CanadianSolar

NISE-610E Series Data logger

User Manual

Contents

About this manual

This manual is for data logger of the NISE-610E series products .

Purpose

This manual is intended for:

- Product users ;
- Field technical support, maintenance person and system implementation person .

Symbol Conventions

In order to ensure the safety of users, power grid, and equipment when using this product, the manual provides relevant warning symbols. Please read it carefully to better use the equipment and avoid personal and property damage.

Symbols	Description
 Danger	Indicates a high potential danger, which may cause personal injury or property damage if it cannot be avoided.
 Warning	Indicates a moderate potential danger, which may result in personal injury or property damage if it cannot be avoided.
 Caution	Indicates a low potential hazard which, if not avoided, may result in personal injury or property damage.
 Attention	Indicates a potential risk if failure to avoid a situation that could cause equipment to fail to function properly or cause property damage.
 Note	Emphasis and additions to the content may also provide tips or tricks to optimize the use of the product, which can help you solve a problem or save you time.

1．Safety Instructions

NISE-610E data logger are designed and tested to meet the requirements of international safety regulations, but it is still necessary to pay attention to safety when installing or operating. Please read the installation instructions, warnings and precautions in the user manual carefully and always follow these instructions when using the data logger.

Unreasonable use or misoperation may result in:

• Injury to the life and personal safety of the operator or third parties.

• Damage to the logger or other property belonging to the operator or third parties. Precautions during operation will be detailed in the appropriate section.

Note: The safety instructions in this manual cannot cover all the precautions that should be followed. Follow the actual conditions on site. CSI disclaims liability for any damage caused by a violation of the safety instructions in this manual.

Danger	Please have the relevant organization of professional personnel to install this product, wiring and other work.

2．Product Description

2.1 Product Description

NISE-610E data logger are mainly used in industry and commerce, distributed photovoltaic projects are safe and reliable, easy to install, flexible networking, multi-device access, intelligent operation and maintenance.

Easy to install: desktop installation, guide rail installation

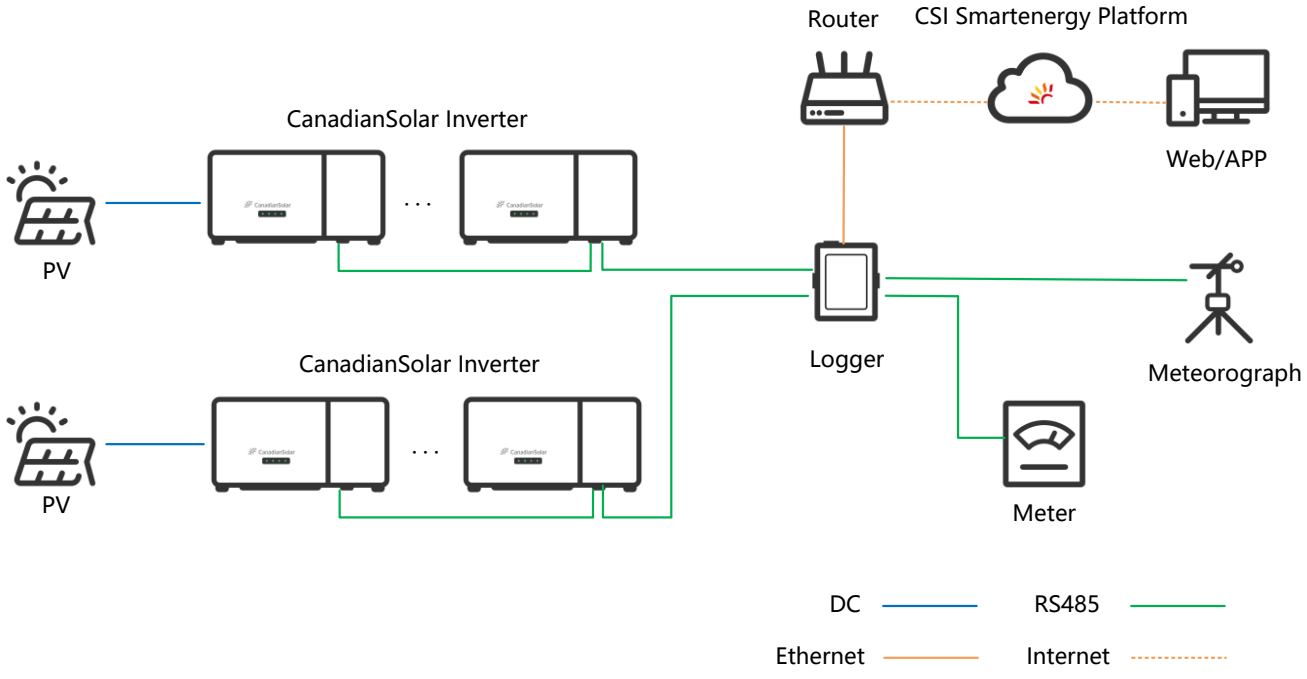
Flexible networking: Supports four RS485 and one Ethernet communication modes

Support protocol: RS485: Modbus RTU

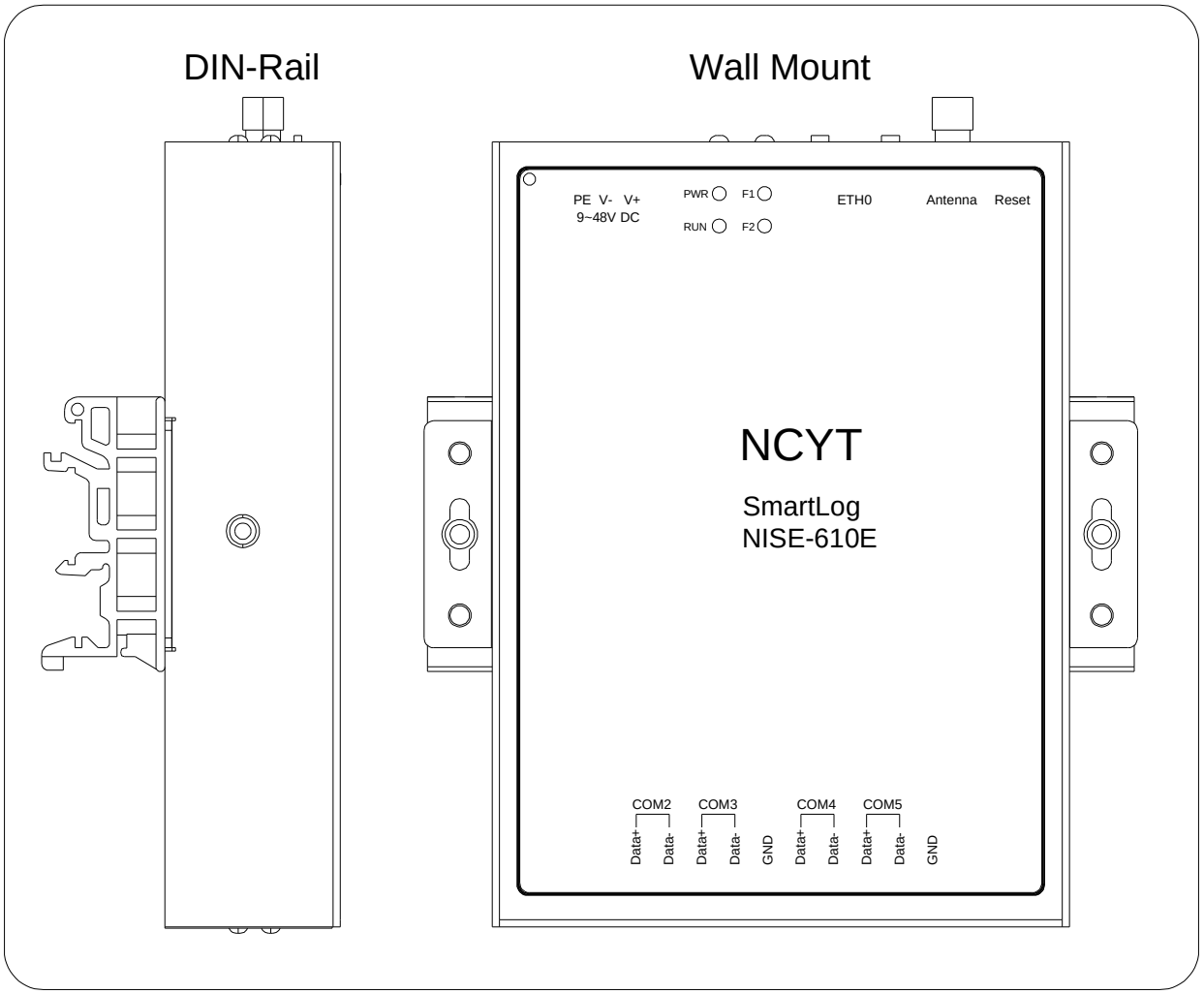
Ethernet: Support Modbus TCP, IEC104, MQTT

