

BL203 Ethernet/IP Distributed I/O



BL203 User Manual

Version: V1.2

Date: 2023-10-24

Shenzhen Beilai Technology Co.,Ltd

Website: <https://www.bliiot.com>

Preface

Thanks for choosing BLIIoT Distributed I/O. These operating instructions contain all the information you need for operation of BL203.

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Disclaimer

This document is designed for assisting user to better understand the device. As the described device is under continuous improvement, this manual may be updated or revised from time to time without prior notice. Please follow the instructions in the manual. Any damages caused by wrong operation will be beyond warranty.

Revision History

Update Date	Version	Description	Owner
2021-10-13	V1.0	First Edition	ZLF
2022-07-01	V1.1	Add Profinet, EtherCAT protocol, add platform, logic control functions	HYQ
2023-07-27	V1.1	Change Model name	HYQ
2023-10-24	V1.2	Add BL203, BL206, BL207 description	HYQ
2023-10-24	V1.2	User manual split by model	HYQ

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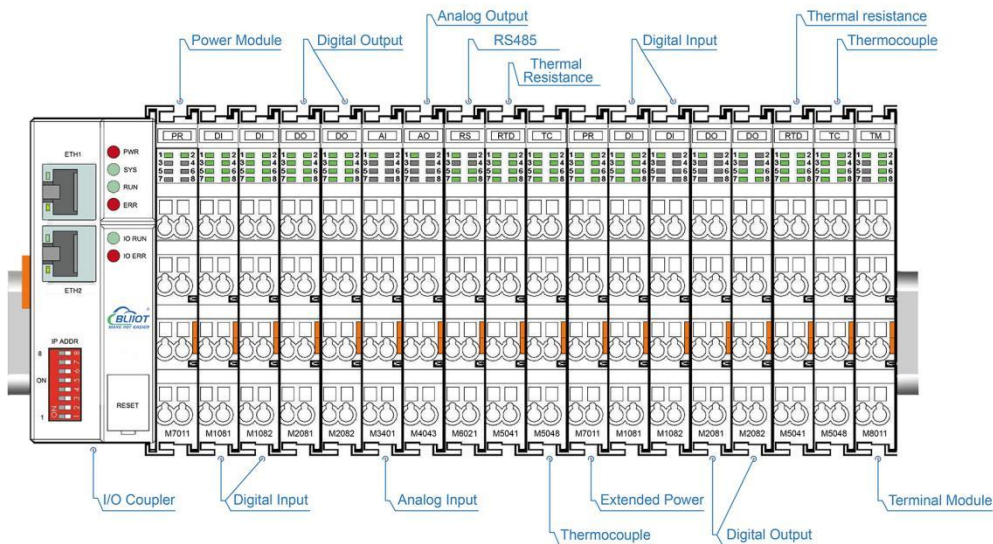
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1 Product Introduction

1.1 Overview

BL203 coupler is a data acquisition and control system based on a powerful 32-bit microprocessor design with Linux operating system and support for Ethernet/IP protocols, allowing quick access to Ethernet/IP-enabled PLCs in the field for IIoT and industrial automation applications.

The BL203 distributed I/O system consists of 3 parts: Coupler, I/O modules and terminal module.



The communication between the node and the field devices (eg PLC) takes place via the Ethernet interface of the fieldbus coupler, and the communication between the fieldbus coupler and the I/O modules takes place via the local bus. The two Ethernet interfaces are internally integrated with a switch function, which can establish a linear topology without the need for additional switches or hubs.

The system needs to use the power module to provide 24VDC system voltage and 24VDC field voltage. Since two independent power supplies are used, the field voltage input interface and system voltage input interface of BL203 coupler are electrically isolated from each other.

When assembling fieldbus node modules, each I/O module can be arranged in any combination, and it is not required to be grouped by module type.

A terminal module must be plugged into the end of a fieldbus node to ensure correct data transmission.

1.2 Typical Application

High reliability, easy expansion, easy setting, and convenient network wiring, these capabilities let users efficiently adapt the BL203 I/O system to a variety of complex industrial applications.

1.3 Features

- Each I/O system can have a maximum of I/O 32 modules.
- Support Ethernet/IP protocol.
- The field side, the system side and the bus side are electrically isolated from each other.
- Support 2 X RJ45 interface, integrated switch function, can establish line topology, without the need for additional switches or hubs.
- Convenient wiring connection technology, screw-free installation.

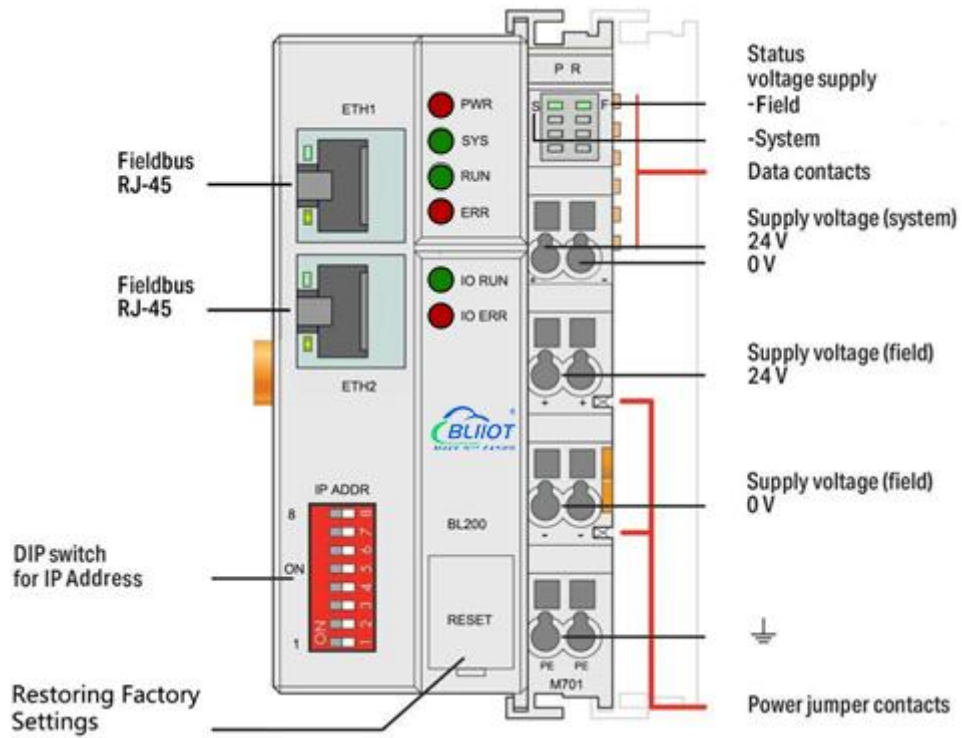
1.4 Model List

Description	Model	Channel	Type
Modbus-TCP I/O Coupler	BL200	/	/
Profinet I/O Coupler	BL201	/	/
EtherCAT I/O Coupler	BL202	/	/
Ethernet/IP I/O Coupler	BL203	/	Ethernet/IP
OPC UA EdgeIO Controller	BL205	/	/
MQTT EdgeIO Controller	BL206	/	/
MQTT+OPC UA+Modbus TCP	BL206Pro	/	/
BACnet/IP I/O Coupler	BL207	/	/
BACnet/IP+MQTT+OPC UA	BL207Pro	/	/
8CH DI	M1081	8	NPN (low level trigger)
8CH DI	M1082	8	PNP (high level trigger)
16CH DI	M1161	16	NPN (low level trigger)
16CH DI	M1162	16	PNP (high level trigger)
4CH DO	M2044	4	Relay

8CH DO	M2081	8	PNP
8CH DO	M2082	8	NPN
16CH DO	M2161	16	PNP
16CH DO	M2162	16	NPN
4CH AI Single-Ended	M3041	4	0-20mA/4-20mA
4CH AI Single-Ended	M3043	4	0-5V/0-10V
4CH AI Differential	M3044	4	0-5V/0-10V
4CH AI Differential	M3046	4	±5V/±10V
4CH AO	M4041	4	0-20mA/4-20mA
4CH AO	M4043	4	0-5V/0-10V
4CH AO	M4046	4	±5V/±10V
2CH RTD	M5021	2	3Wire PT100
2CH RTD	M5022	2	3Wire PT1000
2CH RTD	M5023	2	4Wire PT100
2CH RTD	M5024	2	4Wire PT1000
4CH TC	M5048	4	TC(B/E/J/K/N/R/S/T)
2CH RS485	M6021	2	RS485
2CH RS232	M6022	2	RS232
1CH RS485, 1CH RS232	M6023	2	RS485+RS232
Power module	M7011	/	/
Terminal module	M8011	/	/

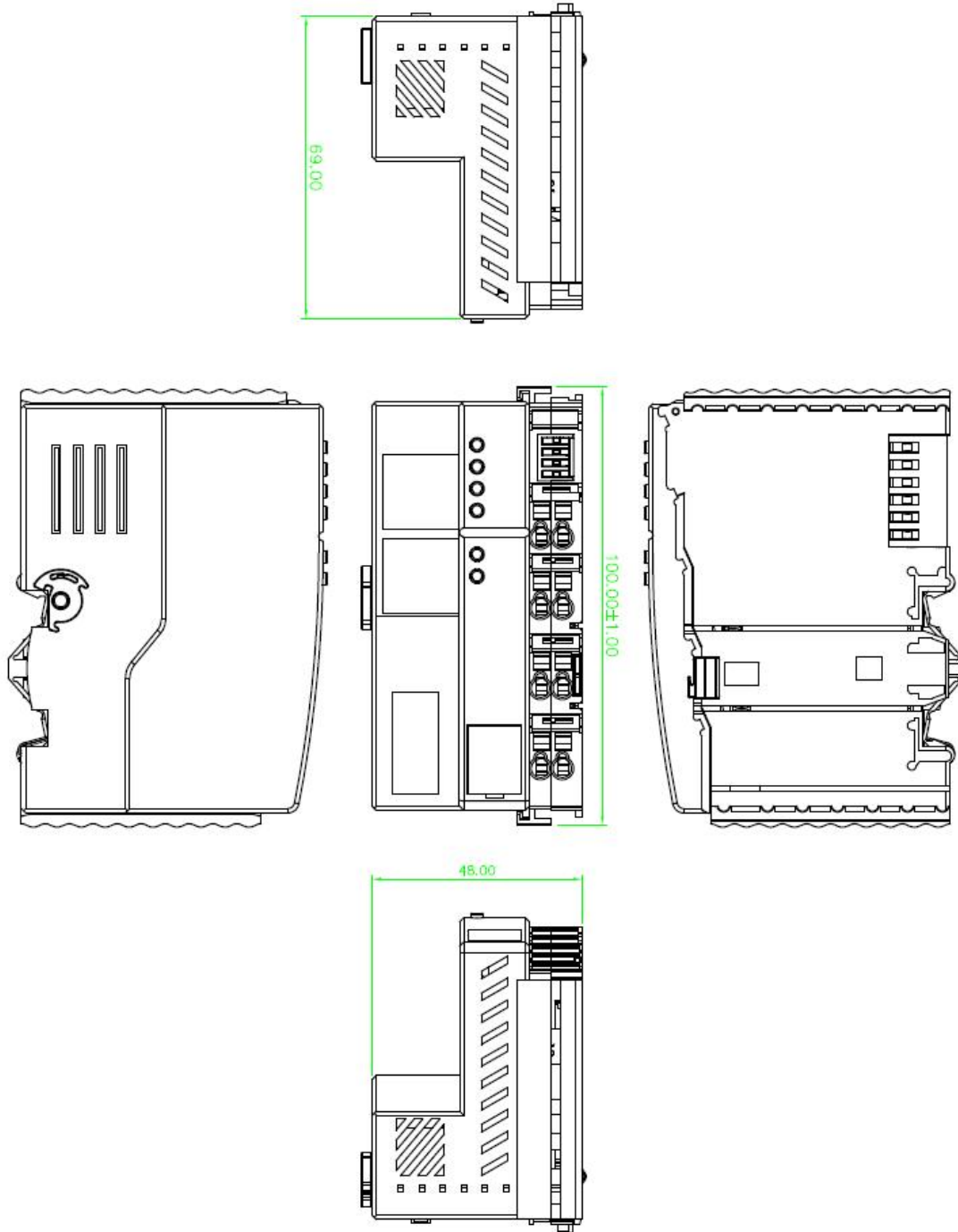
2 Hardware

2.1 I/O Coupler



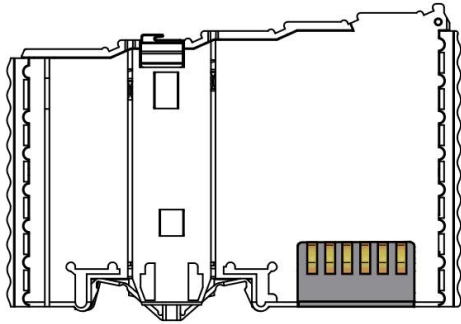
2.2 Dimension

Unit:mm



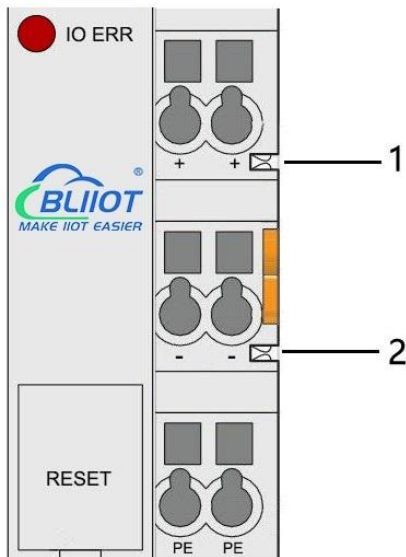
2.3 Data Contacts/Internal Bus

The communication between the fieldbus coupler/controller and the I/O modules, as well as the system power supply of the I/O modules are realized via the internal bus. The internal bus is made up of 6 data contacts, these gold-plated contacts are self-cleaning when connected.



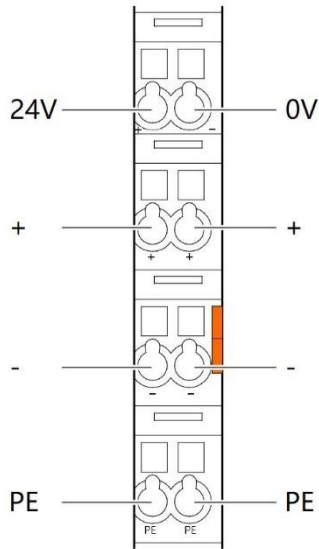
2.4 Power Jumper Contacts

The power module included with the coupler has two self-cleaning power jumper contacts for powering the field side. This power supply has a maximum current of 10A across the contacts, current exceeding the maximum will damage the contacts. When configuring the system, it must be ensured that the above-mentioned maximum current is not exceeded. If it exceeds, a power expansion module needs to be inserted.



