MHT4-20KW THREE-PHASE HYBRID Paralleling Solution

www.solinteg.com

V1.1 2023.01.30

CONTENT

1

Introduction

INTEGRATE SOLAR INTELLIGENTLY

Introduction

Comparison between Master-Slave & Datalogger

Items	Master Slave Parallel	Datalogger Parallel
Device	2-10 inverters, 1 smart meter	2-10 inverters, 1 smart meter, 1 datalogger
Communication method	CAN+RS485 （smart meter)	CAN+RS485 (smart meter)
Communication with server	Each inverter needs to be equipped with communication module(WIFI/LAN), and communicates with server separately.	Communication module(WIFI/LAN) is unnecessary. Inverters communicate with server through the datalogger.
Australia DRED	Integrated	Integrated
Germany Ripple Control Receiver active power adjusting	Integrated	Integrated
Germany Ripple Control Receiver Reactive power adjusting	Non-Integrated	Integrated
Number of supported parallel inverter	10	10
Launch time	November,2022	March, 2023
Feature	*More suitable for paralleling projects equipped with a handful of supported devices *Not integrated with reactive power adjusting function	*More suitable for paralleling projects equipped with large number of supported devices *Integrated with reactive power adjusting function *Able to be applied to projects equipped with multi-series inverters, like on-grid, hybrid and AC couple mixed parallel

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Introduction

Notes

1. Each plant equipped with smart meter only supports one parallel system, which contains all installed inverters. Separately operating inverter is not involved in this system.

2. For master-slave controlling system, each parallel system must use the same model and specification in the same series of energy storage inverters, and battery (model and capacity) is recommended to be the same. The parallel system does not support grid-connected inverters or other models.

3. Batteries can not be connected in parallel. Each inverter is connected to its own battery.

4. When slave inverter loses the CAN bus communication in master-slave controlling system, the inverter itself will be automatically shutdown. When the RS485 communication between the Master/Datalogger and the smart meter is lost, the whole parallel system will automatically stop running.

5. In the parallel system, the priority strategy is to balance the output of each inverter. Also, the battery SOC connected to each inverter will be adjusted as consistently as possible by adjusting charge and discharge power.

6. The Master/Datalogger synchronizes the settings to the Slaves, which means the parameter settings of all inverters in the parallel system are the same.

7. At present, two solutions, master-slave and datalogger controlling, only support on-grid parallel, and off-grid parallel is expected to be launched by March, 2023.

