



# Export Power Control Solution

## APsystems ECU-R&Chint Meter

(For NA)



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## Table of Contents

|                                                                                                                                                                                               |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>1. Split-Phase Meter</b>                                                                                                                                                                   | <b>4</b>  |
| 1.1 ECU-R&DTSU666-250A/50mA-120/240V (Total current in the load or PV system less than 250A)                                                                                                  | 4         |
| 1.1.1 Schematic diagram of the system principle                                                                                                                                               | 4         |
| 1.1.2 Meter Wiring Diagram                                                                                                                                                                    | 5         |
| <b>2. Three-Phase Four-Wires Meter</b>                                                                                                                                                        | <b>6</b>  |
| 2.1 ECU-R&DTSU666-250/50mA-3X120/208V(Total current in the Load or PV system less than 250A)                                                                                                  | 6         |
| 2.1.1 Schematic diagram of the system principle                                                                                                                                               | 6         |
| 2.1.2 Meter Wiring Diagram                                                                                                                                                                    | 7         |
| 2.2 ECU-R&DTSU666-1.5(6)-3X277/480V( (No current limitation, but CT needs to be purchased by yourself, and the CT ratio is less than 9999,The secondary current of CT can only be 1A or 5A).) | 8         |
| 2.2.1 Schematic diagram of the system principle                                                                                                                                               | 8         |
| 2.2.2 Meter Wiring Diagram                                                                                                                                                                    | 9         |
| <b>3. Electric Meter Settings</b>                                                                                                                                                             | <b>10</b> |
| 3.1 Electric Meter Configuration on ECU-R(Local access)                                                                                                                                       | 10        |
| 3.1.1 The Modbus address is consistent                                                                                                                                                        | 11        |
| 3.1.2 Configuration for Single-phase Inverters doing three-phase grid connection (Export Limit Function)                                                                                      | 12        |
| 3.2 Electric Meter Configuration on EMA Web (Remote Control)                                                                                                                                  | 13        |
| 3.2.1 Power Limit Setting on EMA                                                                                                                                                              | 13        |
| <b>4. Data Display on EMA Web</b>                                                                                                                                                             | <b>14</b> |
| 4.1 Export/Import Data (Meter is installed on the Grid Side)                                                                                                                                  | 14        |
| 4.2 PV Power Generation Data (Meter is installed on the PV Side)                                                                                                                              | 14        |

|                                                                                                                                |    |
|--------------------------------------------------------------------------------------------------------------------------------|----|
| 4.3 PV Power Generation, Consume Energy, and Export/Import Energy Data (Meter is installed on the PV Side and Grid Side) ..... | 14 |
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**Tip:**

- **APsystems has adapted the following meters, which must be supplied by APsystems; otherwise, self-purchased meters will not be compatible.**

# 1. Split-Phase Meter

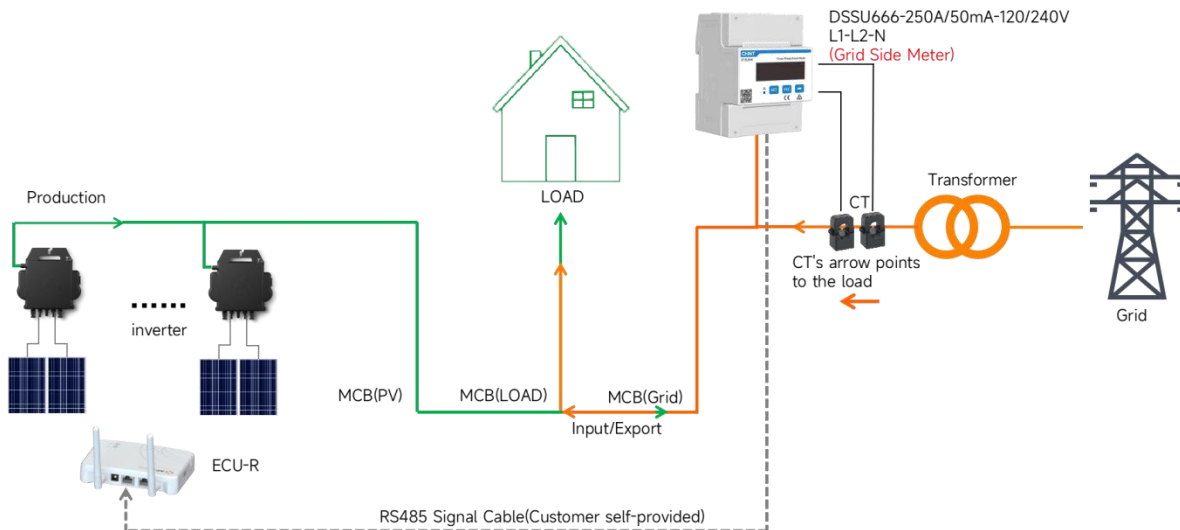
## 1.1 ECU-R&DTSU666-250A/50mA-120/240V

(Total current in the load or PV system less than 250A)