No.	Type	Description
1	Spring contact	Supply 24V to the field side
2	Spring contact	Supply 0V to the field side

2.5 Terminal Point



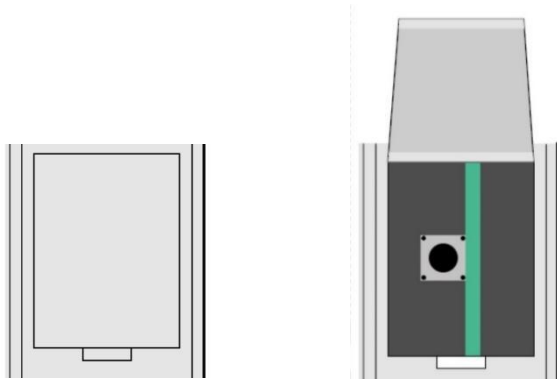
Name	Description
24V	System Power 24VDC
0V	System Power 0VDC
+	Connections Field Supply 24 VDC
+	Connections Field Supply 24 VDC
-	Connections Field Supply 0 VDC
-	Connections Field Supply 0VDC
PE	Grounding
PE	Grounding

2.6 Factory Reset

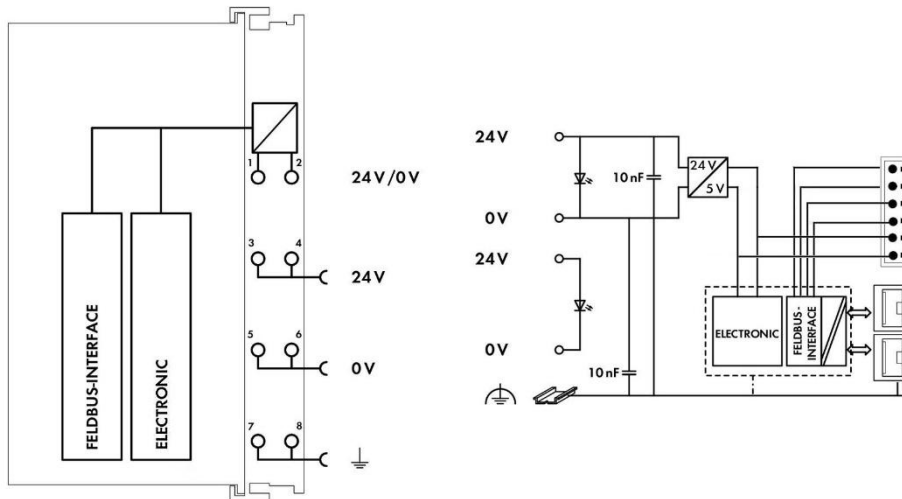
This reset button is used to restore the device configuration parameters to the factory state.

Operation steps:

1. When the device is running, open the flip cover;
2. Press and hold the button for more than 5 seconds, until all the LED lights go off, indicates reset successful, and then the device will automatically restart.



2.7 Electrical Schematic



3 Installation

3.1 Installation Sequence

All distributed couplers and I/O modules from Beilai Technology must be mounted on a standard DIN 35 rail.

Starting from the coupler, the I/O modules are assembled from left to right, and the modules are installed next to each other. All I/O modules have grooves and power jumper contacts on the right side, to avoid assembly errors, I/O modules must be inserted from the right and top to avoid damage to the modules.

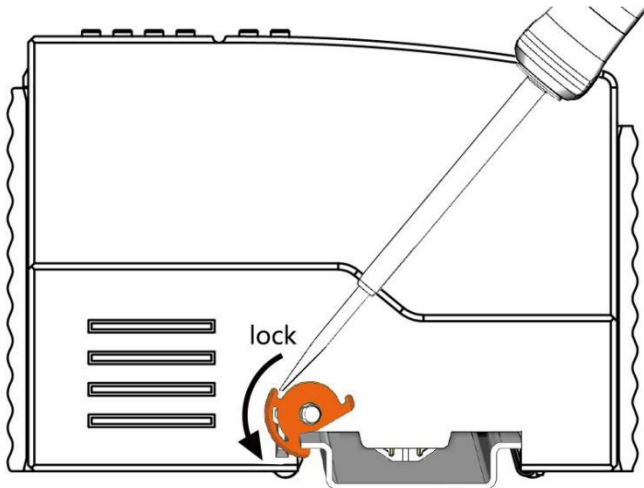
Utilizes a tongue and groove system to form a secure fit and connection. With the automatic locking function, the individual components are securely fixed on the rail

after installation.

Don't forget to install the terminal module! Always plug a terminal module (eg TERM) into the end of the I/O module to ensure correct data transmission.

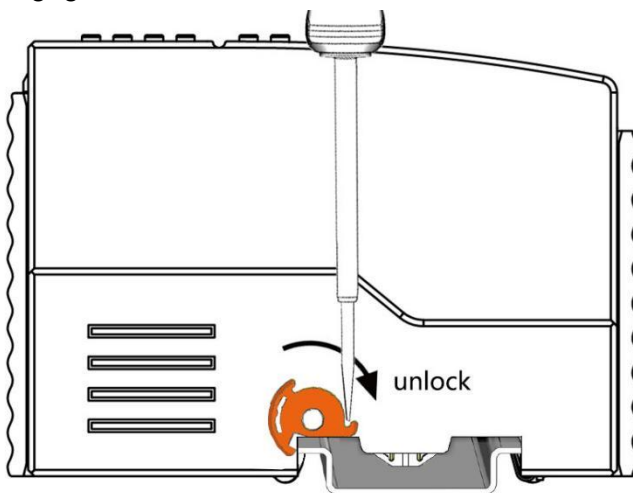
3.2 Install Coupler

- 1.Snap the coupler onto the DIN rail first;
- 2.Use a tool such as a screwdriver to turn the locking cam until the locking cam engages the DIN rail.

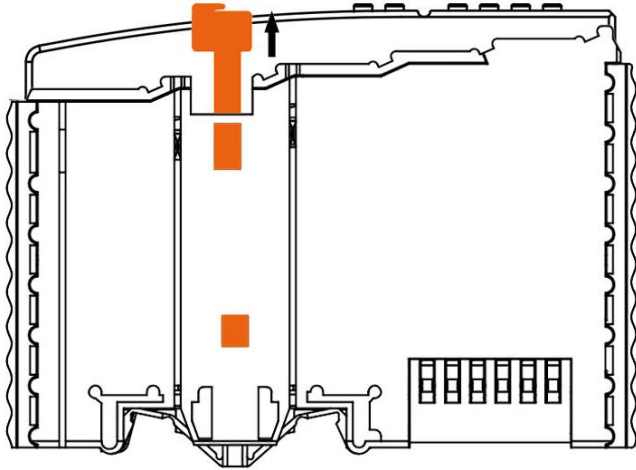


3.3 Remove Coupler

- 1.Use a screwdriver to turn the locking disc cam until the locking cam no longer engages the rail.



- 2.Pull the release tab to remove the coupler from the assembly



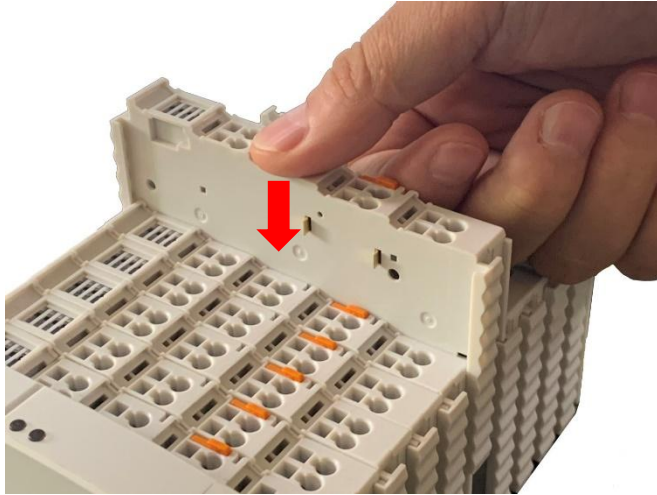
Data or power contacts are electrically disconnected from adjacent I/O modules when the coupler/controller is removed.

3.4 Insert I/O Modules

1. When inserting the module, make sure the tabs on the module line up with the grooves of the coupler or other I/O module to which it is attached.



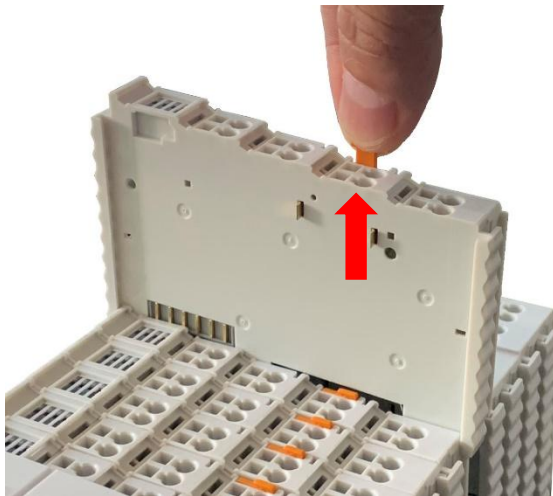
2. Press the I/O module into the assembly position until the I/O module snaps into the rail.



After the I/O module is installed, the electrical connection to the coupler (or the previous I/O module) and the following I/O module is established via the data contacts and the power jumper contacts.

3.5 Remove I/O Modules

Pull up on the latch to remove the I/O module from the assembly.



When the I/O module is removed, the electrical connection to the data or power jumper contacts is disconnection.

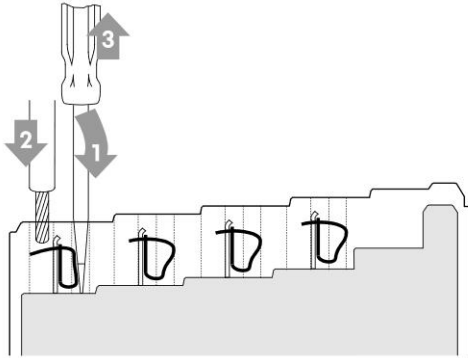
4 Device Connection

4.1 Wiring

CAGE CLAMP connection is suitable for solid, stranded and fine-stranded conductors. Only one wire can be connected to each CAGE CLAMP. If there is more than one wire,

it must be merged into a point before being connected.

1. Open the CAGE CLAMP by inserting the tool into the opening above the junction.
2. Insert the wire into the corresponding open connection terminal.
3. Once the tool is removed, the CAGE CLAMP closes and the wire is clamped firmly by the spring.



4.2 Power Supply

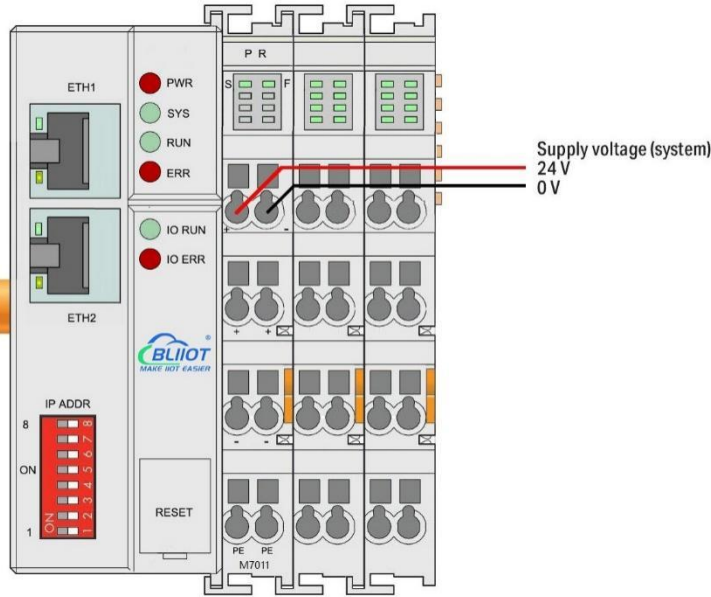
System and field voltages are supplied by power supply modules. The power supply module of the BL203 coupler supplies power for the internal electronics of the coupler and the I/O modules. If necessary (there are many I/O modules and the current is relatively high), it can also be provided through an independent power supply module. The fieldbus interface (Ethernet interface), system and field are galvanically isolated from each other.

4.2.1 System Power

BL203 couplers require 24V DC system power, which is connected from the terminal of the power supply module. The 5V bus voltage required inside the system is converted from the 24V system voltage.

The power supply module only has proper fuse protection, please provide proper overcurrent protection externally.

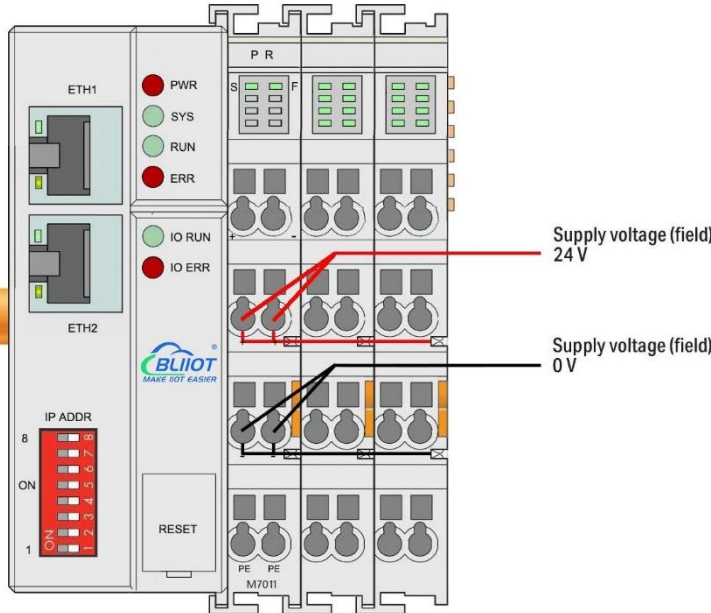
Please pay attention to matching the output power of the power supply module and the load power to avoid excessive load current.



4.2.2 On-site Power Supply

The power supply module supplies 24 VDC on the field side to power the sensors and actuators.

Field power supply only has proper fuse protection. Without overcurrent protection, electronic equipment can be damaged.



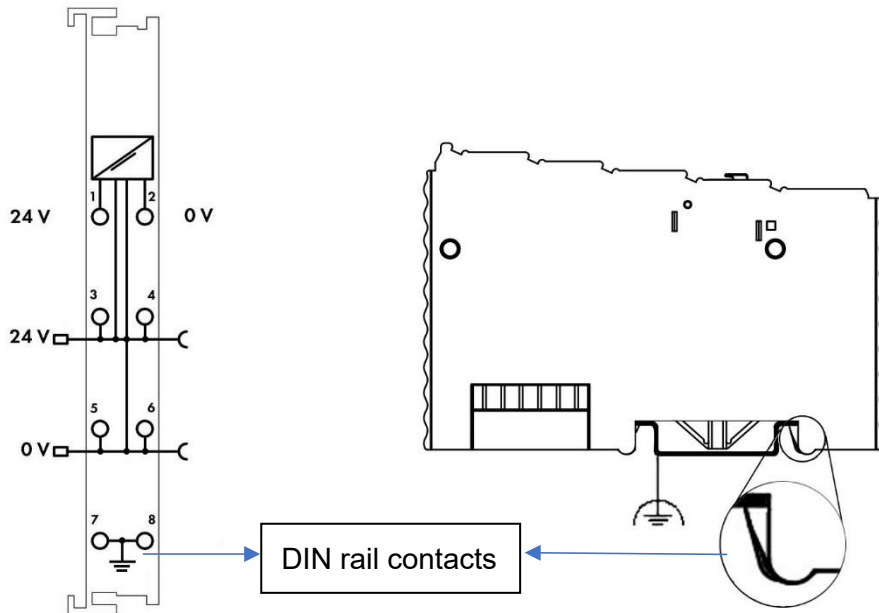
Field-side power is automatically output from the power jumper contact when the I/O module is connected. The continuous load current across the contacts of the power supply must not exceed 10 A.

