Programmable Controller CJ-series

EtherNet/IP™ Connection Guide

Balluff GmbH

Network Module
(BNI EIP-50[]-105-Z015)

P503-E1-01

About Intellectual Property Rights and Trademarks

Table of Contents

1. Related Manuals

To ensure system safety, make sure to always read and follow the information provided in all Safety Precautions and Precautions for Safe Use in the manuals for each device which is used in the system.
The table below lists the manuals provided by Balluff GmbH (hereinafter referred to as "Balluff") and OMRON Corporation (hereinafter referred to as "OMRON"), which pertain to this guide.

Manufacturer	Cat. No.	Model	Manual name
OMRON	W472	CJ2M-CPU[][] CJ2H-CPU6[] CJ2H-CPU6[]-EIP	CJ Series CJ2 CPU Unit Hardware USER'S MANUAL
OMRON	W473	CJ2M-CPU[][] CJ2H-CPU6[] CJ2H-CPU6[]-EIP	CJ Series CJ2 CPU Unit Software USER'S MANUAL
OMRON	W465	CJ1W-EIP21 CJ2M-CPU3[] CJ2H-CPU6[]-EIP	CJ Series EtherNet/IP™ Units OPERATION MANUAL
OMRON	W446	CXONE-AL[][]C-V4 / AL[][]D-V4	CX-Programmer OPERATION MANUAL
OMRON	0969584-7	W4S1-05[] W4S1-03B	Switching Hub W4S1-series Users Manual
OMRON	9540393-4	E2E(Q)-[]-IL[]	PROXIMITY SENSOR INSTRUCTION SHEET
OMRON	9540292-0	E2E(Q)-[]-IL[]	PROXIMITY SENSOR INDEX LIST
Balluff	933690-726	BNI EIP-50[]-105-Z015	BNI EIP-502-105-Z015 BNI EIP-508-105-Z015 EtherNet/IP™ IP67 Modules User’s Guide
Balluff	893539	BNI EIP-50[]-105-Z015	BNI EIP-508-105-Z015 IP67 Modules 8IO-Link/In-/Outputs, 8 In-/Outputs User’s Guide

2. Terms and Definitions

The terms and definitions used in this guide are given below.

Term	Explanation and Definition
node	A node refers to a relay point, a junction point or an end point on an EtherNet/IP network made up of devices having an EtherNet/IP port. A device with one EtherNet/IP port is recognized as one node and two EtherNet/IP ports as two nodes on an EtherNet/IP network.
tag	A data link between the local I/O memory and a remote I/O memory is called a tag. A tag can be set using a network symbol name or an I/O memory address.
tag set	When a connection is established, from 1 to 8 tags (including PLC status) is configured as a tag set. Each tag set represents the data that is linked for a tag data link connection. Tag data links are therefore created through a connection between one tag set and another tag set. A tag set name must be set for each tag set.
tag data links	The standard EtherNet/IP implicit communications are called tag data links. Tag data links enable cyclic tag data exchanges on an EtherNet/IP network between PLCs or between PLCs and other devices.
connection	A connection is used to exchange data as a unit within which data concurrency is maintained.
connection type	There are two kinds of connection types for tag data links. One is a multi-cast connection, and the other is a unicast (point-to-point) connection. The multi-cast connection sends an output tag set in one packet to more than one node. The unicast connection separately sends one output tag set to each node. Therefore, the multi-cast connection can reduce the communications load if one output tag set is sent to more than one node.
originator and target	To perform tag data links, it is necessary to open connections between nodes that perform tag data links. The node that requests the connection is called the originator, and the node that receives the request is called the target.
tag data link parameters	The information that is set to perform tag data links, including tags, tag sets and connections, is called tag data link parameters.
EDS file	A file that describes information unique to a device such as the number of I/O points for an EtherNet/IP device. The connections that define the tag data links can be set by installing this file in Network Configurator.

3. Precautions

(1) Understand the specifications of devices which are used in the system. Allow some margin for ratings and performance. Provide safety measures, such as installing a safety circuit, in order to ensure safety and minimize the risk of abnormal occurrence.

(2) To ensure system safety, make sure to always read and follow the information provided in all Safety Precautions and Precautions for Safe Use in the manuals for each device which is used in the system.

(3) The user is encouraged to confirm the standards and regulations that the system must conform to.

(4) It is prohibited to copy, to reproduce, and to distribute a part or the whole of this guide without the permission of OMRON Corporation.

(5) The information contained in this guide is current as of February 2018. It is subject to change for improvement without notice.

The following notations are used in this guide.

⚠ Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

Precautions for Correct Use

Precautions on what to do and what not to do to ensure proper operation and performance.

Additional Information

Additional information to read as required.
This information is provided to increase understanding or make operation easier.

Symbol

The triangle symbol indicates precautions (including warnings).
The specific operation is shown in the triangle and explained in the text.
This example indicates a general precaution.

The filled circle symbol indicates operations that you must do.
The specific operation is shown in the circle and explained in the text.
This example shows a general precaution for something that you must do.

4. Overview

This guide describes procedures for connecting a Balluff Network Module (BNI EIP-50[]-105-Z015) (hereinafter referred to as the "Network Module") to an OMRON CJ-series Programmable Controller + EtherNet/IP Unit (hereinafter referred to as the "PLC") via EtherNet/IP and for checking their communication status.
Refer to *Section 6. EtherNet/IP Settings* and *Section 7. EtherNet/IP Connection Procedure* to understand setting methods and key points to operate EtherNet/IP tag data links.
In this guide, the CJ-series EtherNet/IP Unit and the built-in EtherNet/IP port on the CJ-series CJ2 CPU Unit are collectively called "EtherNet/IP Unit".
The OMRON E2E-series IO-Link Proximity Sensor (hereinafter referred to as the "Proximity Sensor") is used in this guide in order to check data that is sent and received between the PLC and the Network Module.

5. Applicable Devices and Device Configuration

5.1. Applicable Devices

The applicable devices are as follows:

Manufacturer	Name	Model
OMRON	CJ2 CPU Unit	CJ2[]-CPU[][]
OMRON	EtherNet/IP Unit	CJ1W-EIP21 CJ2H-CPU6[]-EIP CJ2M-CPU3[]
Balluff	Network Module	BNI EIP-502-105-Z015 BNI EIP-508-105-Z015

Precautions for Correct Use

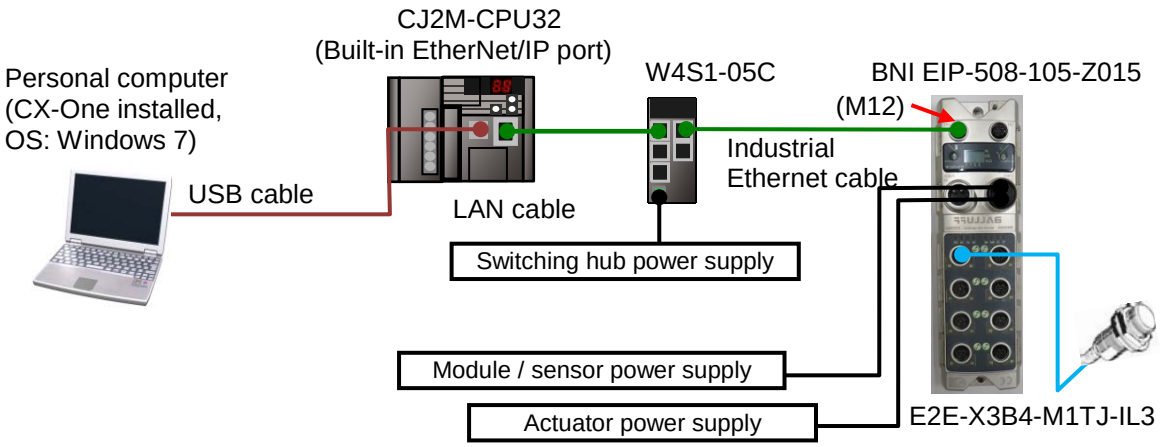
In this guide, the devices with models and versions listed in *5.2. Device Configuration* are used as examples of applicable devices to describe the procedures for connecting the devices and checking their connection.
You cannot use devices with versions lower than the versions listed in *5.2*.
To use the above devices with models not listed in *5.2.* or versions higher than those listed in *5.2.*, check the differences in the specifications by referring to the manuals before operating the devices.

Additional Information

This guide describes the procedures for establishing the network connection.
It does not provide information on operation, installation, wiring method, device functionality, or device operation, which is not related to the connection procedures.
Refer to the manuals or contact the device manufacturer.