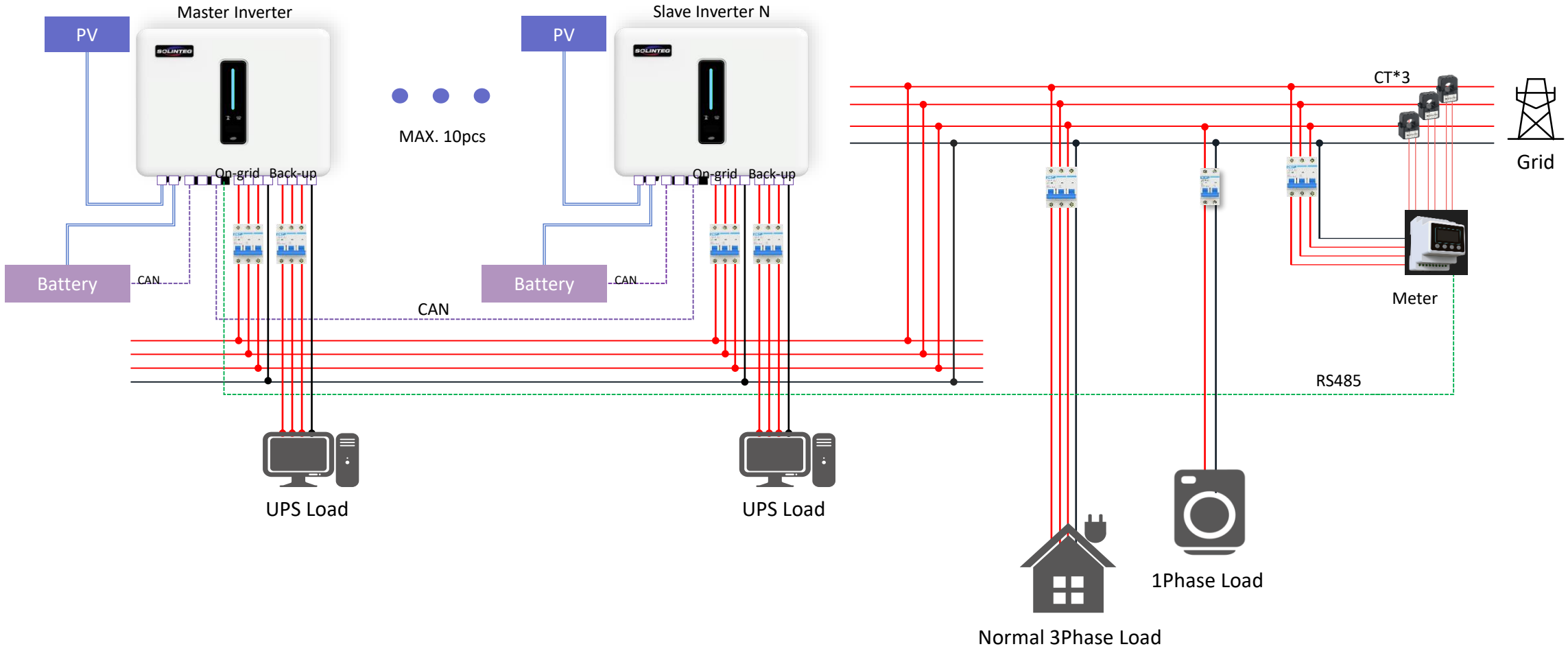
2

Master Slave Controlling

INTEGRATE SOLAR INTELLIGENTLY

Master Slave Controlling

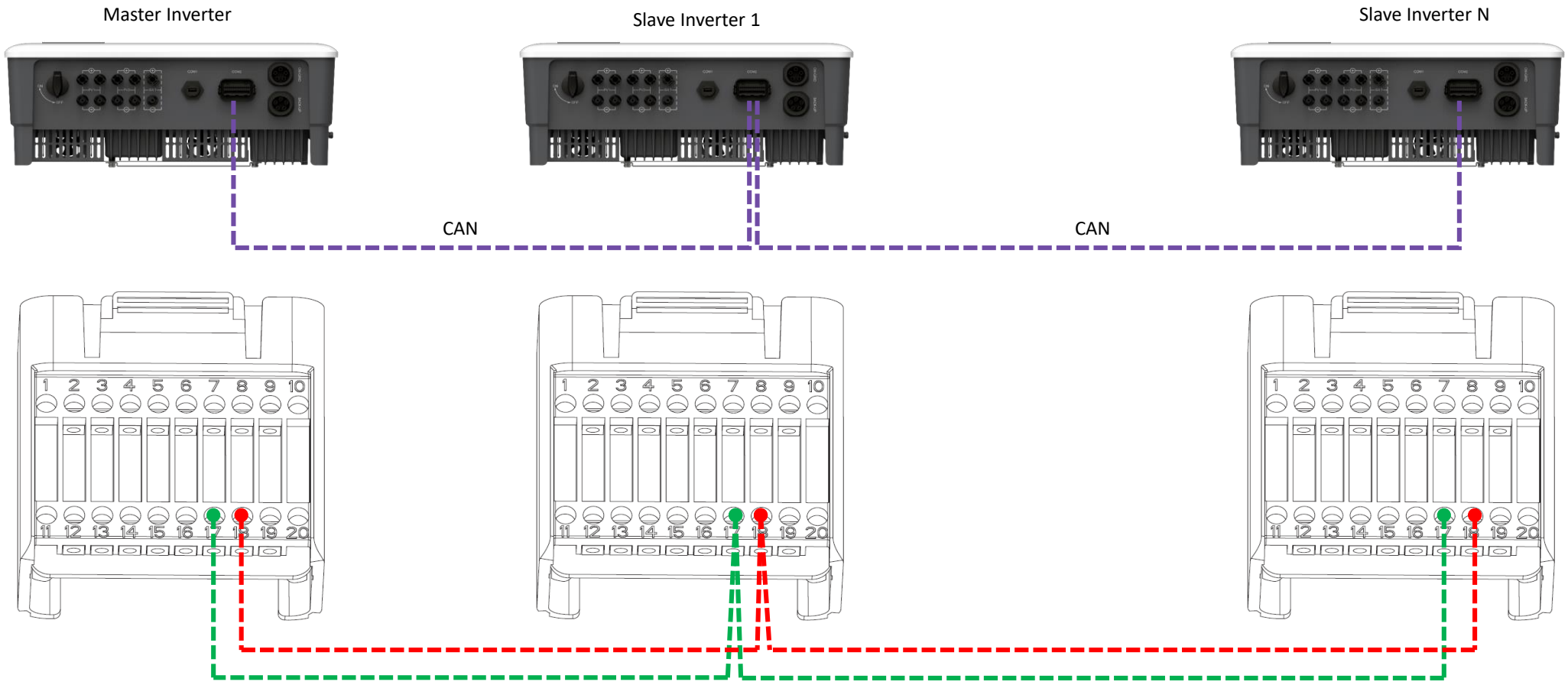
System Connection Diagram



SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

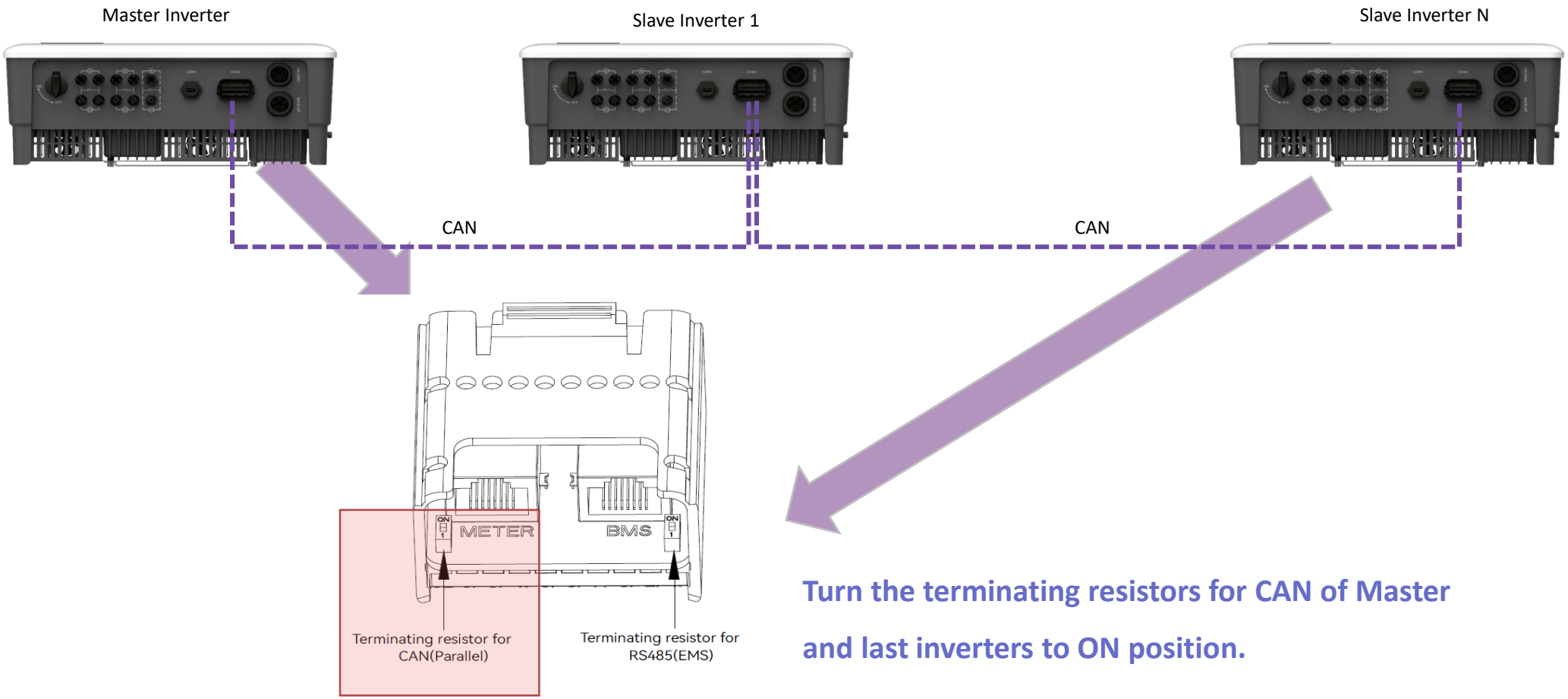
Master Slave Controlling

CAN Communication Connection



Master Slave Controlling

CAN Communication Connection

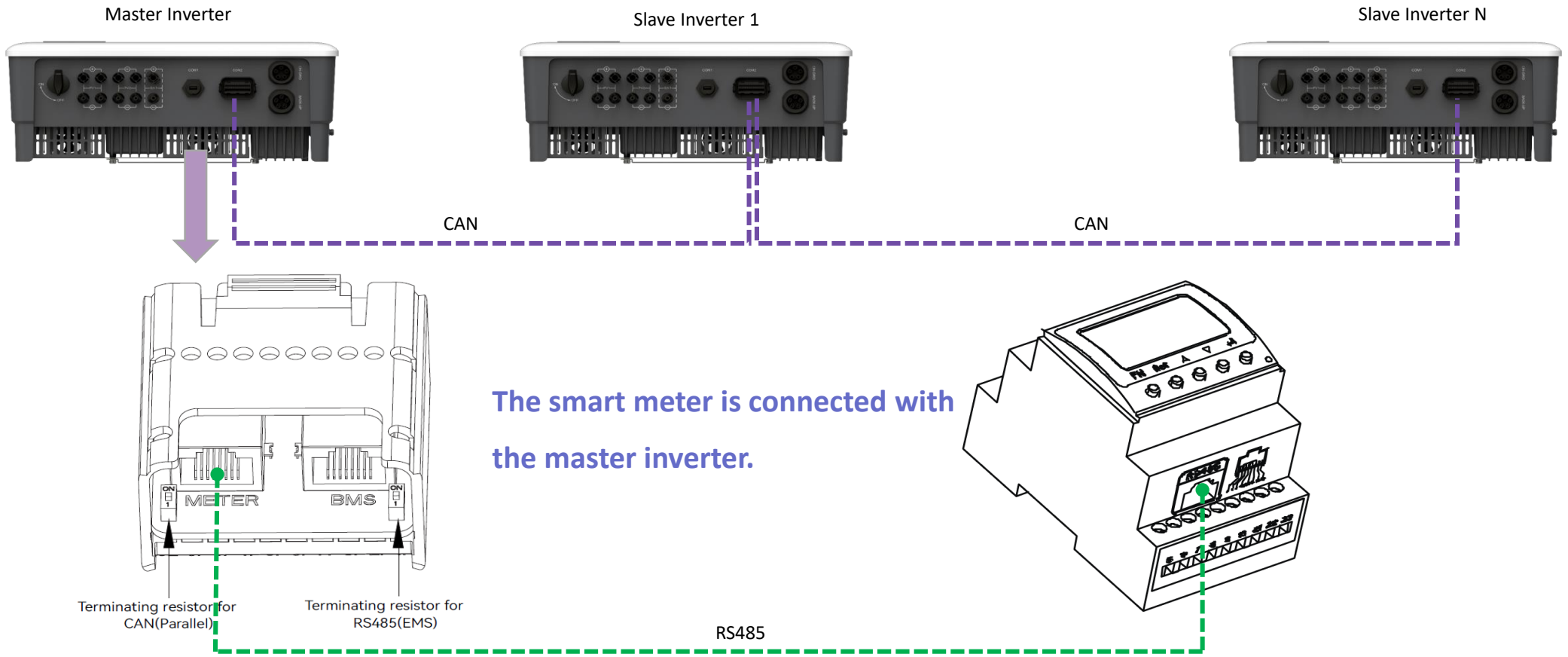


Turn the terminating resistors for CAN of Master and last inverters to ON position.

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Master Slave Controlling

Smart Meter Communication Connection



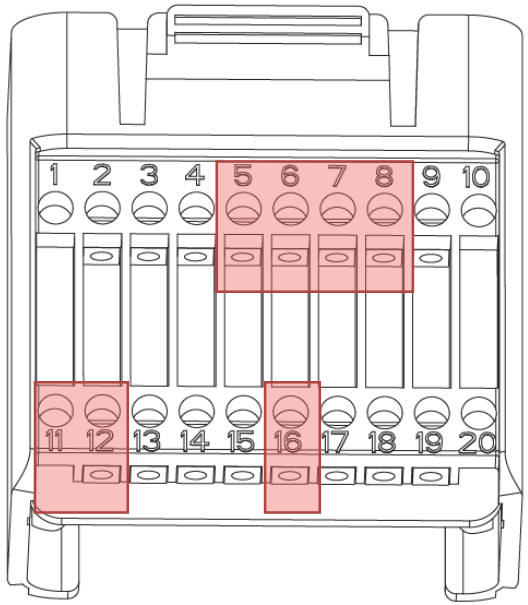
The smart meter is connected with the master inverter.

Master Slave Controlling

Ripple Control Receiver Connection

In Germany and some European areas, a Ripple Control Receiver is widely used by the grid company. It is aimed to control maximum allowed feed-in power through converting power grid dispatch instructions to dry contact signal which is received by dry contact purchased as requires. The interface of this function is as follows.

Master Inverter

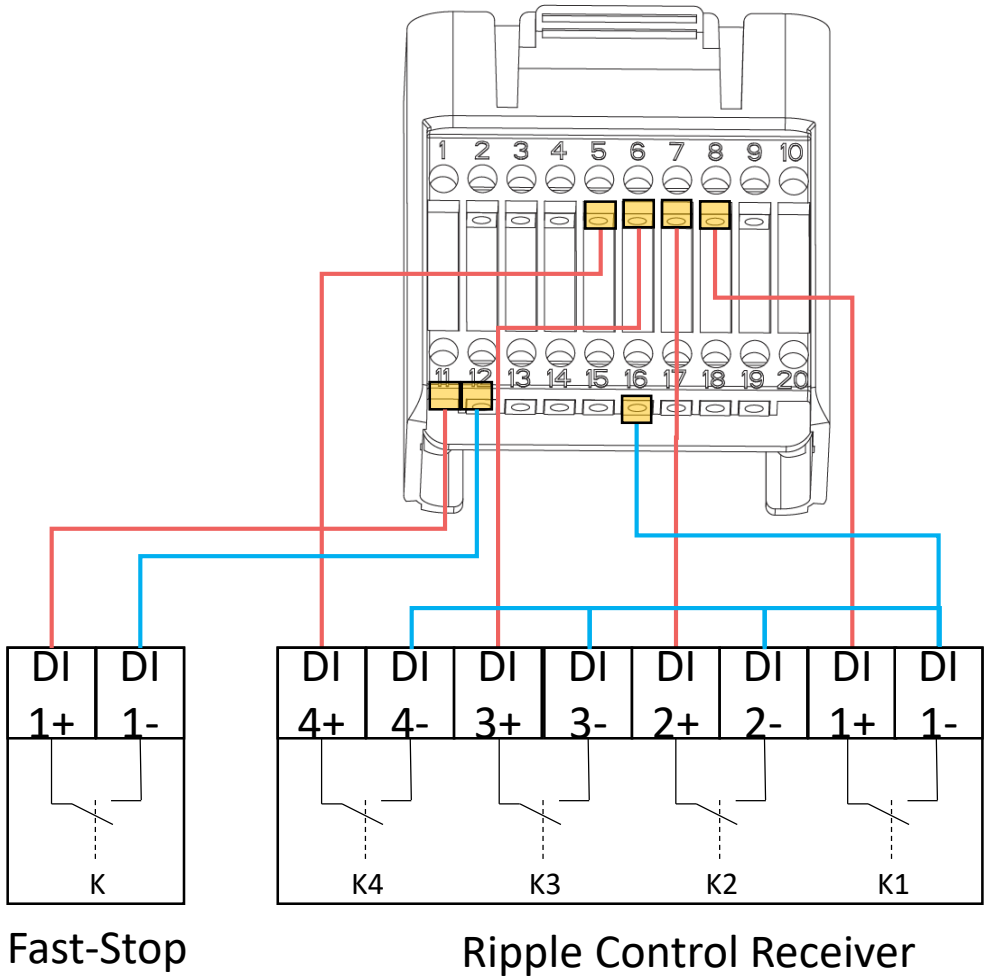


- **Only the master device needs to be connected.**
- **Only integrated with active power adjusting function.**

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Master Slave Controlling

Ripple Control Receiver Connection



Active Power Dry Contact Connection Diagram

- When K1 is turned on, the maximum allowed feed-in power is 100% of the total rated power of the inverter.
- When K2 is turned on, the maximum allowed feed-in power is 60% of the total rated power of the inverter.
- When K3 is turned on, the maximum allowed feed-in power is 30% of the total rated power of the inverter.
- When K4 is turned on, feed-in power is not allowed.