2.2 Application Scenarios Introduction

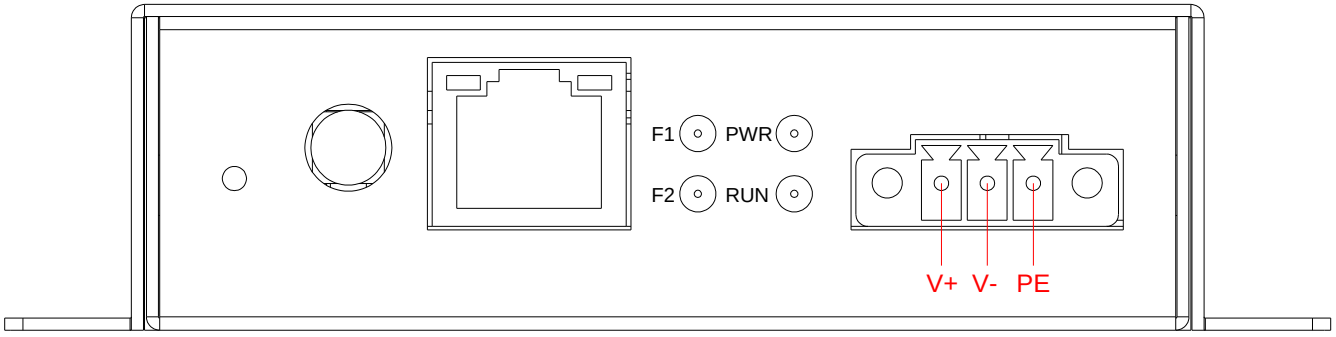
Application scenarios of data logger:



2.3 Appearance



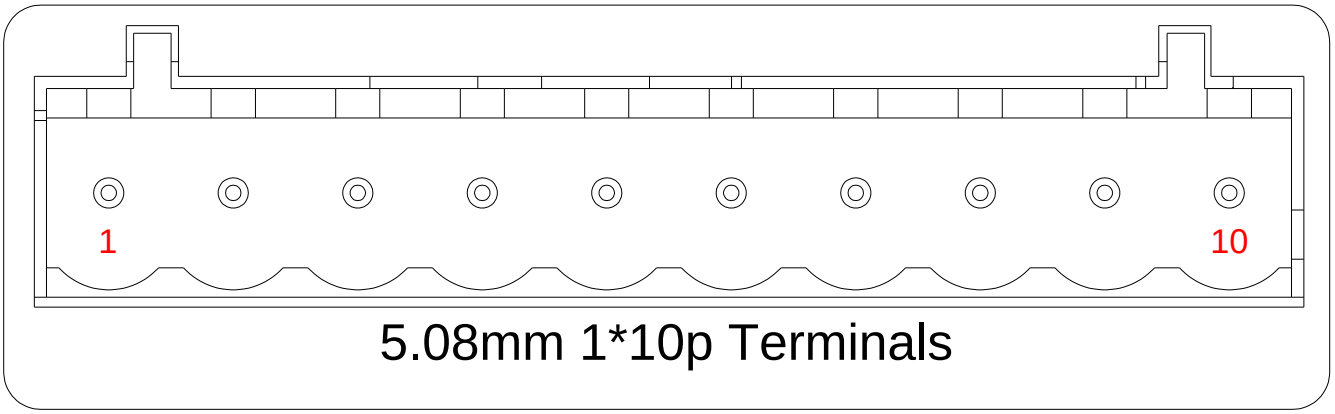
2.4 Power Wiring Diagram



Warning	Static electricity and surges can easily have adverse effects on equipment. PE terminal blocks are designed to release the current introduced by static electricity and surges. Most of the discharges from the internal protection circuit of the machine are connected to PE. Please connect PE to the ground reliably.

2.5 Communication Terminals

NISE-610E contains four universal serial ports P1 to P4.

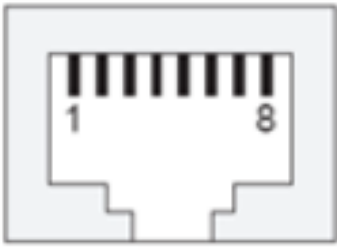


NO.	Definitions	NO.	Definitions
1	COM2 RS-485 A	6	COM4 RS-485 A
2	COM2 RS-485 B	7	COM4 RS-485 B
3	COM3 RS-485 A	8	COM5 RS-485 A
4	COM3 RS-485 B	9	COM5 RS-485 B
5	GND	10	GND

Warning	Follow the wire markings for wiring.

2.5 Network Ports

NISE-610E series supports 1x 10/100MBps BASE-T RJ45 Ethernet:



Pins	10/100 MBps RJ45 Definition
1	TX+
2	TX-
3	RX+
4	-
5	-
6	RX-
7	-
8	-

Insert the network cable into the RJ45 network connector. When the network cable is reliably connected, the two LED indicators located in the RJ45 connector will indicate the current network status. The RJ45 network connector indicator is defined in the following table:

Indicators	Color	Status	Features
SPD	green	ON	10/100 network is connected
		OFF	The network is disconnected or not connected
L&A	yellow.	ON	Network packets are being sent and received properly
		OFF	No packets sent or received (or no connection)

2.6 Indicator Light Description

Model	NISE-610E		
Light	Color	Status	Function
PWR	green	ON	Always on after power on,the power supply is normal
		OFF	Power outage
RUN	green	ON/Blink	System running indicator,on/flashing is normal
F1	green	OFF	Unused
F2	green	Blink	Internal status indication

3. Mechanical Installation

3.1 Equipment Disassembly

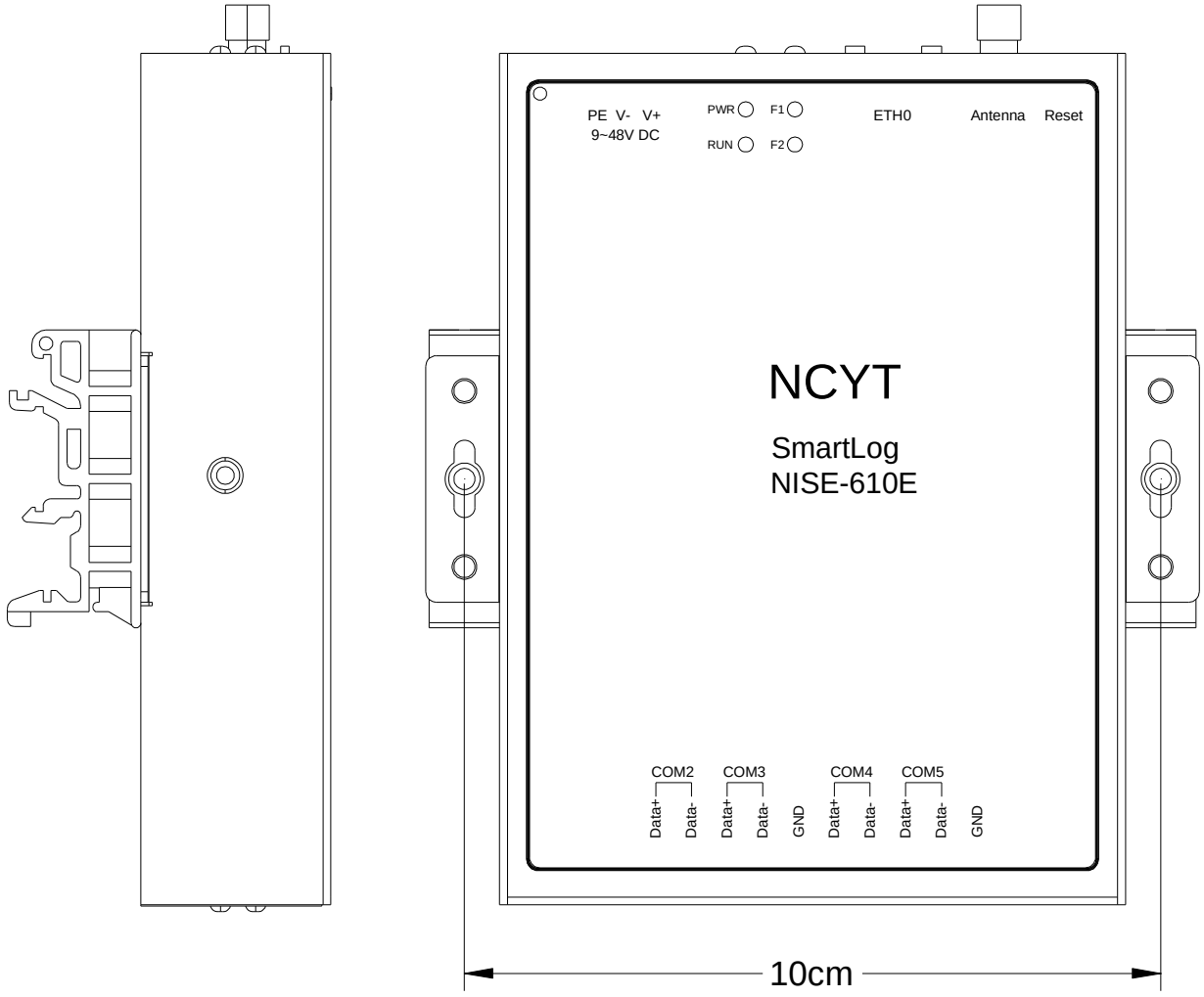
Check that the delivery is complete and free of damage according to the packing list in the package.

The NISE-610E package contains the following items:

NO.	Name	Quantity	Notes
1	NISE-610E logger	1	
2	Power terminal	1	
3	Serial terminal	1	Includes two terminal resistors of 120 Ω
4	Switching power supply	1	
5	DIN-Rail rail	1	

3.2 Device Installation

It can be wall-mounted, desktop or rail-mounted according to the actual conditions on site.



Wall hanging, desktop installation steps :

1. Choose the right plane (wall, metal surface, desktop);
2. Use a marker to mark the drilling position;
3. Use an electric drill or hammer drill to drill holes in the marked positions;
4. Fasten with expansion screws (wall) or fasten with nuts (metal surface).