5.2. Device Configuration

The hardware components to reproduce the connection procedures in this guide are as follows:



Manufacturer	Name	Model	Version
OMRON	CJ2 CPU Unit (Built-in EtherNet/IP port)	CJ2M-CPU32	Ver.2.0 (Ver.2.12)
OMRON	Power Supply Unit	CJ1W-PA202	
OMRON	Switching hub	W4S1-05C	Ver.1.00
-	Switching hub power supply (24 VDC)	-	
OMRON	CX-One	CXONE-AL[][]C-V4 /AL[][]D-V4	Ver.4.[][]
OMRON	CX-Programmer	(Included in CX-One)	Ver.9.65
OMRON	Network Configurator	(Included in CX-One)	Ver.3.62
OMRON	IO-Link Proximity Sensor	E2E-X3B4-M1TJ-IL3	Ver.1.00
-	Personal computer (OS: Windows 7)	-	
-	USB cable (USB 2.0 type B connector)	-	
-	LAN cable (STP (shielded, twisted-pair) cable of Ethernet category 5 or higher)	-	
Balluff	Industrial Ethernet cable (M12 straight male to RJ45, double-ended)	BCC M414-E894-8G-672 -ES64N9-006	
Balluff	Network Module	BNI EIP-508-105-Z015	H6_S4.2
Balluff	EDS file	BNI EIP-508-105-Z015.eds	1.1 (Major Revision: 4)
Balluff	Icon file	BNI EIP-508-105-Z015.ico	
-	Module / sensor power supply (24 VDC)	-	
-	Actuator power supply (24 VDC)	-	

Precautions for Correct Use

Prepare the EDS file listed on the previous page.
To obtain the EDS file, contact Balluff GmbH.

Precautions for Correct Use

Note that the EDS file specified in this *Clause 5.2.* is not compatible with versions of the Network Module earlier than "H5_S[].[]". You need the EDS file with a different version that is compatible with earlier versions of the Network Module.

Precautions for Correct Use

When there is an icon file specific to the device, the icon file and the EDS file must be stored in the same folder.

Precautions for Correct Use

Update CX-Programmer and Network Configurator to the versions specified in this *Clause 5.2.* or to higher versions. If you use a version higher than the one specified, the procedures and related screenshots described in *Section 7.* and the subsequent sections may not be applicable. In that case, use the equivalent procedures described in this guide by referring to the *CX-Programmer OPERATION MANUAL* (Cat. No. W446) and *Network Configurator Online Help*.

Additional Information

For specifications of the switching hub power supply, refer to the *Switching Hub W4S1-series Users Manual* (Cat. No. 0969584-7).

Additional Information

For specifications of the Module / sensor and Actuator power supplies, refer to the *BNI EIP-508-105-Z015 IP67 Modules 8 IO-Link/In-/Outputs, 8 In-/Outputs User's Guide* (893539).

Additional Information

The system configuration in this guide uses USB for the connection between the personal computer and the PLC. For information on how to install the USB driver, refer to *A-5 Installing the USB Driver* of the *CJ Series CJ2 CPU Unit Hardware USER'S MANUAL* (Cat. No. W472).

6. EtherNet/IP Settings

This section describes the parameters and tag data link settings that are all defined in this guide.
Hereinafter, the Network Module is referred to as the "Destination Device" in some descriptions.

6.1. Parameters

The parameters set in this guide are shown below.

6.1.1. EtherNet/IP Communications Settings

The parameters required to connect the PLC and the Network Module via EtherNet/IP are shown below.

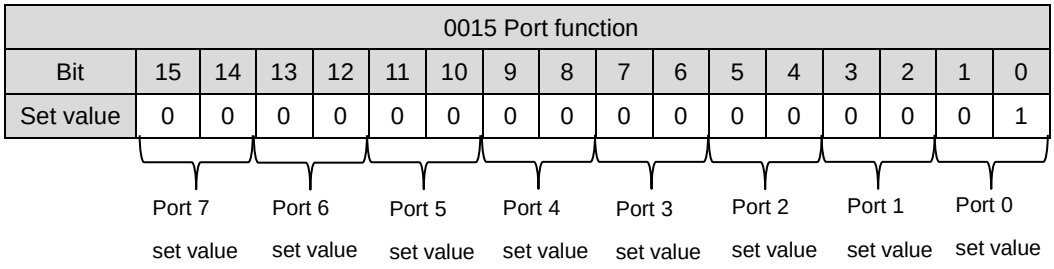
Item	PLC (Node 1)	Network Module (Node 2)
IP address	192.168.250.1	192.168.250.2
Subnet mask	255.255.255.0	255.255.255.0

6.1.2. Destination Device Settings

The parameter of the Network Module is shown below.

Item	Set value	Remarks
0015 Port function	1	Port 0: IO-Link mode Ports 1-7: Standard I/O mode

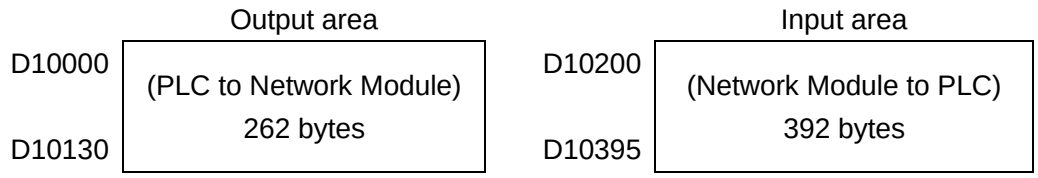
The following figure shows the data configuration of 0015 Port function and the relationship between each port and set value of 0015 Port function. The IO-Link mode is set when the set value for port is 01, whereas the standard I/O mode is set when the set value for port is 00. With Network Configurator, the set value of 0015 Port function is "1" in decimal that represents a binary value of "00 00 00 00 00 00 00 01".



For example, if setting Ports 0-2 to IO-Link mode and Ports 3-7 to standard I/O mode, the set value of 0015 Port function will be "21" in decimal that represents a binary value of "00 00 00 00 00 01 01 01".

6.2. Tag Data Link Settings

The tag data link settings for the Network Module are given below.



■Output area

Address	Bit	Function name	Data allocation
D10000	0	Output data (O04)	Standard I/O ports
	1	Output data (O02)	
	2	Output data (O14)	
	3	Output data (O12)	
	4	Output data (O24)	
	5	Output data (O22)	
	6	Output data (O34)	
	7	Output data (O32)	
	8	Output data (O44)	
	9	Output data (O42)	
	10	Output data (O54)	
	11	Output data (O52)	
	12	Output data (O64)	
	13	Output data (O62)	
	14	Output data (O74)	
	15	Output data (O72)	
D10001	0	Restart (R04)	
	1	Restart (R02)	
	2	Restart (R14)	
	3	Restart (R12)	
	4	Restart (R24)	
	5	Restart (R22)	
	6	Restart (R34)	
	7	Restart (R32)	
	8	Restart (R44)	
	9	Restart (R42)	
	10	Restart (R54)	
	11	Restart (R52)	
	12	Restart (R64)	
	13	Restart (R62)	
	14	Restart (R74)	
	15	Restart (R72)	
D10002	0 to 7	0(Reserved)	
	8	RO (Red LED on display on)	
	9	GO (Green LED on display on)	
	10	DL (Display lock / PLC lock)	
	11 to 15	0(Reserved)	

Address	Bit	Function name	Data allocation
D10003 to D10018	0 to 15 0 to 15	IO-Link port 0 output process data	IO-Link port 0
D10019 to D10034	0 to 15 0 to 15	IO-Link port 1 output process data	IO-Link port 1
D10035 to D10050	0 to 15 0 to 15	IO-Link port 2 output process data	IO-Link port 2
D10051 to D10066	0 to 15 0 to 15	IO-Link port 3 output process data	IO-Link port 3
D10067 to D10082	0 to 15 0 to 15	IO-Link port 4 output process data	IO-Link port 4
D10083 to D10098	0 to 15 0 to 15	IO-Link port 5 output process data	IO-Link port 5
D10099 to D10114	0 to 15 0 to 15	IO-Link port 6 output process data	IO-Link port 6
D10115 to D10130	0 to 15 0 to 15	IO-Link port 7 output process data	IO-Link port 7

