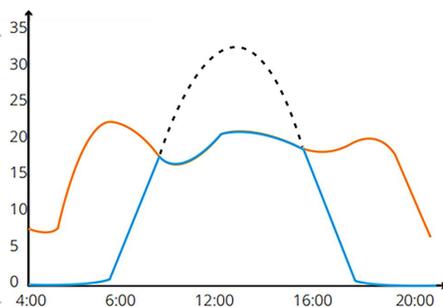# Export Power Control

ECU-R with CHINT Meter Solution

Overview

Export Power Control can intelligently control the output power of the photovoltaic system,also can accurately display the photovoltaic power generation,consumed power and export/import power. This solution can meet the requirements of prohibit or restrict the photovoltaic power generation transmit to the grid net and accuracy requirements of the photovoltaic monitoring data.

Export Power Control is composed of CHINT electric meter, APsystems energy communicator ECU-R and current transformer CT (Optional).

In the case of export limitation, the electric meter and current transformer CT (Optional)should be installed at the grid side. As shown below, the ECU-R will adjust the photovoltaic power production according to the export power that send from the electric meter via RS485, so that the export power does not exceed the preset limit.

0W export power control
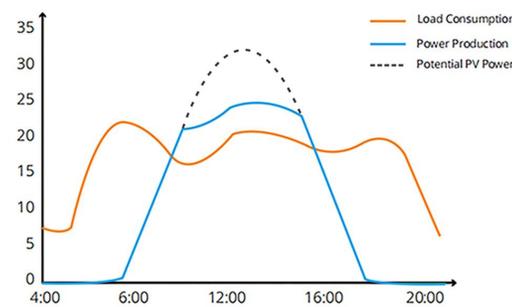
2kW export power control

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System Composition

Energy Communication Unit ECU-R

ECU-R is the information gateway for our micro-inverters.ECU-R not only collects and transfers of inverter data,but also as the control center of export management solution,it receives data .from the electric meter and adjusts the output power of the micro-inverters.

Single-phase electric meter CHINT DDSU666

It suitable for single phase power grid, it can measure and display for the electric paraelectric meters in the circuit including voltage, current, power, frequency, power factor, active energy, etc. The network can be realized through RS485 communication.

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Three phase electric meter CHINT DTSU666 and DSSU666

It suitable for three phase power grid, it can measure and display for the electric paraelectric meters in the circuit including voltage, current, power, frequency, power factor, active energy, etc. The network can be realized through RS485 communication.

Current Transformer

Current transformer is used for current and electric energy measurement or electric metering in AC circuit.

When the electric meter cannot be directly connected to the circuit or the system capacity is a little higher, a electric meter with the external current transformer is preferred.

CHINT Electric Meter Selection

Grid Type	Part No.	electric meter Model	Reference voltage(V)	Access type	CT	Application
Single phase	2273020003	DDSU666-5(80)A	220/230V	Direct connection	No need	Applicable for the circuit current is within 80A
	2273001003	DDSU666-100A/40mA	230V	Via CT	Standard configuration:1CT of 100A,with package;	Applicable for the current is within 100A
	2273002003	DDSU666-CT-1.5(6)A	220/230V	Via CT	Customer purchase:1 CT,Secondary side current must be less than 5A;	Applicable for the circuit current exceed 100A
Three phase four wire(3P4W)	2270101003	DTSU666-5(80)A	3X230/400V	Direct connection	No need	Applicable for the circuit current is within 80A
	2270103003	DTSU666-100A/40mA	3X230/400V	Via CT	Standard configuration:3CTs of 100A,with package;	Applicable for the circuit current is within 100A
	2270105003	DTSU666-250A/50mA	3X230/400V	Via CT	Standard configuration:3CTs of 250A,with package;	Applicable for the current is within 250A
	2270107003	DTSU666-1.5(6)A	3X230/400V	Via CT	Customer purchase:3 CTs,Secondary side current must be less than 5A;	Applicable for the circuit current exceed 200A
Three phase three wire(3P3W)	2270201003	DSSU666-5(80)A	3X400V	Direct connection	No need	Applicable for the circuit current is within 80A
	2270205003	DSSU666-100A/40mA	3X400V	Via CT	Standard configuration:2CTs of 100A,with package;	Applicable for the circuit current is within 100A
	2270206003	DSSU666-250A/50mA	3X400V	Via CT	Standard configuration:2CTs of 250A,with package;	Applicable for the current is within 250A
	2270203003	DSSU666-1.5(6)A	3X400V	Via CT	Customer purchase:2CTs,Secondary side current must be less than 5A;	Applicable for the circuit current exceed 200A

Wiring of the Electric Meters with ECU-R

The electric meter and and current transformer CT (Optional) installed at the grid side are necessary for export limitation, if need an extra accurate photovoltaic power generation,the photovoltaic power side also need an electric meter and current transformer CT (Optional).

Export Power Control Solution support all of APsystem micro-inverter,for three-phase micro inverter is completely balanced, therefore power generation of the three phase will be uniformly reduced if any phase flows to the grid.