The RCRR function must be enabled on the inverter screen. If the Ripple Control Receiver is not connected or the RCRR function is not enabled, the inverter will fail to output.

The Ripple Control Receiver connection for single inverter is the same.

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

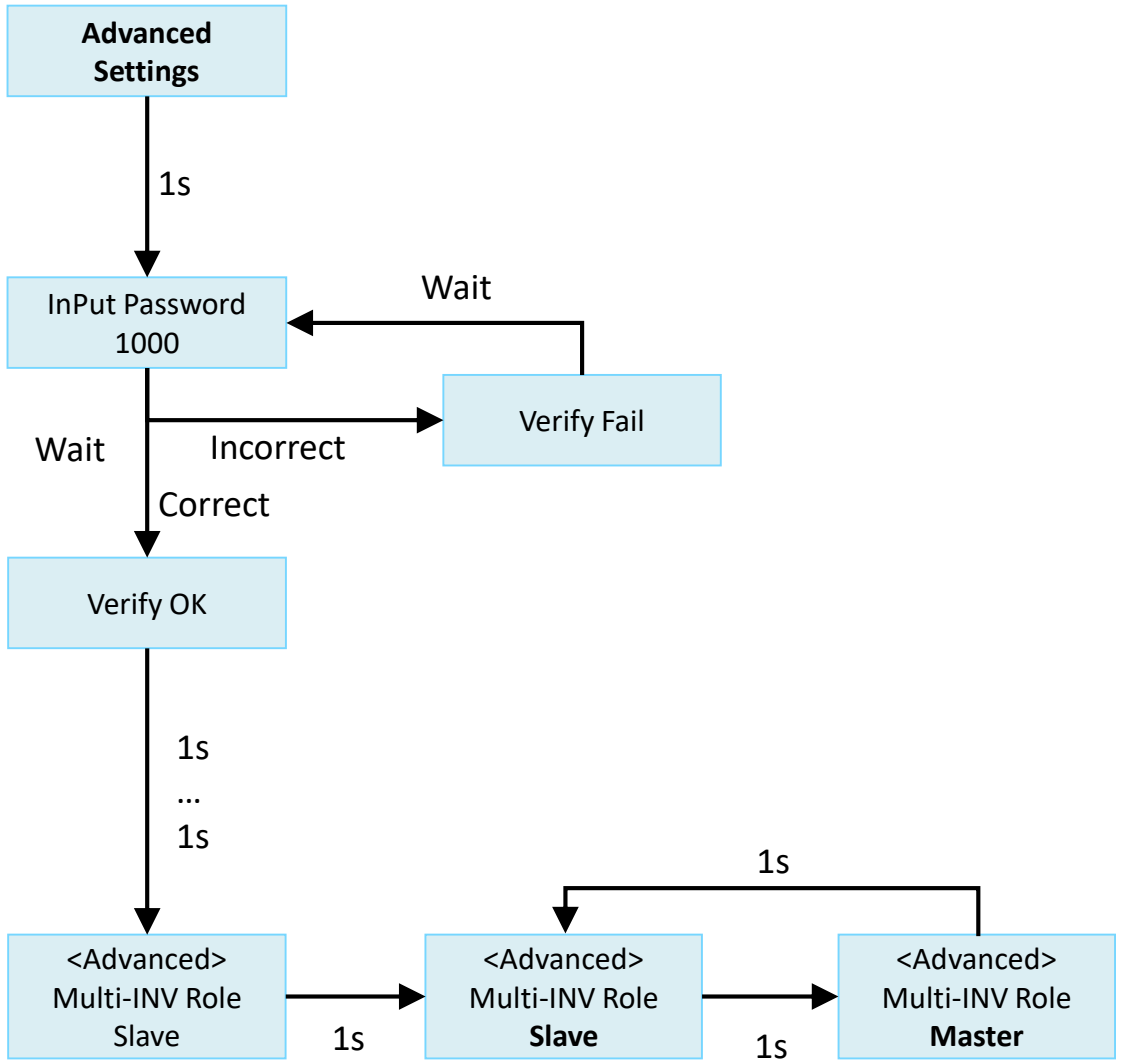
Master Slave Controlling

Operation Procedure

1. According to the instructions and parallel system drawing, install the whole system including cable connections.
2. Ensure that the inverters and batteries are securely connected, cable connections are firm, and each inverter is equipped with communication module.
3. Power on all the inverters
   ① If there is power grid, the inverter is only connected to the power grid, not the back-up load;
   ② If there is no power grid, switch on the battery and PV, but do not switch on the back-up load.
4. Configure the WIFI network for system.
5. Create a plant in monitoring APP to add all inverters.
6. Set the inverter connected to the smart meter as the Master via monitoring APP (or on screen)
7. Confirm that all inverters are online in the monitoring APP.
8. Set the necessary parameters of the master inverter via APP or screen, such as safety code, export limit, RCRR, etc.
9. All inverters are connected to the power grid, batteries and PV to make sure that the system can run normally.
10. After the system runs properly, connect the load.