■Input area

Address	Bit	Function name	Data allocation
D10200	0	Input data (I04)	Standard I/O ports
	1	Input data (I02)	
	2	Input data (I14)	
	3	Input data (I12)	
	4	Input data (I24)	
	5	Input data (I22)	
	6	Input data (I34)	
	7	Input data (I32)	
	8	Input data (I44)	
	9	Input data (I42)	
	10	Input data (I54)	
	11	Input data (I52)	
	12	Input data (I64)	
	13	Input data (I62)	
	14	Input data (I74)	
	15	Input data (I72)	
D10201	0	Short circuit status (S0)	
	1		
	2	Short circuit status (S1)	
	3		
	4	Short circuit status (S2)	
	5		
	6	Short circuit status (S3)	
	7		
	8	Short circuit status (S4)	
	9		
	10	Short circuit status (S5)	
	11		
	12	Short circuit status (S6)	
	13		
	14	Short circuit status (S7)	
	15		
D10202	0	Overload status (O04)	
	1	Overload status (O02)	
	2	Overload status (O14)	
	3	Overload status (O12)	
	4	Overload status (O24)	
	5	Overload status (O22)	
	6	Overload status (O34)	
	7	Overload status (O32)	
	8	Overload status (O44)	
	9	Overload status (O42)	
	10	Overload status (O54)	
	11	Overload status (O52)	
	12	Overload status (O64)	
	13	Overload status (O62)	
	14	Overload status (O74)	
	15	Overload status (O72)	
D10203	0	PA (Actuator power)	
	1	PS (Sensor power)	
	2	NA (No actuator supply)	
	3 to 15	0(Reserved)	

Address	Bit	Function name	Data allocation
D10204	0 to 15	IO-Link port 0 input process data **Stores the process data of the Proximity Sensor.**	IO-Link port 0
	0 to 7	**Stores Byte0 (PD0).**	
	8 to 15	**Stores Byte1 (PD1).**	
D10205 to D10219	0 to 15 0 to 15	IO-Link port 0 input process data	
D10220	0	IOL (Port in IO-Link mode)	
	1	DC (Device connected)	
	2 to 7	0(Reserved)	
	8	VF (Validation failed)	
	9	DF (Data storage validation failed)	
	10	PDI (Process data invalid)	
	11 to 14	0(Reserved)	
	15	SC (IO-Link short circuit)	
D10221	0 to 15	Vendor ID	
D10222	0 to 15	Device ID	
D10223	0 to 7		
	8 to 15	Event 1	
D10224	0 to 15		
D10225	0 to 15	Event 2	
D10226	0 to 7		
	8 to 15	Event 3	
D10227	0 to 15		
D10228 D10251	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 1
D10252 D10275	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 2
D10276 D10299	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 3
D10300 D10323	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 4
D10324 D10347	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 5
D10348 D10371	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 6
D10372 D10395	0 to 15 0 to 15	Same functions as for the data allocation "IO-Link port 0"	IO-Link port 7

■Process Data of Proximity Sensor

(Data to be stored in the address D10204 listed in the table for the input area)

Byte0 (PD0)	割り当て Assignment	詳細 Details
7 6 5 4 3 2 1 0	モニタ出力 Monitor Output	センシングの検出量を8bit(0-255)で出力する 詳細は6項を参照。 The sensing data are output as eight bits(0-255). For details, refer to Section 6

Byte1 (PD1)	割り当て Assignment	詳細 Details
7 6 5 4 3 2 1 0	制御出力 Control Output	0: OFF 1: ON
	– Reserved	0
	– Reserved	0
	– Reserved	0
	不安定検出アラーム Instability Detection Alarm	0: 安定状態　Stable 1: 不安定状態　Unstable
	過接近検出アラーム Target too Close Alarm	0: 安定状態 Not close 1: 過接近状態　Too close
	– Reserved	0
	異常 Error	検出コイル断線等センサ内部に異常が発生しており、交換が必要な場合の診断出力 This is the diagnostic output issued when an error such as disconnection of the detection coil has occurred inside the sensor and the sensor must be replaced. 0:正常 Normal (OFF) 1: 異常 Error (ON)

Additional Information

For details on setting the data in tag data links for the Network Module, refer to *5. Integration* and *6. Process Data* of the *BNI EIP-508-105-Z015 IP67 Modules 8 IO-Link/In-/Outputs, 8 In-/Outputs User's Guide* (893539).

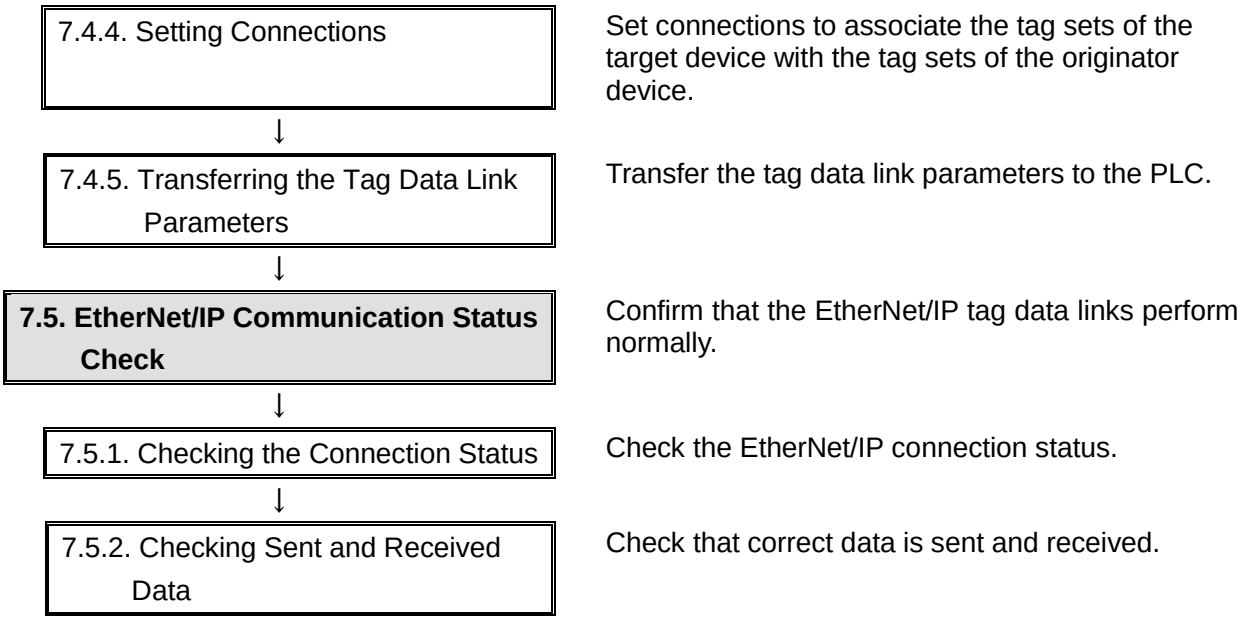
7. EtherNet/IP Connection Procedure

This section describes the procedures for connecting the Network Module and the PLC via EtherNet/IP. The explanation of the procedure for setting up the PLC given in this guide is based on the factory default settings.
For the initialization, refer to *Section 8. Initialization Method*.

7.1. Work Flow

Take the following steps to connect the Network Module and the PLC via EtherNet/IP and to perform tag data links.

7.2. Balluff Network Module Setup	Set up the Balluff Network Module.
↓	
7.2.1. Hardware Settings	Connect the cables and the Proximity Sensor to the Network Module.
↓	
7.2.2. Parameter Settings	Set the IP address of the Network Module.
↓	
7.3. PLC Setup	Set up the PLC.
↓	
7.3.1. Hardware Settings	Set the hardware switches on the EtherNet/IP Unit and wire the network.
↓	
7.3.2. Installing the EDS File	Install the EDS file in Network Configurator.
↓	
7.3.3. Starting CX-Programmer and Going Online with PLC	Start CX-Programmer and go online with the PLC.
↓	
7.3.4. Creating an I/O Table and Setting the IP Address	Create an I/O table and set the IP address of the PLC.
↓	
7.4. Network Settings	Set EtherNet/IP tag data links.
↓	
7.4.1. Starting Network Configurator and Going Online with PLC	Start Network Configurator and go online with the PLC.
↓	
7.4.2. Uploading the Network Configuration	Upload the network configuration.
↓	
7.4.3. Tag Registration	Register tags and tag sets.
↓	


7.4.4. Setting Connections
Set connections to associate the tag sets of the target device with the tag sets of the originator device.
7.4.5. Transferring the Tag Data Link Parameters
Transfer the tag data link parameters to the PLC.
7.5. EtherNet/IP Communication Status Check
Confirm that the EtherNet/IP tag data links perform normally.
7.5.1. Checking the Connection Status
Check the EtherNet/IP connection status.
7.5.2. Checking Sent and Received Data
Check that correct data is sent and received.