Danger	Please avoid other wires in the wall when drilling to avoid damage

Rail installation:

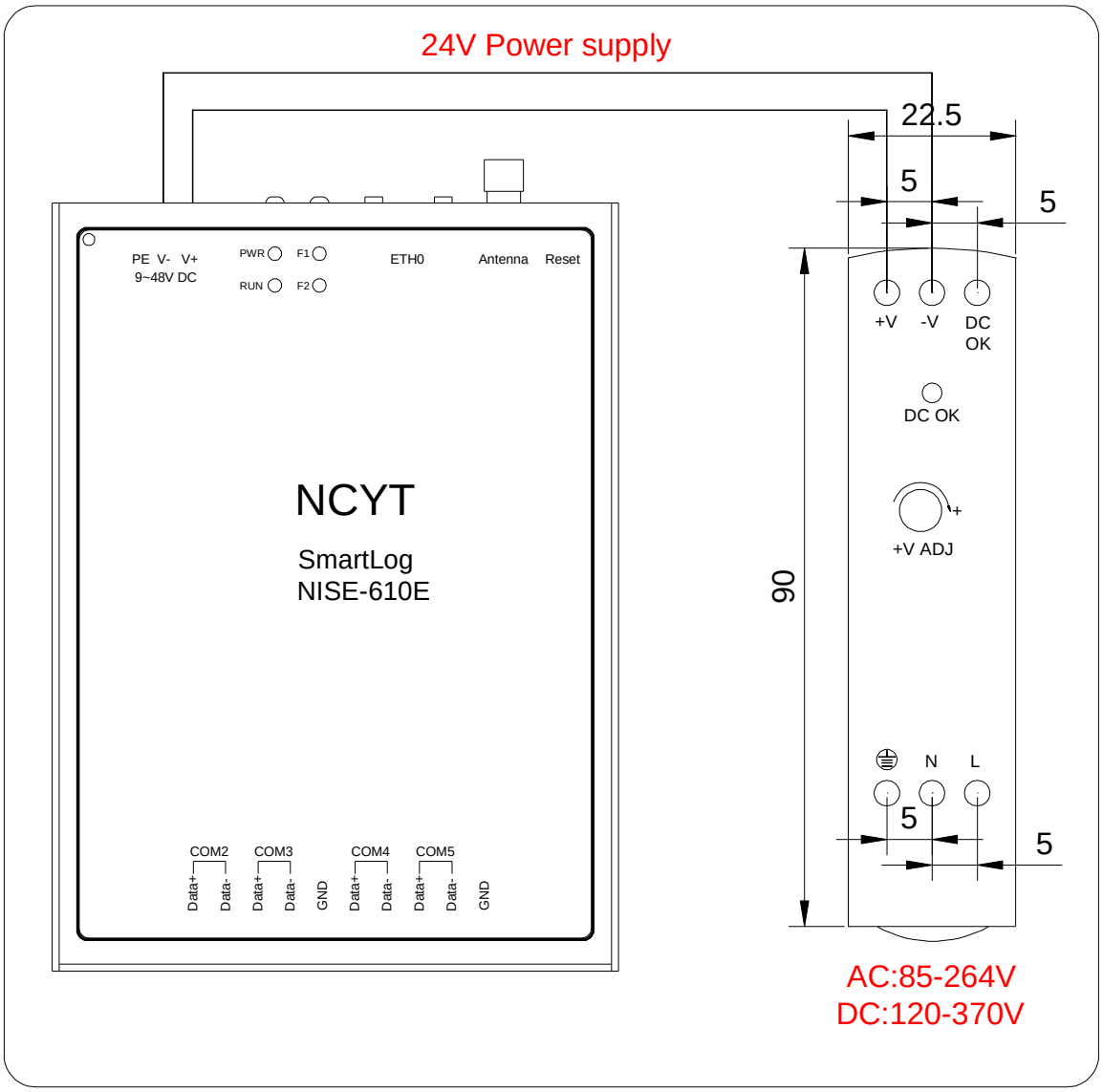
1. Fix the guide rail in the appropriate position;
2. NISE-610E is tilted at a certain angle, so that the upper clip fits into the guide rail;
3. Push the lower part of the NISE-610E and snap it into the guide rail.

Warning	Please observe the surrounding environment during installation to avoid hand scratches.

Power supply installation steps: The power supply only supports rail installation. For installation steps, please refer to the NISE-610E rail installation steps.

4. Electrical Installation

4.1 Power Connections

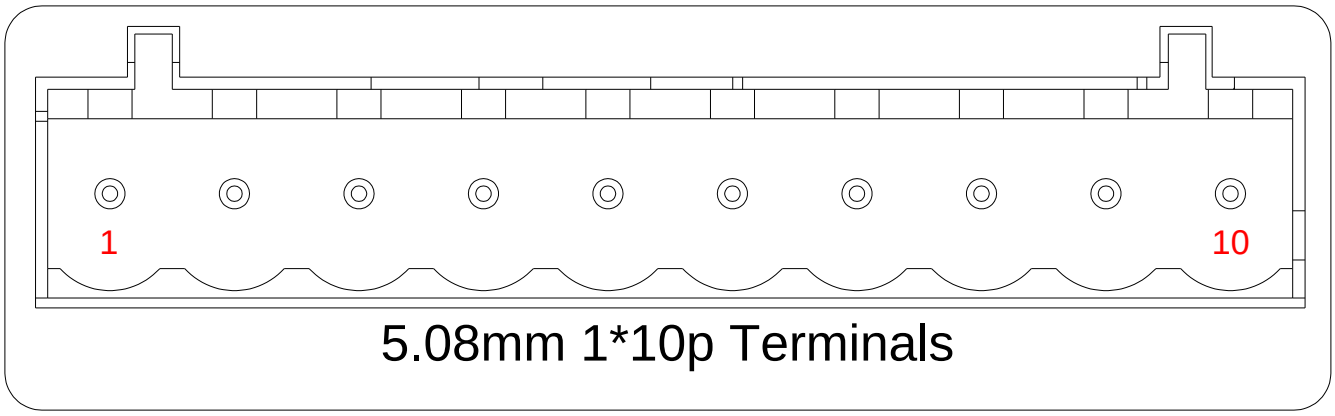


Steps for Power Installation

1. Use 2.5 mm^2 wire and strip the insulation 8-10mm;
2. The +V and -V terminals of the power supply are respectively connected to the V+ and V- terminals of the NISE-610E device.

Danger	Please be sure to check the corresponding terminal carefully when wiring, so as to avoid injury to personnel and equipment.

4.2 RS485 Connections



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3	COM3 RS-485 A	8	COM5 RS-485 A
4	COM3 RS-485 B	9	COM5 RS-485 B
5	GND	10	GND

1. Use 1~1.5 mm^2 twisted pair with shielding layer;
2. Strip the protective layer of the communication cable by about 20mm, and strip the insulation layer of the wires by about 10mm ;
3. Connect the stripped wires to the RS485 port of the NISE-610E device ;
4. If multiple inverters need to be monitored on site, daisy-chain cables can be used for the inverters. Each serial port of NISE-610E can connect 30 inverters.

⚠ Attention	When wiring, the RS485A is connected to port A of the NISE-610E device and the RS485B is connected to port B of the NISE-610E device.

5. Engineering Configuration

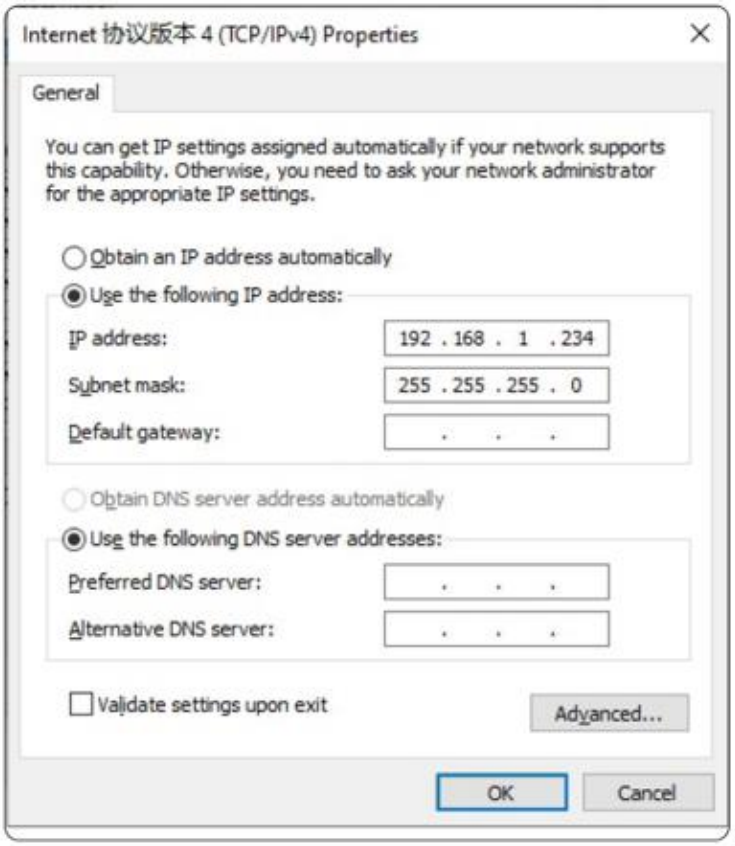
5.1 Configuration Software Download

Please to https://smartenergy.csisolar.com/attach/ConfigTool_EN.7z, download ConfigTool configuration software.