### 1.1.1 Schematic diagram of the system principle

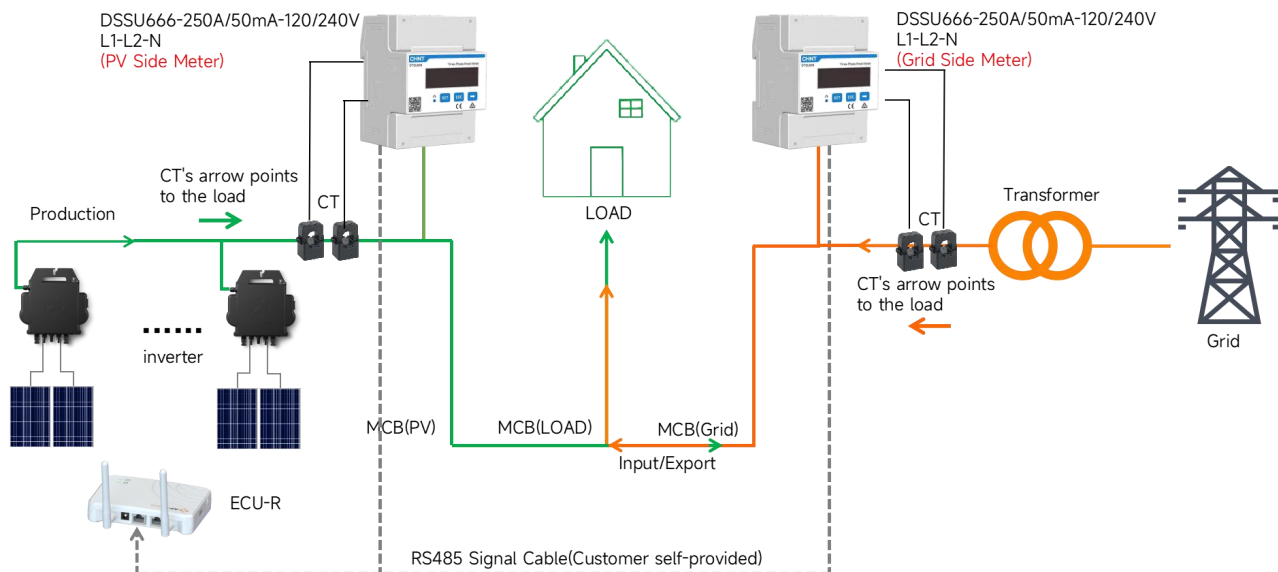
#### ① One Meter:

It is installed on the grid side already enables **Export Limit Function**. (Used to capture feed-in and bought-in electricity)



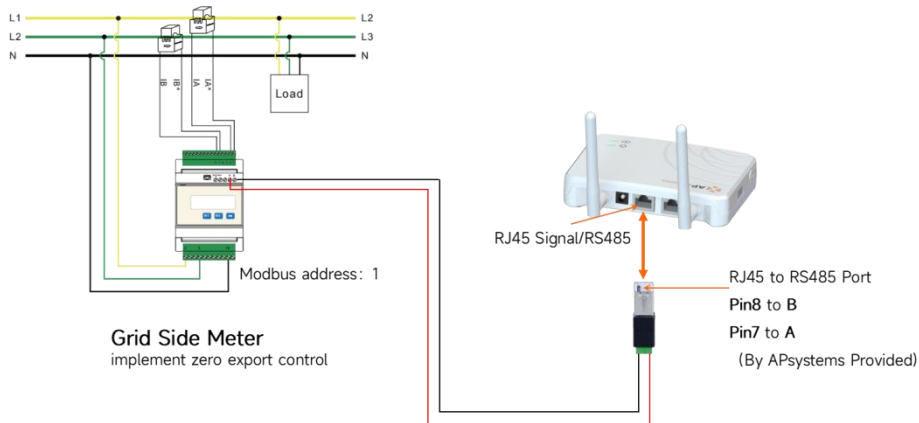
#### ② Two Meters:

**PV Side Meter:** can only collect photovoltaic data; **GRID Side Meter:** Acts as Export Limit Function. (For capturing feed-in power, purchased power, PV generation, and customer consumption.)