7.2. Balluff Network Module Setup

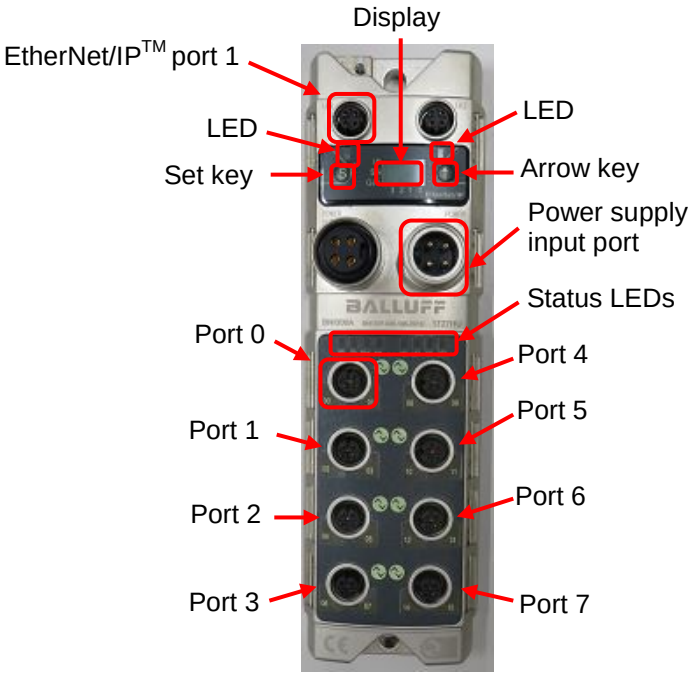
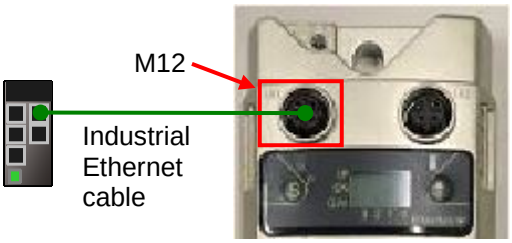
Set up the Balluff Network Module.

7.2.1. Hardware Settings

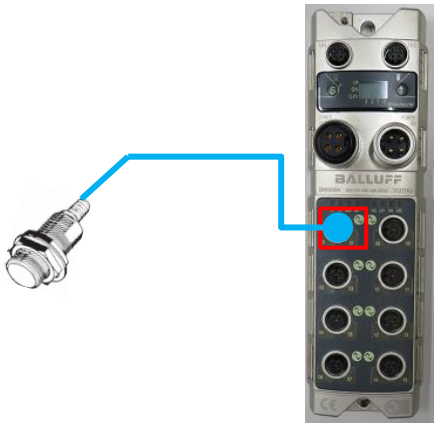
Connect the cables and the Proximity Sensor to the Network Module.

Precautions for Correct Use

Make sure that the power supplies are OFF when you set up.
If any of them are ON, the settings described in the following steps and subsequent procedures may not be applicable.

1	Make sure that Module / sensor, Actuator and Switching hub power supplies are all OFF.	
2	Check the positions of the ports, keys and LED on Network Module by referring to the figure on the right.	
3	Connect Switching hub and EtherNet/IP™ port 1 on Network Module with an Industrial Ethernet cable.	

4 Connect Proximity Sensor to Port 0 on Network Module.



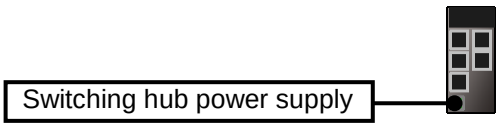
5 Connect Module / sensor power supply and Actuator power supply to Power supply input port on Network Module.

*For connecting the power supplies to Network Module, refer to *3.3. Electrical connection* of the *BNI EIP-508-105-Z015 IP67 Modules 8 IO-Link/In-/Outputs, 8 In-/Outputs User's Guide* (893539).

Power supply input port pin assignment

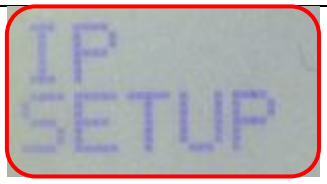
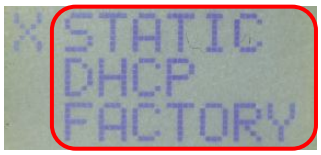
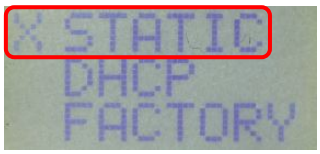
Pin	Function	Description
1	+24V	Actuator power supply
2	+24V	Module / sensor power supply
3	0V	GND module / sensor power supply
4	0V	GND actuator power supply

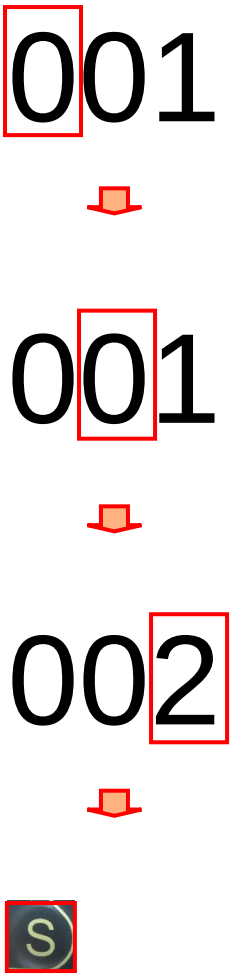
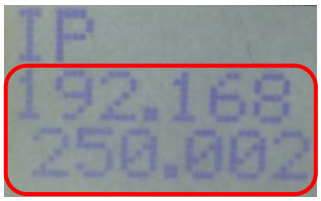
6 Connect Switching hub power supply to Switching hub.

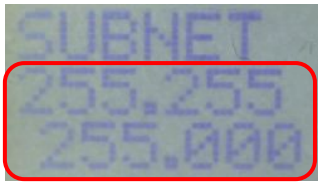


7.2.2. Parameter Settings

Set the IP address of the Network Module.

1	Turn ON Module / sensor and Actuator power supplies.	
2	The display on Network Module shows the 4th octet of the Network Module IP address. Briefly press the **Set** key twice.	 
3	Check that the IP SETUP Menu is displayed as shown on the right. Briefly press the **Arrow** key.	 
4	Check that menu items of the IP SETUP Menu are displayed as shown on the right. Press and hold the **Set** key (at least 3 seconds).	 
5	The display of the menu items starts flashing. *The display flashes in editing mode, allowing you to select the menu items from the IP SETUP Menu.	 Flashing
6	Select ***STATIC*** by briefly pressing the **Arrow** key. Briefly press the **Set** key.	 
7	The display shows the 4th octet of the Network Module IP address.	

8	Set the 1st digit of the 4th octet to *0* by briefly pressing the **Arrow** key. Briefly pressing the **Set** key saves the entered value of the 1st digit. Set the 2nd digit of the 4th octet to *0* by briefly pressing the **Arrow** key. Briefly pressing the **Set** key saves the entered value of the 2nd digit. Set the last digit of the 4th octet to *2* by briefly pressing the **Arrow** key. Briefly pressing the **Set** key saves the entered value of the last digit. *The 4th octet of the IP address is set to 002.	
9	In the same way as step 8, set the 3rd octet of the IP address to *250*.	
10	In the same way as step 8, set the 2nd octet of the IP address to *168*.	
11	In the same way as step 8, set the 1st octet of the IP address to *192*.	
12	The IP address of Network Module is displayed. Check that 192.168.250.2 is set as shown on the right.	
13	Briefly press the **Arrow** key.	

14	The subnet mask of Network Module is displayed. Check that the address is set to 255.255.255.0 as shown on the right. *If not, press and hold the **Set** key (at least 3 seconds) to call up the editing mode, and then set the address to *255.255.255.0* in the same way as steps 8 to 12.	
15	Turn OFF Module / sensor and Actuator power supplies, then turn them back ON. *The changed parameter will be reflected by power cycling.	

7.3. PLC Setup

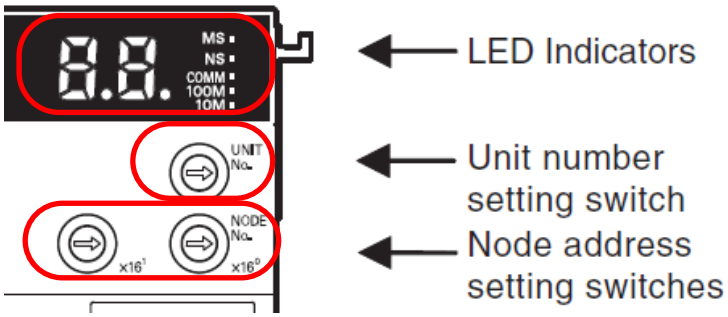
Set up the PLC.