5.2 Network Configuration

5.2.1 Connect the NISE-610E

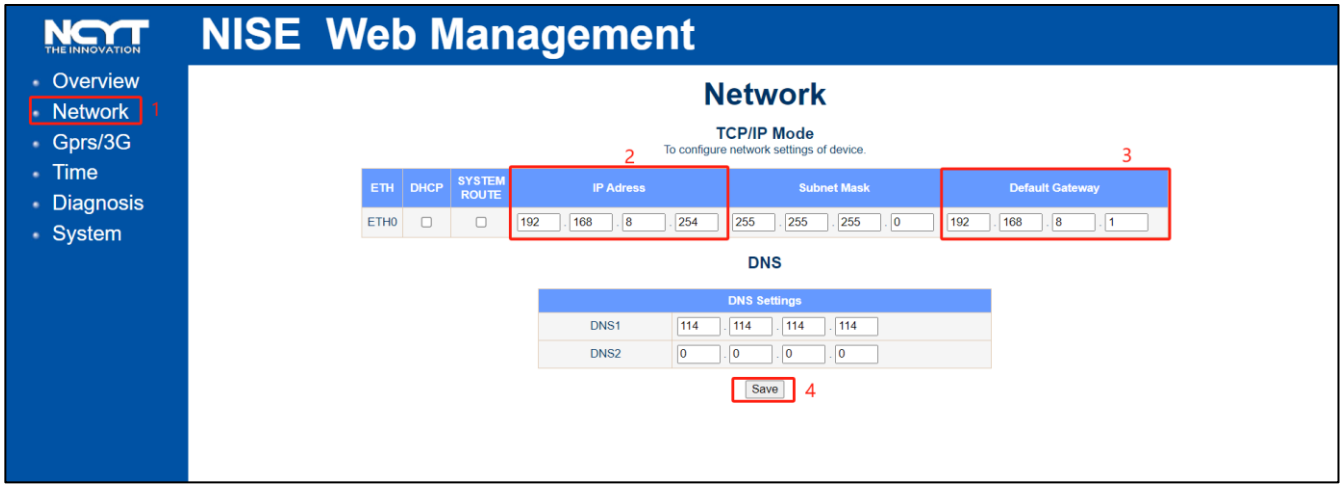
The default IP address of the NISE-610E is 192.168.1.254, Modify the computer IP, and keep the computer and smartlogger IP in the same network segment, and use the network cable to connect the computer and Logger device. Stay on the same network segment, for example, 192.168.1.234, and connect the PC to the NISE-610E using a network cable.



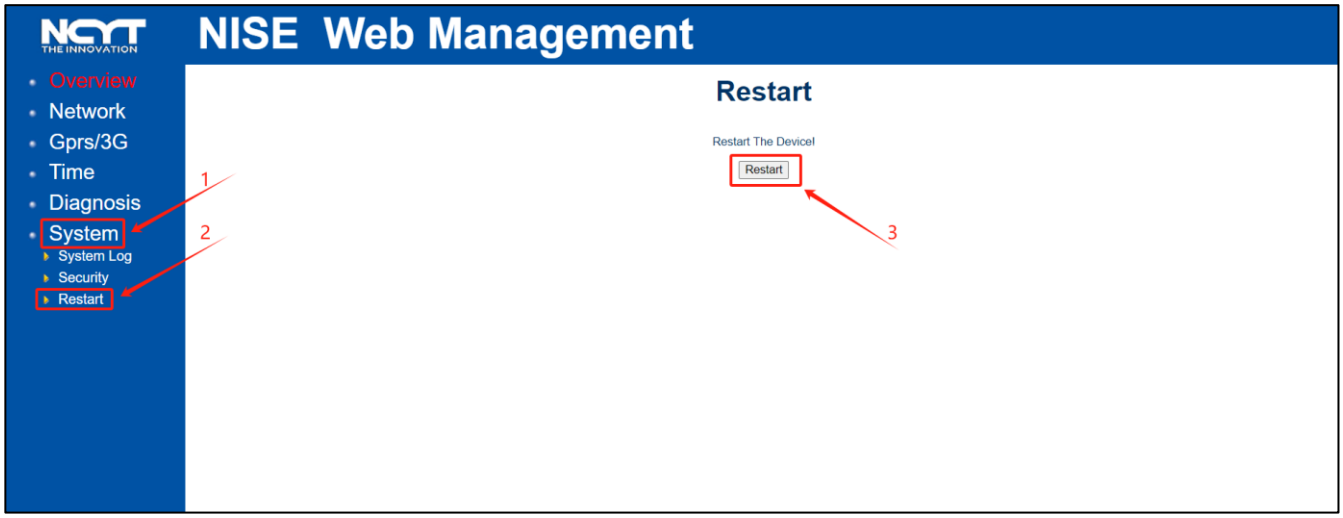
5.2.2 Modify IP address

1) Connect the network cable to NISE-610E, open the computer browser and enter 192.168.1.254, enter the user name "admin" and password "admin", Click to Login.

2) Modify on the "Network" page and configure the IP and gateway address of the management machine according to the router's network segment information. If the router's network segment is located in network segment 8, modify the management machine IP address to 192.168.8.254, the default gateway to 192.168.8.1, and click Save.



3) After the modification is completed and saved, restart the management machine.

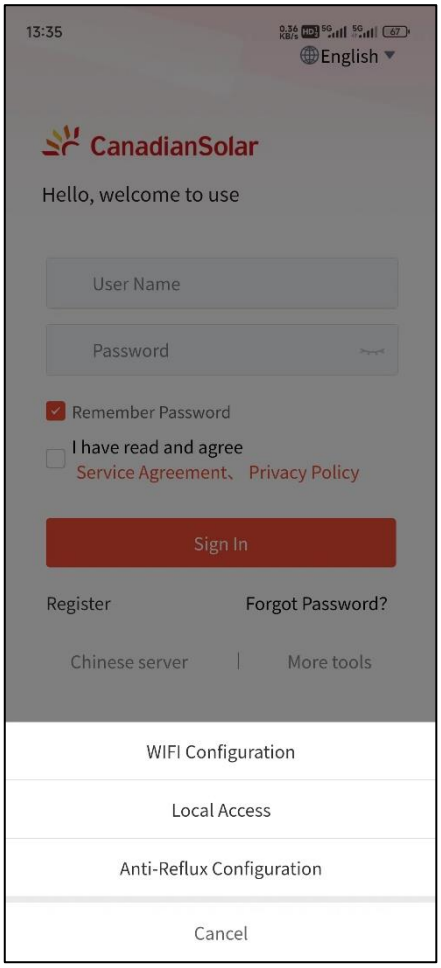


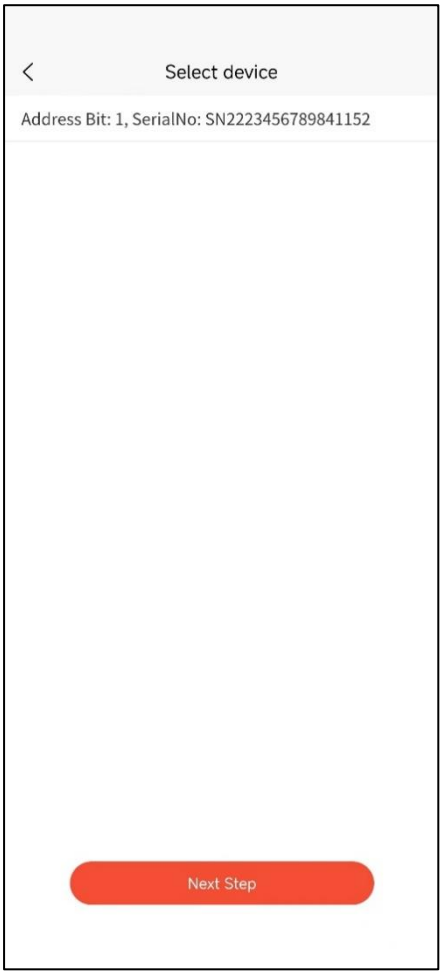
5.3 Software Configuration

5.3.1 Changing the Modbus Address

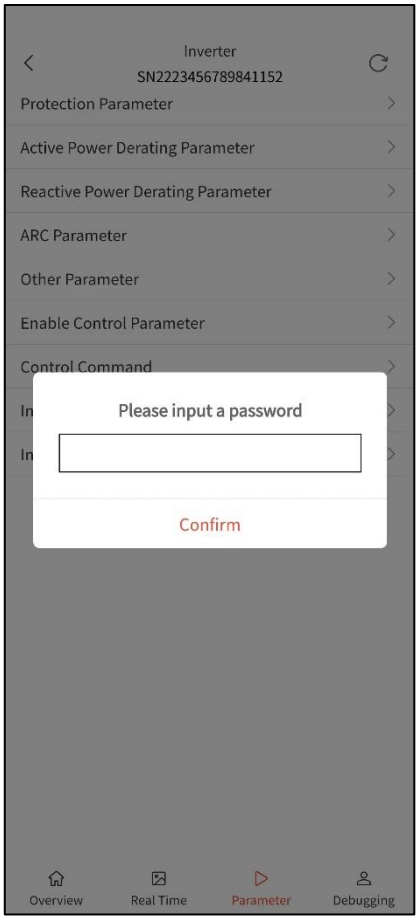
Attention	Before using the NISE-610E logger, change the Modbus address of each inverter to ensure that the Modbus address on the RS485 bus is not the same
Note	Using the smart data stick provided by CSI, the operation is as follows

