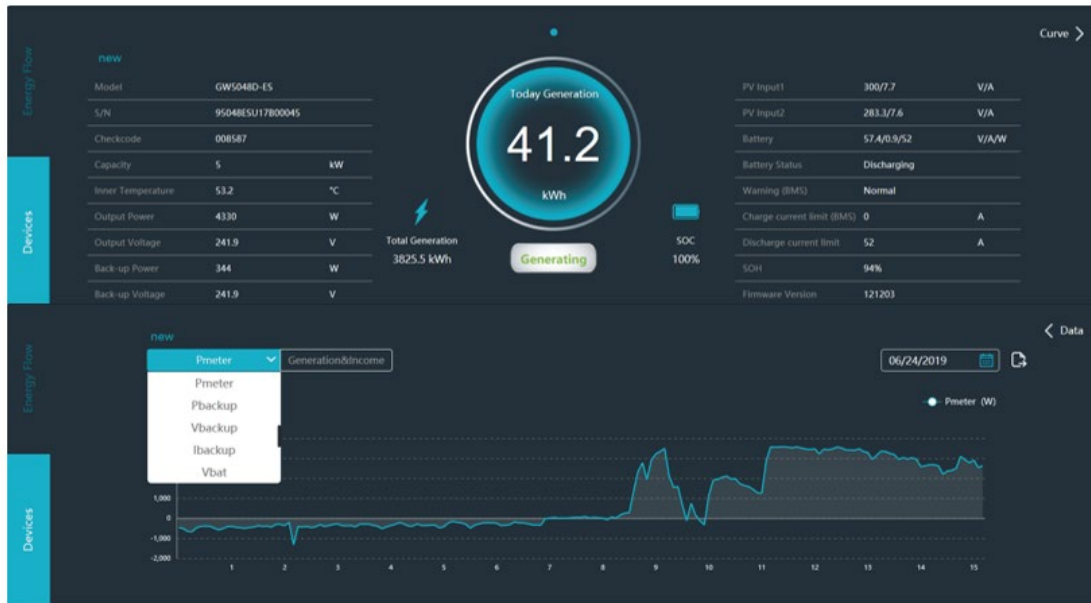
The data is combined on monitoring pages as below:
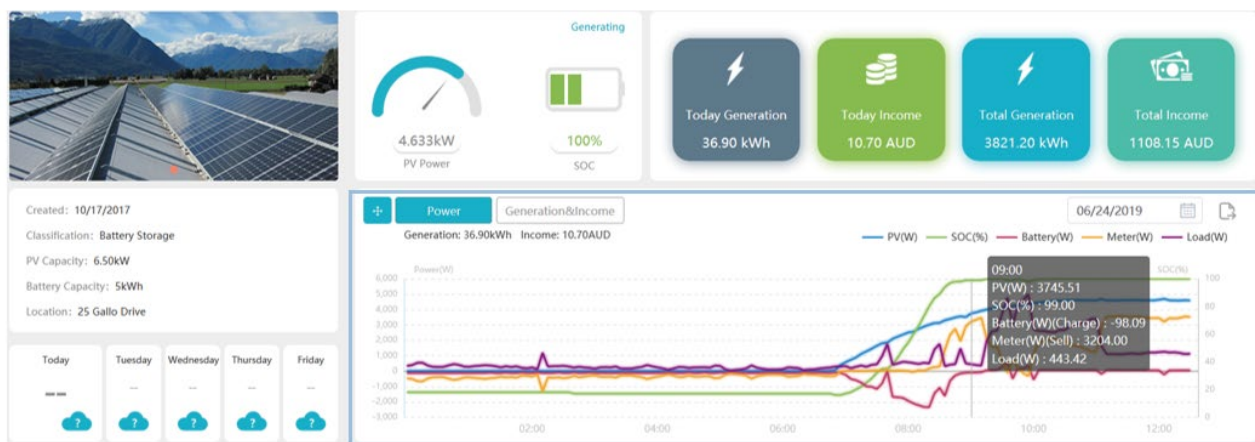
Or you can check the data of each inverter as well:

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NOTE

1. The SOC value on plant info page may differ from that on device info page.

2. Each monitoring station registers max one piece of SEC1000S.

Important Check List:

Items	Proper Settings
Inverter ARM firmware	14 or higher
SEC1000S firmware version	03 or higher
Inverters connected on each COM ports	Max 4 pieces
Inverters are daisy chained via EMS ports	Yes
CTs and power cables to SEC1000S are connected accordingly	Yes
CTs' direction is right	Yes
Communication address of each inverter are set differently on PV Master	Yes
On ProMate, the system capacity and CT ratio are set properly	Yes
Work mode of each inverter set on PV Master	"General Mode"

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