The following are the detailed drawings of different types of electric meters with ECU-R application solutions

NO CT Connection

The electric meter should be installed at the grid side,but dose' t need to install extra CT, this solution only for the circuit less than 80A.
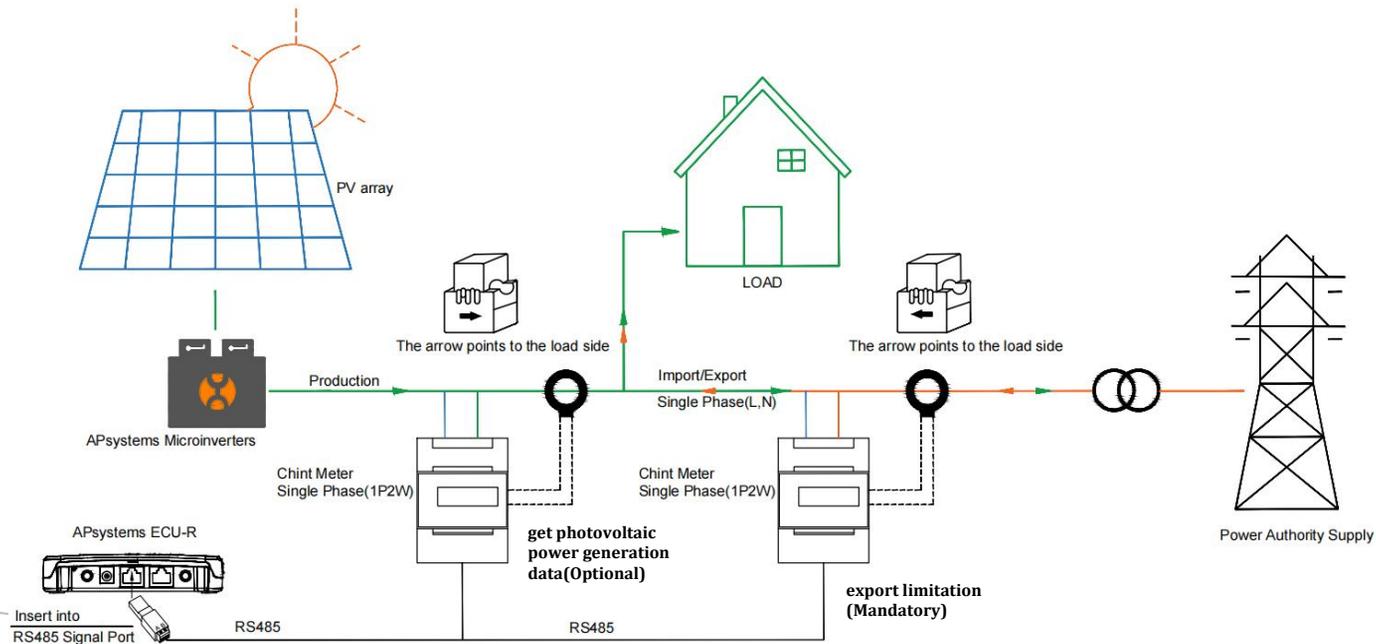
This drawing applicable for CHINT electric meter DDSU666-5(80)A-220/230V,DTSU666-5(80)A-3X230/400V and DSSU666-5(80)A-3X400V.
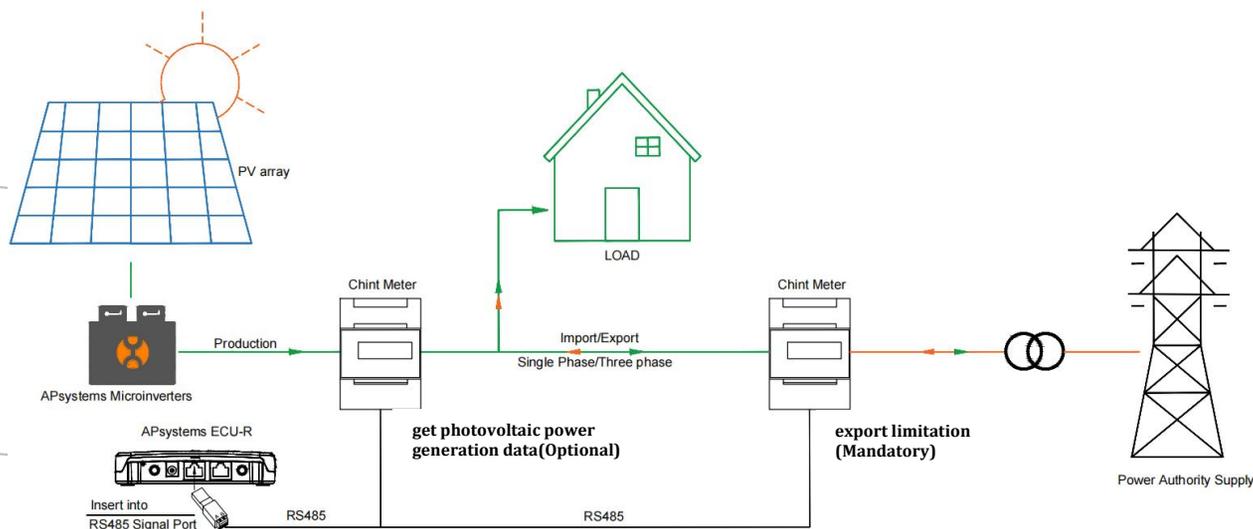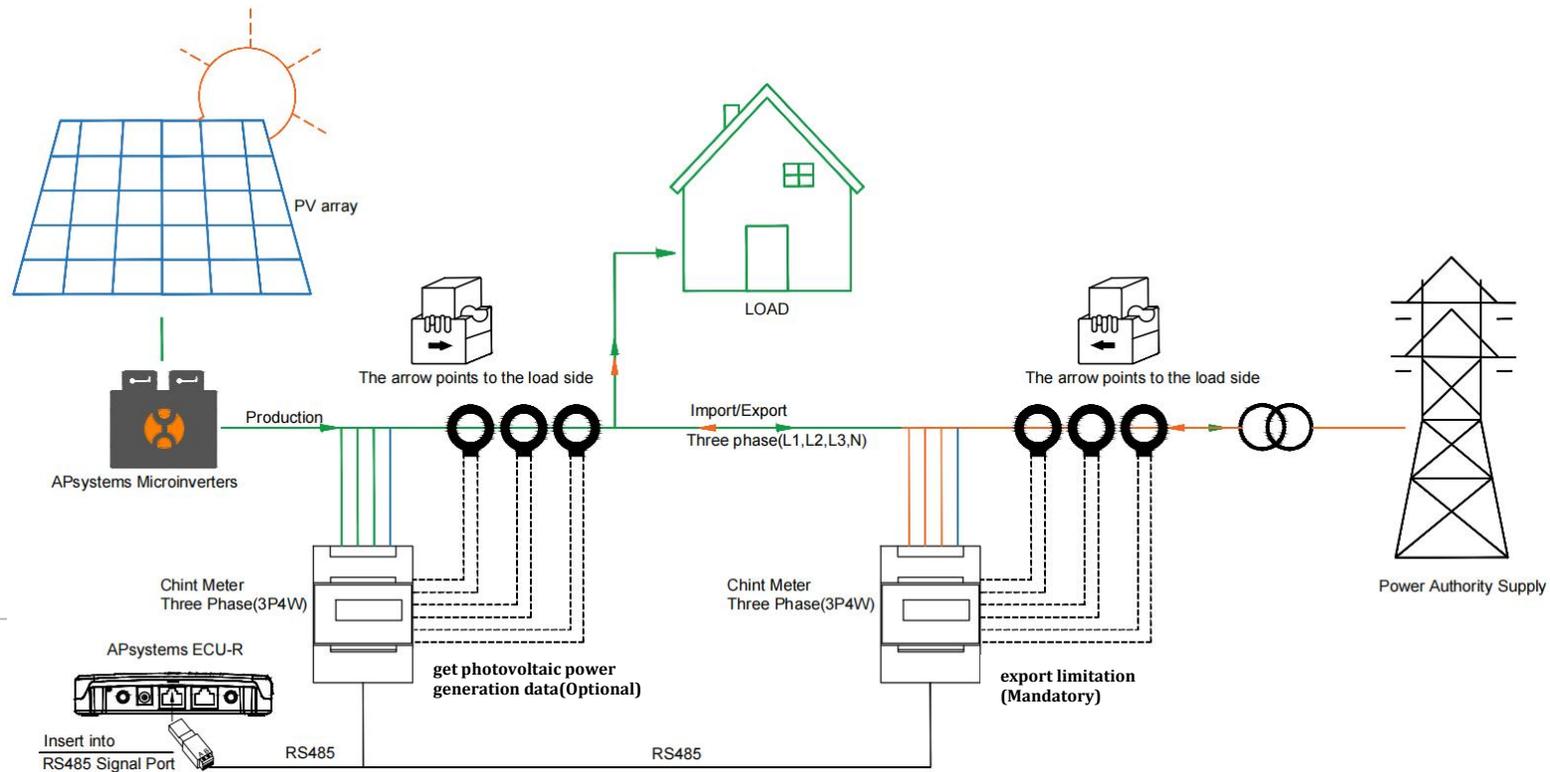
Equip with CT Connection