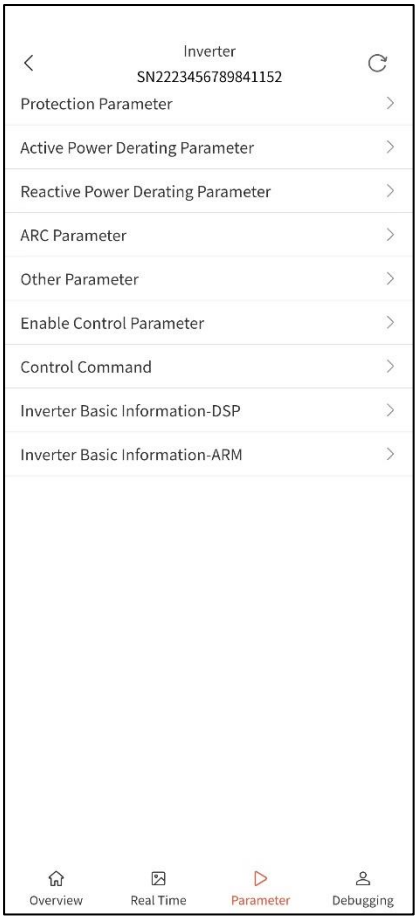
1) Insert the data stick into the inverter, wait for the green light to blink, open the APP “more tools”-> “Local Access” -> scan the code to connect the inverter, select the inverter and click Next.



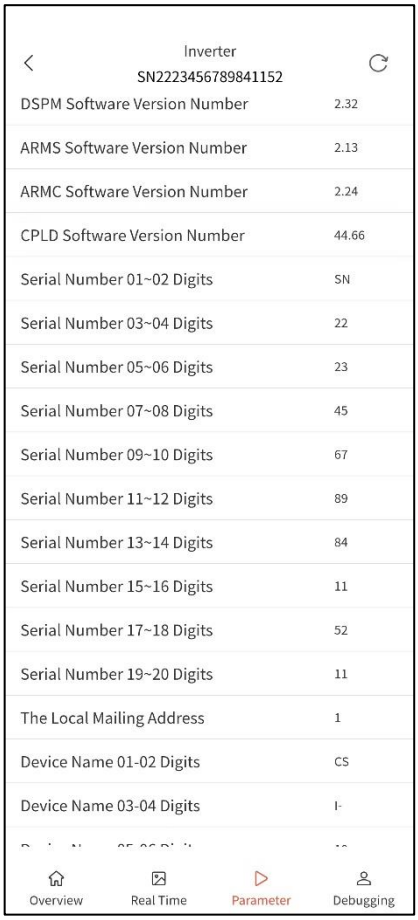


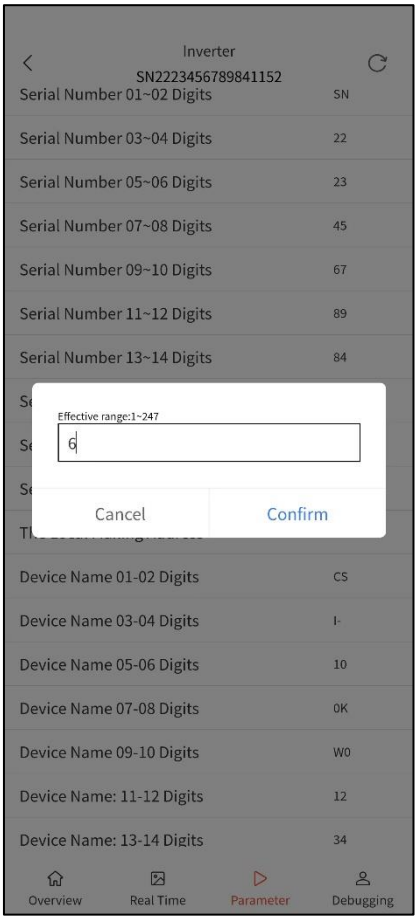
2) Click the "Parameters" page below->enter password 8888 in the pop-up box -> click "Inverter Basic Information-ARM".

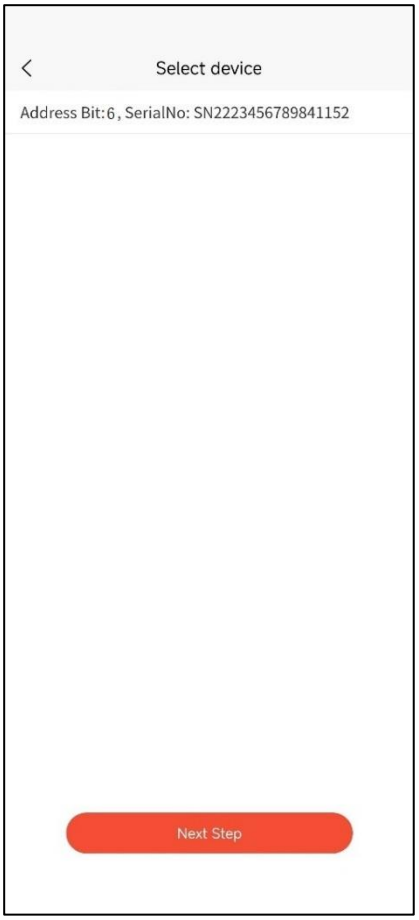




3) Click "The Local Mailing Address"-> modify the address as required-> click "Confirm"->re-scan the code connection to confirm the modification