Master Slave Controlling

Setting



Screen Display

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

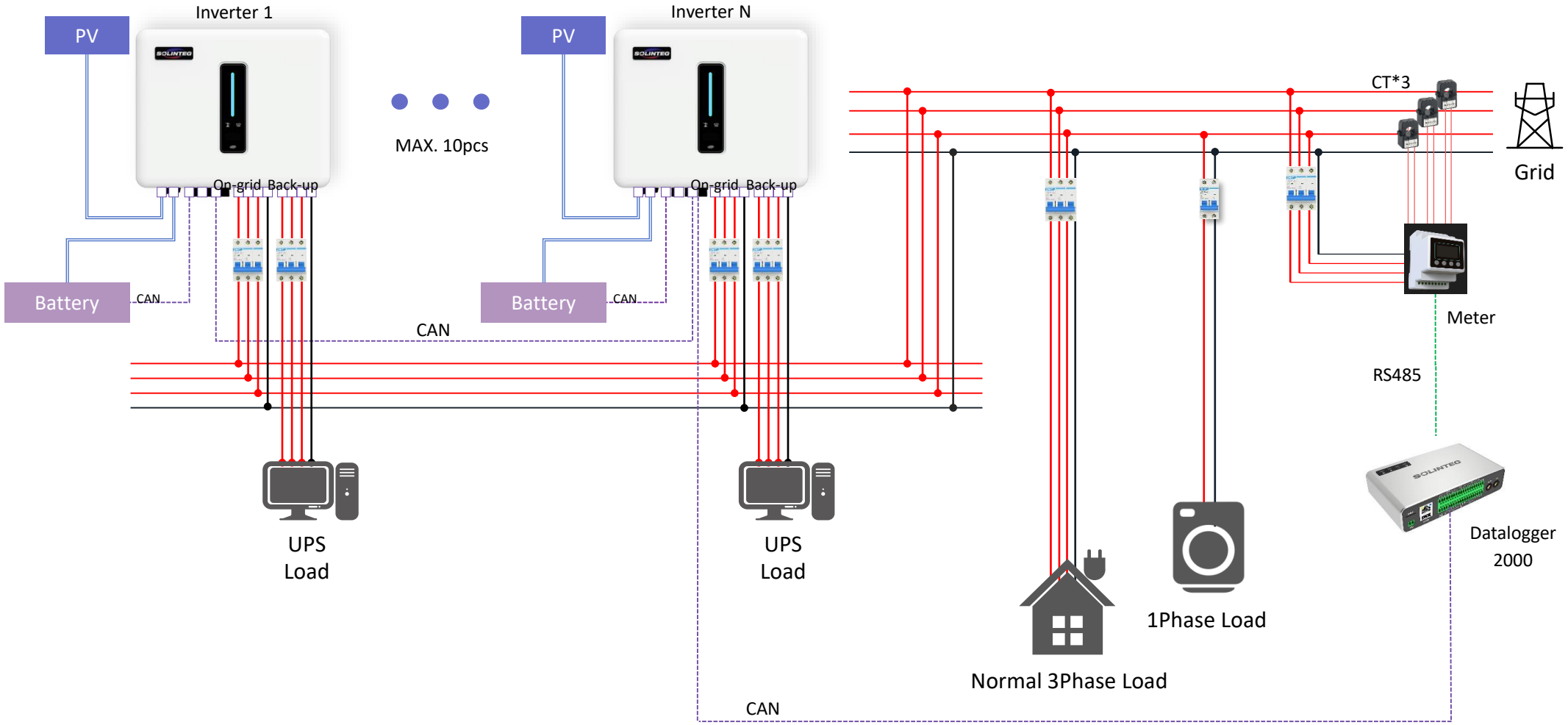
3

Datalogger Controlling

INTEGRATE SOLAR INTELLIGENTLY

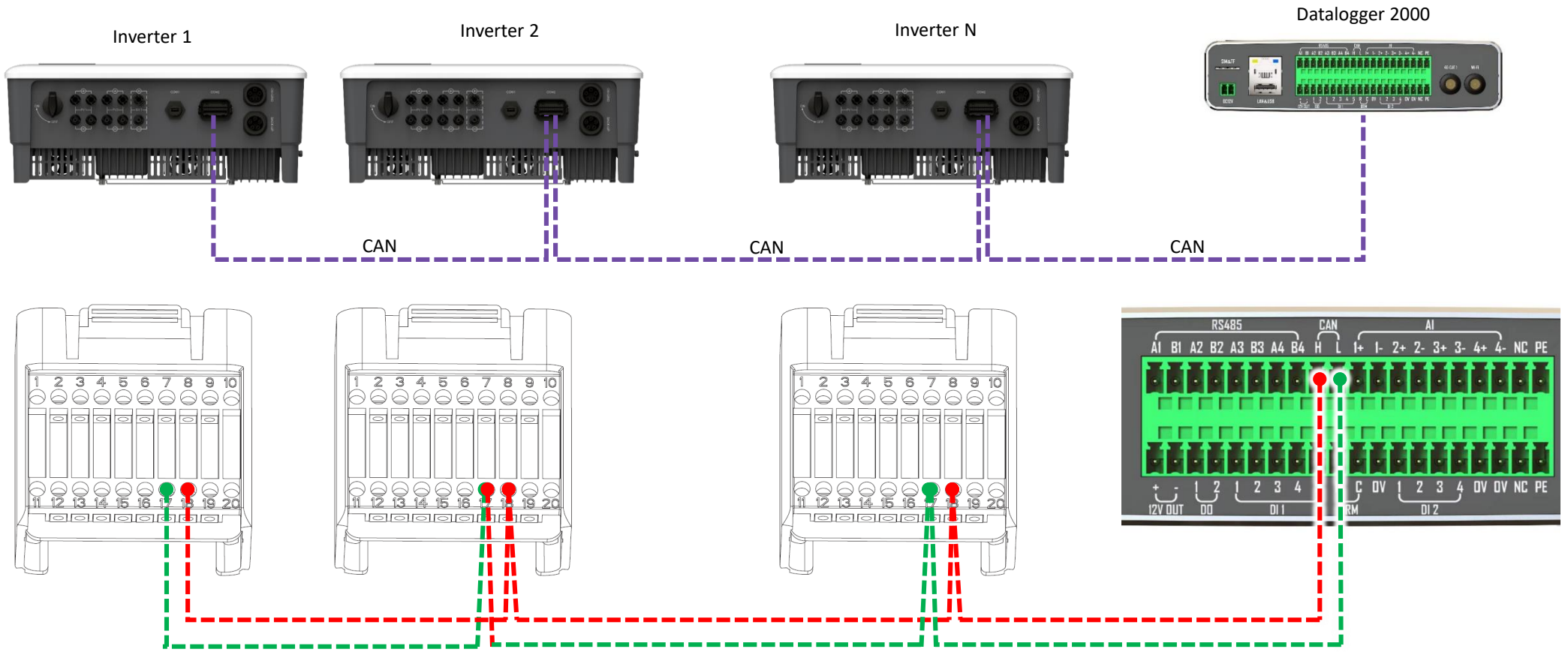
Datalogger Controlling

System Connection Diagram



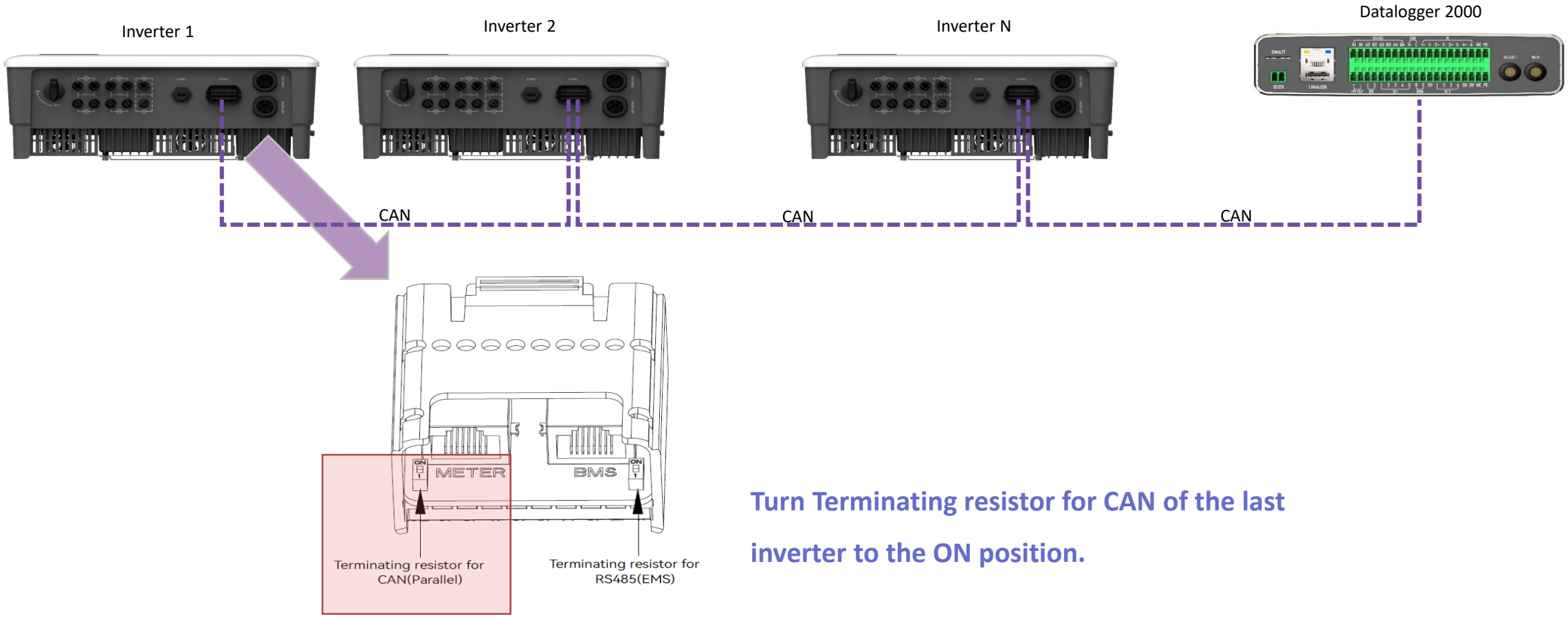
Datalogger Controlling

CAN Communication Connection



Datalogger Controlling

CAN Communication Connection



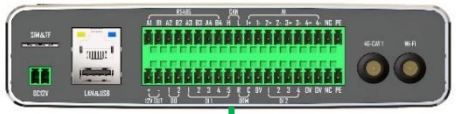
Turn Terminating resistor for CAN of the last inverter to the ON position.

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

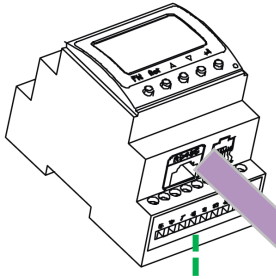
Datalogger Controlling

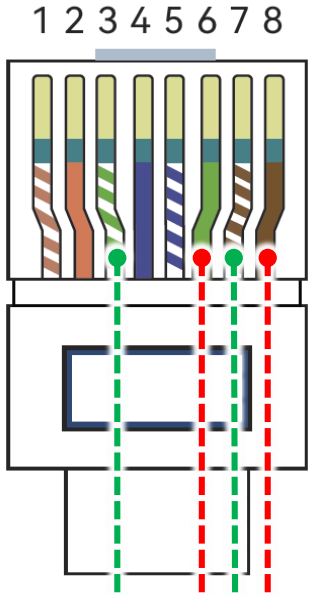
Smart Meter Communication Connection

Datalogger 2000

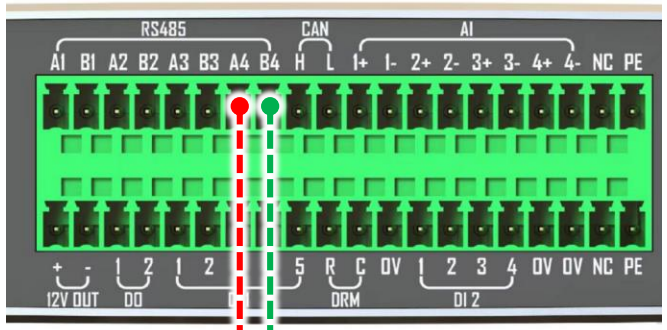


The smart meter is connected with the datalogger.