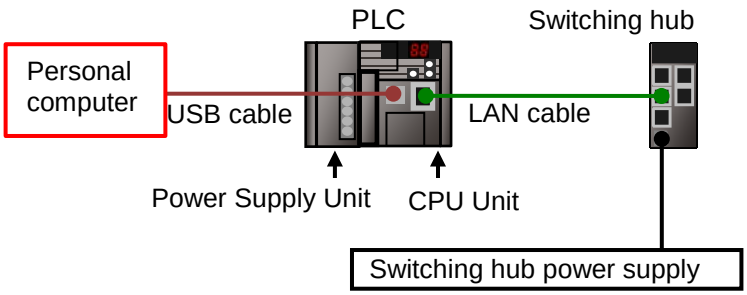
7.3.1. Hardware Settings

Set the hardware switches on the EtherNet/IP Unit and wire the network.

Precautions for Correct Use

Make sure that the power supplies are OFF when you set up.
If either of them is ON, the settings described in the following steps and subsequent procedures may not be applicable.

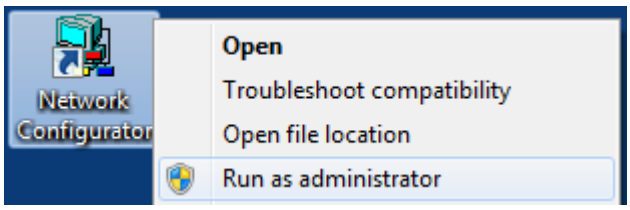
1	Make sure that PLC and Switching hub are powered OFF.	
2	Check the positions of the hardware switches and LED indicators on the front of EtherNet/IP Unit by referring to the figure on the right.	
3	Set Unit number setting switch to *0*.	**Setting the Unit Number** The unit number is used to identify individual CPU Bus Units when more than one CPU Bus Unit is mounted to the same PLC. Use a small screwdriver to make the setting, taking care not to damage the rotary switch. The unit number is factory-set to 0.  **Setting range**: 0 to F
4	Set Node address setting switches to the following default values. NODE No.x16^1: *0* NODE No.x16^0: *1* *The IP address is set to 192.168.250.1. *By default, the first 3 octets of the local IP address are fixed to 192.168.250. The last octet is a value that is set by Node address setting switches.	**Setting the Node Address Switches** With the FINS communications service, when there are multiple EtherNet/IP Units connected to the Ethernet network, the EtherNet/IP Units are identified by node addresses. Use the node address switches to set the node address between 01 and FE hexadecimal (1 to 254 decimal).Do not set a number that has already been set for another node on the same network.   **Setting range**: 01 to FE hex (1 to 254 decimal) The left switch sets the sixteens digit (most significant digit) and the right switch sets the ones digit (least significant digit).The node address is factory-set to 01.

5	Connect a LAN cable to the EtherNet/IP port on PLC, and connect a USB cable to the USB port. As shown in *5.2. Device Configuration*, connect Personal computer and Switching Hub to PLC.	
6	Turn ON PLC and Switching hub.	
7	The IP address is displayed on the seven-segment display. Afterwards, the rightmost 8 bits of the IP address is displayed in hexadecimal during normal operation.	

7.3.2. Installing the EDS File

Install the EDS file in Network Configurator.

1 Right-click the Network Configurator shortcut icon and select ***Run as administrator*** from the menu.



Precautions for Correct Use

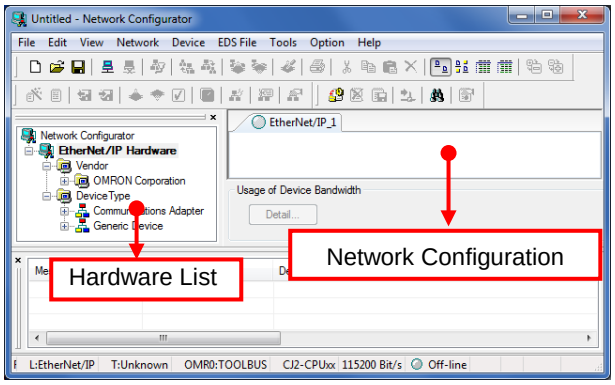
To manipulate the EDS file, you must select "Run as administrator" as described in step 1 above to start Network Configurator.
Otherwise, if you login with other user accounts, the following operations listed in the EDS File Menu are not applied due to user management for Windows security functions.

●EDS File Menu:

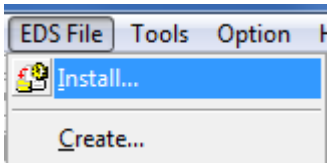
Install, Create, Delete and Creating EDS Index Files

2 Network Configurator starts. The following panes are displayed in this window.

Left: Hardware List
Right: Network Configuration Pane

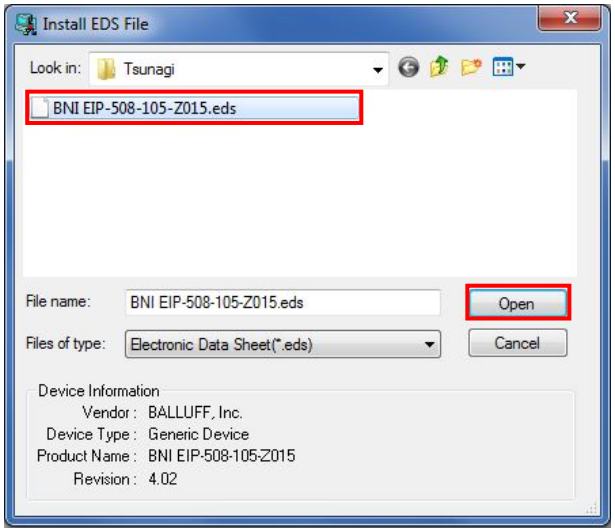


3 Select ***Install*** from the EDS File Menu.



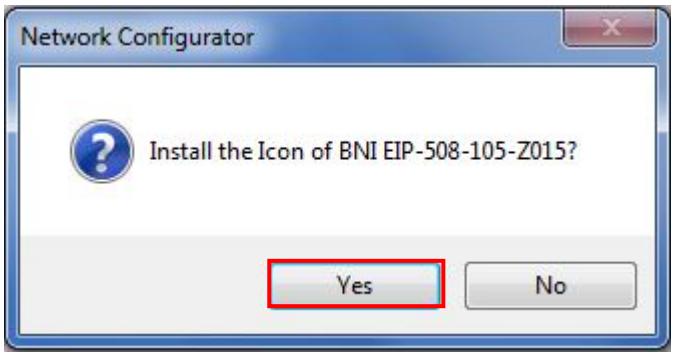
4 The Install EDS File Dialog Box is displayed. Select *BNI EIP-508-105-Z015.eds* (EDS file) to install. Click **Open**.

*For information on how to obtain the EDS file, refer to *Precautions for Correct Use* in *5.2. Device Configuration*.

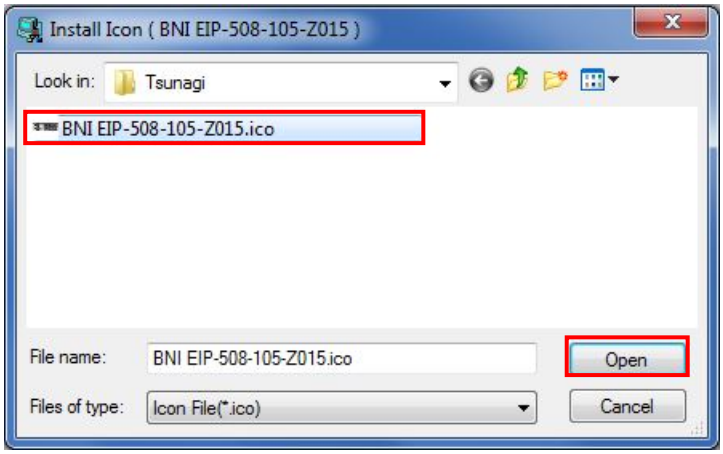


5 If the dialog box on the right is displayed, check the contents and click **Yes**.
If not, go to step 7.

*If the icon file and the EDS file are stored in the same folder, the icon file is automatically installed, and the dialog box on the right is not displayed. There is no need to proceed with step 6.