The problem of excessive load power on the system side or on the field side can be

solved by plugging in additional power supply modules. After plugging in an additional power supply module, a new voltage potential may appear on the field side. In the case where electrical isolation is not required, the field power supply and the system power supply can use the same power supply.

4.2.3 Grounding

When installing the enclosure cabinet, the cabinet must be grounded, and the rail is electrically connected to the cabinet through screws to ensure that the rail is properly grounded. Grounding can increase resistance to electromagnetic interference. Some components in the I/O system have rail contacts that dissipate EMI onto the rail.



5 BL203 Ethernet/IP Coupler

5.1 BL203 Coupler Overview

The BL203 coupler supports standard Ethernet/IP protocol access. The coupler supports a maximum input of 504 bytes and a maximum output of 504 bytes. The number of extended IO modules supported is 32.

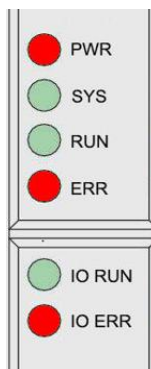
5.2 Technical Parameters

Name	Parameter	Description
System power	Input voltage(system)	24 VDC
	Input current(system)	MAX 500 mA@24VDC
	Power Efficiency	84%
	Internal bus voltage	5VDC
	Coupler current consumption	MAX 300mA@5VDC
	I/O current consumption	MAX 1700mA@5VDC
	Isolation protection	500 V system/supply
Field power	Input voltage (field)	24 VDC
	Current carrying capacity (power jumper contacts)	MAX 10 ADC
Ethernet	Number	2 X RJ45
	Transmission medium	Twisted Pair STP 100 Ω Cat 5
	MAX cable length	100m
	Baud rate	10/100 Mbit/s
	Isolation protection	ESD contact: 8KV, Surge: 4KV(10/1000us)
System	Operating system	Linux
	CPU	300MHz
	RAM	64MB
	Flash	128MB
	I/O Modules	MAX 32
	Protocol	Ethernet/IP, HTTP, DHCP, DNS
	Process data area	The maximum input length is 504 bytes, and the maximum output length is 504 bytes
	Maximum number of explicit message connections	10
	Maximum number of implicit message connections	5
	Maximum number of CIP connections	10
Wiring method	Method	CAGE CLAMP
	Wire diameter	0.08 mm ² ... 2.5 mm ² , AWG 28 ... 14

	Strip length	8 mm ... 9 mm / 0.33 in
Environment	Working temperature	0 ... 55 ° C
	Storage temperature	-40 ... 70 ° C
	Relative humidity	5 ... 95% no condensation
	Working altitude	0 ... 2000 m
	Protection type	IP20
Dimension	Width	48mm
	Length	100mm
	Height	69mm
Material	Color	Light gray
	Housing material	Polycarbonate, Nylon 6.6
	Fire load	1.239 MJ
	Weight	180g
Installation	Method	DIN-35 rail
Certificates	EMC	EN 55022: 2006/A1: 2007 (CE &RE) Class B
		IEC 61000-4-2 (ESD) Level 4
		IEC 61000-4-3 (RS) Level 4
		IEC 61000-4-4 (EFT) Level 4
		IEC 61000-4-5 (Surge)Level 3
		IEC 61000-4-6 (CS)Level 4
		IEC 61000-4-8 (M/S) Level 4

5.3 Hardware Interface

5.3.1 LED Indicators



LED	Description	Color	Status	Meaning
PWR	Power indicator	Red	ON	Power connection

				successful
			OFF	No power
SYS	System indicator	Green	ON	System is abnormal
			OFF	System is running normally
RUN	Running indicator	Green	Flashing	System is running normally
			OFF	System is abnormal
ERR	Error indicator	Red	ON	Ethernet/IP protocol connection error
			OFF	No errors
I/O RUN	I/O Running indicator	Green	Flashing	I/O module is working normally
			OFF	Module not inserted
I/O ERR	I/O Error indicator	Red	ON	I/O module communication error
			OFF	No errors

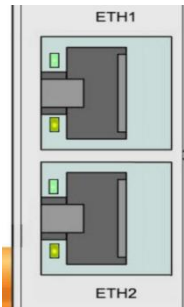


LED	Description	Color	Status	Meaning
S	System 24V power indicator	Green	ON	Power is OK
			OFF	No power
F	Field 24V power indicator	Green	ON	Power is OK
			OFF	No power

5.3.2 Ethernet Port

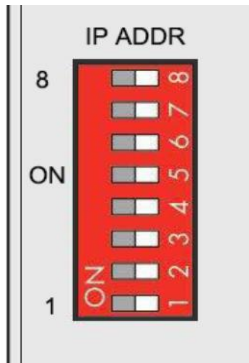
Connect to the Ethernet-based field bus through the ETH 1 interface.

ETH2 is used to connect other nodes that need to access the Ethernet.



5.3.3 IP Address Selection Switch

The 8-bit DIP switches are used to set the IP address. The DIP switches are coded starting from DIP switch 1 with the lowest valid bit (2^0) to DIP switch 8 with the highest valid bit (2^7), which corresponds to decimal values: 0-255.



When the value of DIP switch is 1111 1111 (decimal 255), the IP address is set according to the web page, and the web page setting can specify the IP address or set up the automatic acquisition, and when the web page is not set up, the IP address is 192.168.1.10.

For DIP switch values of 0000 0000 - 1111 1110 (decimal 0-254), the 3rd byte of the IP address is determined, and the 1st, 2nd and 4th bytes are fixed bytes, i.e. 192.168.xxx.253.

5.4 Process Data Definition

BL203 does not support the data collected by the serial port module temporarily, the data point address of the I/O module is determined by the Ethernet/IP master station.

AO 0-5V/0-10V output value

Voltage(0-5V)	Voltage(0-10V)	Decimal	Hexadecimal
5	10	32767	0x7FFF
.	.	.	.
.	.	.	.
2.5	5	16383	0x3FFF
.	.	.	.
.	.	.	.
0	0	0	0x0000

If analog output 3V is required

When the range is 0-5V, send value $3 \times 32767 / 5 = 19660.2$, because AO value is an

integer, then send 19660.

When the range is 0-10V, send value $3 \times 32767 / 10 = 9830.1$, because AO value is an integer, then send 9830.

AO -5-5V/-0-10V output value

Voltage(-5-5V)	Voltage(-10-10V)	Decimal	Hexadecimal
5	10	32767	0x7FFF
.	.	.	.
2.5	5	16383	0x3FFF
.	.	.	.
-2.5	-5	-16383	0xC001
.	.	.	.
-5	-10	-32767	0x8001

If analog output 3V is required

When the range is -5-5V, send value $3 \times 65534 / 10 = 19660.2$, because AO value is an integer, then send 19660.

When the range is -10-10V, send value $3 \times 65534 / 20 = 9830.1$, because AO value is an integer, then send 9830.

AO 0-20mA/4-20mA output value

Current(0-20mA)	Current(4-20mA)	Decimal	Hexadecimal
20	20	32767	0x7FFF
.	.	.	.
.	.	.	.
10	12	16383	0x3FFF
.	.	.	.
.	.	.	.
0	4	0	0x0000

If analog output 17mA is required

When the range is 0-20mA, send value $17 \times 32767 / 20 = 27851.95$, because AO value is an integer, then send 27852.

When the range is 4-20mA, send value $(17-4) \times 32767 / 16 = 26623.1875$, because AO value is an integer, then send 26623.

AI 0-20mA/4-20mA input value

Current(0-20mA)	Current(4-20mA)	Decimal	Hexadecimal
-----------------	-----------------	---------	-------------

20	20	32767	0x7FFF
.	.	.	.
.	.	.	.
10	12	16383	0x3FFF
.	.	.	.
.	.	.	.
0	4	0	0x0000

Example: In the master station, the AI display value is 23456, when range is 0-20mA, the AI theoretical value is: $23456/32767*20=14.3168\text{mA}$. When range is 4-20mA, the AI theoretical value is: $23456/32767*16+4=15.4535\text{mA}$.

AI 0-5V/0-10V input value

Voltage(0-5V)	Voltage(0-10V)	Decimal	Hexadecimal
5	10	32767	0x7FFF
.	.	.	.
.	.	.	.
2.5	5	16383	0x3FFF
.	.	.	.
.	.	.	.
0	0	0	0x0000

Example: The value of AI displayed in the master station is 23456, then the theoretical value of AI for range 0-5V is $23456/32767*5=3.579\text{V}$. The theoretical value of AI for range 0-10V is $23456/32767*10=7.158\text{V}$.

AI -5-5V/-10-10V input value

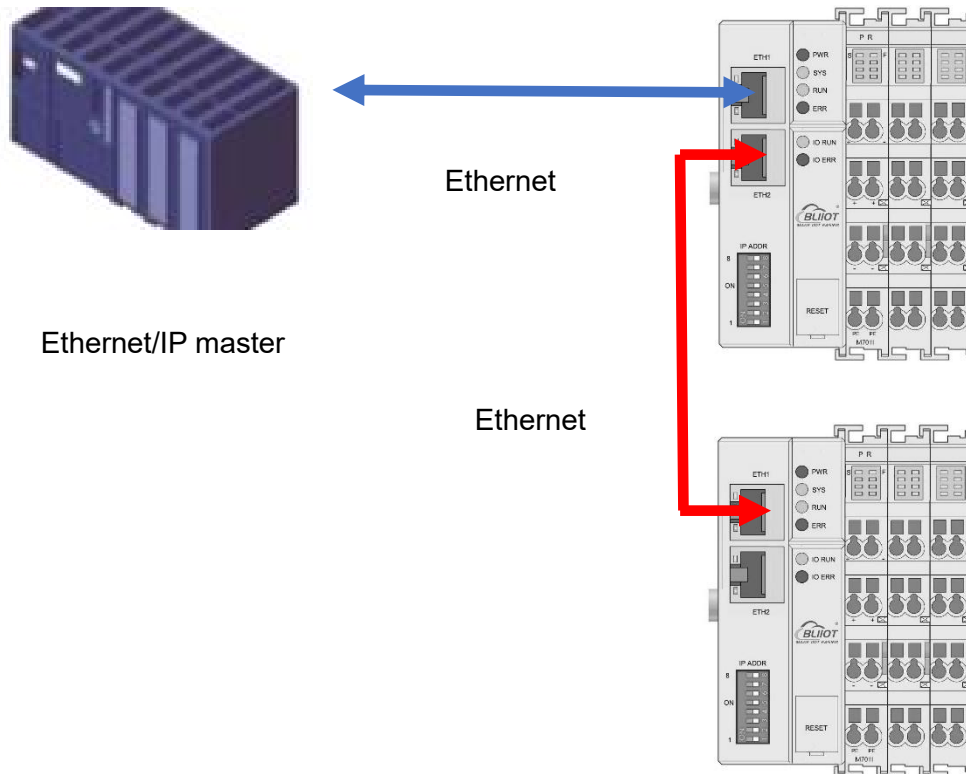
Voltage(0-5V)	Voltage(0-10V)	Decimal	Hexadecimal
5	10	32767	0x7FFF
.	.	.	.
2.5	5	16383	0x3FFF
.	.	.	.
-2.5	-5	-16383	0xC001
.	.	.	.
-5	-10	-32767	0x8001

Example: The value of AI displayed in the master is 23456, then the theoretical value of AI for range -5-5V is $23456/65534*10=3.579\text{V}$. For range -10-10V, the theoretical

value of AI is $23456/65534 * 20 = 7.158V$.

5.5 Coupler Connection

The BL203 coupler is used as a Ethernet/IP slave, and both ETH1 and ETH2 network ports can be directly connected to the Ethernet/IP master, or connected to the Ethernet/IP master through a switch.



5.6 BL203 Web Configuration

The web configuration for the BL203 Ethernet/IP Coupler is primarily designed to view the Byte occupied by the IO modules, the Byte length size of T-->O and O-->T.

5.6.1 Preparation Before Configuration

To successfully access the BL203 coupler, it must be properly installed and connected to the computer. In addition, configure them with correct IP addresses to keep them in the same network segment.

5.6.1.1 Connect Computer and Coupler

1. Mount the fieldbus node on a DIN35 rail. Follow the installation instructions in the "Installation" chapter.
2. Connect the 24 V power supply to the system power terminals.
3. The computer and the bus node can be connected in two ways, one is that the two are connected to the switch device of the local area network through the Ethernet port; the other is that the two are directly connected point-to-point. For detailed steps, follow the instructions in the "Coupler Connection" chapter.
4. Turn on the power supply and start supplying power.

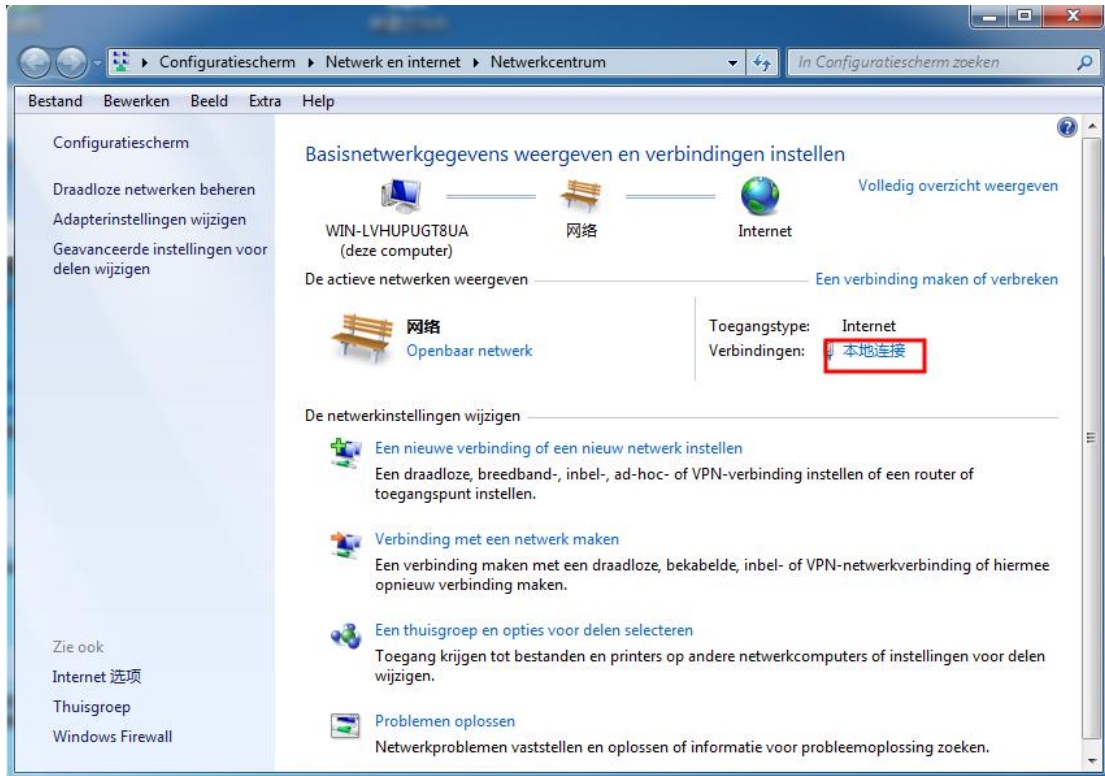
The coupler is initialized after power-up, creates process image according to the I/O modules configuration of the fieldbus node.