RS485



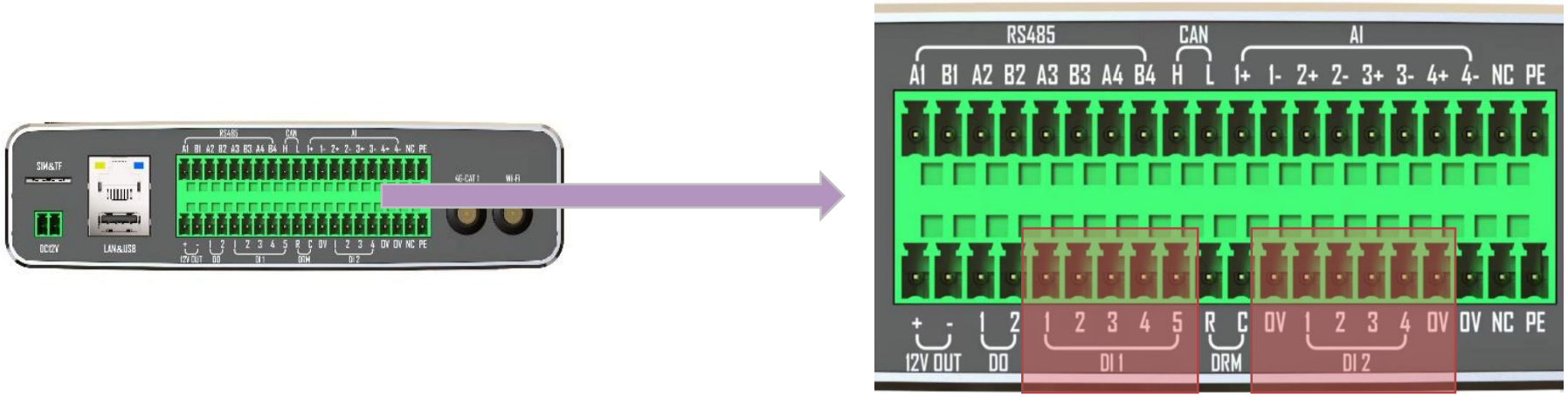
RS485

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Datalogger Controlling

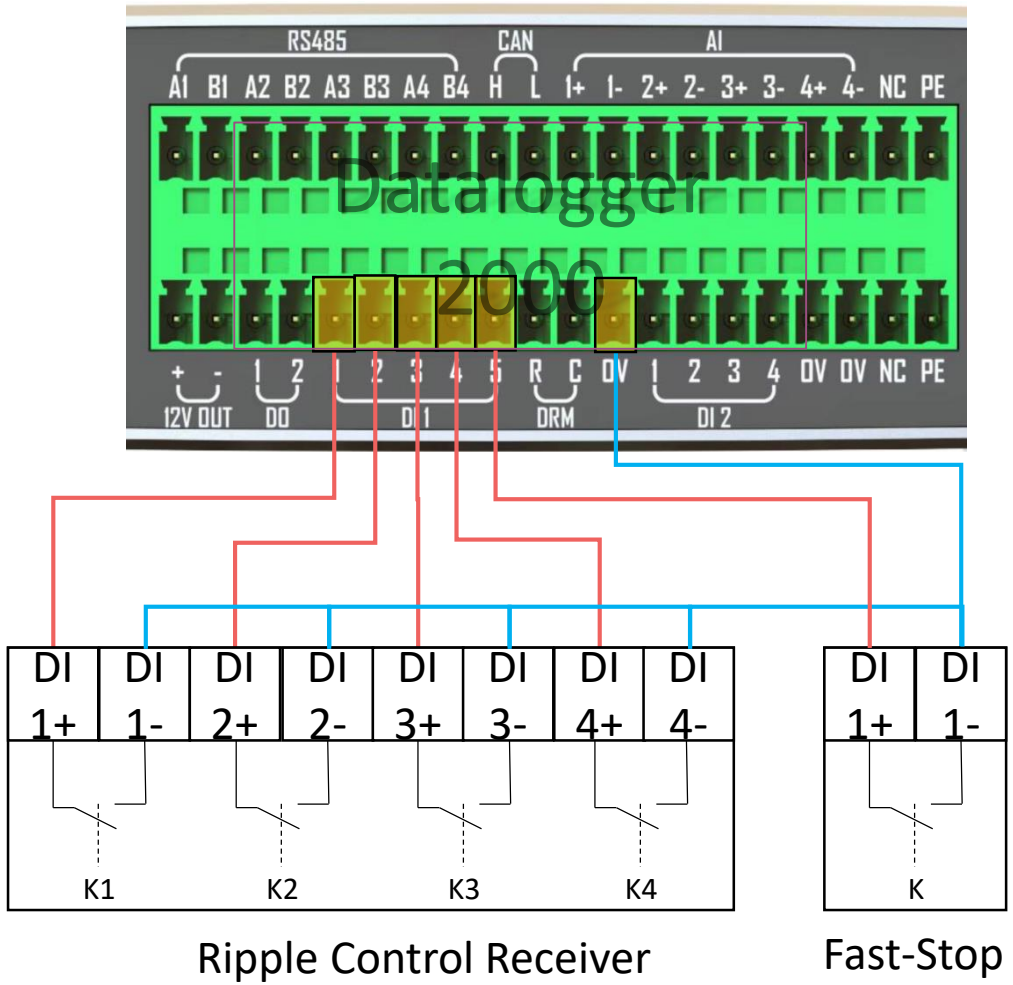
Ripple Control Receiver Connection

In Germany and some European areas, a Ripple Control Receiver is widely used by the grid company. It is aimed to control maximum allowed feed-in power through converting power grid dispatch instructions to dry contact signal which is received by dry contact purchased as requires. The Datalogger2000 interface of this function is as follows.



Datalogger Controlling

Ripple Control Receiver Connection



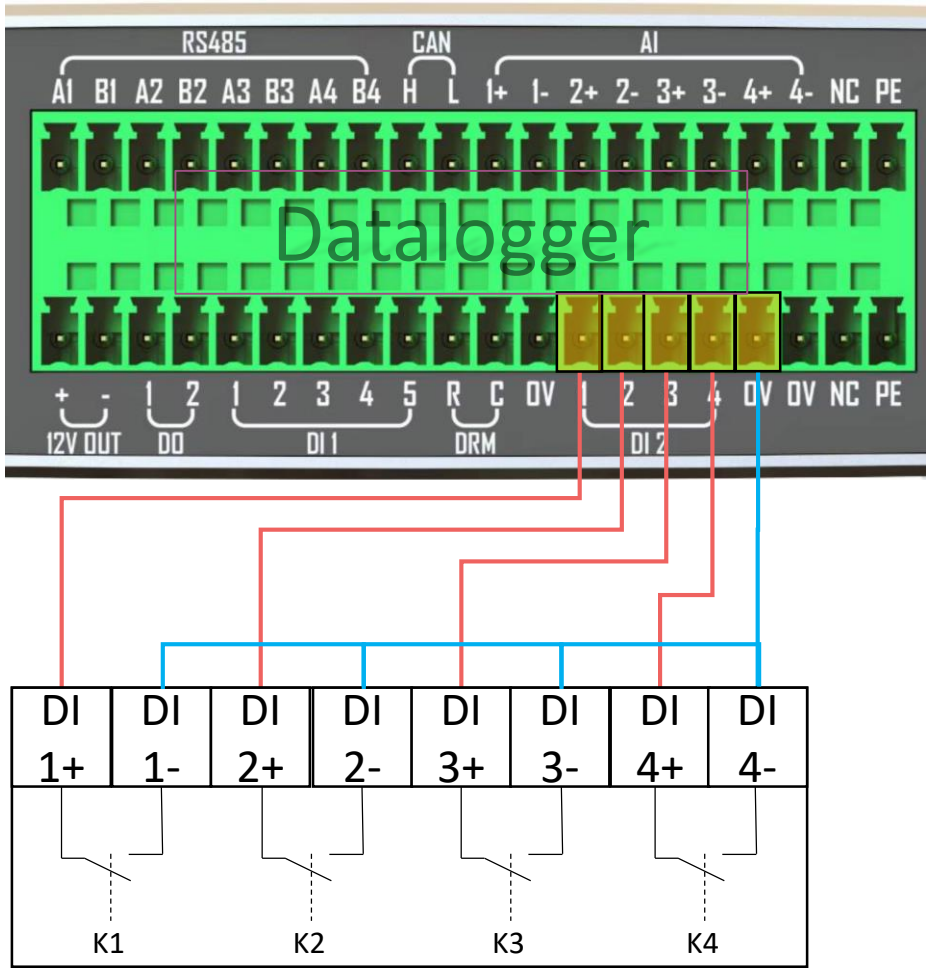
Active Power Dry Contact Connection Diagram

The settings can be customized.
Instructions to be updated.

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Datalogger Controlling

Ripple Control Receiver Connection



Ripple Control Receiver

Reactive Power Dry Contact Connection Diagram

The settings can be customized.
Instructions to be updated.

SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

4

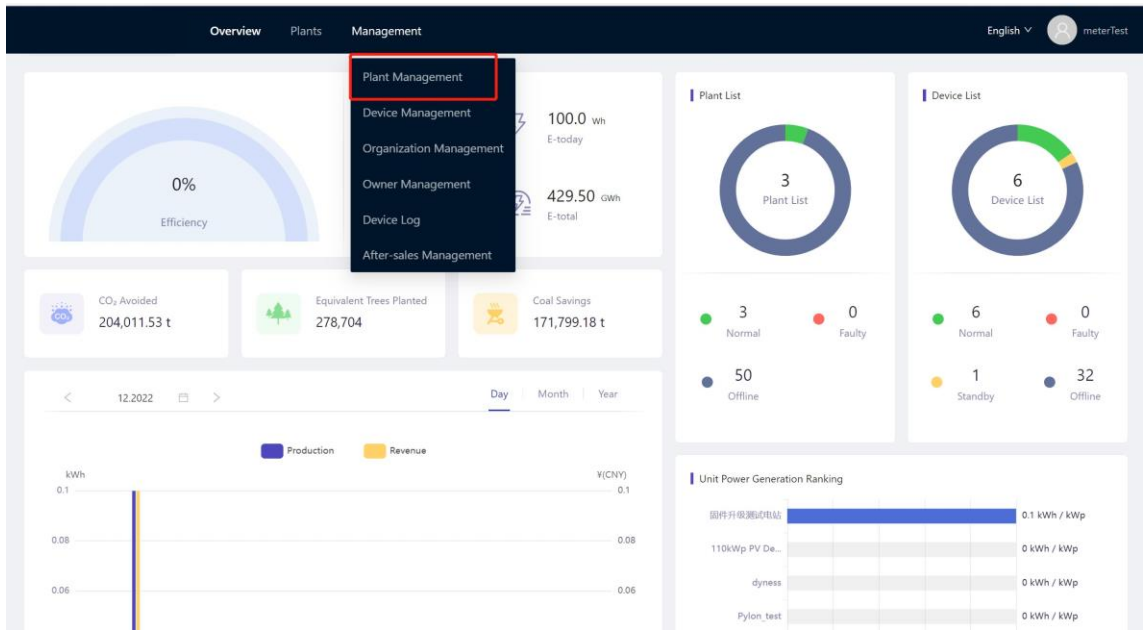
Solinteg Cloud Setting

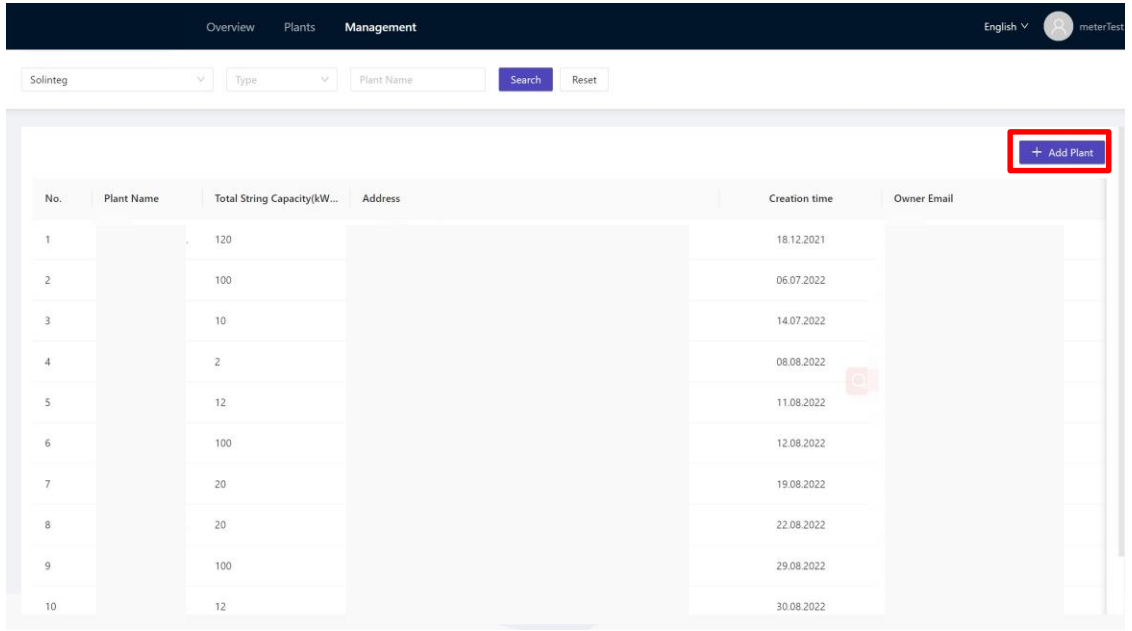
INTEGRATE SOLAR INTELLIGENTLY

Solinteg Cloud Setting

Create a New Paralleling Plant

Login Solinteg cloud, and click[Plant Management]—Add Plant.