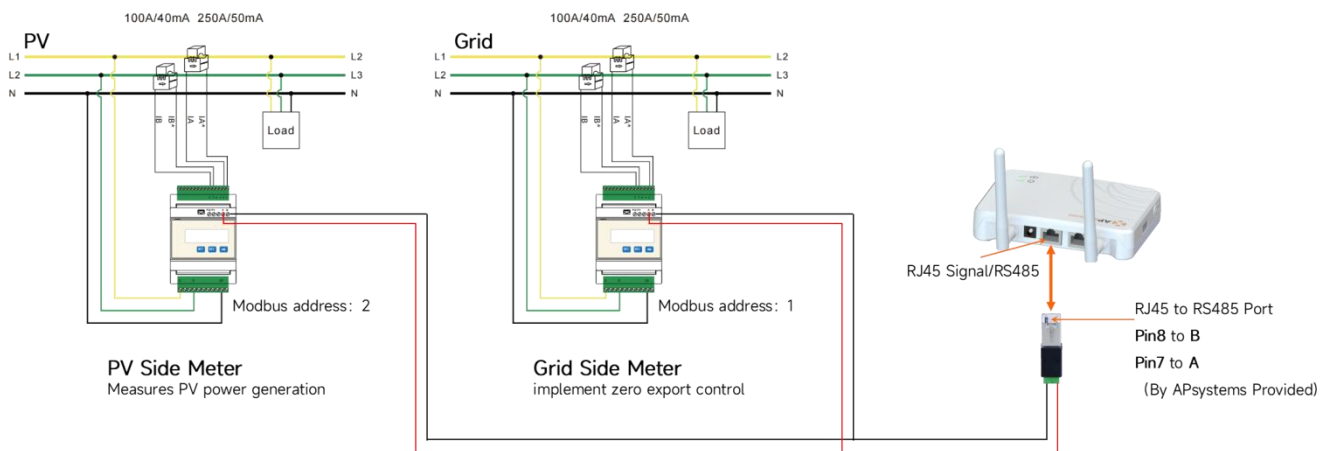


## 1.1.2 Meter Wiring Diagram

Installation method for one meter:

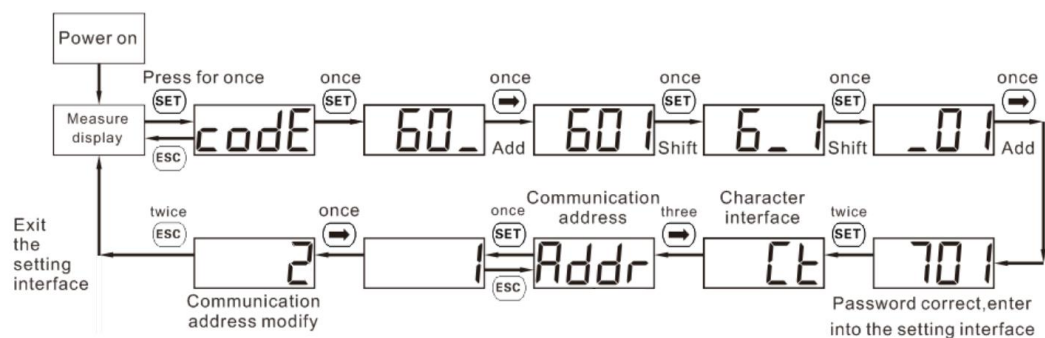


Installation method for Two meters:



### Tips:

- RS485 Signal Cable It is recommended to use 0.5mm<sup>2</sup> shielded twisted pair cable or 0.5mm<sup>2</sup> copper cable.
- PV Side Meter and Grid Side Meter can realize the function independently. According to the number of meters selected for the actual functional requirements, the factory default Modbus address of each meter is 1. If you need to modify the Modbus of the PV Side Meter to 2, you need to modify it manually. The operation process is as follows:



## 2. Three-Phase Four-Wires Meter

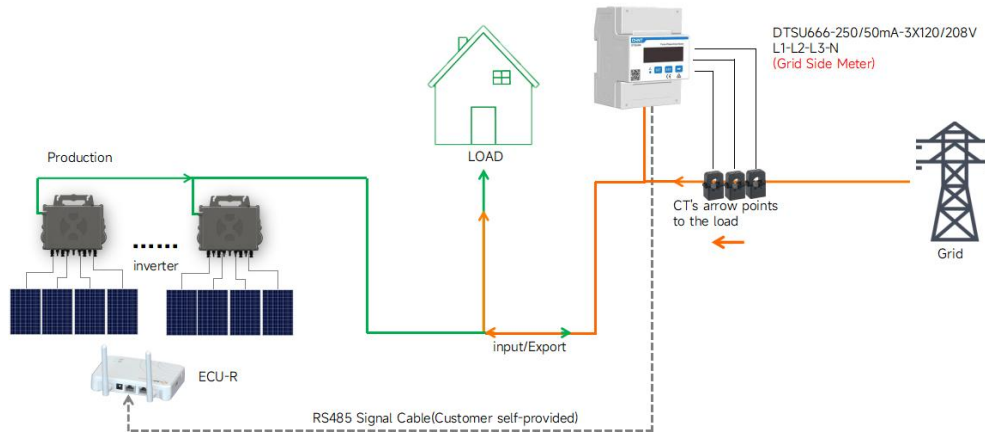
### 2.1 ECU-R&DTSU666-250/50mA-3X120/208V.

(Total current in the Load or PV system less than 250A)

#### 2.1.1 Schematic diagram of the system principle

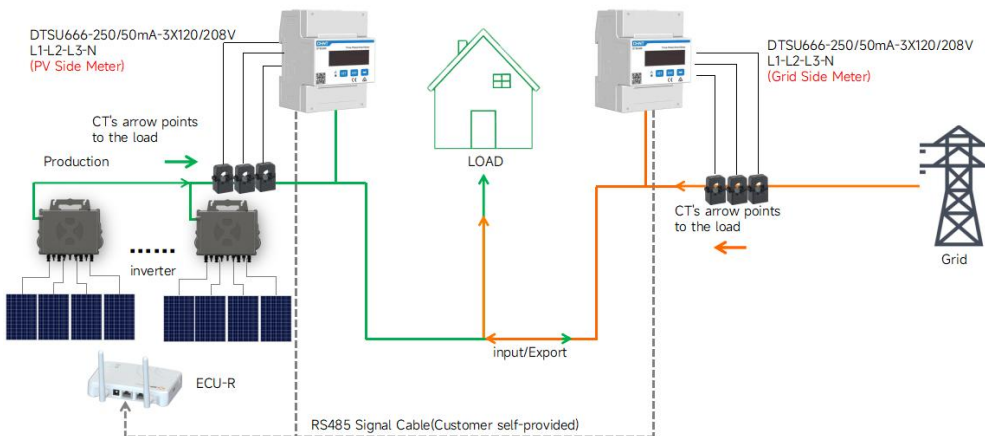
##### ① One Meter:

It is installed on the grid side already enables **Export Limit Function**. (Used to capture feed-in and bought-in electricity)



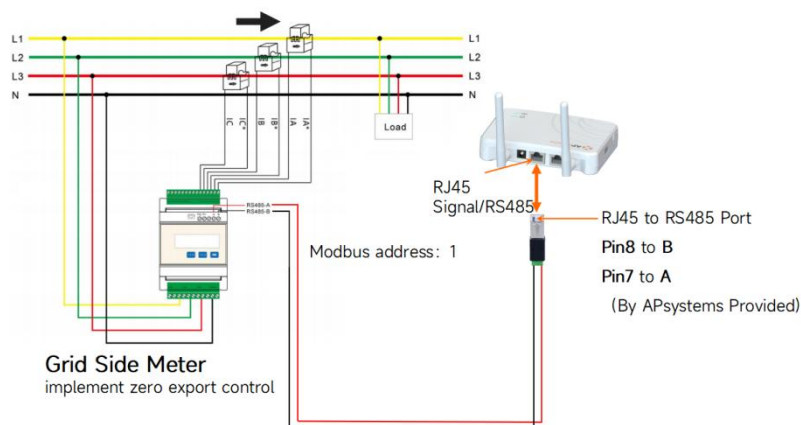
##### ② Two Meters:

**PV Side Meter:** can only collect photovoltaic data; **GRID Side Meter:** Acts as Export Limit Function. (For capturing feed-in power, purchased power, PV generation, and customer consumption.)

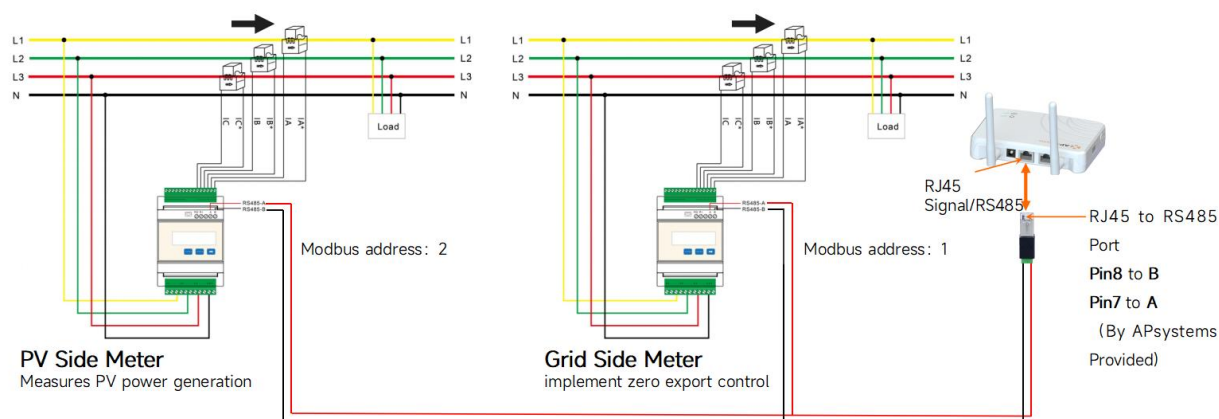


## 2.1.2 Meter Wiring Diagram

Installation method for one meter:

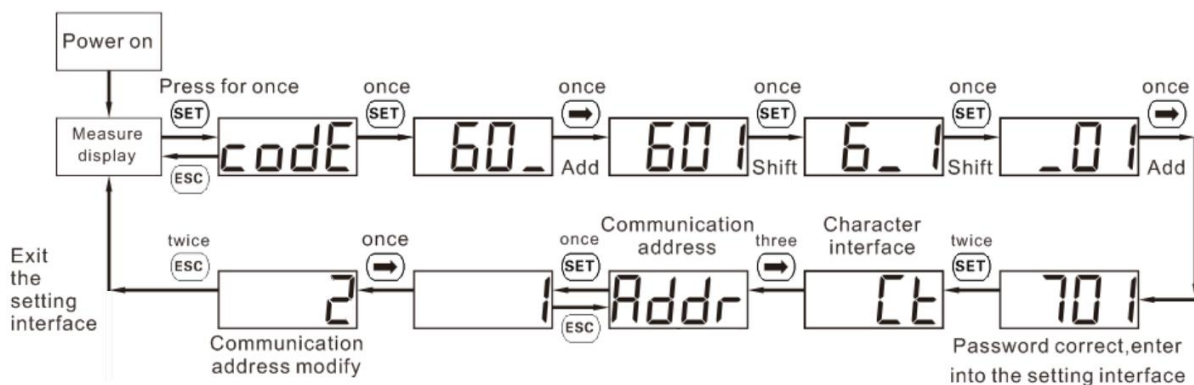


Installation method for Two meters:



### Tips:

- RS485 Signal Cable It is recommended to use 0.5mm<sup>2</sup> shielded twisted pair cable or 0.5mm<sup>2</sup> copper cable.
- PV Side Meter and Grid Side Meter can realize the function independently. According to the number of meters selected for the actual functional requirements, the factory default Modbus address of each meter is 1. If you need to modify the Modbus of the PV Side Meter to 2, you need to modify it manually. The operation process is as follows:



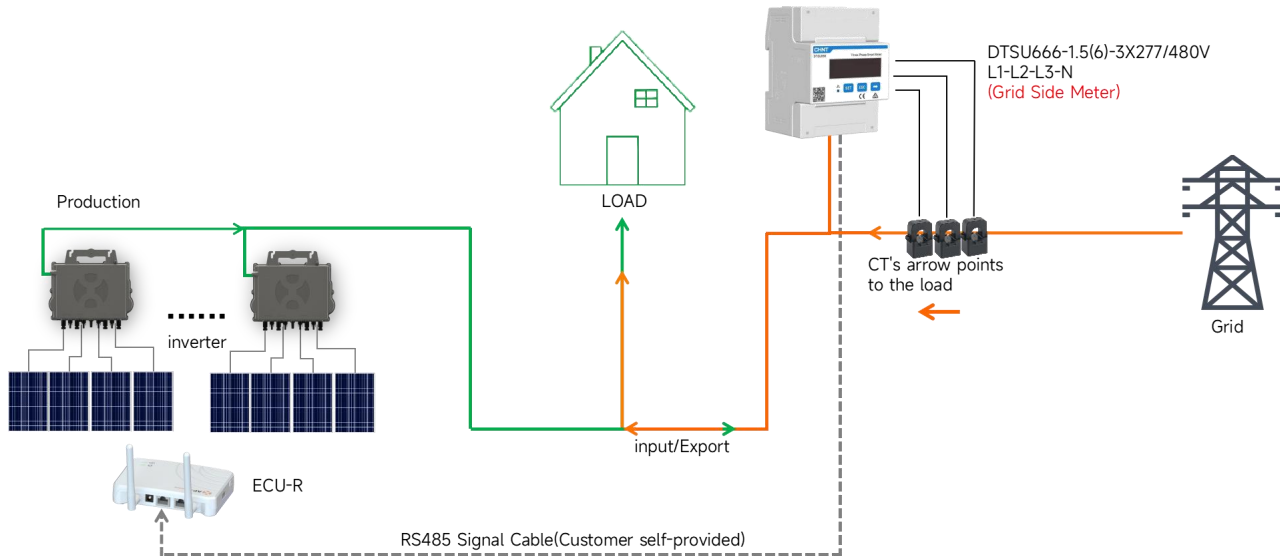
## 2.2 ECU-R&DTSU666-1.5(6)-3X277/480V

(No current limitation, but CT needs to be purchased by yourself, and the CT ratio is less than 9999, The secondary current of CT can only be 1A or 5A.)

### 2.2.1 Schematic diagram of the system principle

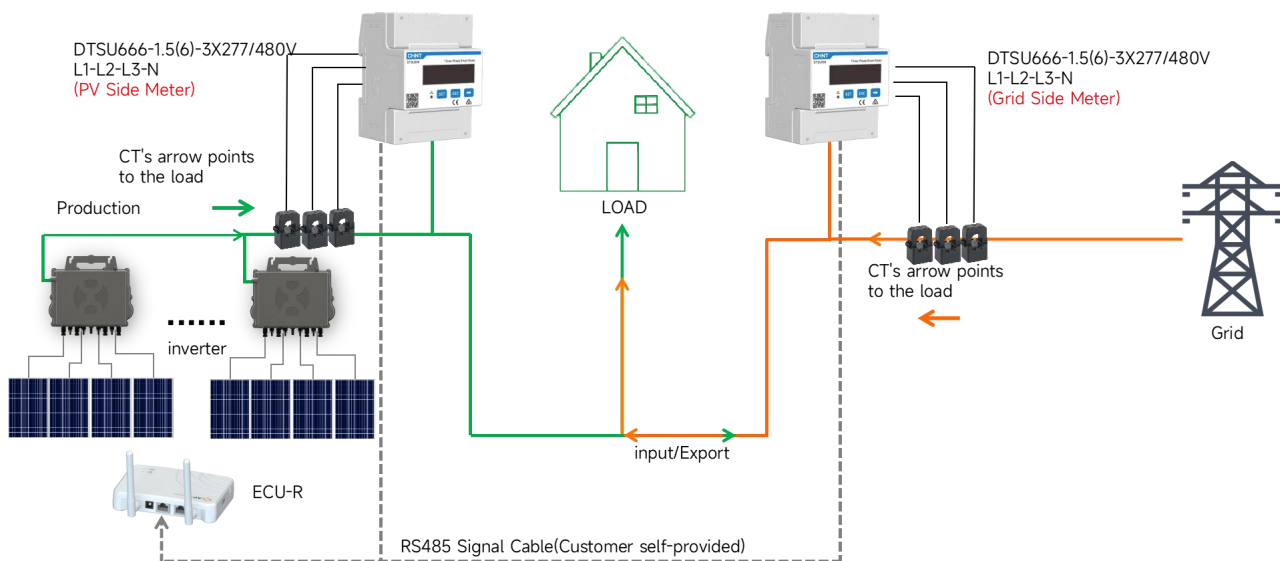
#### ① One Meter:

It is installed on the grid side already enables **Export Limit Function**. (Used to capture feed-in and bought-in electricity)

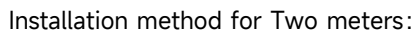


#### ② Two Meters:

**PV Side Meter:** can only collect photovoltaic data; **GRID Side Meter:** Acts as Export Limit Function. (For capturing feed-in power, purchased power, PV generation, and customer consumption.)