5.6.1.2 Configure Computer IP Address

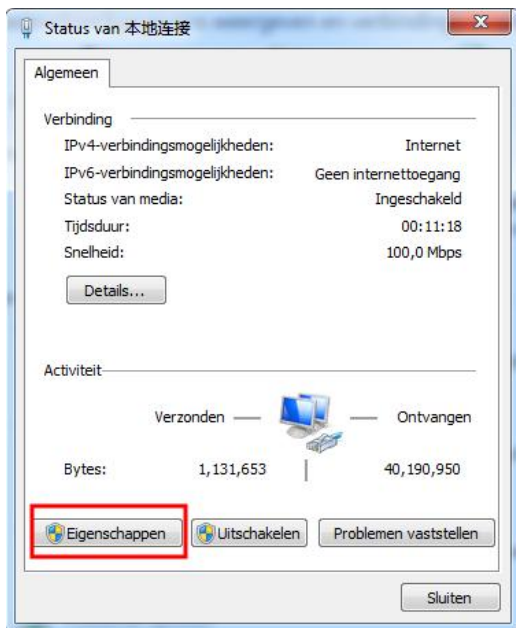
There are two ways to configure PC IP address. One is to turn on the automatic IP address option on the PC's local connection to dynamically assign DHCP in the network. The other is to configure a static IP address with the coupler node on the same network segment on the local connection of the PC.

Takes Windows 7 system as an example for configuration. Windows systems are all configured similarly.

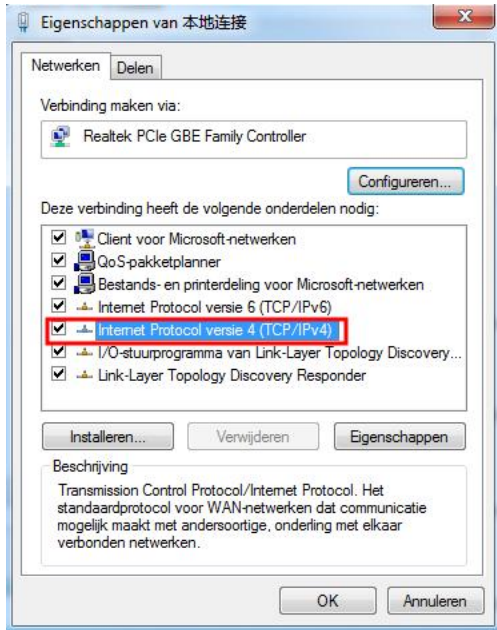
1. Click Start > Control Panel > Network and Sharing Center, and click local connection in the window that opens.



2. In the local connection status window, click Properties.



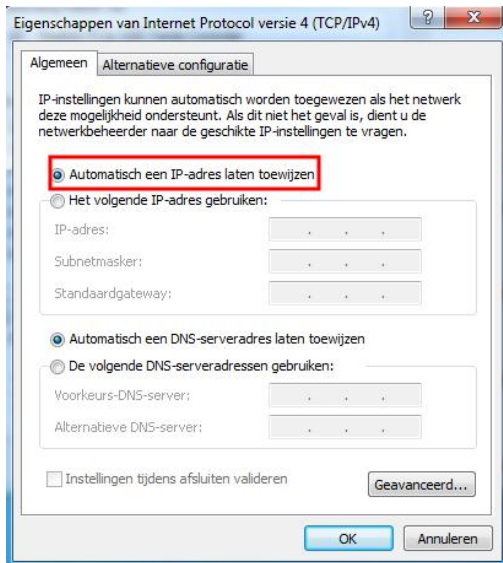
3. Double-click "Internet Protocol Version 4 (TCP/IPv4)" on the local connection properties page.



4. There are two ways to configure the IP address of the PC

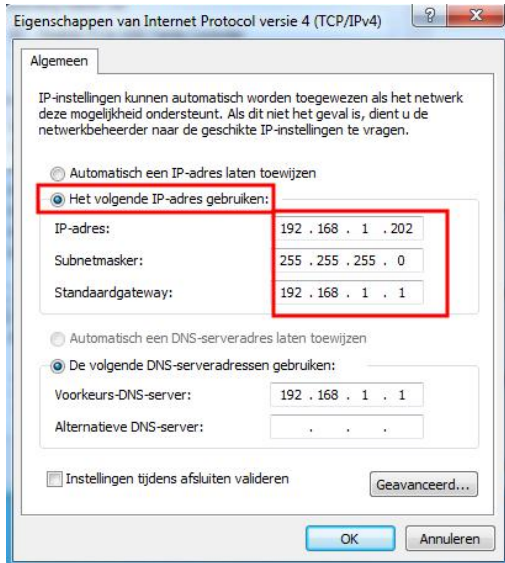
- Obtain IP address automatically (system default mode)

To obtain an IP address automatically from a DHCP server, select "Obtain an IP address automatically";



- Set a static IP address

Select "Use the following IP address" and set the correct values for the IP address, subnet mask and default gateway.



5.6.1.3 Configure Coupler IP address

There are 2 ways to assign an IP address

- Assignment via built-in web page (static IP or automatic IP assignment)
- Assign via DIP switch (static IP)

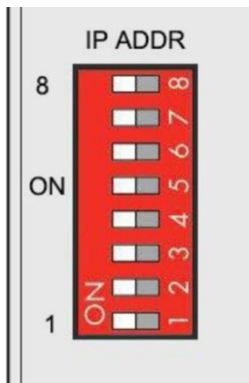
DIP address selector switch definition

Switch position (ON = 1)	Value	Definition
0000 0000 --- 1111 1110	0-254	Enable the DIP selector switch assignment function and determine the value of the 3rd byte. Example: 0010 0110 (22 decimal), the IP address is "192.168.22.253".
1111 1111	255	Enable the function of specifying IP on the web page, or select the function of DHCP automatic allocation. When the IP is not allocated through the web, the IP is 192.168.1.10

5.6.1.3.1 Configuration via Web Page

The fieldbus coupler can be set to an IP address via the "Settings > Local Settings" page after entering the page, or it can be set to be assigned automatically. Select

static address, if not set IP address, the IP is 192.168.1.10



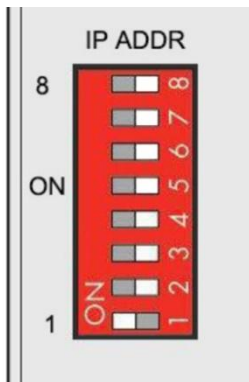
5.6.1.3.2 Assign IP via DIP Switch

Set the value of the DIP address selector switch to 0000 0000 - 1111 1110 (decimal 0 - 254), and the IP address will be assigned by the DIP switch.

The IP address consists of fixed bytes and variable bytes. The 1st, 2nd and 4th bytes are fixed bytes, the DIP selector switch determines the 3rd byte, namely:

192.168.xxx.253

The fieldbus coupler assigns an IP address via a DIP switch, and the IP address set in this way is static.



5.6.1.4 Factory Default Settings

Before logging into the web configuration page, it is necessary for you to understand the following default parameters,

IP: Determined according to the DIP switch, if the DIP switch is 1111 1111, the default IP is 192.168.1.10

If factory default DIP switch is 0000 0000 status, then the IP is 192.168.0.253

Item	Description
------	-------------

Username	admin
Password	Empty

5.6.2 Login Configuration Page

1. Open a browser on your computer, such as IE, Chrome, etc.
2. Enter the IP address of the coupler node (192.168.1.10) in the address bar of the browser to enter the user login interface.



3. Enter "Username" and "Password" in the login interface, and then click Login.

BL200UA

Authorization Required

Please enter your username(the default is admin) and password(no password by default).

Username

Password

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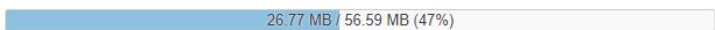
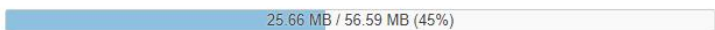


4. After successfully logging in to the web interface, the display is as follows

Status


System

Hostname	BL200
Model	BL200-Modbus TCP IO Module
Firmware Version	Shenzhen Beilai Technology Co.,Ltd. V1.1.12
Kernel Version	4.4.194
Local Time	2023-11-07 08:31:30
Uptime	0h 6m 36s
Load Average	1.39, 0.81, 0.38

Memory

Total Available	 26.77 MB / 56.59 MB (47%)
Used	 25.66 MB / 56.59 MB (45%)
Buffered	 3.34 MB / 56.59 MB (5%)
Cached	 9.50 MB / 56.59 MB (16%)

Network

Active Connections	 74 / 16384 (0%)
--------------------	--

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5.7 Web Configuration Page Description

5.7.1 Status

Users can check overview, system log and kernel log, as well as device parameters and device operating status.

Status > Overview

BL200UA
REFRESHING

Status
System
Settings
I/O Module
Serial Module
OPC UA
Operation&Control
Logout

Status

- Overview
- System Log
- Kernel Log

System

Hostname	BL200UA
Model	BL200UA-OPCUA IO Module
Firmware Version	Shenzhen Beilai Technology Co.,Ltd v1.0.11
Kernel Version	4.4.194
Local Time	2022-03-21 06:44:49
Uptime	3h 31m 35s
Load Average	0.16, 0.11, 0.09

Memory

Total Available	26.05 MB / 56.59 MB (46%)
Used	26.57 MB / 56.59 MB (46%)
Buffered	3.21 MB / 56.59 MB (5%)
Cached	9.98 MB / 56.59 MB (17%)

Network

Active Connections	22 / 16384 (0%)
--------------------	-----------------

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Status > System Log

BL200UA
Logout

Status
System
Settings
I/O Module
Serial Module
OPC UA
Operation&Control

System Log

```

Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Booting Linux on physical CPU 0x0
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] Linux version 4.4.194 (peng@peng) (gcc version 5.4.0 (LEDE GCC 5.4.0 unknown) ) #0 PREEMPT Sat May 9 15:23
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] CPU: ARM926EJ-S [41069265] revision 5 (ARMv5TEJ), cr=0005317f
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] CPU: VIVT data cache, VIVT instruction cache
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Machine model: Nuvoton NUC980 IOT-GateWay Version: 0.1
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Memory policy: Data cache writeback
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] On node 0 totalpages: 16384
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] free_area_init_node: node 0, pgdat c0657704, node_mem_map c3f77000
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] Normal zone: 128 pages used for memmap
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] Normal zone: 0 pages reserved
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] Normal zone: 16384 pages, LIFO batch:3
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] pcpu-alloc: s0 r0 d32768 u32768 alloc=1*32768
Thu Jan 1 00:00:26 1970 kern.debug kernel: [ 0.000000] pcpu-alloc: [0] 0
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Built 1 zonelists in Zone order, mobility grouping on. Total pages: 16256
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] Kernel command line: root=/dev/mdblock2 console=ttyS0,115200n8 rdinit=/sbin/init mem=64M lpj=744448
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] PID hash table entries: 256 (order: -2, 1024 bytes)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Dentry cache hash table entries: 8192 (order: 3, 32768 bytes)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Inode-cache hash table entries: 4096 (order: 2, 16384 bytes)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Memory: 57756K/65536K available (4538K kernel code, 305K rwdata, 1704K rodata, 188K init, 252K bss, 7780K reserved)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] Virtual kernel memory layout:
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] vector : 0xffff0000 - 0xffff1000 ( 4 kB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] fixmap : 0xffc00000 - 0xffd00000 (3072 kB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] vmalloc : 0xc4800000 - 0xcfb00000 ( 944 MB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] lowmem : 0xc0000000 - 0xc4000000 ( 64 MB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] modules : 0xbf000000 - 0xc0000000 ( 16 MB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] .text : 0xc0008000 - 0xc0620f54 ( 6244 kB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] .init : 0xc0621000 - 0xc0650000 ( 188 kB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] .data : 0xc0650000 - 0xc069c784 ( 306 kB)
Thu Jan 1 00:00:26 1970 kern.notice kernel: [ 0.000000] .bss : 0xc069c784 - 0xc06db8f8 ( 253 kB)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] SLUB: HWalign=32, Order=0-3, MinObjects=0, CPUs=1, Nodes=1
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Preemptible hierarchical RCU implementation.
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] Build-time adjustment of leaf fanout to 32.
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] NR_IRQS: 545
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000000] clocksource: nuc980-timer5: mask: 0xfffff max_cycles: 0xfffff, max_idle_ns: 62215505635 ns
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000033] sched_clock: 24 bits at 120kHz, resolution 8333ns, wraps every 68905062463ns
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.000741] Console: colour dummy device 80x30
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.186616] console [ttyS0] enabled
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.190091] Calibrating delay loop (skipped) preset value.. 148.88 BogoMIPS (lpj=744448)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.198174] pid_max: default: 32768 minimum: 301
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.203133] Mount-cache hash table entries: 1024 (order: 0, 4096 bytes)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.209708] Mountpoint-cache hash table entries: 1024 (order: 0, 4096 bytes)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.218916] CPU: Testing write buffer coherency: ok
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.224863] Setting up static identity map for 0x0400 - 0x043c
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.271550] clocksource: jiffies: mask: 0xfffffff max_cycles: 0xfffffff, max_idle_ns: 19112604462750000 ns
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.282316] futex hash table entries: 256 (order: -1, 3072 bytes)
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.288874] pinctrl core: initialized pinctrl subsystem
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.296433] NET: Registered protocol family 16
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.303199] DMA: preallocated 256 KiB pool for atomic coherent allocations
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.316783] <DT> nuc980_dt_device_init +
Thu Jan 1 00:00:26 1970 kern.info kernel: [ 0.348016] <DT> nuc980_dt_device_init -
                    
```