◆ Single Phase System

This drawing applicable for CHINT electric meter DDSU666-100A/40mA-230V and DDSU666-CT-1.5(6)A-220/230V.

PV array

LOAD

The arrow points to the load side

The arrow points to the load side

Production

Import/Export
Single Phase(L,N)

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Power Authority Supply

Chint Meter
Single Phase(1P2W)

Chint Meter
Single Phase(1P2W)

APsystems ECU-R

get photovoltaic power generation data(Optional)

export limitation (Mandatory)
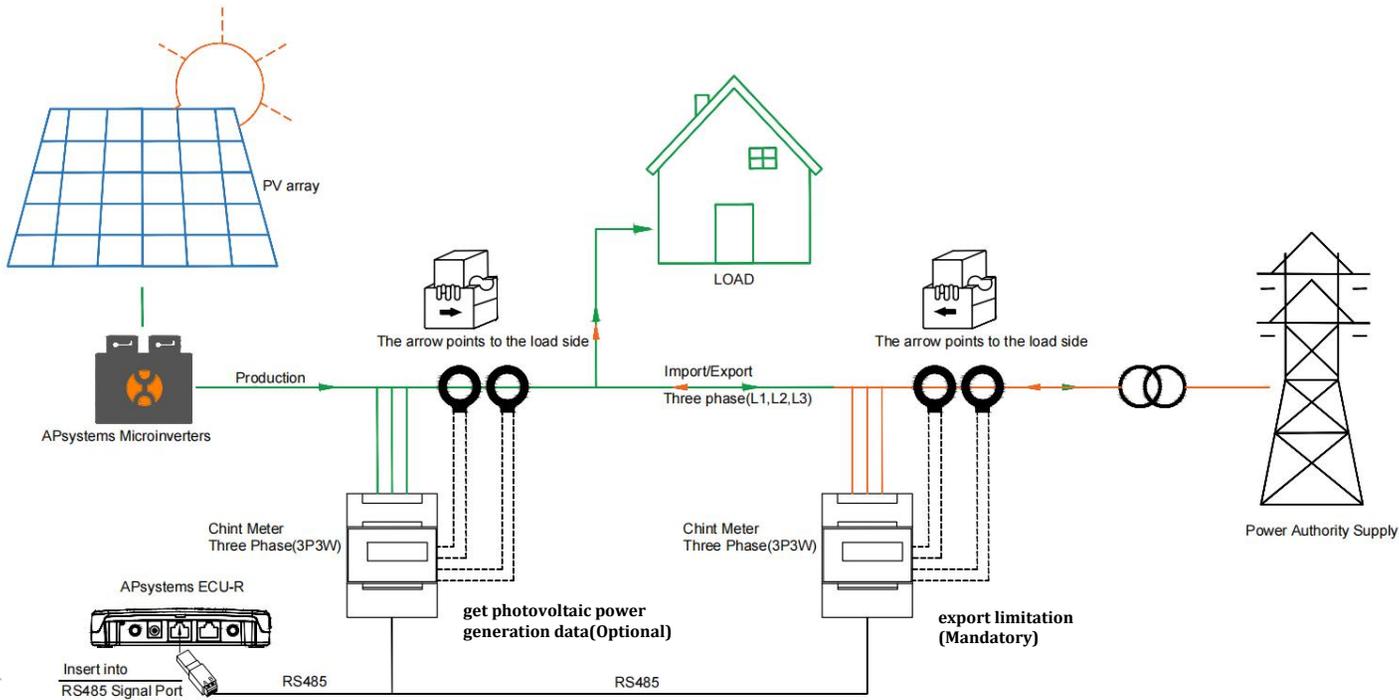
Insert into
RS485 Signal Port

RS485

RS485

APsystems

◆ Three Phase System 3P4W

This drawing applicable for CHINT electric meter DTSU666-100A/40mA-3X230/400V,DTSU666-250A/50mA-3X230/400V and DTSU666-1.5(6)A-3X230/400V.
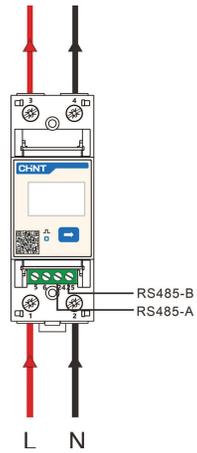

PV array

LOAD

The arrow points to the load side

The arrow points to the load side

Production

APsystems Microinverters

Import/Export
Three phase(L1,L2,L3,N)

Power Authority Supply

Chint Meter
Three Phase(3P4W)

Chint Meter
Three Phase(3P4W)

APsystems ECU-R

get photovoltaic power generation data(Optional)

export limitation (Mandatory)

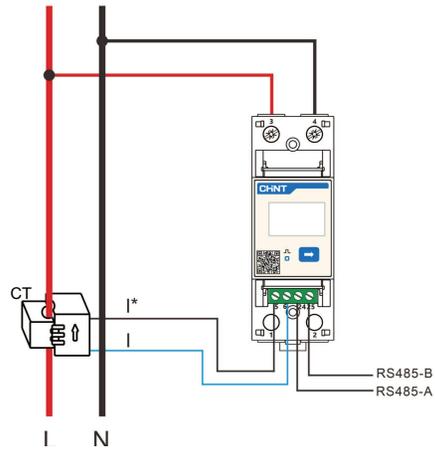Insert into
RS485 Signal Port

RS485

RS485

◆ **Three Phase System 3P3W**

This drawing applicable for CHINT electric meter DSSU666-1.5(6)A-3X400V,DSSU666-100A/40mA-3X400 and DSSU666-250A/50mA-3X400V.
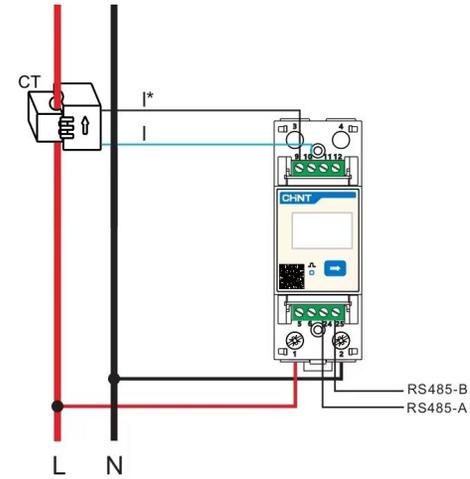