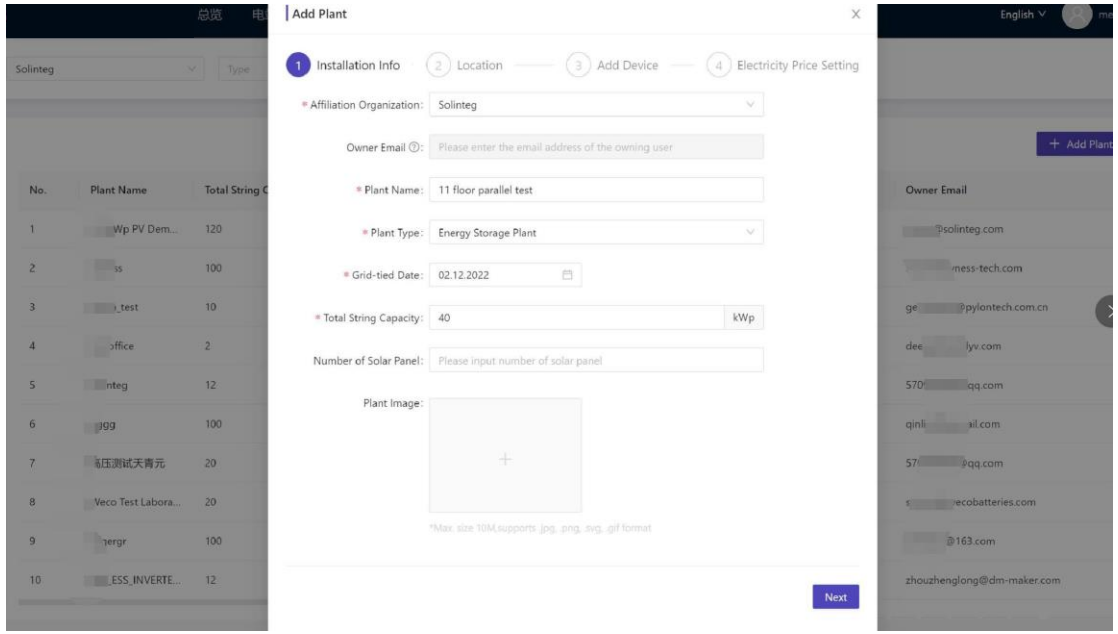


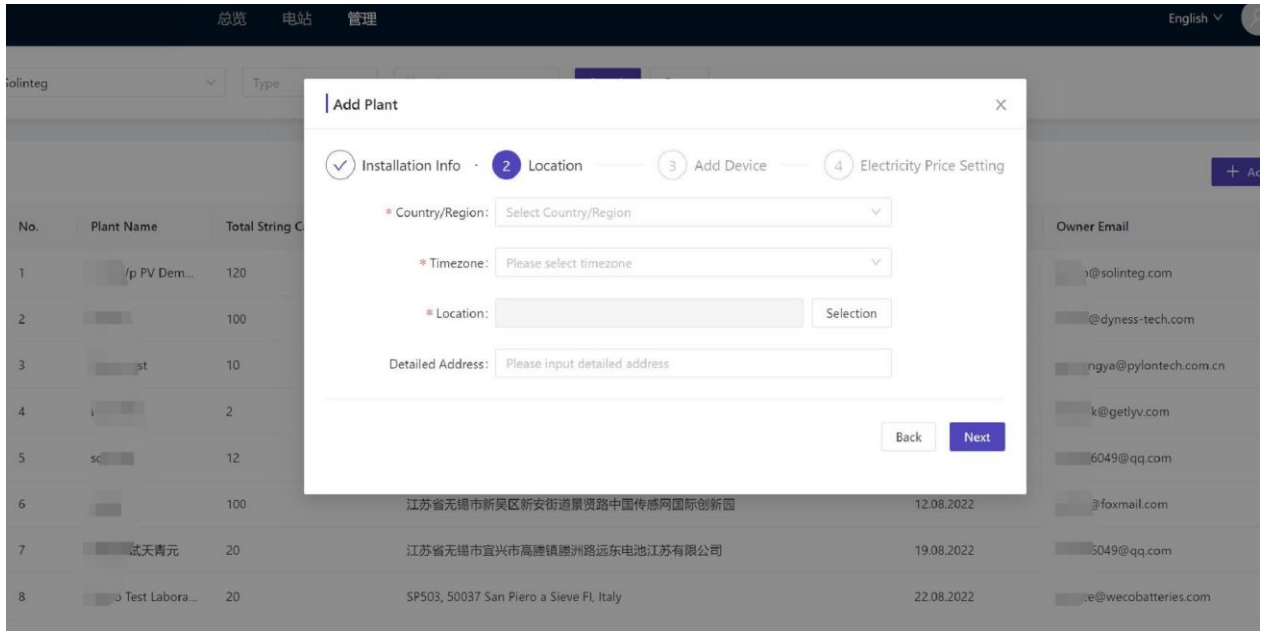
SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Solinteg Cloud Setting

Create a New Paralleling Plant

Fill in the required fields which are marked with * in Installation Info and Location menu.

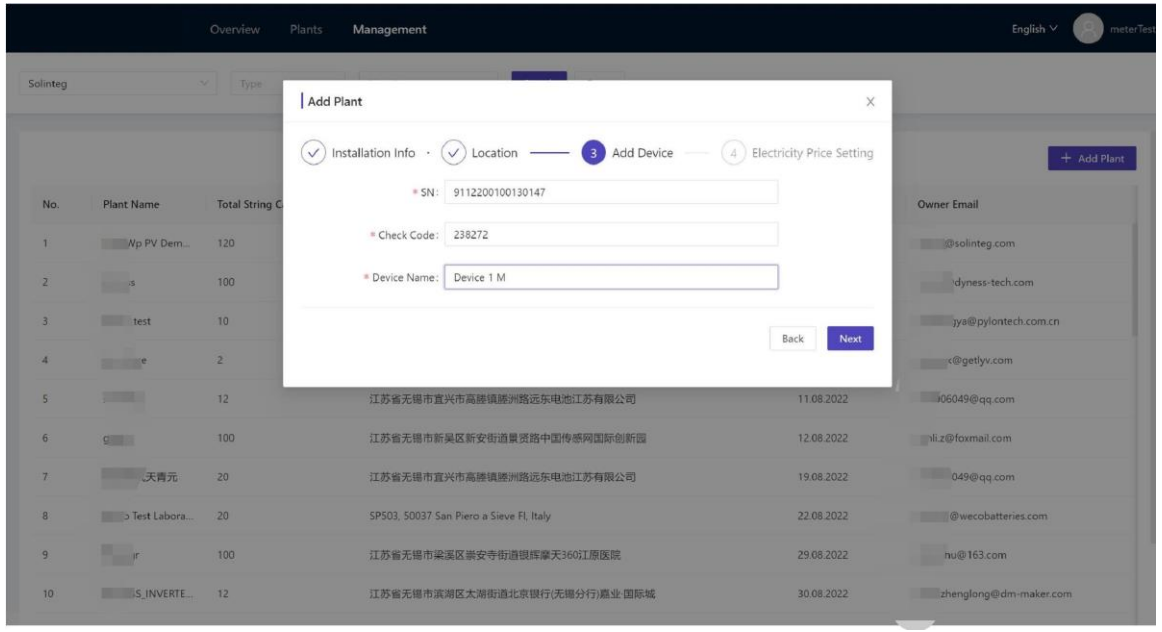


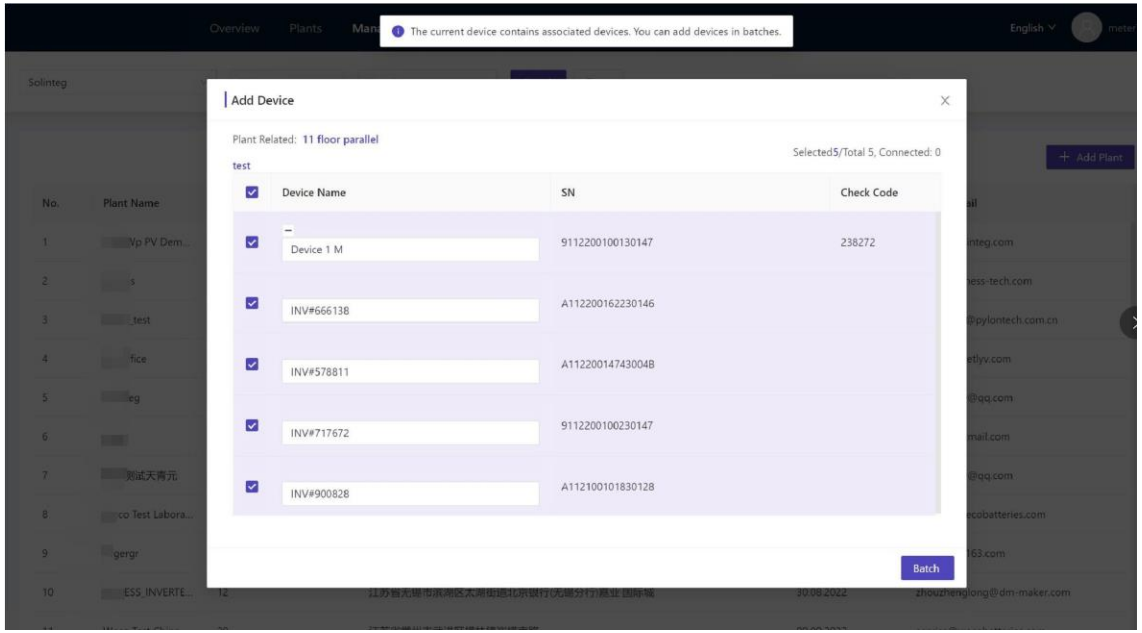


Solinteg Cloud Setting

Create a New Paralleling Plant

Once one device information of the Master or Slave inverter of a paralleling is filled in, the others will show automatically in the next page. Click [Batch] to add all the inverters.(Please set the inverters as Master and Slave via inverter screen or Solinteg SetAPP).