Status > Kernel Log

Kernel Log

```
[ 0.000000] Booting Linux on physical CPU 0x0
[ 0.000000] Linux version 4.4.194 (peng@peng) (gcc version 5.4.0 (LEDE GCC 5.4.0 unknown) ) #0 PREEMPT Sat May 9 15:23:54 2020
[ 0.000000] CPU: ARM926EJ-S [41069265] revision 5 (ARMv5TEJ), cr=0005317f
[ 0.000000] CPU: VIVT data cache, VIVT instruction cache
[ 0.000000] Machine model: Nuvoton NUC980 IOT-GateWay Version: 0.1
[ 0.000000] Memory policy: Data cache writeback
[ 0.000000] On node 0 totalpages: 16384
[ 0.000000] free_area_init_node: node 0, pgdat c0657704, node_mem_map c3f77000
[ 0.000000] Normal zone: 128 pages used for memmap
[ 0.000000] Normal zone: 0 pages reserved
[ 0.000000] Normal zone: 16384 pages, LIFO batch:3
[ 0.000000] pcpu-alloc: s0 r0 d32768 u32768 alloc=1*32768
[ 0.000000] pcpu-alloc: [0] 0
[ 0.000000] Built 1 zonelists in Zone order, mobility grouping on. Total pages: 16256
[ 0.000000] Kernel command line: root=/dev/mtdblock2 console=ttyS0,115200n8 rdinit=/sbin/init mem=64M lj=744448
[ 0.000000] PID hash table entries: 256 (order: -2, 1024 bytes)
[ 0.000000] Dentry cache hash table entries: 8192 (order: 3, 32768 bytes)
[ 0.000000] Inode-cache hash table entries: 4096 (order: 2, 16384 bytes)
[ 0.000000] Memory: 57756K/65536K available (4538K kernel code, 305K rvddata, 1704K rodata, 188K init, 252K bss, 7780K reserved, 0K cma-reserved)
[ 0.000000] Virtual kernel memory layout:
[ 0.000000] vector : 0xffff0000 - 0xffff1000 ( 4 kB)
[ 0.000000] fixmap : 0xfc000000 - 0xff000000 (3072 kB)
[ 0.000000] vmalloc : 0xc4800000 - 0xff800000 ( 944 MB)
[ 0.000000] lowmem : 0xc0000000 - 0xc4000000 ( 64 MB)
[ 0.000000] modules : 0xbf000000 - 0xc0000000 ( 16 MB)
[ 0.000000] .text : 0xc0008000 - 0xc0620f54 (6244 kB)
[ 0.000000] .init : 0xc0621000 - 0xc0650000 ( 188 kB)
[ 0.000000] .data : 0xc0650000 - 0xc069c784 (306 kB)
[ 0.000000] .bss : 0xc069c784 - 0xc06db8f8 (253 kB)
[ 0.000000] SLUB: HWalign=32, Order=0-3, MinObjects=0, CPUs=1, Nodes=1
[ 0.000000] Preemptible hierarchical RCU implementation.
[ 0.000000] Build-time adjustment of leaf fanout to 32.
[ 0.000000] NR_IRQS: 545
[ 0.000000] clocksource: nuc980-timer5: mask: 0xfffff max_cycles: 0xfffff, max_idle_ns: 62215505635 ns
[ 0.000033] sched_clock: 24 bits at 120kHz, resolution 8333ns, wraps every 69905062489ns
[ 0.000741] Console: colour dummy device 80x30
[ 0.186616] console [ttyS0] enabled
[ 0.190091] Calibrating delay loop (skipped) preset value. 148.88 BogoMIPS (lj=744448)
[ 0.198174] pid_max: default: 32768 minimum: 301
[ 0.203133] Mount-cache hash table entries: 1024 (order: 0, 4096 bytes)
[ 0.209708] Mountpoint-cache hash table entries: 1024 (order: 0, 4096 bytes)
[ 0.218916] CPU: Testing write buffer coherency: ok
[ 0.224983] Setting up static identity map for 0x8400 - 0x843c
[ 0.271558] clocksource: jiffies: mask: 0xfffff max_cycles: 0xfffff, max_idle_ns: 19112604462750000 ns
[ 0.282316] futex hash table entries: 256 (order: -1, 3072 bytes)
[ 0.288874] pinctrl core: initialized pinctrl subsystem
[ 0.296433] NET: Registered protocol family 16
[ 0.303199] DMA: preallocated 256 KIB pool for atomic coherent allocations
[ 0.316783] <DT> nuc980_dt_device_init +
```

5.7.2 System

5.7.2.1 System

System Properties > General Settings

The screenshot shows the 'System Properties > General Settings' page in the BL200UA web interface. The navigation bar at the top includes 'BL200UA', 'Status', 'System', 'Settings', 'I/O Module', 'Serial Module', 'OPC UA', 'Operation&Control', 'Logout', and a 'REFRESHING' button. The 'System' dropdown menu is open, showing options: System, Administration, Backup / Flash, Firmware, and Reboot. The 'General Settings' tab is selected, showing the following configuration:

- Local Time: 2022/3/21 下午2:58:56. Buttons: Sync with browser, Sync with NTP-Server.
- Hostname: BL200UA
- Timezone: UTC (dropdown menu)

At the bottom of the page, there are three buttons: 'Save & Apply', 'Save', and 'Reset'.

Item	Description	Default
Local time	Displays the current time of the device. You can click the "Sync browser time" or "Sync with NTP server" button to update the device time.	--
Hostname	The device name can be customized to easily distinguish between multiple devices.	BL200EI
Timezone	The time zone can be selected via the drop down menu	UTC

System Properties > Logging

BL200UA

[REFRESHING](#)

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

General Settings
Logging
Time Synchronization
Language and Style

System log buffer size:

 kiB

External system log server:

External system log server port:

External system log server protocol:

Write system log to file:

Log output level:

Cron Log Level:

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Item	Description	Default
System log buffer size		64
External system log server		
External system log server port		
External system log server protocol		
Write system log to file		
Log output level		
Cron log level		

System Properties > Time Synchronization

An NTP server can be set to synchronize time

BL200UA
Status ▾
System ▾
Settings ▾
I/O Module ▾
Serial Module ▾
OPC UA ▾
Operation&Control ▾
Logout
REFRESHING

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

General Settings
Logging
Time Synchronization
Language and Style

Enable NTP client

Provide NTP server

Use DHCP advertised servers

NTP server candidates

0.openwrt.pool.ntp.org	✖
1.openwrt.pool.ntp.org	✖
2.openwrt.pool.ntp.org	✖
3.openwrt.pool.ntp.org	✖
	+

Save & Apply ▾
Save
Reset

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System Properties > Language and Style

BL200UA
Status ▾
System ▾
Settings ▾
I/O Module ▾
Serial Module ▾
OPC UA ▾
Operation&Control ▾
Logout
REFRESHING

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

General Settings
Logging
Time Synchronization
Language and Style

Language auto ▾

Design Bootstrap ▾

Save & Apply ▾
Save
Reset

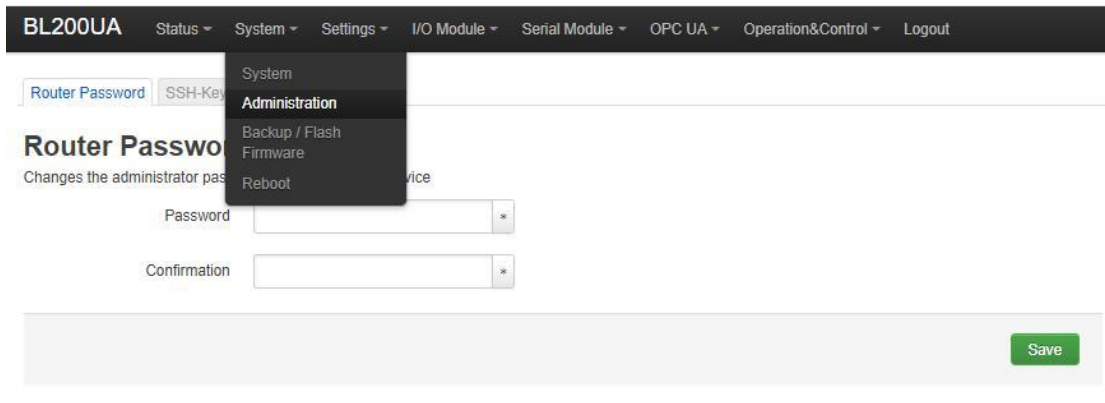
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Item	Description	Default
Language	Available in auto, English, Chinese	auto
Design	Currently only Bootstrap is supported.	Bootstrap

5.7.2.2 Administration

Administration > Router Password

Change the administrator password for accessing the device.



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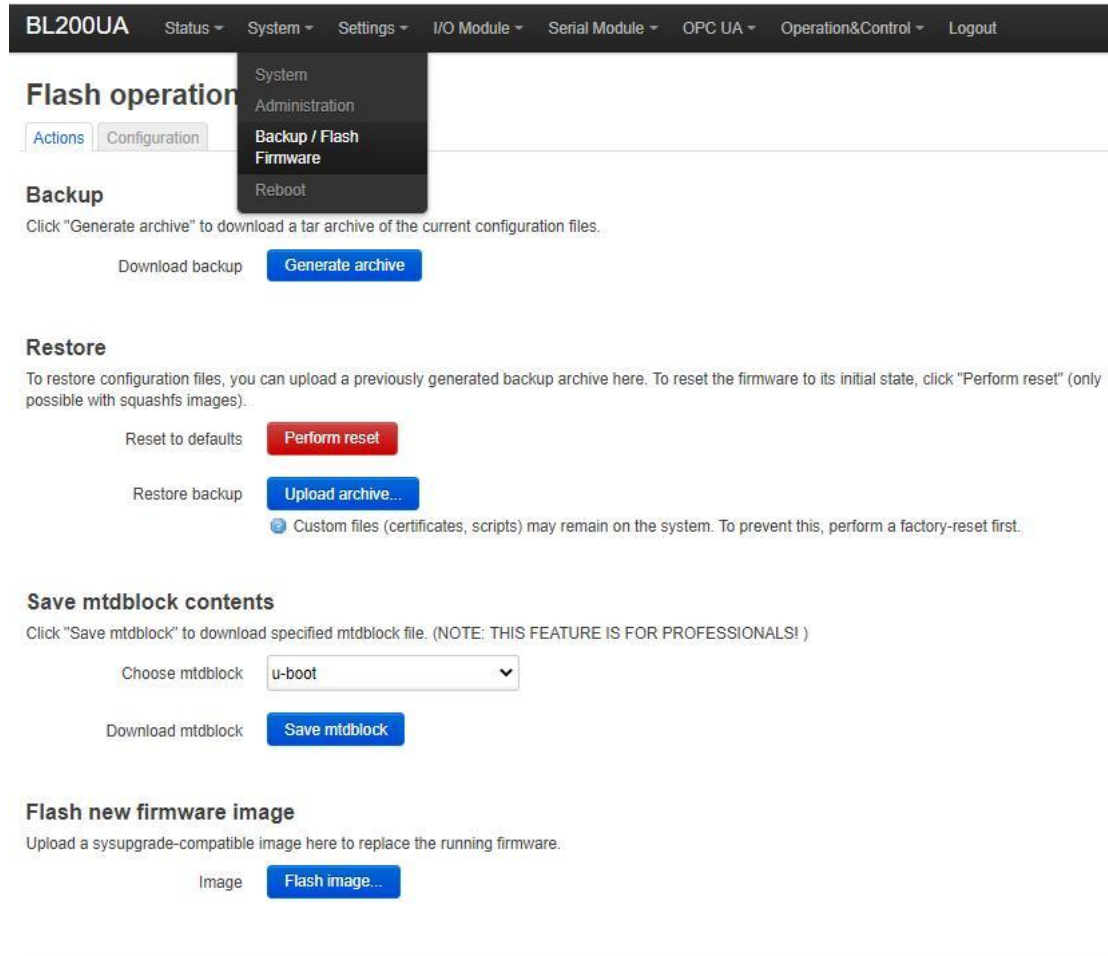
Administration > SSH Keys

Public keys allow for the passwordless SSH logins with a higher security compared to the use of regular passwords. In order to upload a new key to the device, paste an OpenSSH compatible public key line or drag a .pub file into the input field.



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5.7.2.3 Backup/Flash Firmware



Flash operation

System Administration **Backup / Flash Firmware** Reboot

Backup

Click "Generate archive" to download a tar archive of the current configuration files.

Download backup **Generate archive**

Restore

To restore configuration files, you can upload a previously generated backup archive here. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).

Reset to defaults **Perform reset**

Restore backup **Upload archive...**

Custom files (certificates, scripts) may remain on the system. To prevent this, perform a factory-reset first.

Save mtddblock contents

Click "Save mtddblock" to download specified mtddblock file. (NOTE: THIS FEATURE IS FOR PROFESSIONALS!)

Choose mtddblock:

Download mtddblock **Save mtddblock**

Flash new firmware image

Upload a sysupgrade-compatible image here to replace the running firmware.

Image **Flash image...**

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Item	Description	Default
Backup	Click "Generate archive" to download a tar archive of the current configuration files.	--
Restore	To restore configuration files, you can upload a previously generated backup archive here. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).	--
Save mtddblock	Click "Save mtddblock" to download specified mtddblock file. (NOTE: THIS FEATURE IS FOR PROFESSIONALS)	--
Flash image	Upload a sysupgrade-compatible image here to replace the running firmware.	--

5.7.2.4 Reboot

Click "Perform reboot" will reboot your device

BL200UA
Status ▾
System ▾
Settings ▾
I/O Module ▾
Serial Module ▾
OPC UA ▾
Operation&Control ▾
Logout

Reboot

Reboots the operating system of your device

Perform reboot

Shenzhen Beilai Technology Co.,Ltd (v1.0.11) / 2022-02-17

5.7.3 Settings

BL200UA
Status ▾
System ▾
Settings ▾
I/O Module ▾
Serial Module ▾
OPC UA ▾
Operation&Control ▾
Logout

Device settings

Device settings

Modbus Device ID:
☑ If not set or set to 0, the device ID in the Modbus command is ignored

Modbus TCP port:

Dial switch address:
☑ The 3rd segment of IP address is determined by dial switch, restart the device and the modification will take effect

IP Address Type: Static Address ▾

Set device IP address:

Subnet Mask:

Gateway address:

Save & Apply ▾
Save
Reset

Shenzhen Beilai Technology Co.,Ltd (v1.0.11) / 2022-02-17

Item	Description	Default
Modbus Device ID	Modbus device ID range is 1~247.	1
Modbus TCP port	Modbus TCP protocol port number, which can be customized.	502
DIP switch address	Displays the IP address set by the DIP switch.	
IP address type	Select from "Static Address", "Dynamic Address(DHCP)".	
Set device IP address	The IP address of the device can be set by yourself, and it needs to be restarted to take	--

	effect after setting.	
Subnet mask	Set IP subnet mask	
Gateway address	Set IP gateway address	

5.7.4 I/O Modules

After power on, the controller automatically recognizes all I/O modules connected to it and creates an internal local process image based on the module type, data width and the module's position in the node.

If I/O modules are added, changed or removed, a new process image is created and the process data addresses change. When adding an I/O module, the process data of all previous I/O modules must be considered.

The controller can connect up to 32 I/O modules, including digital input and output, analog input and output and special function modules.