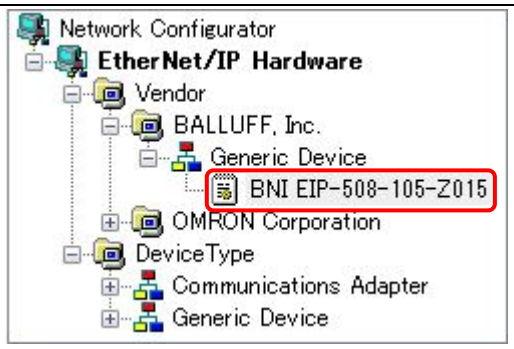


6 The dialog box on the right is displayed.
Select *BNI EIP-508-105-Z015.ico* (icon file) to install.
Click **Open**.

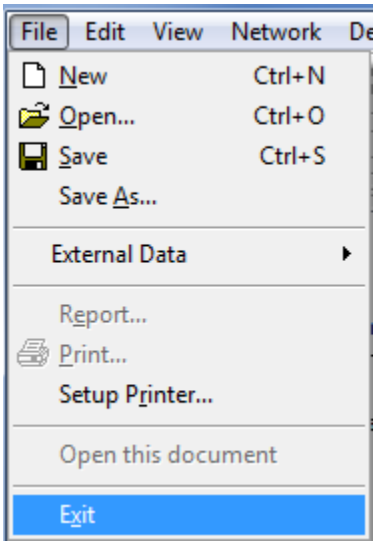


7 Check that Destination Device is added to the Hardware List.

*It indicates that the EDS file is properly installed.



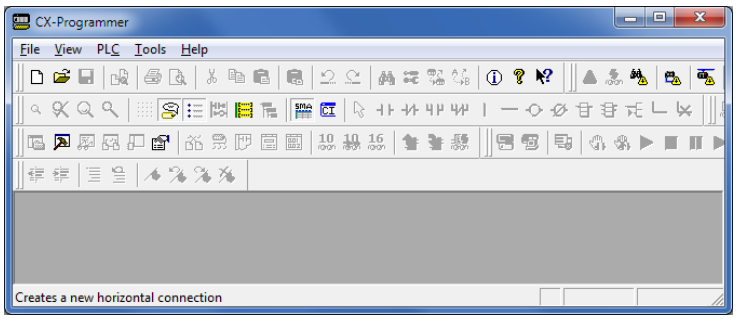
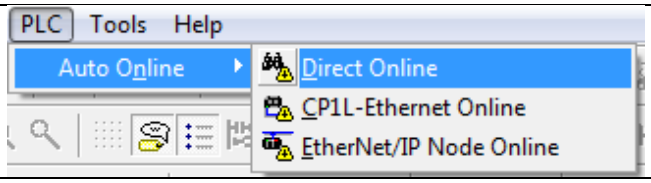
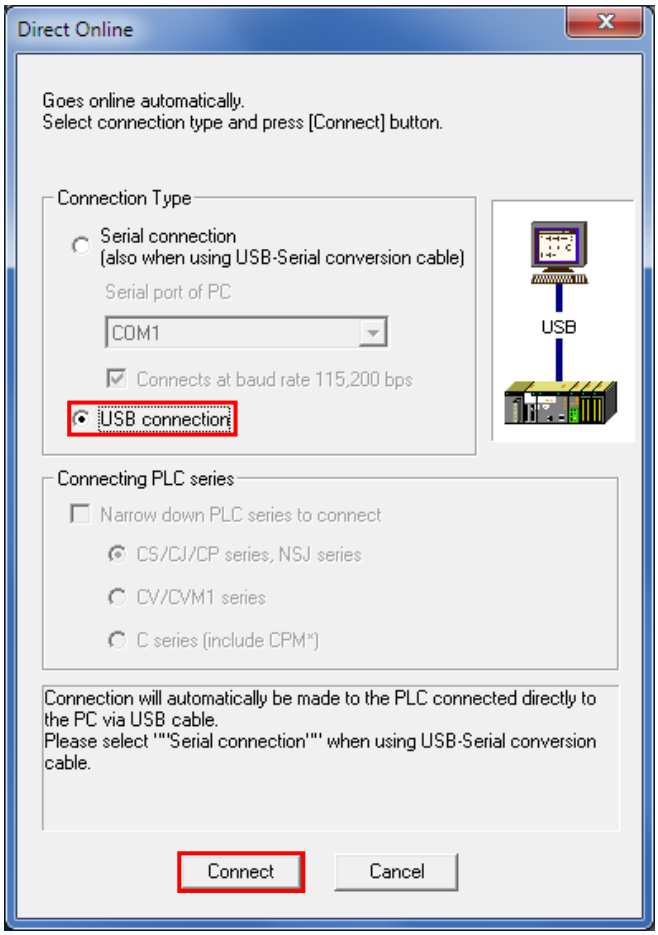
8 Select ***Exit*** from the File Menu to close Network Configurator.

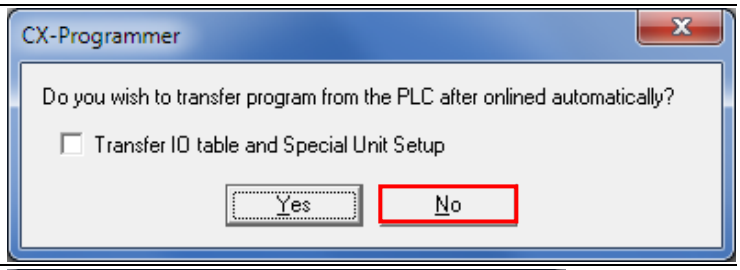
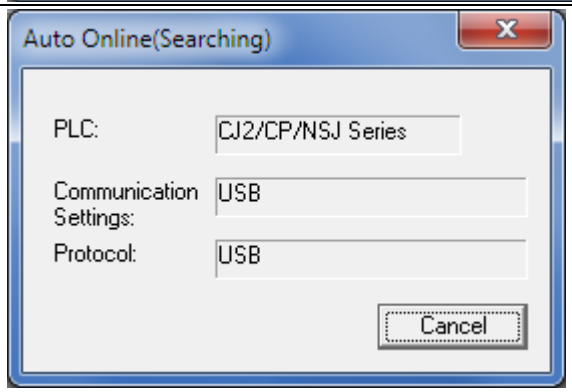
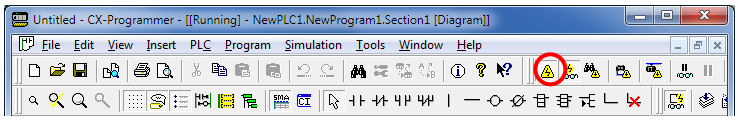


7.3.3. Starting CX-Programmer and Going Online with PLC

Start CX-Programmer and go online with the PLC.

Install CX-One and the USB driver on your personal computer beforehand.

1	Start CX-Programmer. *If the User Account Control Dialog Box is displayed at start, make a selection to start CX-Programmer.	
2	CX-Programmer starts.	
3	Select ***Auto Online*** - ***Direct Online*** from the PLC Menu.	
4	The Direct Online Dialog Box is displayed. Select *USB connection* as the connection type. Click **Connect**.	

5	The dialog box on the right is displayed. Check the contents and click **No**.	
6	The dialog box on the right is displayed. CX-Programmer and PLC are automatically connected.	
7	Check that CX-Programmer and PLC are online. *The  icon is pressed down during online connection.	

Additional Information

If the online connection to the PLC cannot be established, check the cable connection.
Or, return to step 1, check the settings and repeat each step.
For details, refer to *Connecting Directly to a CJ2 CPU Unit Using a USB Cable* of the *CX-Programmer OPERATION MANUAL* (Cat. No. W446).

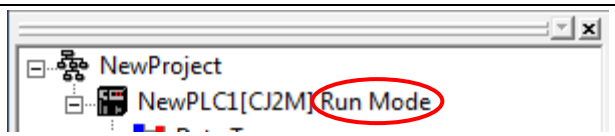
Additional Information

Some dialog boxes described in the subsequent procedure may not be displayed depending on the environmental settings of CX-Programmer.
For details on the environmental settings, refer to *Options and Preferences* in *CHAPTER 3 Project Reference* of the *CX-Programmer OPERATION MANUAL* (Cat. No. W446).
The procedures in this guide assume that "Confirm all operations affecting the PLC" has been selected.

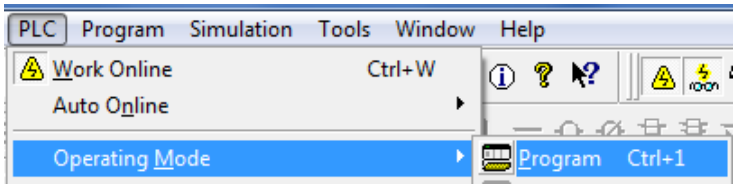
7.3.4. Creating an I/O Table and Setting the IP Address

Create an I/O table and set the IP address of the PLC.