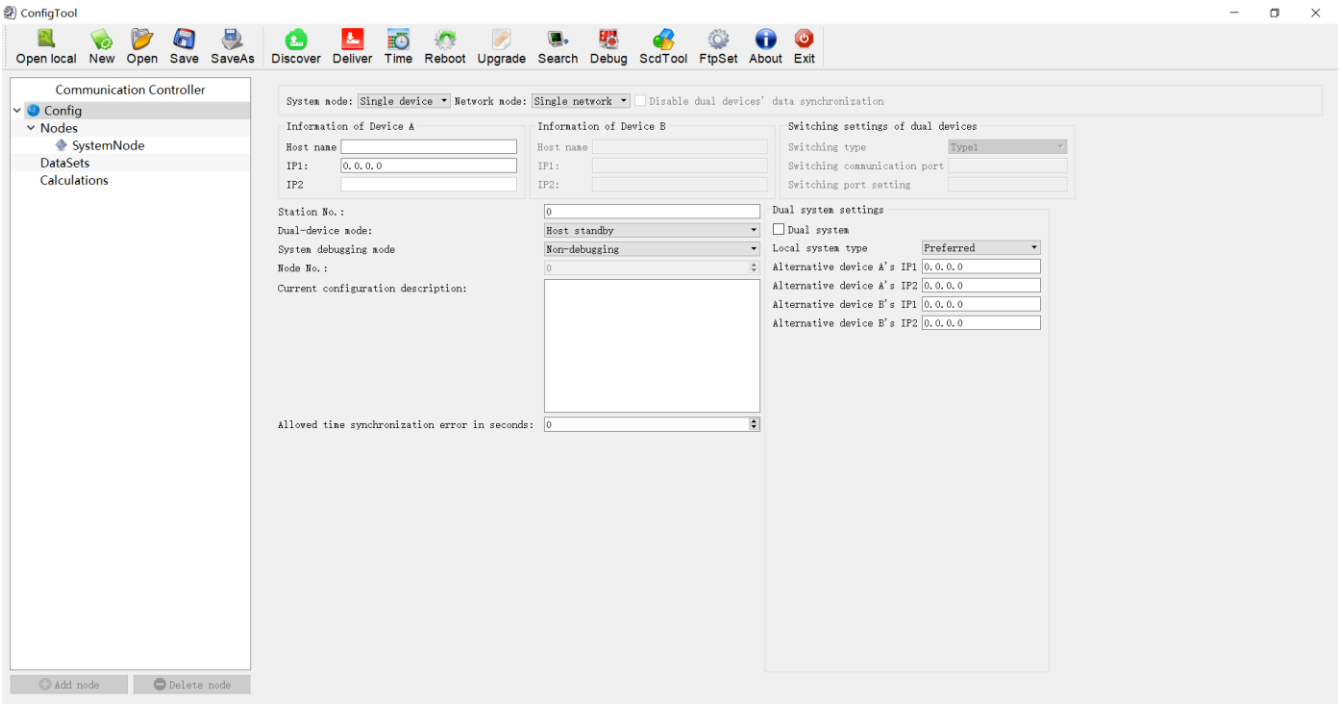






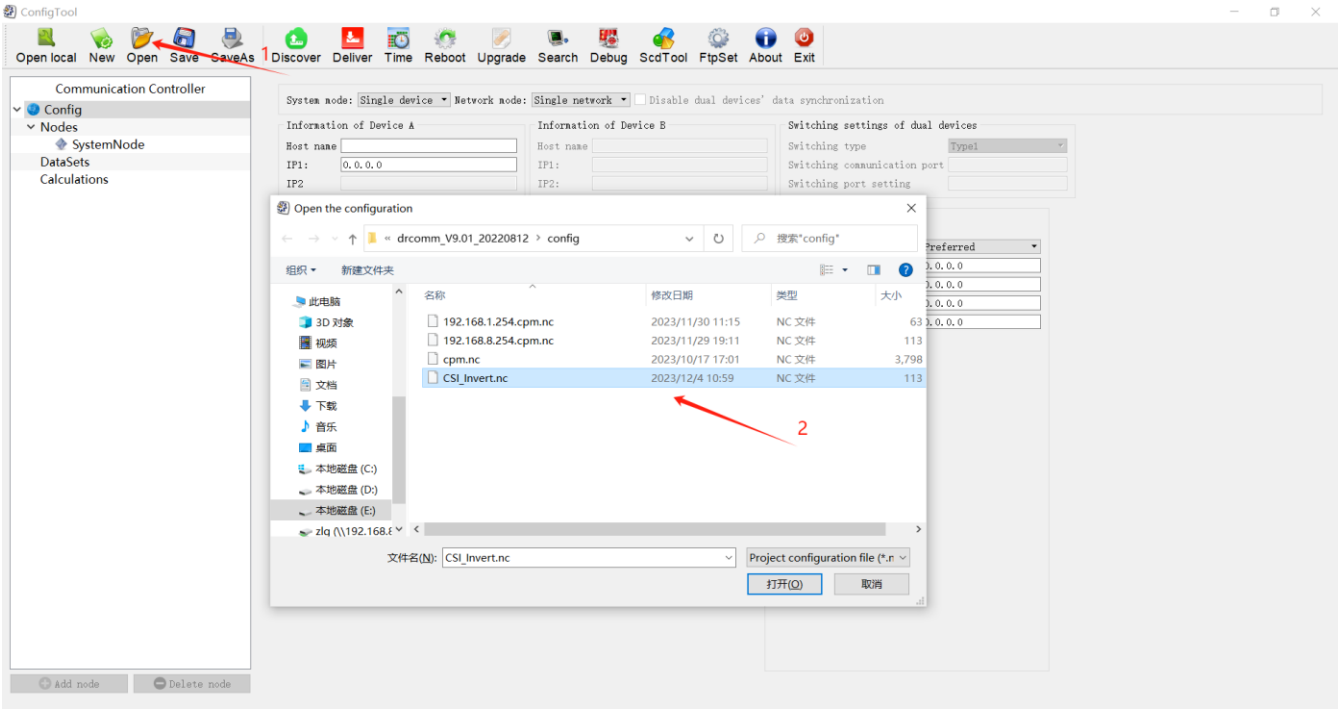
5.3.2 Open Configuration Software

Go to the /bin directory and open the configuration application ConfigTool.EXE



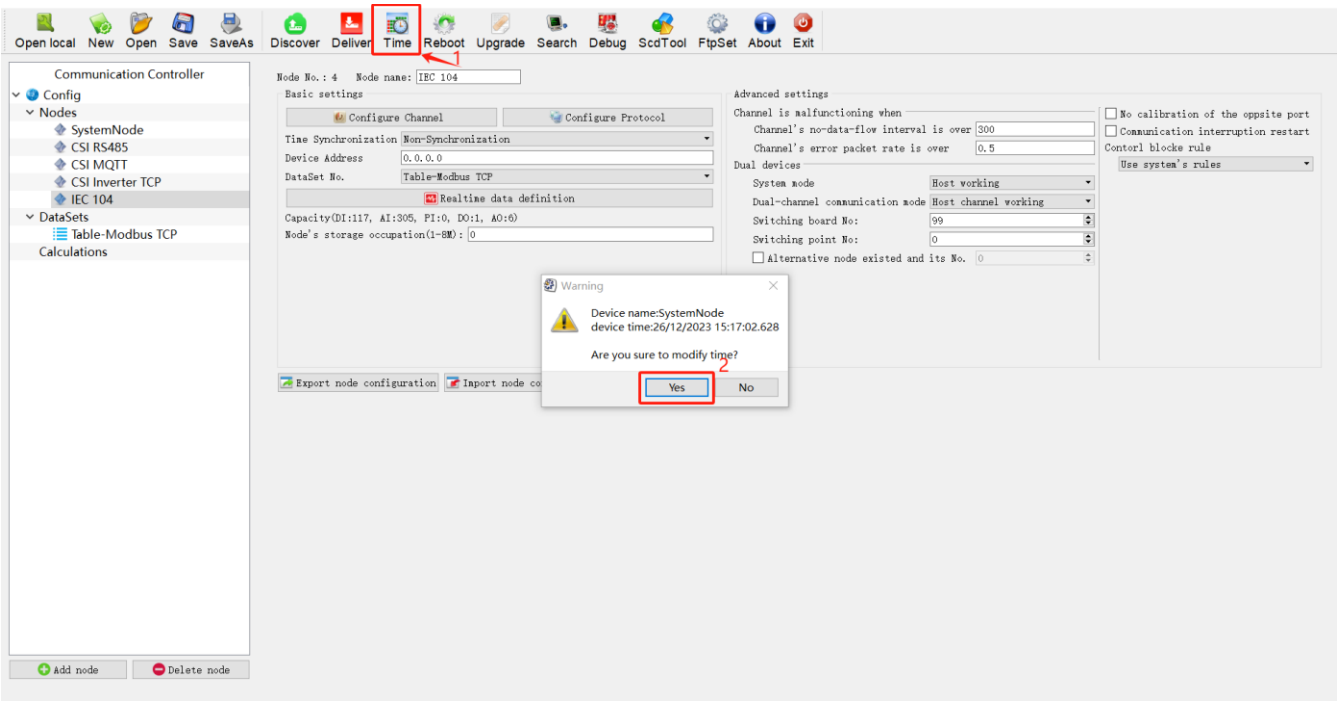
5.3.2 Select Configuration File

Click on "Open" and select "CSI_Invert.NC" profile to see several configurations displayed by default in the node list.



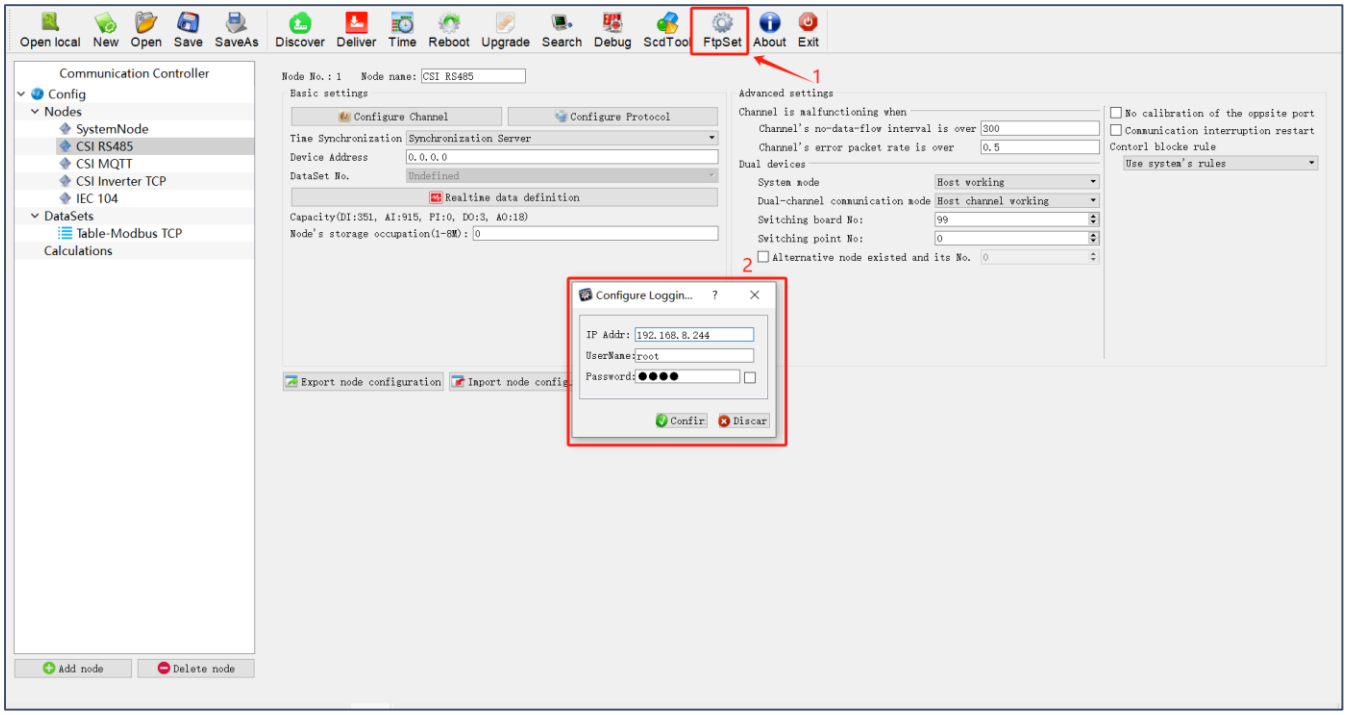
5.3.4 Time Configuration

After opening the configuration, in order to calibrate the inverter time, you need to calibrate the time of the management machine first.