BL200EI
Status ▾ System ▾ Settings ▾ I/O Module ▾ Logout

I/O status

IO Slot	Module Name	Module Type	Channel Number	I/O Module Ethernet/IP Address	24V Address-State	Soft Version	IO Status	Channel Status
1	M1081	DI	8	IW0-0,IX0-0	9001-Power On	29	Normal	Channel Status
2	M2082	DO	8	QW0-0,QX0-0	9002-Power On	29	Normal	Channel Status
3	M1161	DI	16	IW0-1,IX1-2	9003-Power On	29	Normal	Channel Status
4	M2162	DO	16	QW0-1,QX1-2	9004-Power On	29	Normal	Channel Status
5	M3041	AI	4	IW1-5,IX3-10	9005-Power On	29	Normal	Channel Status
6	M3043	AI	4	IW5-9,IX11-18	9006-Power On	29	Normal	Channel Status
7	M3046	AI	4	IW9-13,IX19-26	9007-Power On	29	Normal	Channel Status
8	M4041	AO	4	QW1-5,QX3-10	9008-Power On	29	Normal	Channel Status
9	M4043	AO	4	QW5-9,QX11-18	9009-Power On	29	Normal	Channel Status
10	M5021	RTD	2	IW13-15,IX27-30	9010-Power On	29	Normal	Channel Status
11	M5023	RTD	2	IW15-17,IX31-34	9011-Power On	29	Normal	Channel Status
12	M5048	RTD	4	IW17-21,IX35-42	9012-Power On	29	Normal	Channel Status

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BL203 serial module not support M602X, and M7011 and M8011 are not involved in

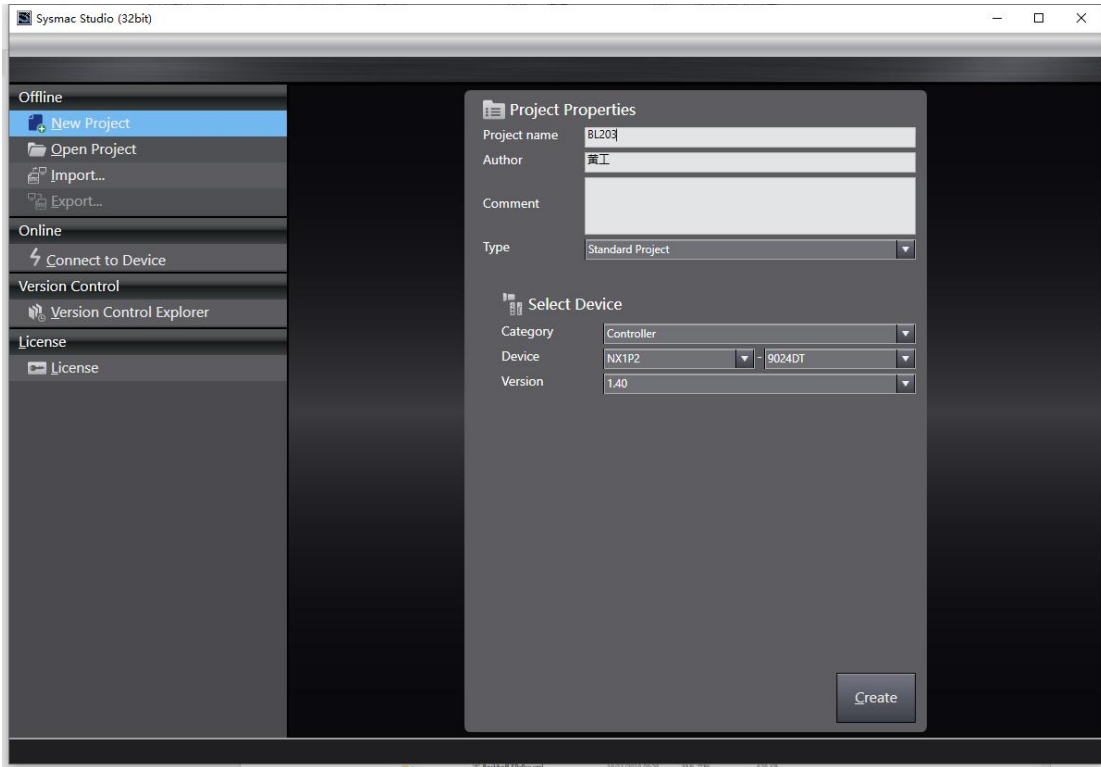
the calculation.

I/O Model	T-->O(Byte)	O-->T(Byte)
M1081	1	
M1082	1	
M1161	2	
M1162	2	
M3041	8	
M3043	8	
M3044	8	
M3046	8	
M5021	4	
M5022	4	
M5023	4	
M5024	4	
M5048	8	
M2081		1
M2082		1
M2161		2
M2162		2
M2044		1
M4041		8
M4043		8
M4046		8

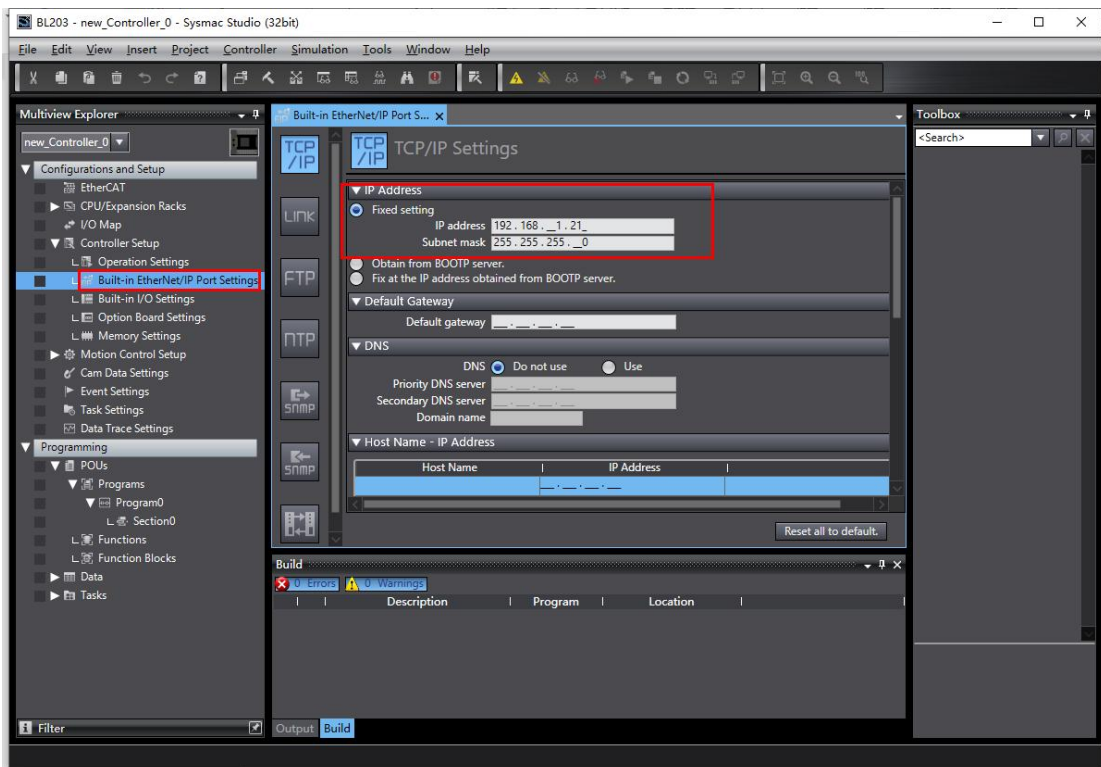
6 BL203 Communication Example

6.1 Omron NX1P2 and BL203 Communication

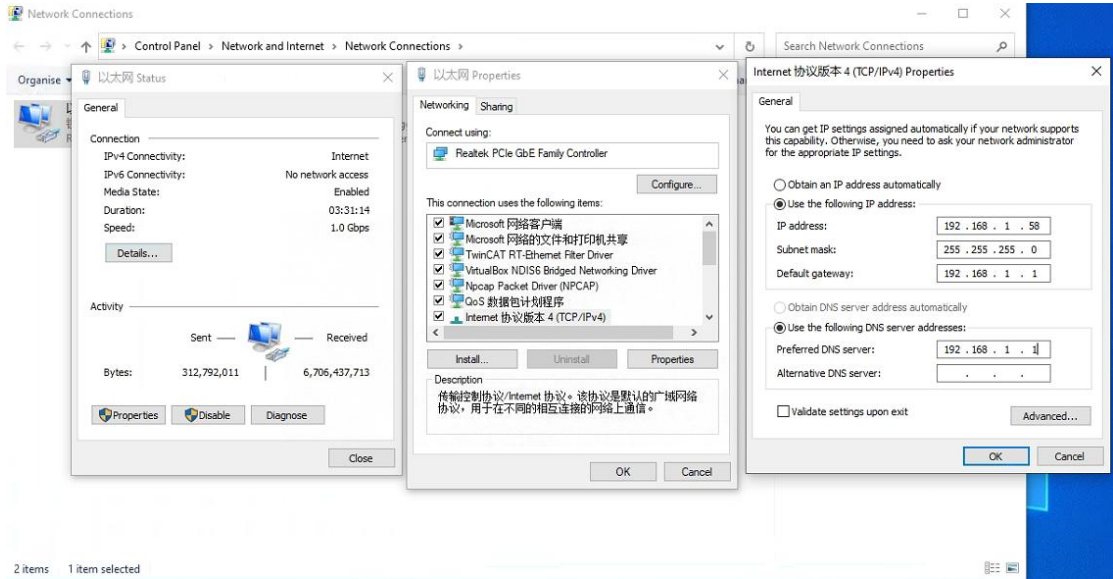
1. Preparation: Assembly of the module, wiring reference chapter 3 installation, chapter 4 connection.
2. Open the Sysmac Studio software, click New Project, select NX1P2-9024DT, click Create.



3. Click Configuration and Settings-Built-in EtherNet/IP Port Settings to modify the IP address.



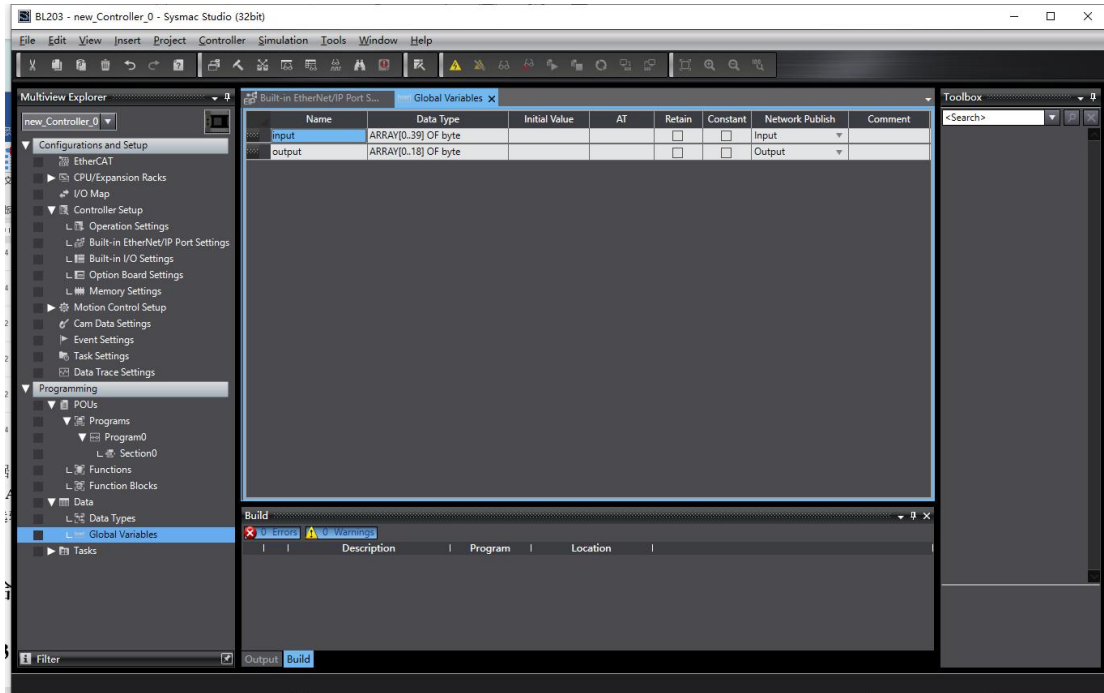
4. Set the computer IP and PLC in the same network segment. The PLC address is known to be 192.168.1.21



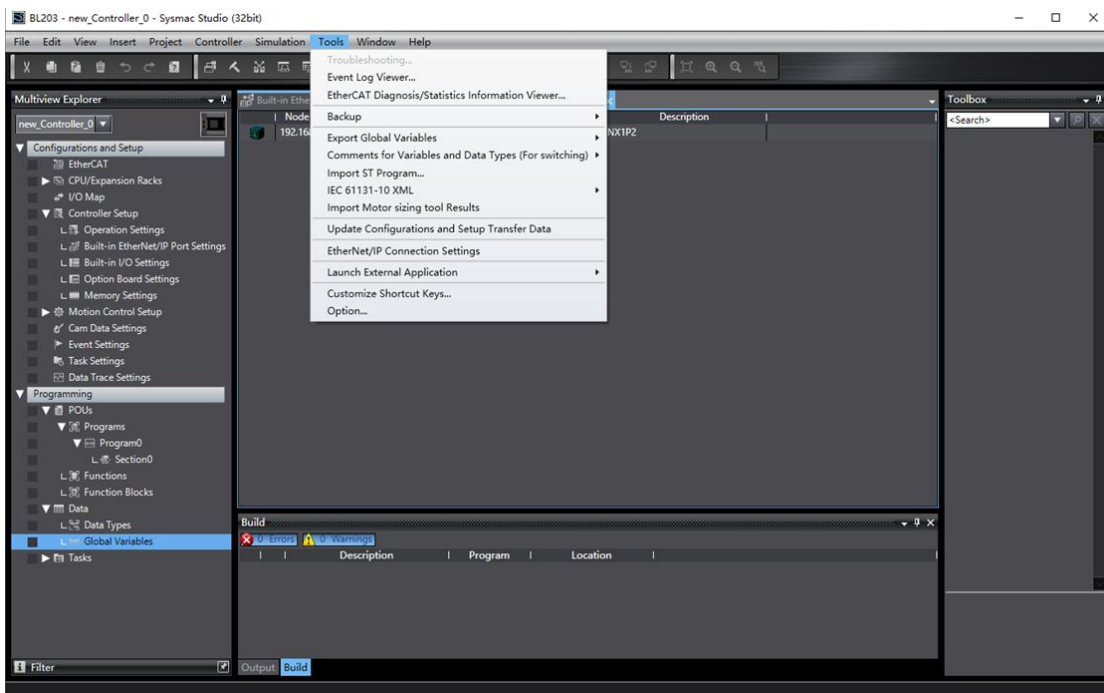
5. Viewing the size of the input/output data area for Ethernet/IP communication, both the T-->O and O-->T Byte sizes, can be viewed through the web page configuration or calculated, refer to 5.7.4 Web Configuration. The T-->O size is known to be 40 Bytes and the O-->T size is known to be 19 Bytes through the web configuration.