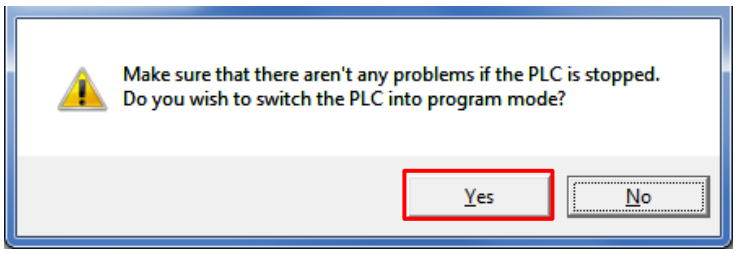
1 If the operating mode of PLC is Run Mode or Monitor Mode, change it to Program Mode by following the steps below.



(1)Select ***Operating Mode*** - ***Program*** from the PLC Menu.

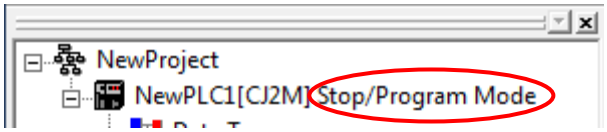


(2)The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.



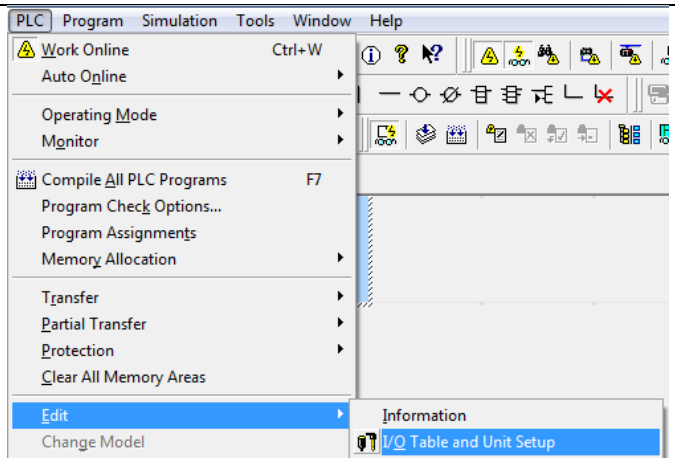
*Refer to *Additional Information* on the previous page for the settings concerning the dialog display.

(3)Check that Stop/Program Mode is displayed to the right of the PLC model in the Project Workspace.

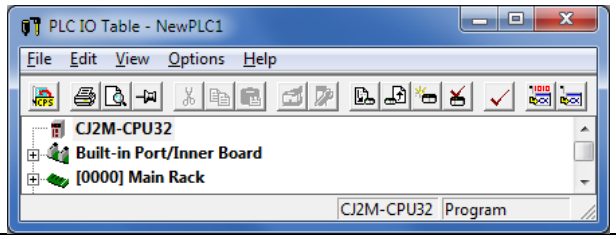


(Project Workspace)

2 Select ***Edit*** - ***I/O Table and Unit Setup*** from the PLC Menu.



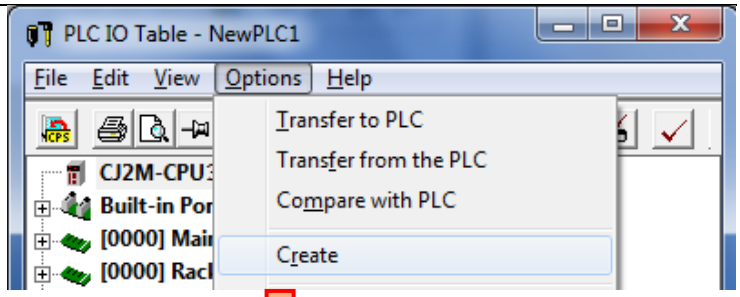
The PLC IO Table Window is displayed.



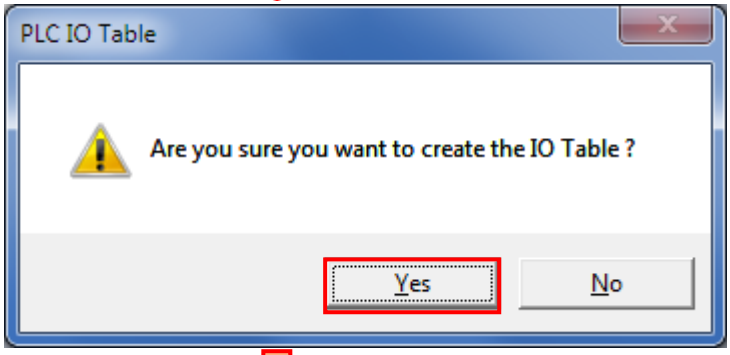
Precautions for Correct Use

The PLC will be reset after creating and transferring an I/O table in step 3 and the subsequent steps. Always confirm safety before creating and transferring an I/O table.

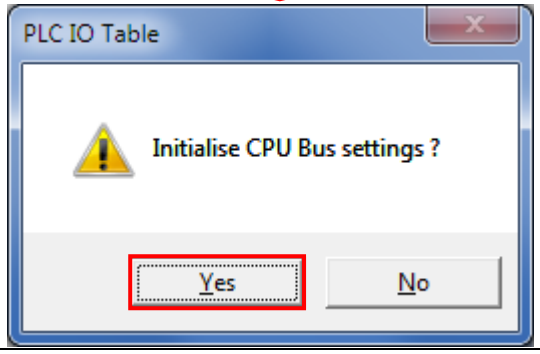
3 Select ***Create*** from the Options Menu of the PLC IO Table Window.



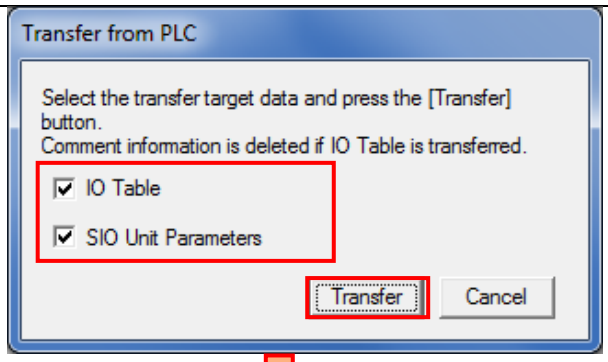
The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.



The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.

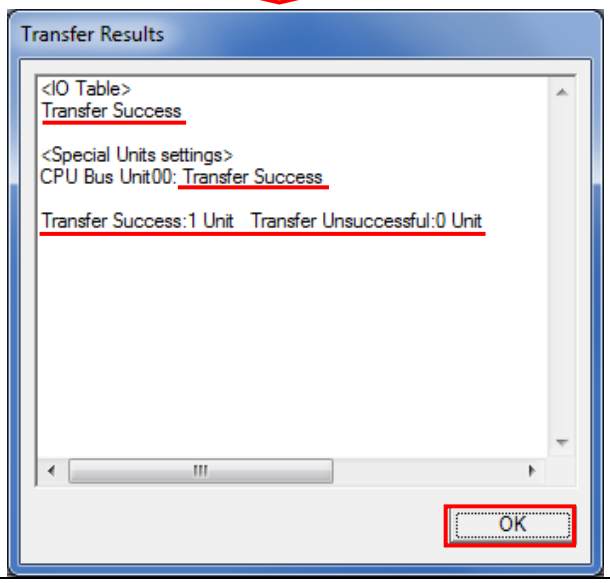


4 The Transfer from PLC Dialog Box is displayed. Select *IO Table* and *SIO Unit Parameters*. Click **Transfer**.



When the transfer is completed, the Transfer Results Dialog Box is displayed.
Check that the transfer is successfully completed by referring to a message in the dialog box.
When an I/O table is created successfully, the dialog box displays as follows:
Transfer Success: 1 Unit
Transfer Unsuccessful: 0 Unit

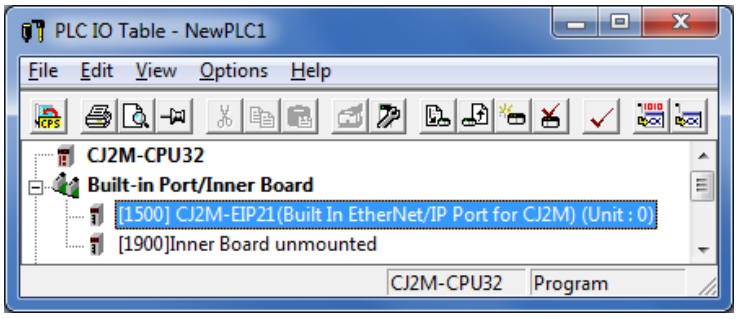
Click **OK**.