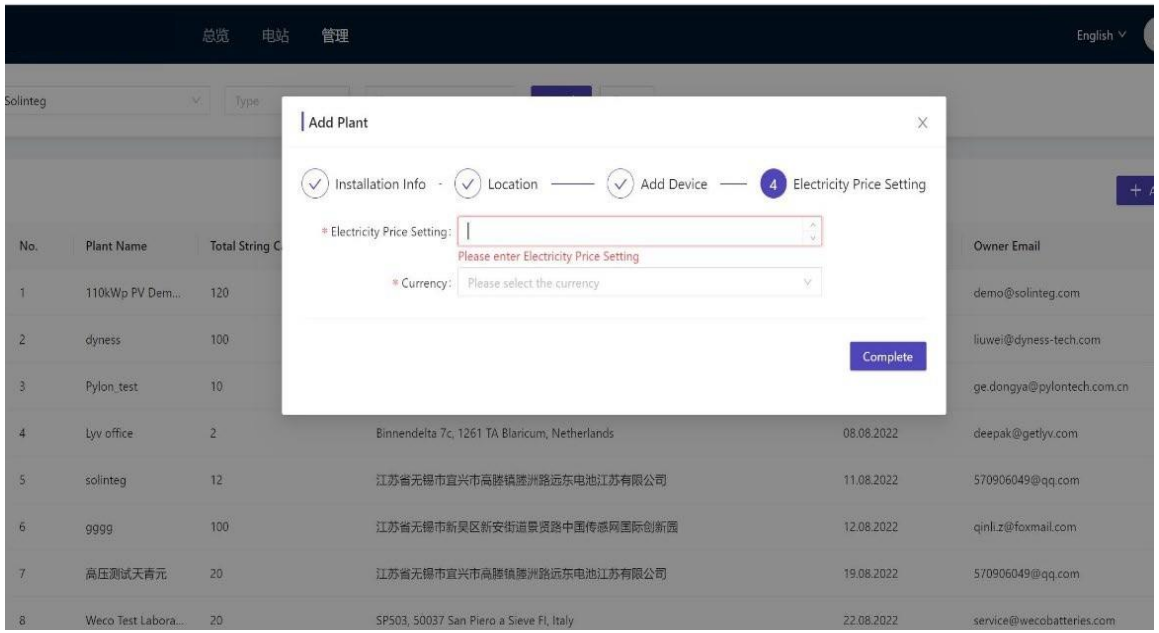


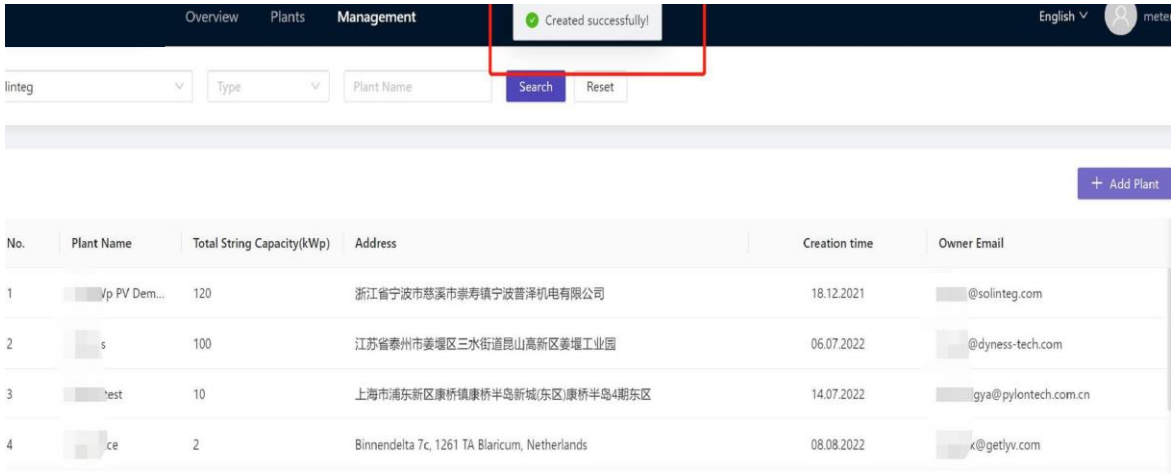


Solinteg Cloud Setting

Create a New Paralleling Plant

The moment you click [Complete] after electricity price and currency are filled in based on local regulation, the plant will be created successfully.



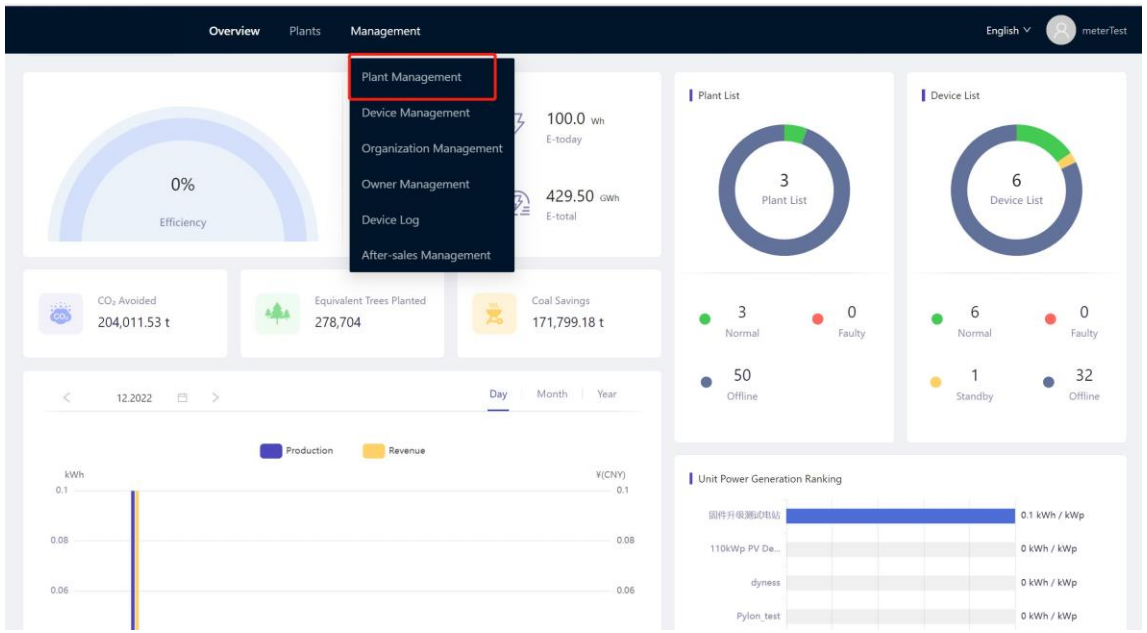


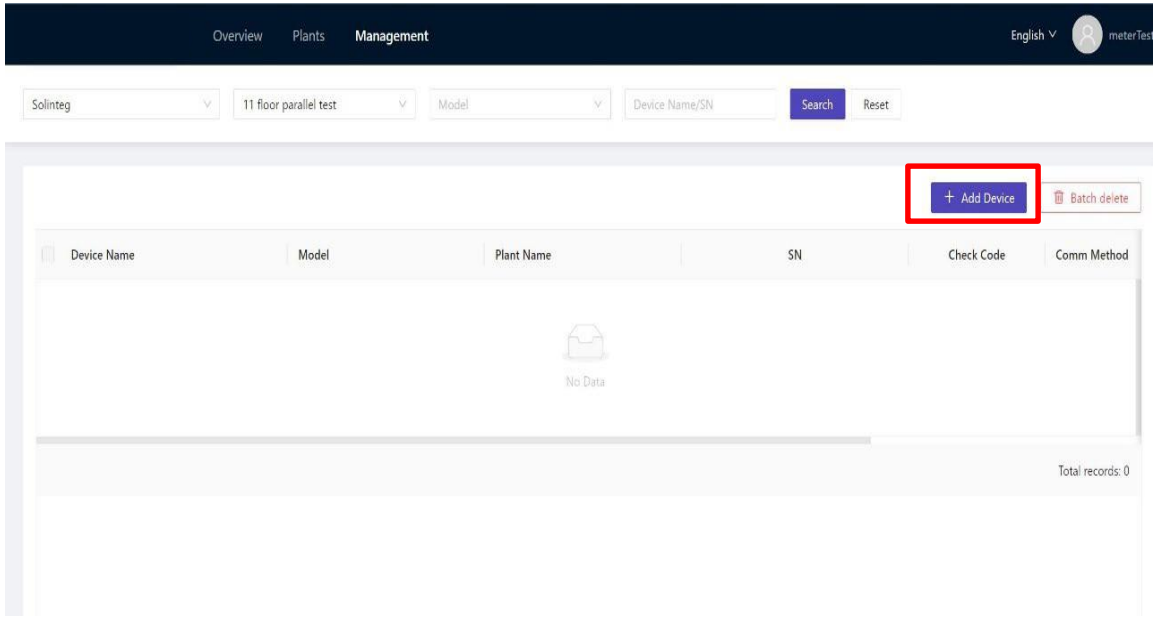
SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Solinteg Cloud Setting

Add Device into an Existing Plant

Login Solinteg cloud , enter [Plant Management] menu, and then click [Add Device].