BL200E1	Status	System	Settings	I/O Module	Logout				
2	M2082	DO	8	QW0-0,QX1-1	9002-Power On	29	Normal	Channel Status	
3	M2081	DO	8	QW1-1,QX2-2	9003-Power On	29	Normal	Channel Status	
4	M1081	DI	8	IW0-0,IX0-0	9004-Power On	29	Normal	Channel Status	
5	M1081	DI	8	IW0-0,IX1-1	9005-Power On	29	Normal	Channel Status	
6	M1082	DI	8	IW1-1,IX2-2	9006-Power On	29	Normal	Channel Status	
7	M1082	DI	8	IW1-1,IX3-3	9007-Power On	29	Normal	Channel Status	
8	M3046	AI	4	IW2-5,IX4-11	9008-Power On	29	Normal	Channel Status	
9	M3046	AI	4	IW6-9,IX12-19	9009-Power On	29	Normal	Channel Status	
10	M4041	AO	4	QW1-5,QX3-10	9010-Power On	29	Normal	Channel Status	
11	M4043	AO	4	QW5-9,QX11-18	9011-Power On	29	Normal	Channel Status	
12	M5021	RTD	2	IW10-11,IX20-23	9012-Power On	29	Normal	Channel Status	
13	M5022	RTD	2	IW12-13,IX24-27	9013-Power On	29	Normal	Channel Status	
14	M5023	RTD	2	IW14-15,IX28-31	9014-Power On	29	Normal	Channel Status	
15	M5048	RTD	4	IW16-19,IX32-39	9015-Power On	29	Normal	Channel Status	

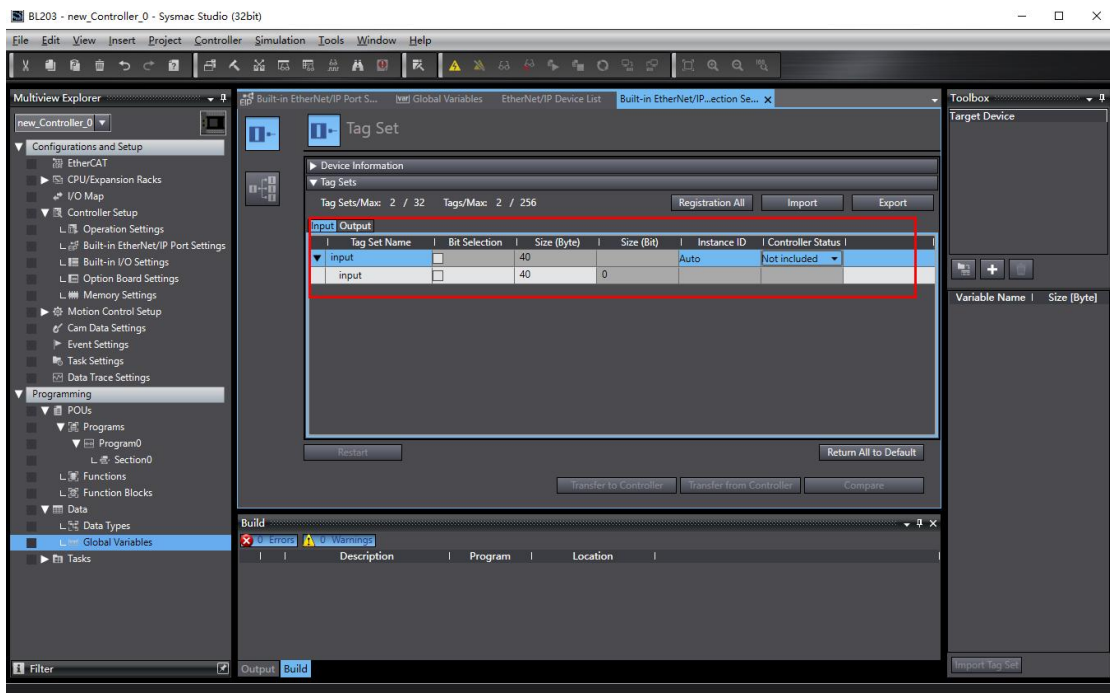
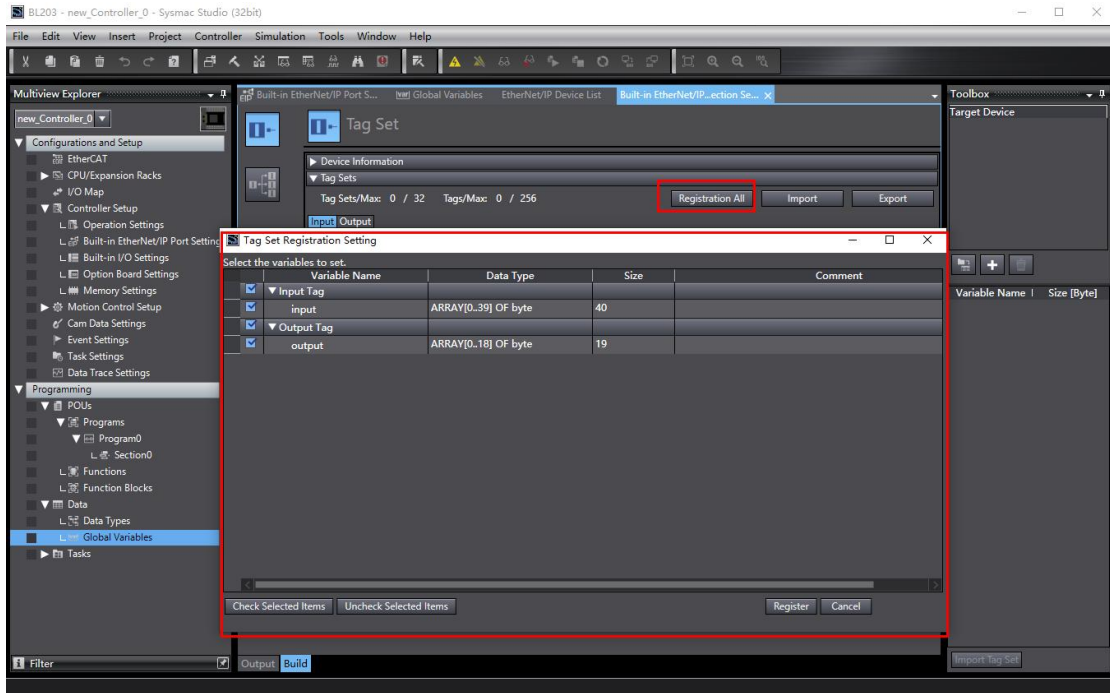
6. Click "Global Variables", according to the configuration of the web page to find out the size of T-->O is 40 Bytes, the size of O-->T is 19 Bytes, create a new input variable input (ARRAY[0..39]OF Byte), a new output variable output (ARRAY[0..18]OF Byte), the network is open to select input and output respectively. Variables can also be created module by module, e.g., if the position of M1082 in slot 7 is IX3-3, the variable M1082 (ARRAY[3...3]OF Byte) is created.



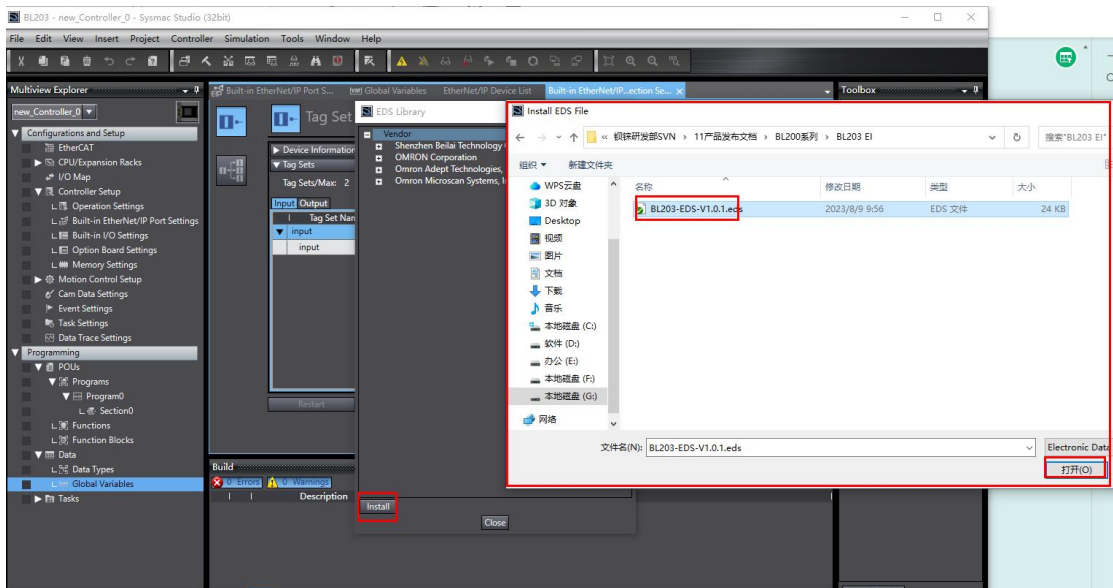
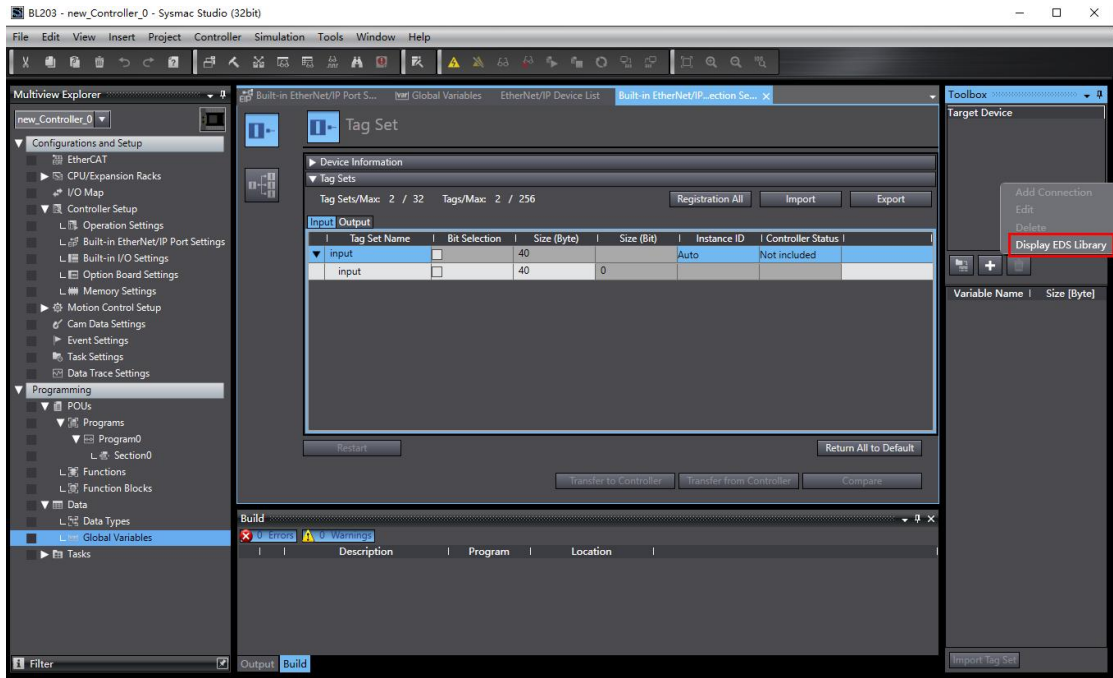
7. Click "Tools", click "Ethernet/IP Connection Setting". Double-click the PLC in the pop-up window to enter the built-in Ethernet/IP port setting connection setting interface.



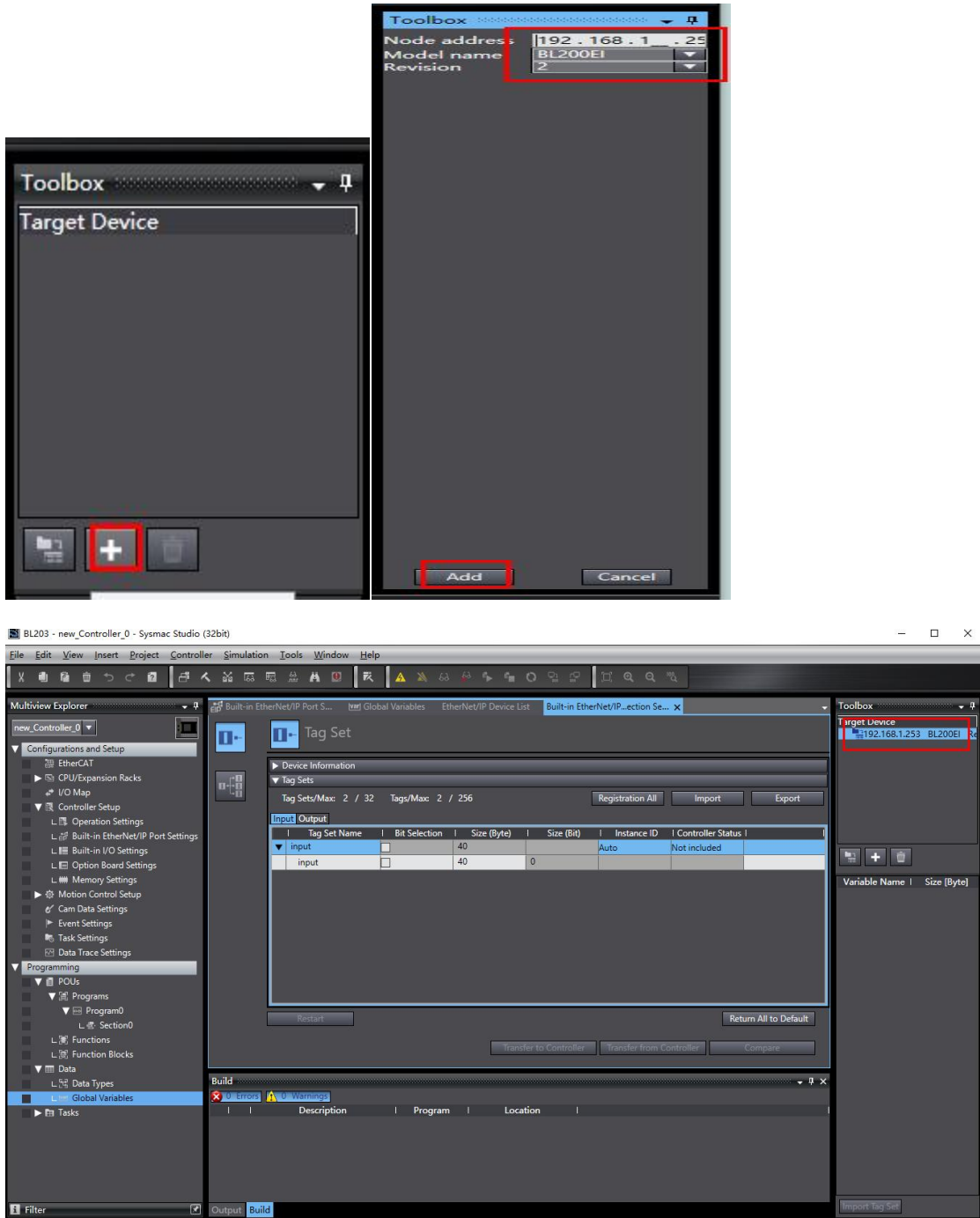
8. Click "Registration All", select the input tag input and output tag output, and click "Register".