Installation method for one meter:



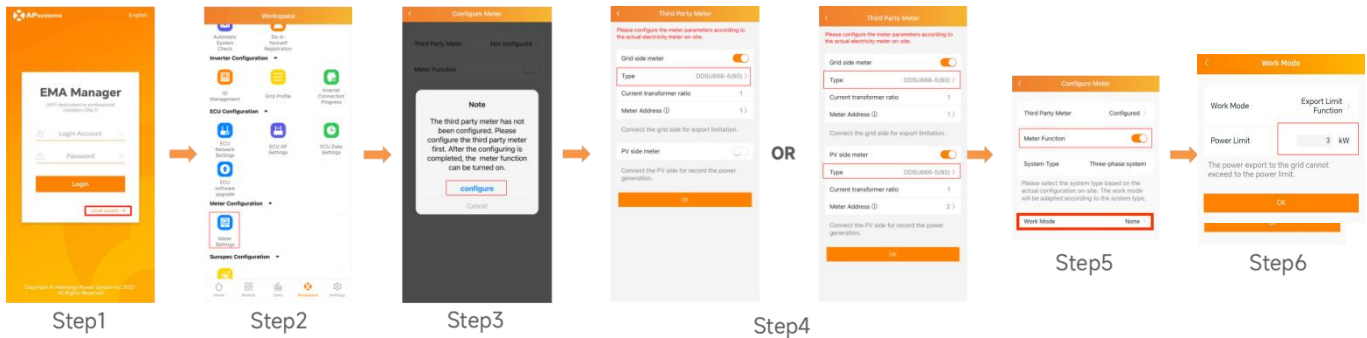
- 



### 3. Electric Meter Settings

#### 3.1 Electric Meter Configuration on ECU-R(Local access)

By connecting to the ECU-R hotspot via mobile phone, enter the Workspace and select **"Meter Settings"**. Then, configure the electric meter information and set the power limit. At present, **if you only have one Meter and need to realize the function of export power control, you can only fill in "Grid side meter" in "Configure Meter", and if you need to realize the function of measuring PV power generation data, you can fill in "PV side meter"**. Fill in the "Power Limit" value for the permitted reverse current to the grid according to the local grid standard.(For example: In this case, the permissible reverse current power per phase is 3kW.)



#### ➤ APP meter type selection and nameplate relationship

Third Party Meter

Please configure the meter parameters according to the actual electricity meter on-site.

Grid side meter ☒

Type **DTSU666-1.5(6)A**

Current transformer ratio 40

Meter Address ① 1 >

Connect the grid side for Export Limit Function.

PV side meter ☒

Type DTSU666-1.5(6)A >

Current transformer ratio 40

Meter Address ① 2 >

Connect the PV side for record the power generation.

OK



### 3.1.1 The Modbus address is consistent

When configuring the meter for local access, it is important to note that the information filled in is consistent with the actual internal Modbus address of the meter.

Third Party Meter

Please configure the meter parameters according to the actual electricity meter on-site.

Grid side meter

Type DDSU666-5(80) >

Current transformer ratio 1

Meter Address ① 1 >

Connect the grid side for export limitation.

PV side meter

Type DDSU666-5(80) >

Current transformer ratio 1

Meter Address ② 2 >

Connect the PV side for record the power generation.