5.3.5 Network Configuration

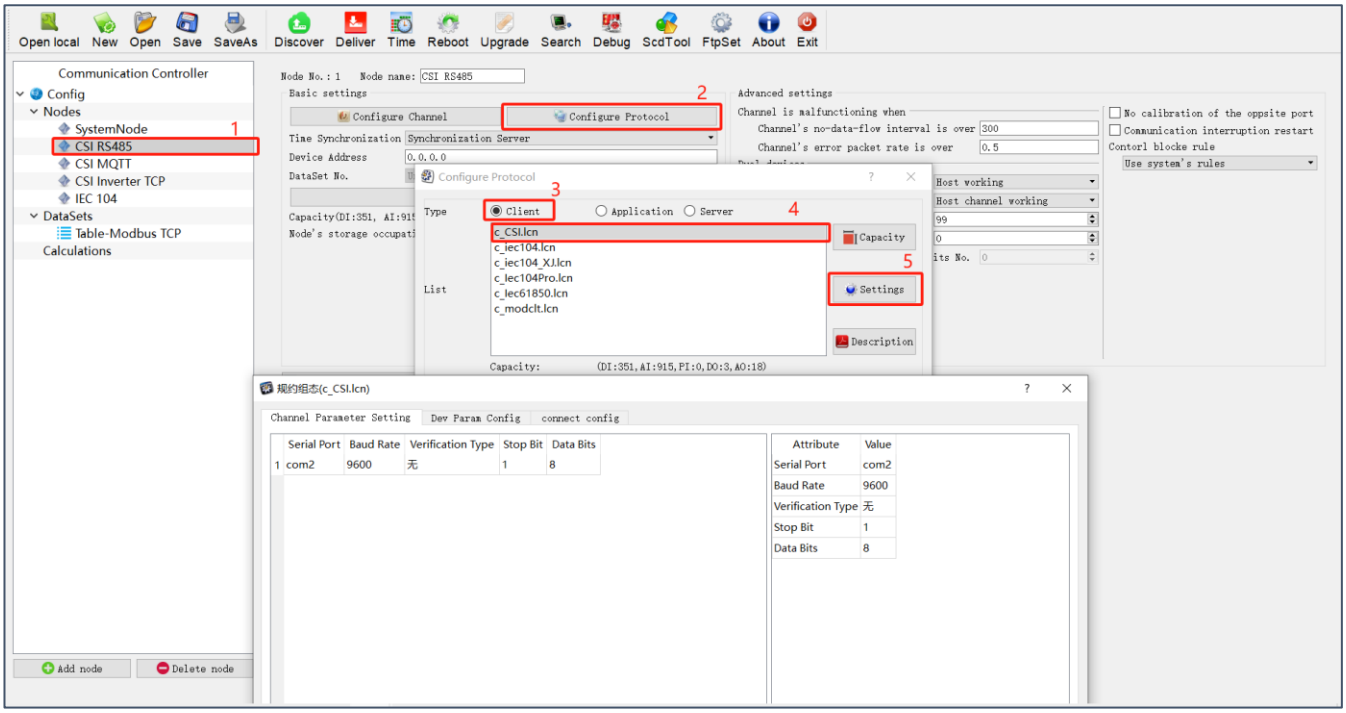
In “FtpSet”,set the parameters based on the modified smartlogger IP address.



5.3.6 Serial Port Configuration

1) Select Protocol Node

Select the node "CSI RS485" in the node list, select "Settings", select "c_CSI.lcn" in the client protocol, click "Setting", the protocol configuration dialog box appears.



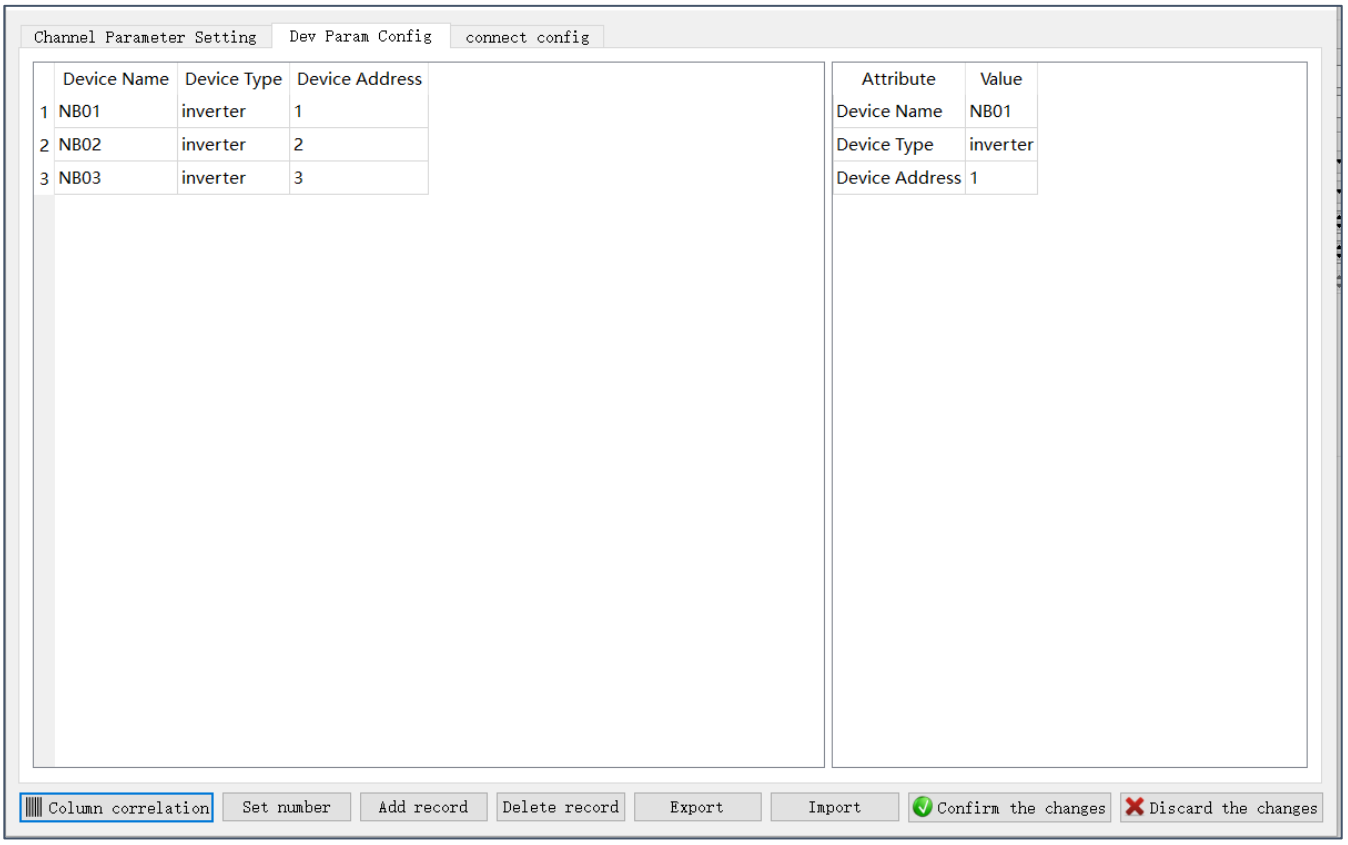
2) Configure serial port parameters

Configure the serial port number, baud rate, check type, stop bit, and data bit in the "Settings" section.

3) Set inverter parameters

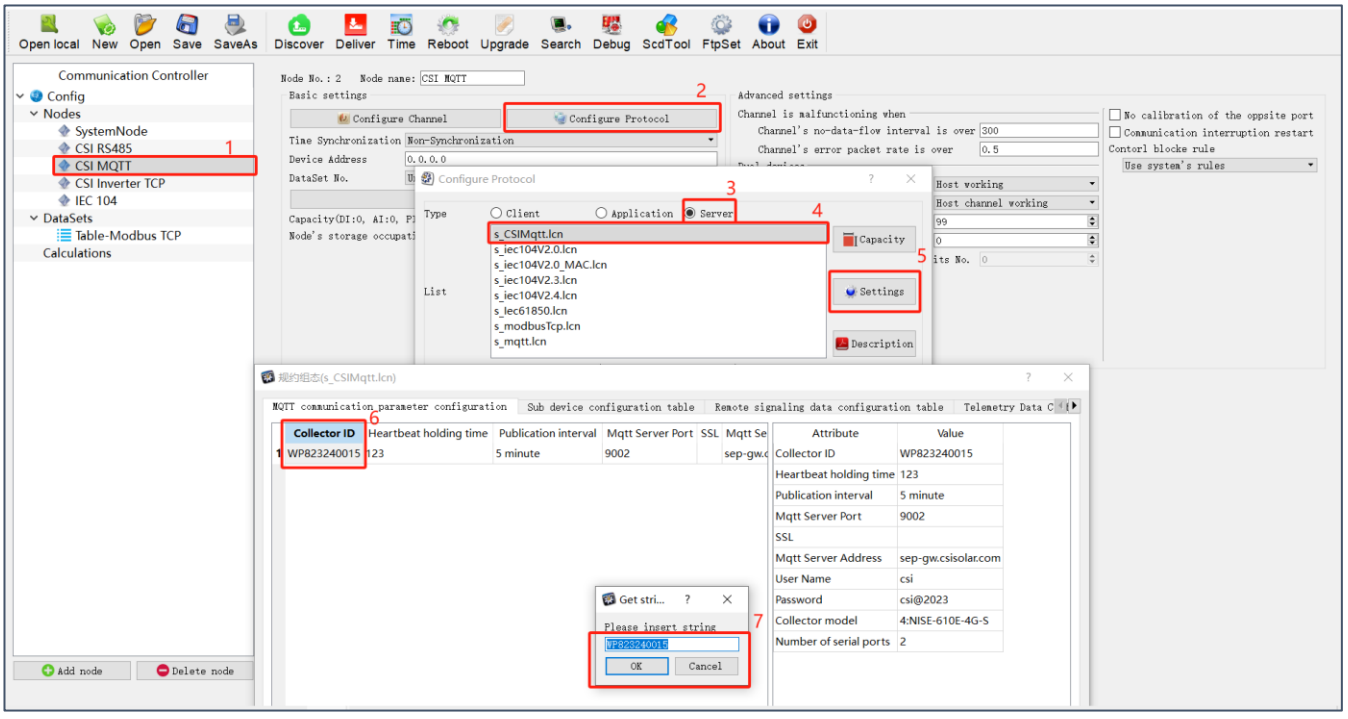
In Device Parameter Configuration, configure the number of inverters and their communication addresses. Inverters can be added by "Adding records". If there are actually 3 inverters on site, you need to add 3 records, and the communication addresses are 1, 2, and 3 respectively. Then click "OK" -> "Confirm modification" to complete the configuration of the serial port part.