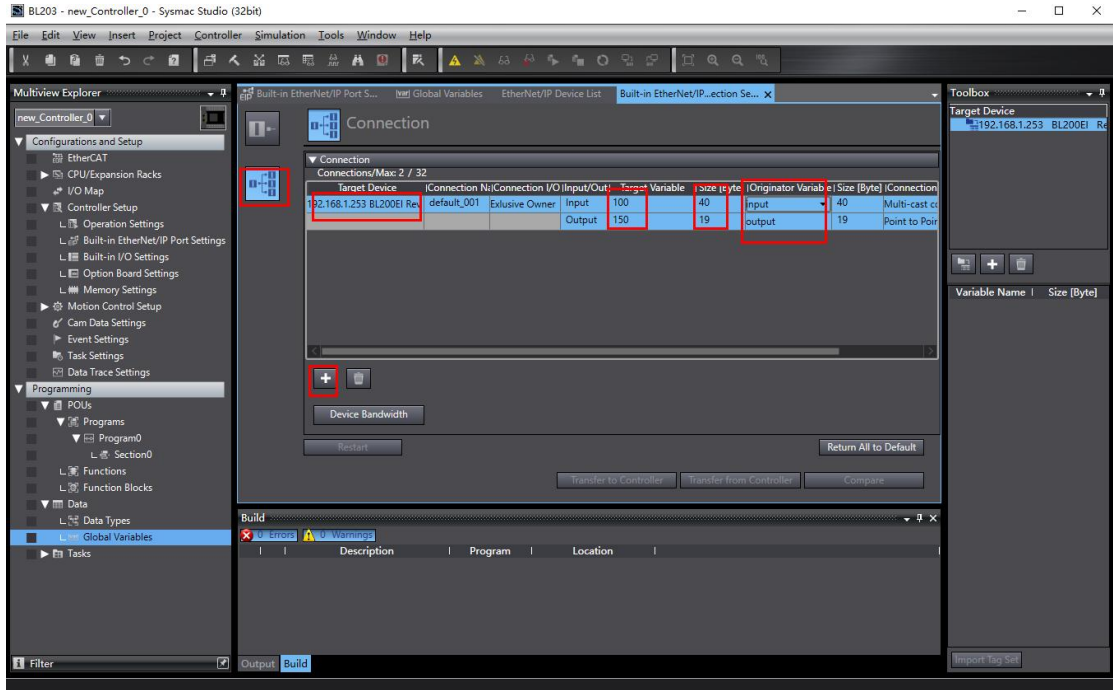
9. In the right toolbox, click the right mouse button, the pop-up box click to show the EDS library, the first time you use is required to install the BL203 EDS file.



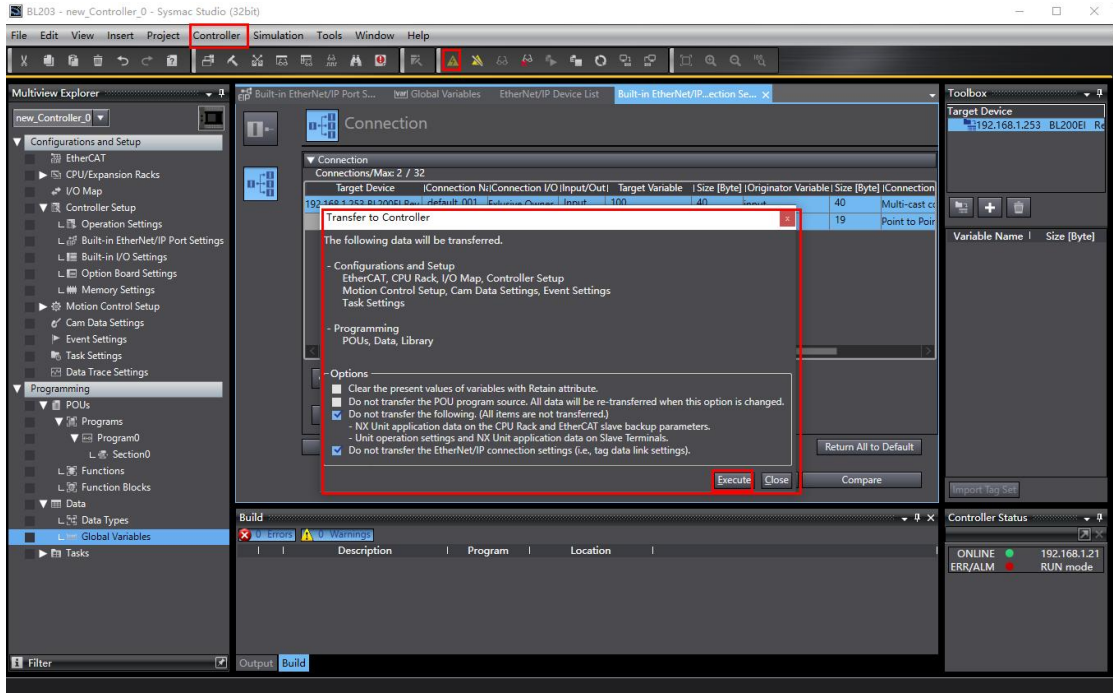
10. After the installation is completed, in the toolbox box, click "+" to add a new BL203 coupler. Select "BL200EI" in the drop-down box of the model name item, select "2" for the version, fill in the coupler address according to the specifications, and refer to 5.3.3 IP address selector switch for the IP address description, and then click "Add".

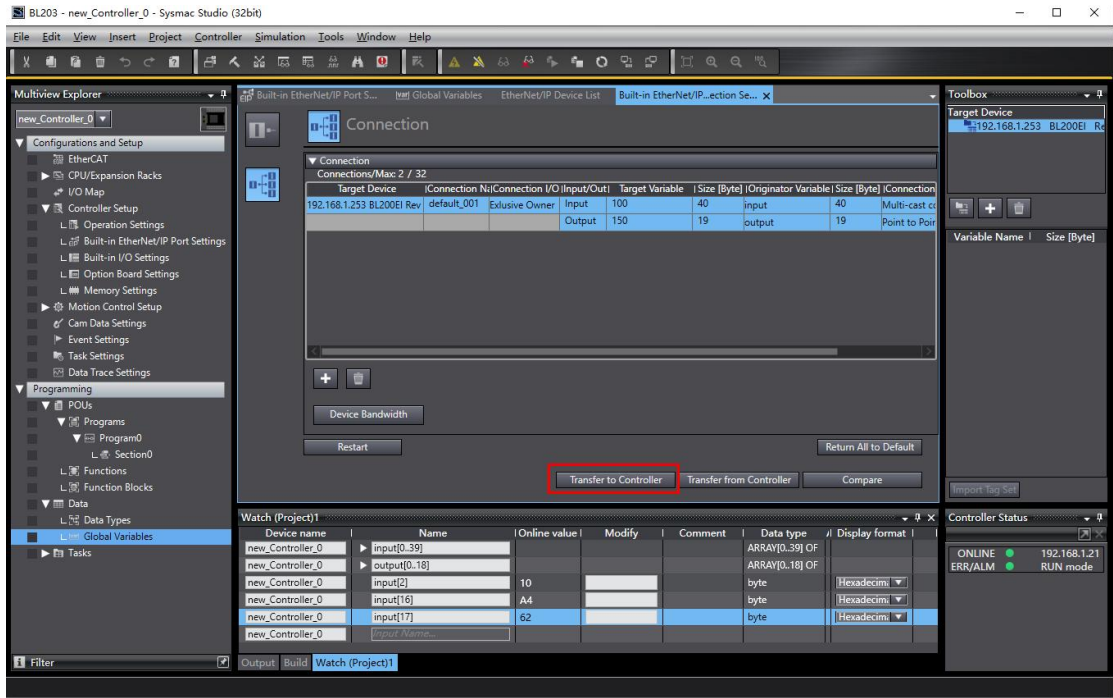


11. Click the connection icon, click "+", select 192.168.1.253 BL200EI as the target device, select "Start Variable", input tag "input", output tag "output", in "Target Variable", input "100", output "150", the target byte size and the starting variable byte size are the same.

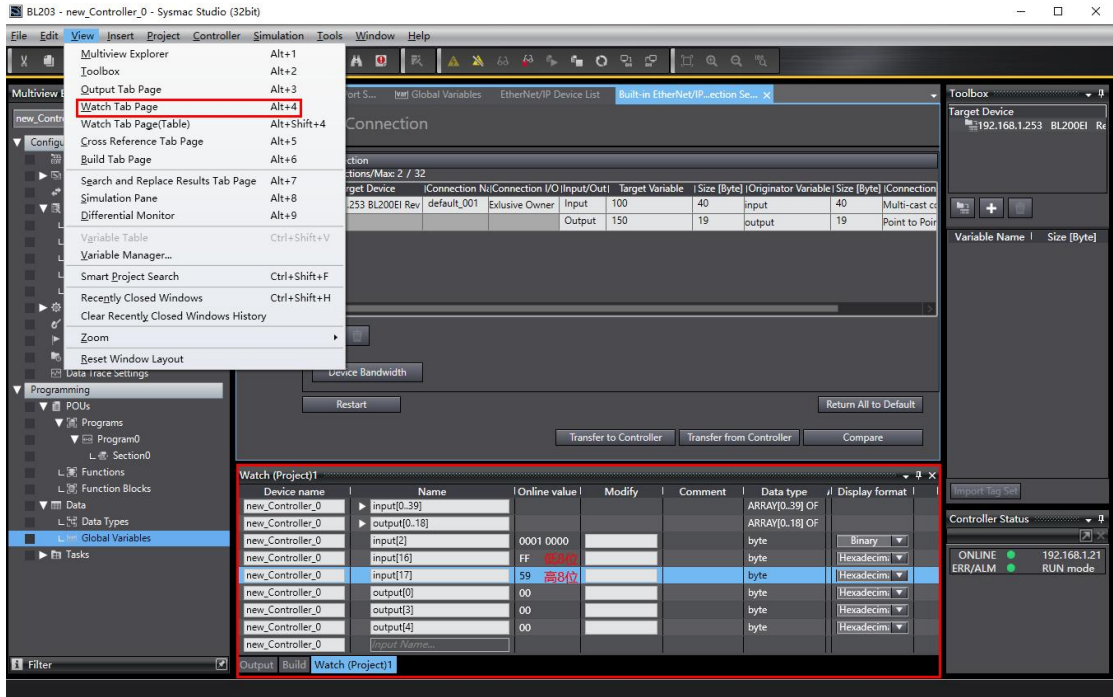


12. Click on Controller - Online, or click on , click on Controller - Transfer - Transfer to Controller in the menu bar, and then click on Execute in the pop-up window to download the configuration and settings to the PLC. Click Yes - Yes - OK in the pop-up window, and click "Transfer to Controller" to download the configuration to the PLC for the internal use of Ethernet/IP configuration.





13. Click "View" - "Watch Tab Page", add input and output variables in the monitor window to monitor the data. In the monitoring window can monitor all the data such as input[0..39], you can also monitor the data of a separate module such as input[2], the name here is the global variable created when the variable. Monitoring input[2] is shown as 10 in hexadecimal and 00010000 in binary, which means that the 5th path is closed and the other 7 paths are open. Monitor input[16] and input[17] combined 16-bit integer is "23039", according to the mapping relationship between AI and AO, refer to 5.4 Process Data Definition, the value of AI is "3.52V".



IO status

IO Slot:6,Module Type:DI,Module Name:M1082

Channels	EI Address	Value
1	IX2.0	Open
2	IX2.1	Open
3	IX2.2	Open
4	IX2.3	Open
5	IX2.4	Close
6	IX2.5	Open
7	IX2.6	Open
8	IX2.7	Open

Fiter Time

Fiter Time(ms)

Back to Overview
Save & Apply ▾
Save
Reset

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IO status

IO Slot:9,Module Type:AI,Module Name:M3046

Channels	EI Address	Value	Mode	Min Value	Max Value	Offset(V)
1	IX12	2.039062	Voltage -5-5V ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	IX14	0.000000	Voltage -5-5V ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	IX16	23019.914062	Voltage -5-5V ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	IX18	0.000000	Voltage -5-5V ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>

Back to Overview
Save & Apply ▾
Save
Reset

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14. DO data sent output [0] sent in the modified item fill in "10110011" keyboard press "Enter" key, you can sent binary, decimal, hexadecimal, pay attention to the display format.

Device name	Name	Online value	Modify	Comment	Data type	Display format
new_Controller_0	input[0..39]				ARRAY[0..39] OF	
new_Controller_0	output[0..18]				ARRAY[0..18] OF	
new_Controller_0	input[2]	0001 0000			byte	Binary
new_Controller_0	input[16]	E1			byte	Hexadecim
new_Controller_0	input[17]	59			byte	Hexadecim
new_Controller_0	output[0]	1011 0011	10110011		byte	Binary
new_Controller_0	output[3]	00			byte	Hexadecim
new_Controller_0	output[4]	00			byte	Hexadecim
new_Controller_0	Input Name...					

BL200EI Status ▾ System ▾ Settings ▾ I/O Module ▾ Logout

IO status

IO Slot:1,Module Type:DO,Module Name:M2082

Channels	EI Address	Value	PowerOn Status	Open/Close
1	QX0.0	Close	Open	Open/Close
2	QX0.1	Close	Open	Open/Close
3	QX0.2	Open	Open	Open/Close
4	QX0.3	Open	Open	Open/Close
5	QX0.4	Close	Open	Open/Close
6	QX0.5	Close	Open	Open/Close
7	QX0.6	Open	Open	Open/Close
8	QX0.7	Close	Open	Open/Close

 ▾

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15. Control AO data, control current output 10mA, according to the mapping relationship according to the AO refer to 5.4 process data definition, if the value is "12288", the high 8 bit is "30H", the low 8 bit is "0", then the low 8 bit output[3] sends "0", the high 8 bit output[4] sends "30H".

Device name	Name	Online value	Modify	Comment	Data type	Display format
new_Controller_0	input[0..39]				ARRAY[0..39] OF	
new_Controller_0	output[0..18]				ARRAY[0..18] OF	
new_Controller_0	input[2]	0001 0000			byte	Binary
new_Controller_0	input[16]	0D			byte	Hexadecim
new_Controller_0	input[17]	5B			byte	Hexadecim
new_Controller_0	output[0]	1011 0011			byte	Binary
new_Controller_0	output[3]	00	高8位 00		byte	Hexadecim
new_Controller_0	output[4]	30	高8位 30		byte	Hexadecim
new_Controller_0	Input Name...					

IO status

IO Slot:10,Module Type:AO,Module Name:M4041

Channels	EI Address	Value	Mode	Min Value	Max Value	Set Value
1	QX3	12288.000000	Current 4-20mA ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	QX5	0.000000	Current 4-20mA ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	QX7	0.000000	Current 4-20mA ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	QX9	0.000000	Current 4-20mA ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>

▾

7 Warranty

- 1) This equipment will be repaired free of charge for any material or quality problems within one year from the date of purchase.
- 2) This one-year warranty does not cover any product failure caused by man-made damage, improper operation, etc.

8 Technical Support

Shenzhen Beilai Technology Co., Ltd
 Website: <https://www.bliiot.com>