OK

Selecting the meter type

CHNT

1

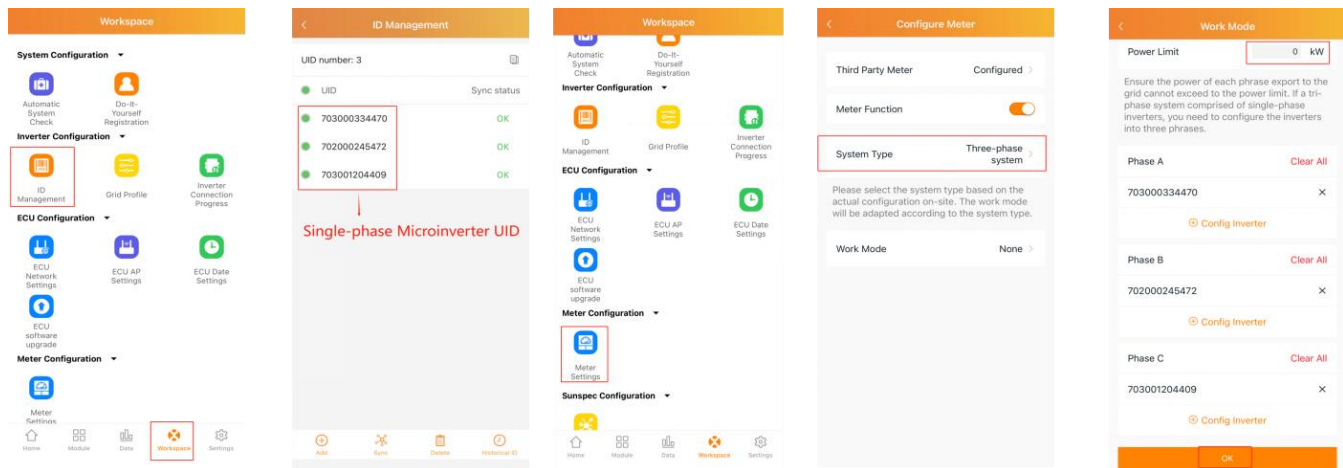
Modbus address of the Grid side meter

CHNT

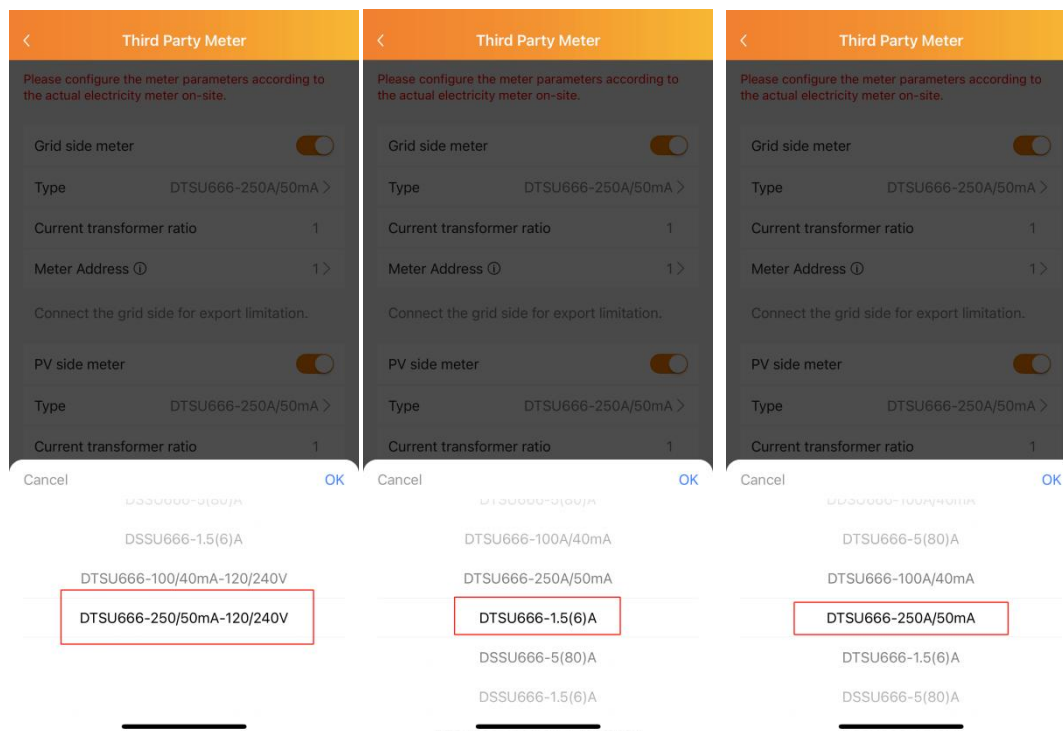
2

Modbus address of the PV side meter

### 3.1.2 Configuration for Single-phase Inverters doing three-phase grid connection (Export Limit Function)



- **Single-phase Inverters doing three-phase grid connection, the meter must be of 3P4W(L1-L2-L3-N) type.**



- ① "DTSU666-1.5(6)-3X277/480V" corresponds to "DTSU666-1.5(6)".  
 ② "DTSU666-250/50mA-120/240V" corresponds to "DTSU666-250/50mA-120/240V".  
 ③ "DTSU666-250/50mA-3X120/208V" corresponds to "DTSU666-250/50mA".

## 3.2 Electric Meter Configuration on EMA Web (Remote Control)

After you configure the electric meter information on ECU-R local, the EMA Web will display the configuration. The EMA page supports remote configuration of electric meter information.

The screenshot shows the 'Meter Configure' page with the 'METER CONFIGURE' section. The 'ECU ID' is 216200032035. Under 'GRID SAMPLING METER', the 'Type' is set to 'DS00666-SJ00A' and 'Modbus Address' is 1. The 'PV SAMPLING METER' section is currently 'No Configure'. The left sidebar shows 'REMOTE CONTROL' expanded, with 'METER SETTING' highlighted. Buttons for 'Setting' and 'Back' are at the bottom right.

Scene1

The screenshot shows the 'Meter Configure' page with both 'GRID SAMPLING METER' and 'PV SAMPLING METER' configured. The 'GRID SAMPLING METER' has 'Type' 'DS00666-SJ00A' and 'Modbus Address' 1. The 'PV SAMPLING METER' has 'Type' 'DS00666-SJ00A' and 'Modbus Address' 2. The left sidebar shows 'METER SETTING' highlighted. Buttons for 'Setting' and 'Back' are at the bottom right.