PV array

LOAD

The arrow points to the load side

The arrow points to the load side

Production

Import/Export
Three phase(L1,L2,L3)

APsystems Microinverters

Power Authority Supply

Chint Meter
Three Phase(3P3W)

Chint Meter
Three Phase(3P3W)

**get photovoltaic power
generation data(Optional)**

**export limitation
(Mandatory)**

APsystems ECU-R

Insert into
RS485 Signal Port
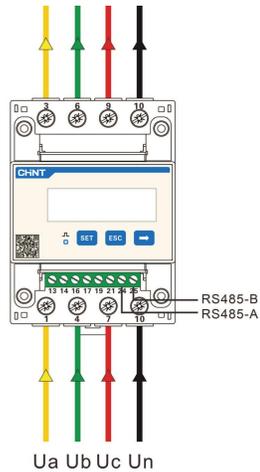
RS485

RS485

Detail Wiring of CHINT Electric Meter
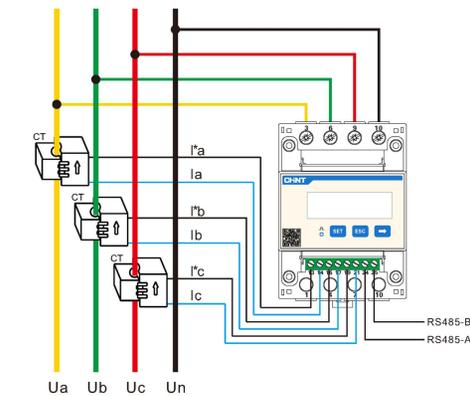
DDSU666-5(80)A-220/230V
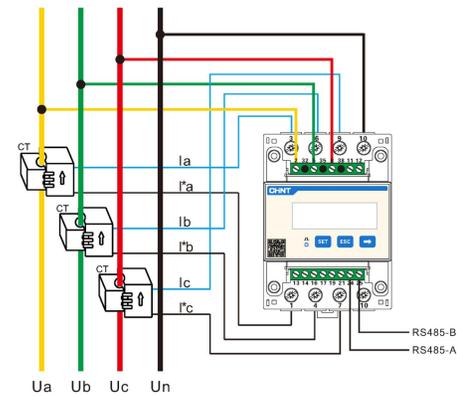
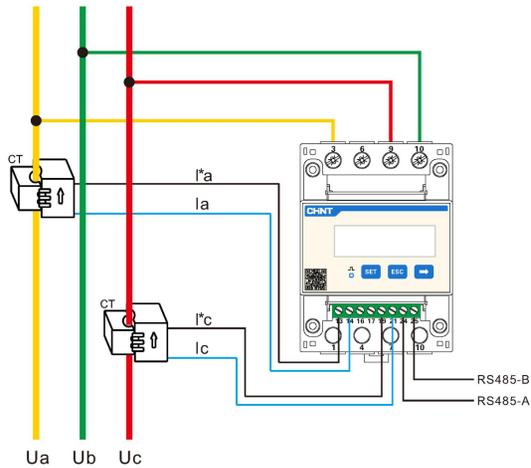DDSU666100A/40mA-230V

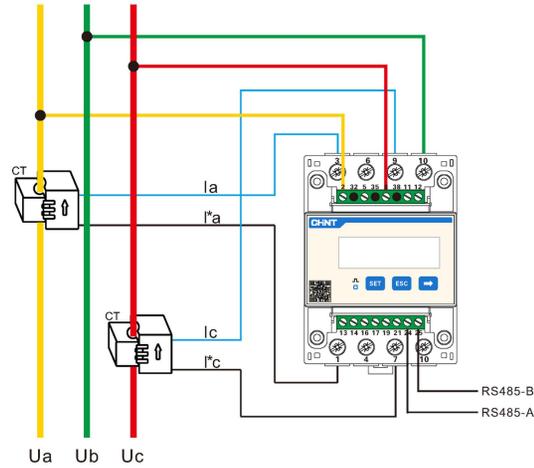DDSU666-CT-1.5(6)A-220/230V

DTSU666-100A/40mA-3X230/400V
DTSU666-250A/50mA-3X230/400V
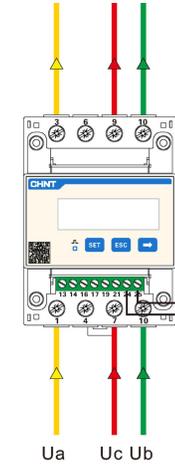
DTSU666-1.5(6)A-3X230/400V