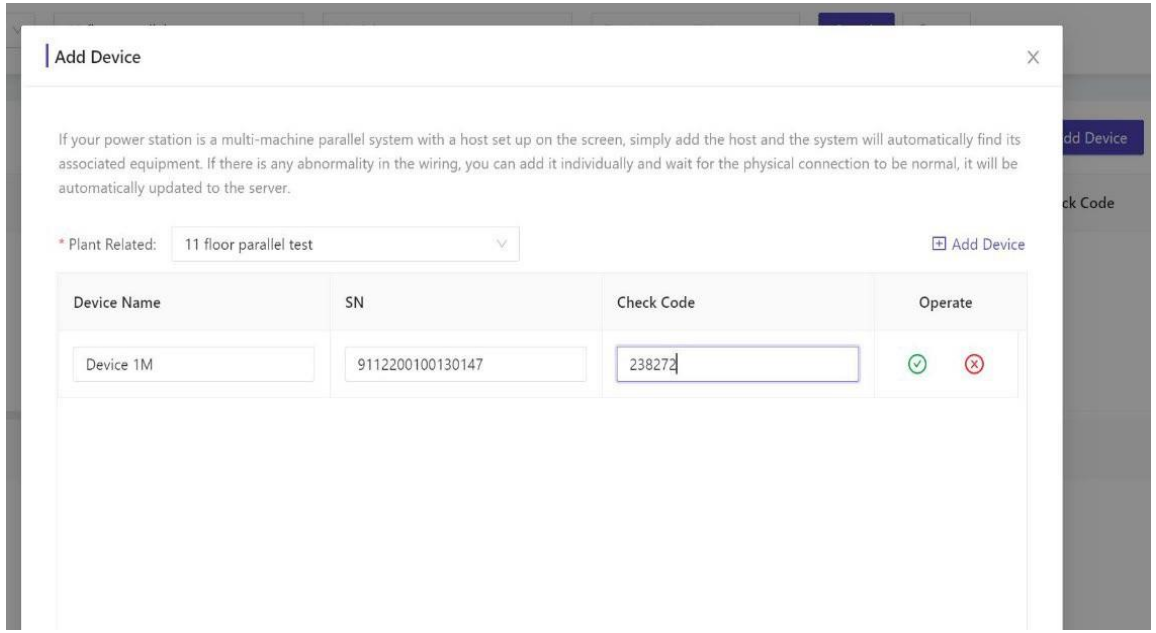


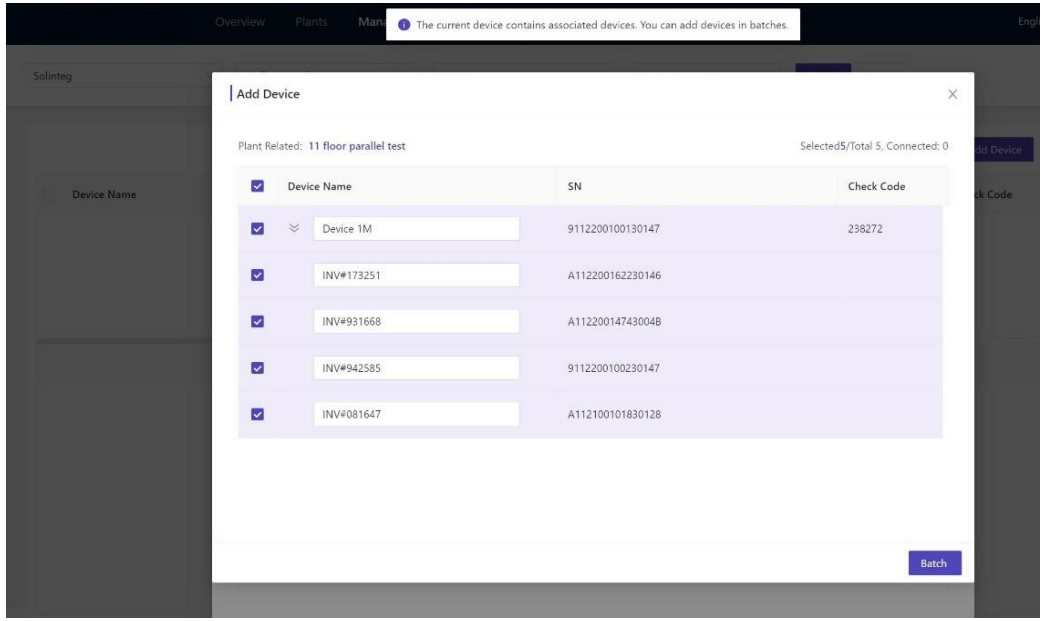
SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Solinteg Cloud Setting

Add Device into an Existing Plant

Once one device information of the Master or Slave inverter of a paralleling is filled in, the others will show automatically in the next page. Click [Batch] to add all the inverters.(Please set the inverters as Master and Slave via inverter screen or Solinteg SetAPP).

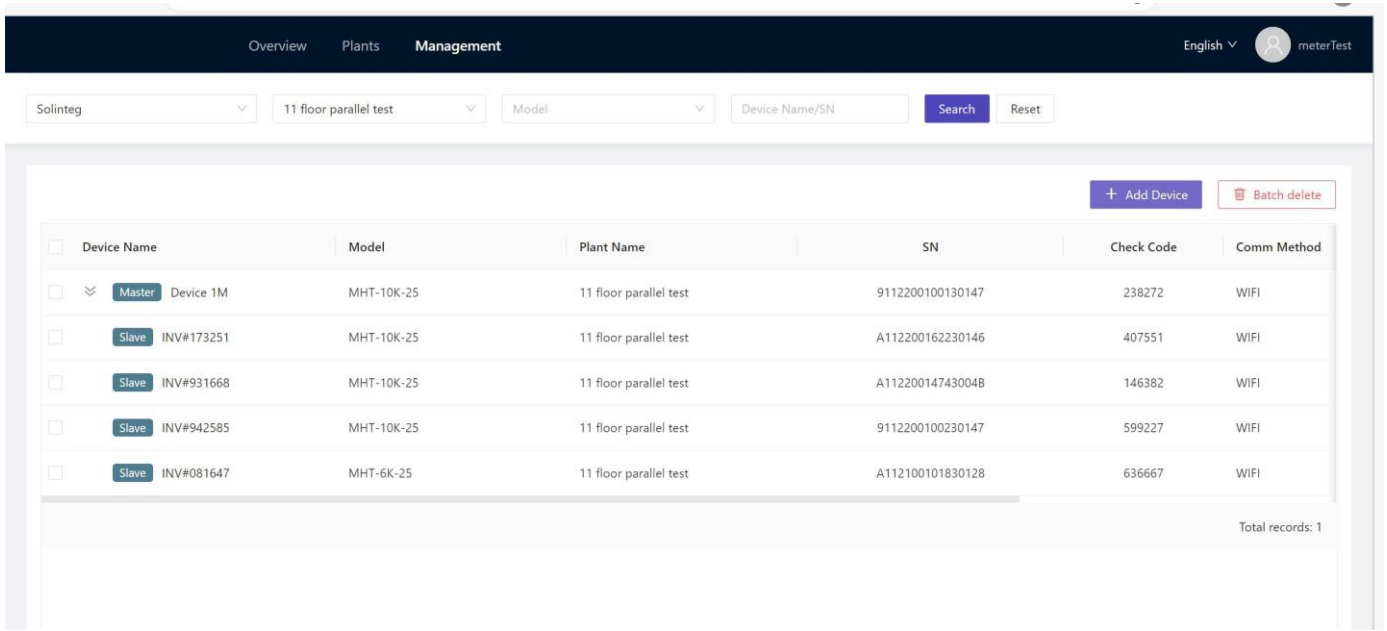




Solinteg Cloud Setting

Add Device into an Existing Plant

The inverters will be shown in the device list of the plant.

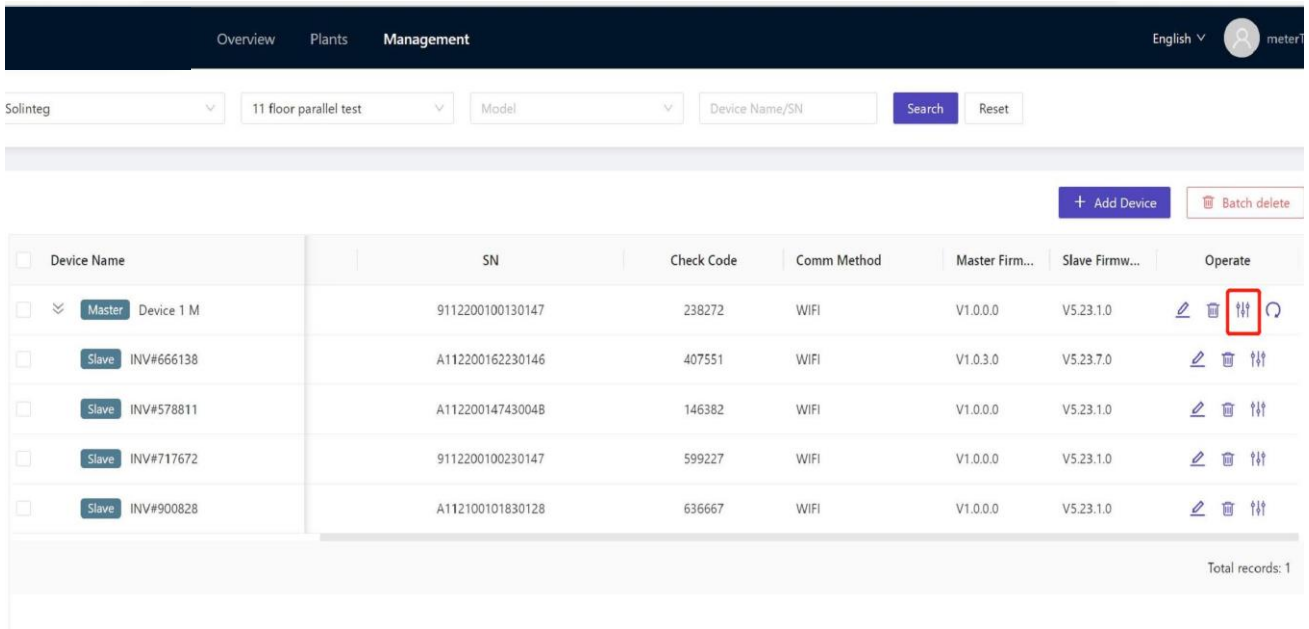


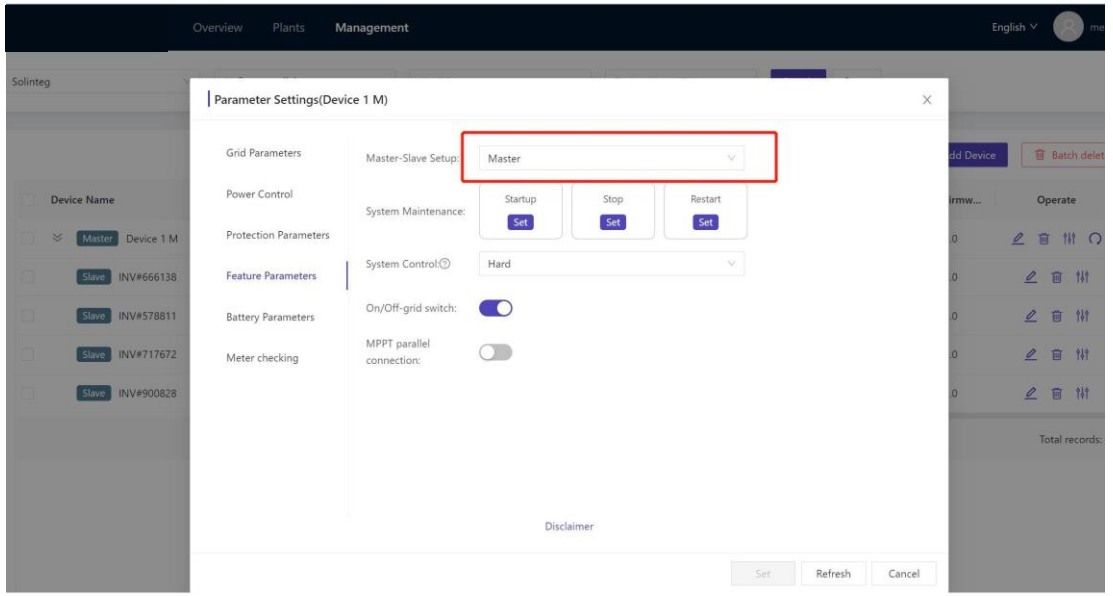
SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

Solinteg Cloud Setting

Master-Slave Setup

Master-slave role can be changed via [Parameter setting ⚙].





SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

THANK YOU

www.solinteg.com