Scene2

**Scene1:** Configure only "GRID SAMPLING METER" for Export Limit Function.

**Scene2:** Configuration of "GRID SAMPLING METER" and "PV SAMPLING METER" for simultaneous Export Limit Control and PV generation measurement.

### 3.2.1 Power Limit Setting on EMA

After you configure the electric meter information, the system applies the configuration and redirects to the meter function settings page within 15–20 minutes. If you want to modify the electric meter configuration, click "Back" to go back to the meter configuration page. Fill in the "Power Limit" value for the permitted reverse current to the grid according to the local grid standard. (For example, In this case, the permissible reverse current power per phase is 1000W.)

The screenshot shows the 'METER SETTING' page. The 'ECU ID' is 216200032035. The 'Meter Display' is set to 'Open'. The 'Export Limit/Relay Control' is set to 'Export Limit'. The 'Power Limit(W)' is set to 1000. The left sidebar shows 'REMOTE CONTROL' expanded, with 'METER SETTING' highlighted. Buttons for 'Meter Configure', 'Three-Phase Setting', and 'Send' are at the bottom.

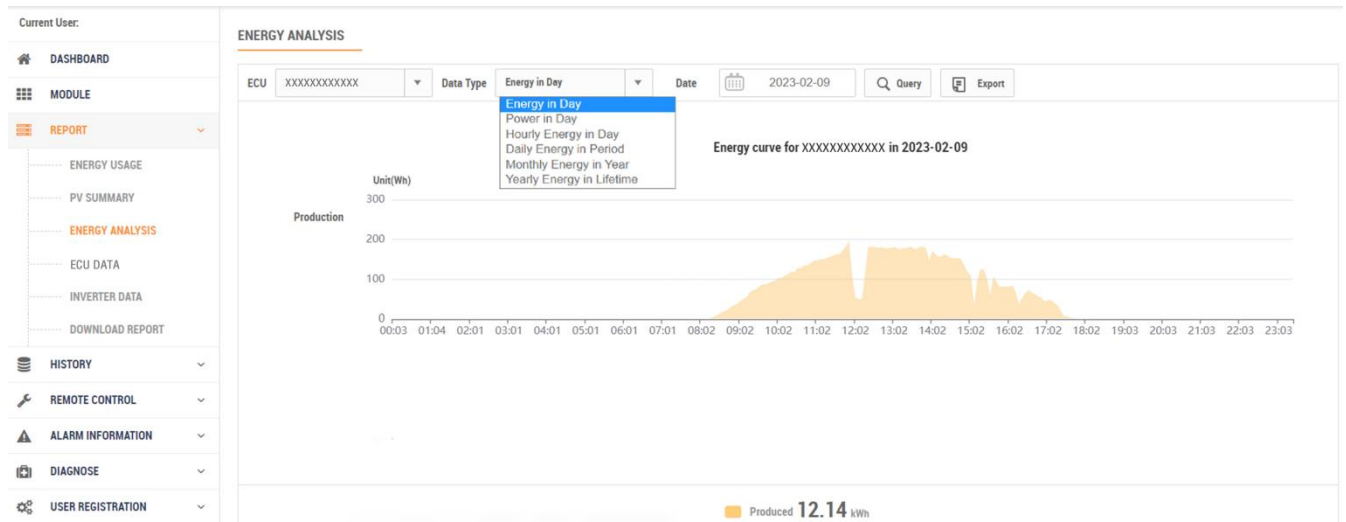
## 4. Data Display on EMA Web

The electric meter transfers export/import power data and photovoltaic power generation data to the ECU-R via RS485. Then, the ECU-R uploads the data to the EMA platform by using the router or a wireless network. Users can view energy information on the EMA platform or through the mobile application.

### 4.1 Export/Import Data (Meter is installed on the Grid Side)



### 4.2 PV Power Generation Data (Meter is installed on the PV Side)



### 4.3 PV Power Generation, Consume Energy, and Export/Import Energy Data (Meter is installed on the PV Side and Grid Side)



## Meter Selection

| Grid Type                          | APsystems<br>Material<br>Part No. | CHINT Meter<br>Model | Reference<br>Voltage &<br>Frequency | Current<br>Access<br>Type | CT                                                                             | Application                                 |
|------------------------------------|-----------------------------------|----------------------|-------------------------------------|---------------------------|--------------------------------------------------------------------------------|---------------------------------------------|
| Split-phase<br>(2P3W)              | 2270110003                        | DTSU666-250A/50mA    | 120/240V<br>50/60Hz                 | Via CT                    | Standard<br>configuration: 3<br>CTs of 250A, with<br>package;                  | Circuits<br>whose current<br>is within 250A |
| Three-phase<br>four-wire<br>(3P4W) | 2270106003                        | DTSU666-250A/50mA    | 120/208V<br>50/60Hz                 | Via CT                    | Standard<br>configuration: 3<br>CTs of 250A, with<br>package;                  | Circuits<br>whose current<br>is within 250A |
|                                    | 2270108003                        | DTSU666-1.5(6)A      | 277/480V<br>50/60Hz                 | Via CT                    | Purchased by the<br>customer: 3 CTs,<br>secondary current<br>must be 1A or 5A. | Maximum CT<br>ratio less than<br>9999       |