DTSU666-5(80)A-3X230/400V

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DSSU666-100A/40mA-3X400V
DSSU666-250A/50mA-3X400V

DSSU666-1.5(6)A-3X400V

DSSU666-5(80)A-3X400V

Meter Settings

The electric meter function can be enabled on ECU-R or EMA platform, and the EMA platform can also display detailed data. Client can choose export limitation function, then enter the electric meter settings page to configure electric meter type and setting the modulus address.
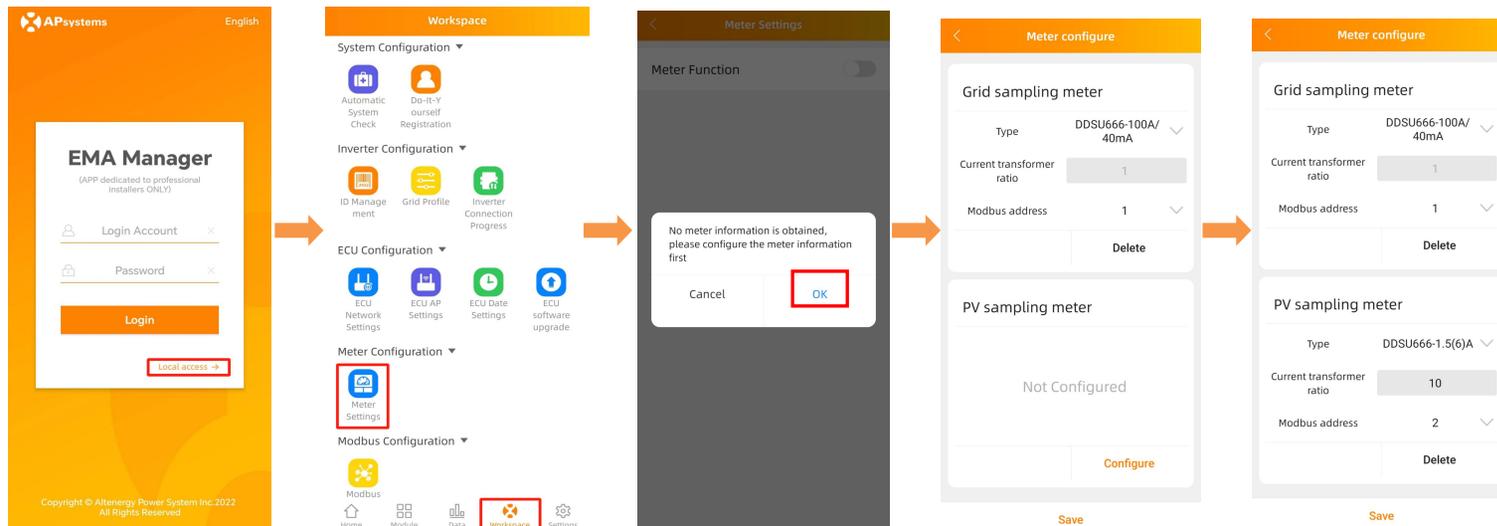
If there is only one electric meter in the system,the modulus address is default 1,it does not need to be set.

Photovoltaic side and grid side are both installed electric meters and CT(optional),one of the electric meter's modulus address should be set as 2 on the electric meter and meter configure page.

Only the type of 1.5(6) of electric meter need to set the current transformer ratio,the secondary current must be less than 5A.

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◆ **Electric Meter Configure on ECU-R Local**

By connecting the ECU-R hot-spot via mobile phone ,enter the Workspace interface to select electric meter settings, then configure electric meter and set the limit power.

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◆Power Limit Setting on ECU-R Local