Attention	Before this, it is necessary to change the Modbus address of the inverter and set it to the same address as in the configuration.



5.3.7 MQTT Forwarding Configuration

NISE-610E enables data forwarding to the Canadian Intelligent Energy Platform by default. You can delete the CSI MQTT node if it is not needed. Select "CSI MQTT" in "Nodes"-> click "Setting"-> select "s_CSIMqtt.lcn" in "Server "-> click"Setting"-> under "MQTT Communication Parameter Configuration"-> double-click "Collector ID", enter the correct collector ID in the pop-up dialog box. The collector ID can be found on the casing of NISE-610E.

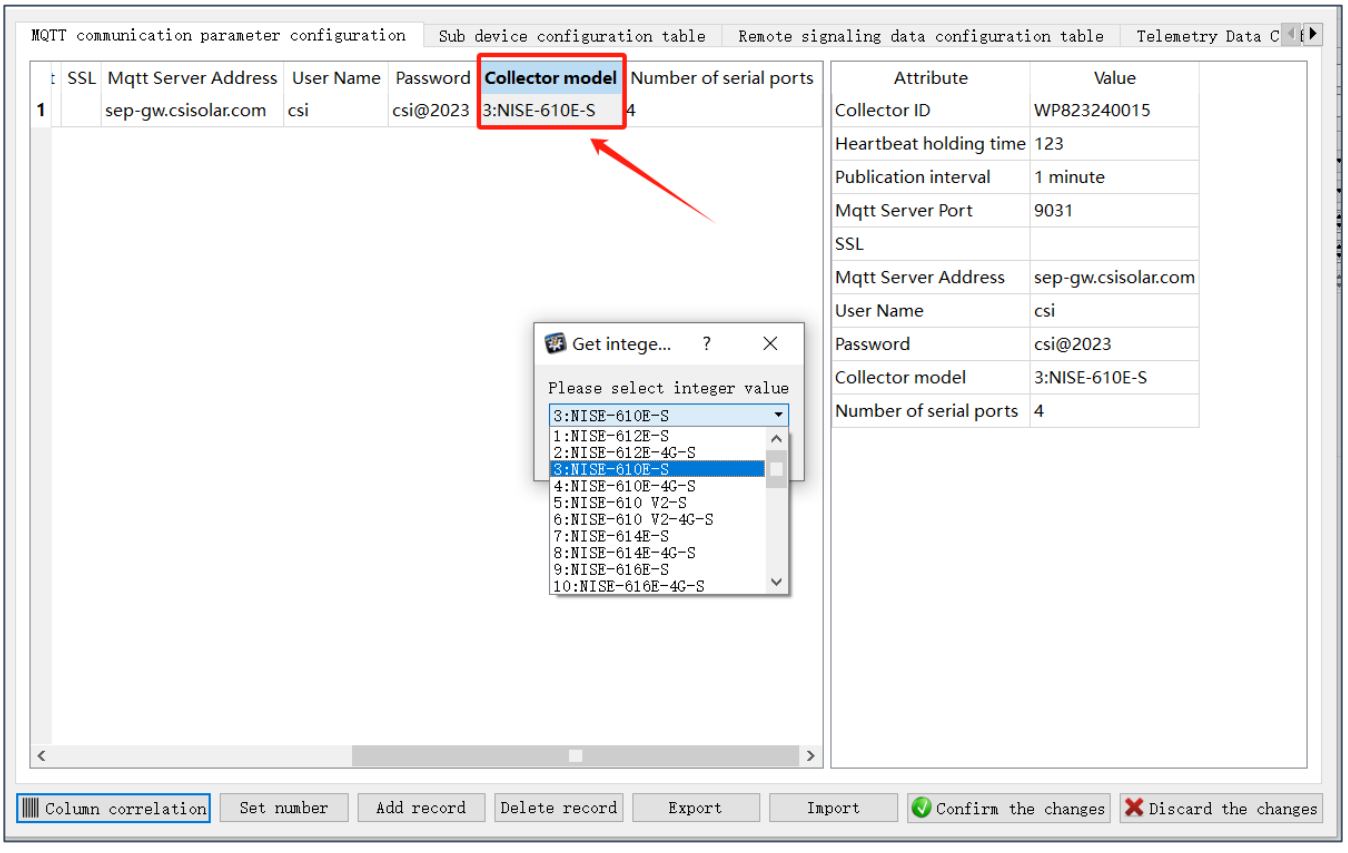


The location of the collector ID on the housing can be seen in the figure below, and the sequence number is the collector ID.

Attention	The entry of the collector ID is very important and if entered incorrectly will result in the device not being found on the platform.

Attention	The input of the collector ID is very important. If the input is incorrect, the device cannot be found on the platform.

In addition, choose the product with the same model as you use, the collector model can also be found in the label above.



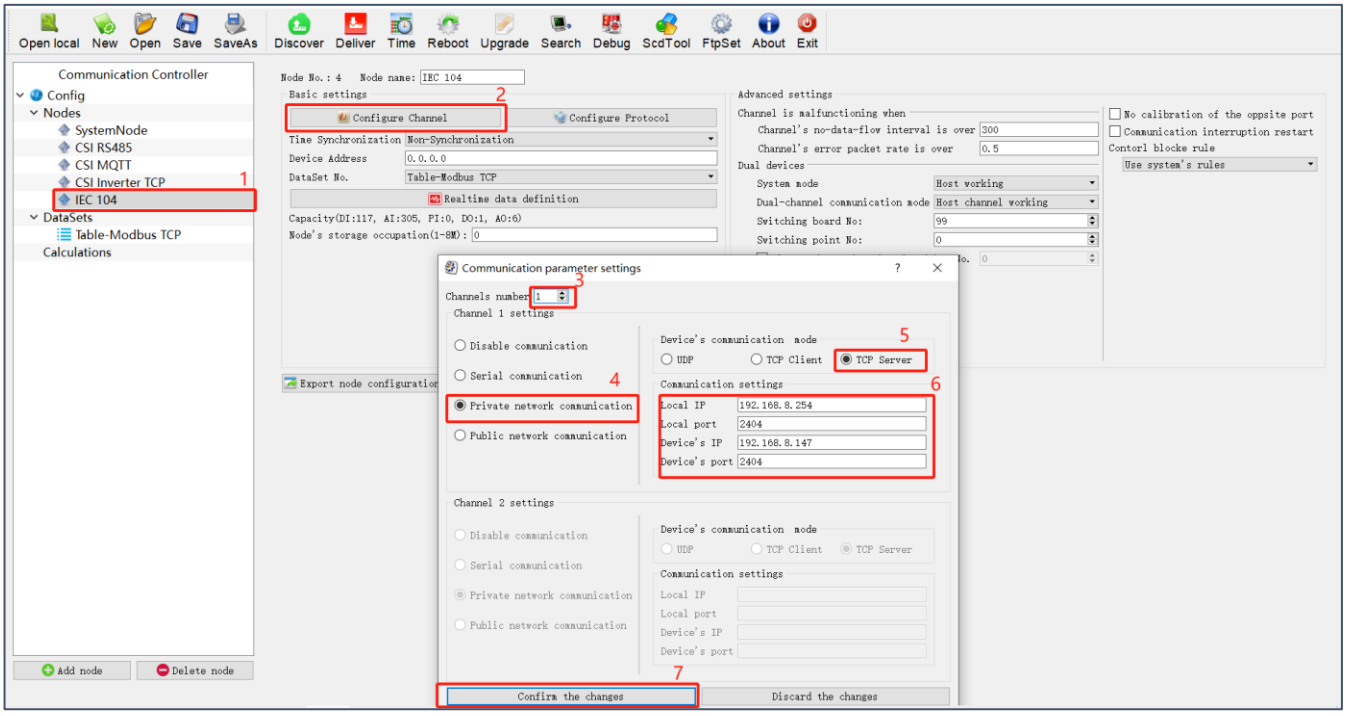
Attention	Do not modify other parameters of MQTT at will, otherwise the data may not be uploaded to the platform.

5.3.8 Modbus TCP Forwarding

The Modbus TCP forwarding function is enabled in the CSI_Inverter.nc configuration file by default. You can delete the CSI Inverter Modbus TCP node if you do not need it.

5.3.9 IEC 104 Forwarding

The IEC 104 forwarding function has been turned on by default in the configuration file of CSI_Inverter.nc. If it is not needed, you can delete the "IEC 104" node. When using the "IEC 104" node, you need to fill in the IP address and port of the management machine and IEC 104 host:



5.3.10 Other Protocol Forwarding And Third-Party Device Access

NISE-610E supports the forwarding of other protocols and the access of third-party devices. Contact local technical support for remote configuration.

5.3.11 Downloading The Configuration And Restarting The Device

After completing all configurations, click "Deliver". When prompted, click "Reboot" to complete all configurations.