After configuring the electric meter,it will enter the electric meter function interface , this interface support set the power limit.if need adjust the electric meter configure,please click the electric meter "config", it will back to the electric meter configure interface.
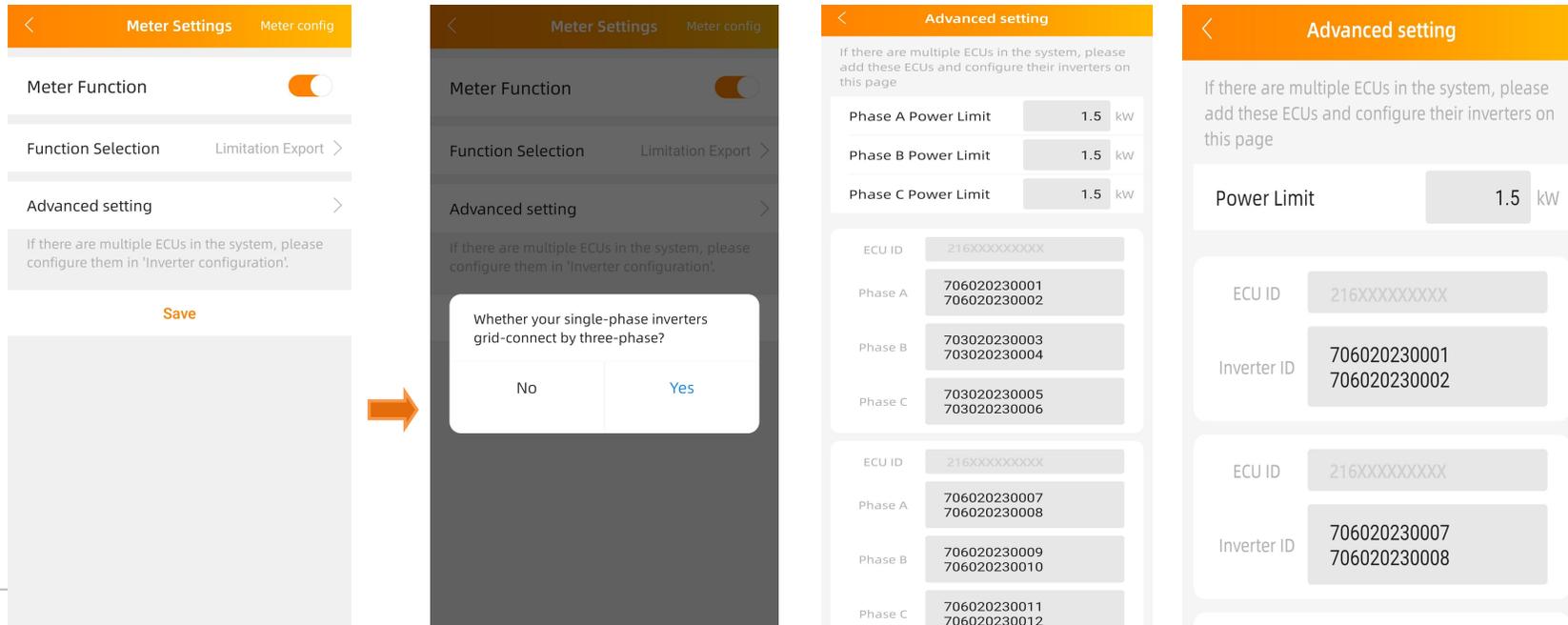
Meter Settings	Meter config
Meter Function	⬤
Function Selection	Limitation Export >
Advanced setting	>

If there are multiple ECUs in the system, please configure them in 'Inverter configuration'.

Save

Meter Settings	Meter config
Meter Function	⬤
Function Selection	Limitation Export >
Advanced setting	>

If there are multiple ECUs in the system, please configure them in 'Inverter configuration'.

Whether your single-phase inverters grid-connect by three-phase?

No	Yes

Advanced setting

If there are multiple ECUs in the system, please add these ECUs and configure their inverters on this page

Phase A Power Limit	1.5	kW
Phase B Power Limit	1.5	kW
Phase C Power Limit	1.5	kW

ECU ID	216XXXXXXXX
Phase A	706020230001 706020230002
Phase B	703020230003 703020230004
Phase C	703020230005 703020230006

ECU ID	216XXXXXXXX
Phase A	706020230007 706020230008
Phase B	706020230009 706020230010
Phase C	706020230011 706020230012

Advanced setting

If there are multiple ECUs in the system, please add these ECUs and configure their inverters on this page

Power Limit	1.5	kW

ECU ID	216XXXXXXXX
Inverter ID	706020230001 706020230002

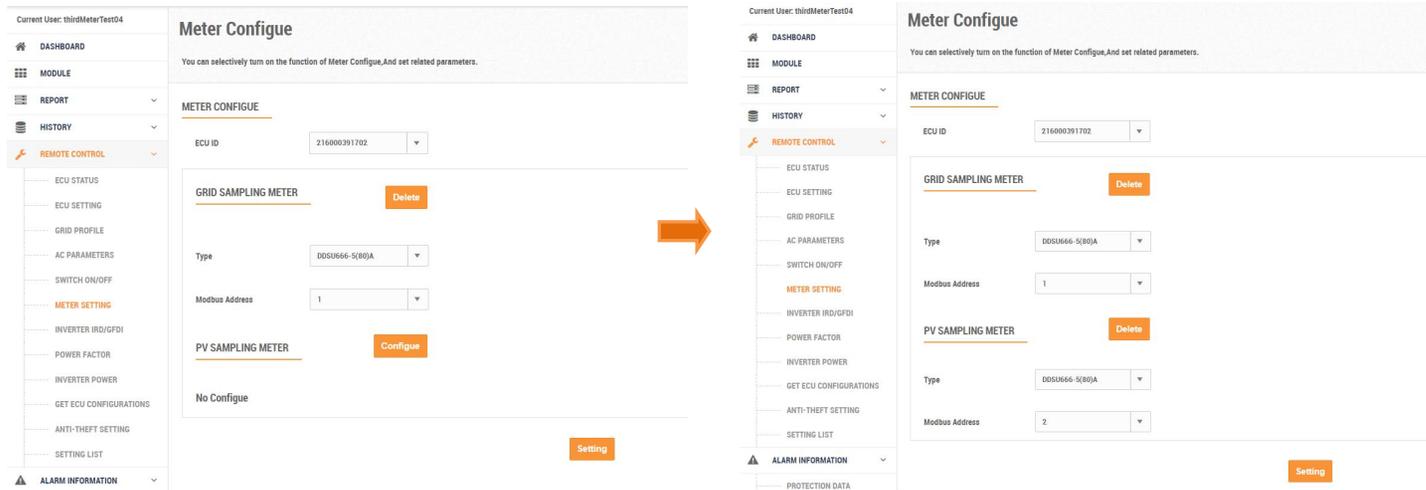| ECU ID	216XXXXXXXX
Inverter ID	706020230007 706020230008

Figure 1

Figure 2

Note:

1.Figure 1(click "yes") —Apply to the Single-phase inverters grid-connect by three-phase.

2.Figure 2(click "no")—Apply to the three inverters,split phase inverters, and single-phase inverters .

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◆ Electric Meter Configure on EMA

After configure the electric meter on ECU-R local,the EMA page will display the configuration,EMA page support configure and modified the electric meter information remotely.

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◆ **Limit Power Setting on EMA**

After configuring the electric meter,wait 15~20minutes,it will enter the electric meter function interface,if need adjust the electric meter configure,please click the "back", it will back to the electric meter configure interface.
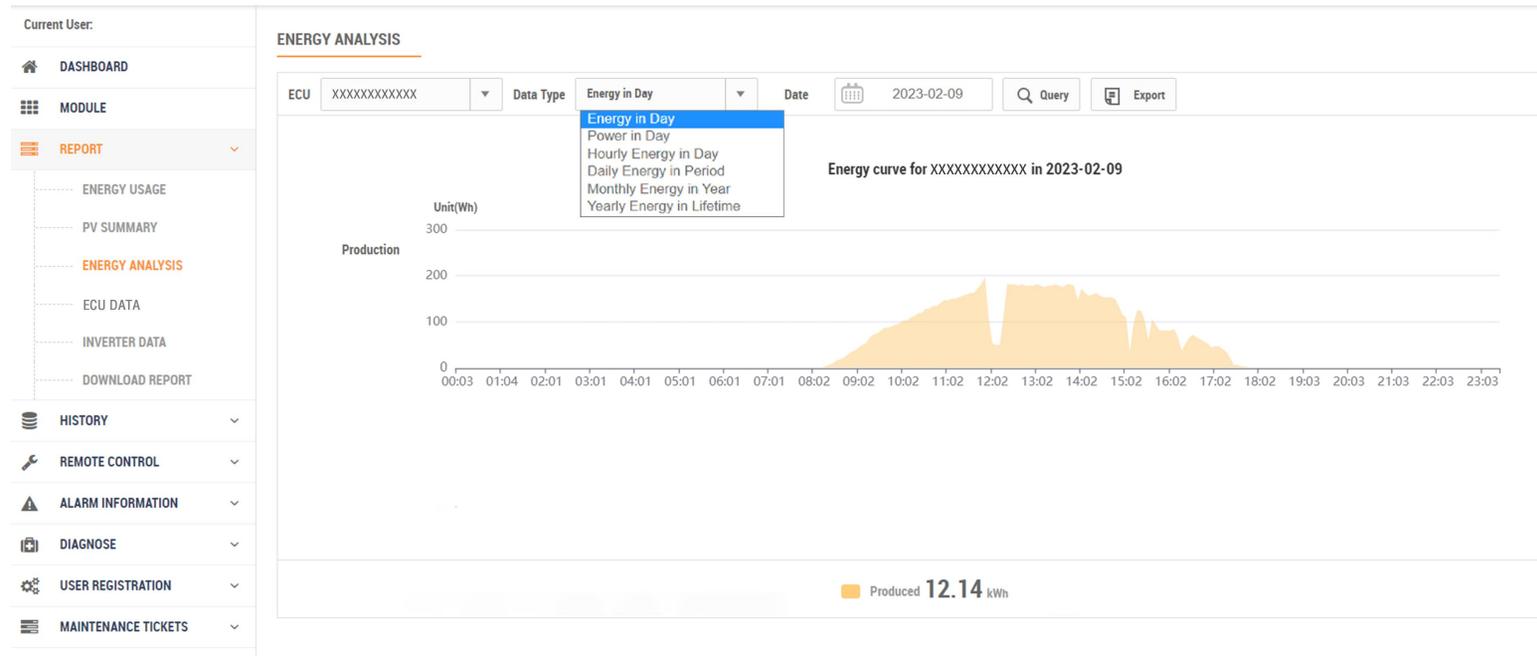
Display on EMA platform

The electric meter transfer Export/Import Power data and Photovoltaic power generation to the ECU-R via RS-485, then the ECU-R uploads those data to the APsystems Energy Monitoring and Analysis (EMA) platform by the router or wireless network.Through the EMA web or mobile application, users can get energy information.

◆**Export/Import data**

Note: Electric meter and current transformer CT (optional) are installed at the grid side

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◆ **Photovoltaic power generation data**

Note: Electric meter and current transformer CT (optional) are installed at the photovoltaic side.

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◆ Photovoltaic Power Generation,Consumed Power and Export/Import Power data

Note: Electric meter and current transformer CT (optional) are installed at both the photovoltaic side and the grid side.