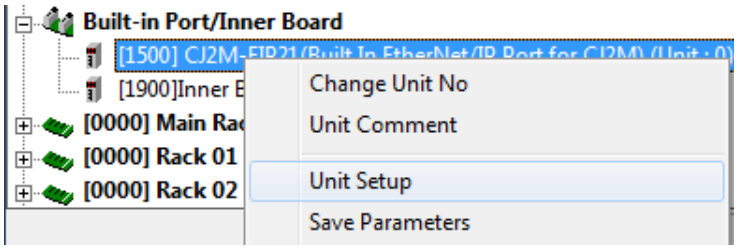


5 In the PLC IO Table Window, click **+** to the left of Built-in Port/Inner Board to display CJ2M-EIP21.

*The figure on the right displays CPU Unit (Built-in EtherNet/IP port) specified in *5.2. Device Configuration*. If you use other applicable EtherNet/IP Units, the display position and name are different from the figure on the right.

Right-click **CJ2M-EIP21** and select ***Unit Setup***.



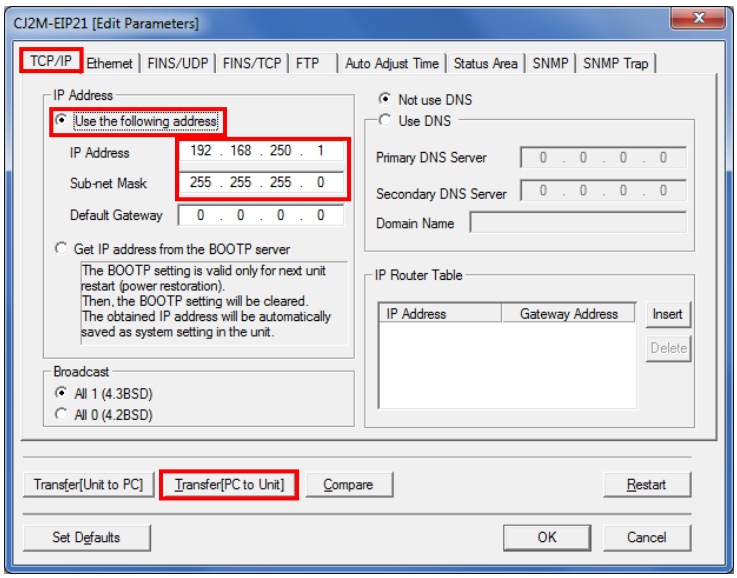


6 The Edit Parameters Dialog Box is displayed.
Click the **TCP/IP** Tab.

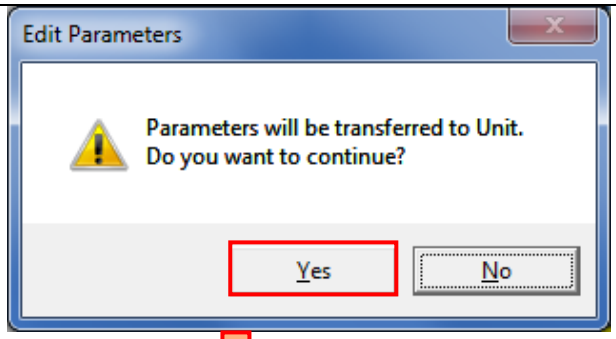
Make the following settings in the *IP Address* Field.

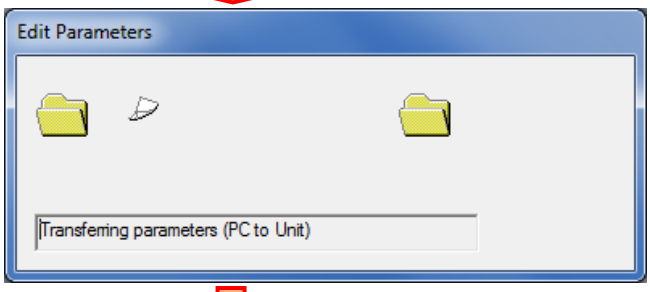
- Use the following address: Select
- IP Address: *192.168.250.1*
- Subnet Mask: *255.255.255.0*

Click **Transfer[PC to Unit]**.

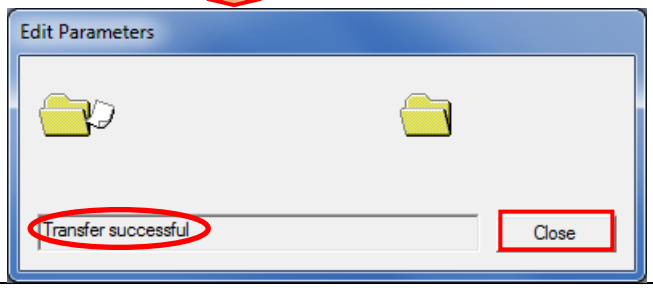


7 The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.

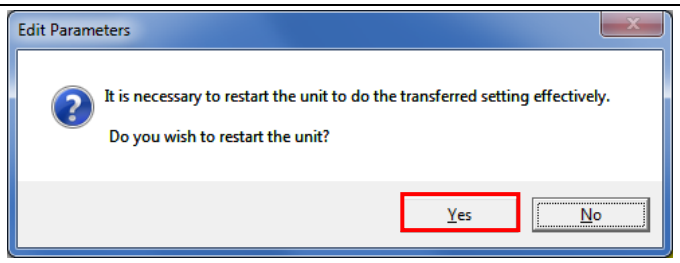




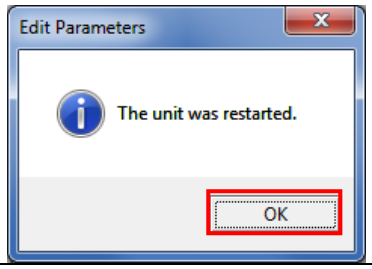
Check that a message is displayed stating "Transfer successful".
Click **Close**.



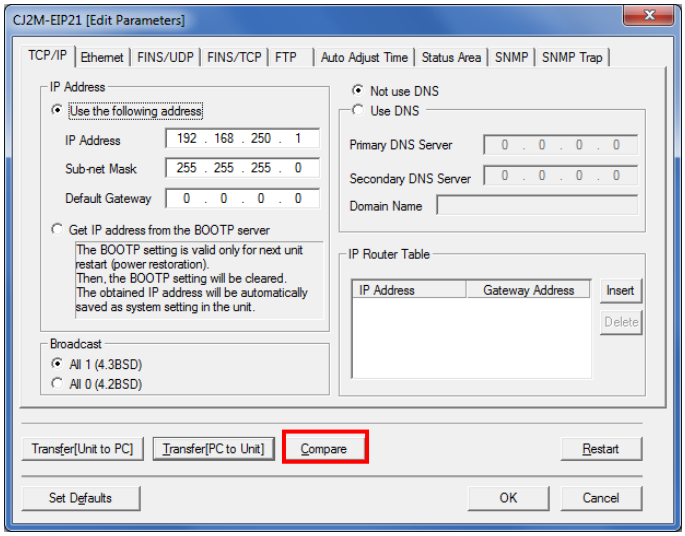
8 The dialog box on the right is displayed. Check the contents and click **Yes**.



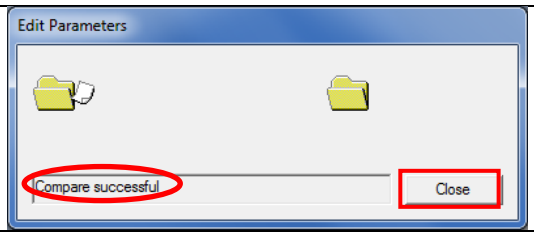
The dialog box on the right is displayed after restarting the EtherNet/IP Unit. Check the contents and click **OK**.



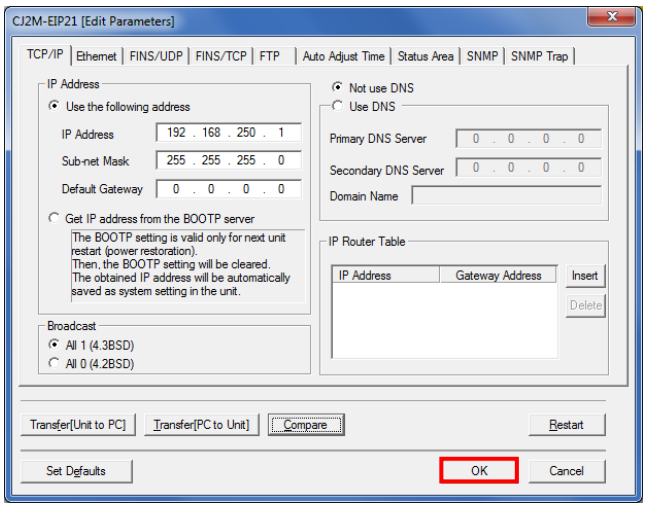
9 Click **Compare** to check that the IP address is correctly changed.



10 Check that a message is displayed stating "Compare successful". Click **Close**.



11 Click **OK** in the Edit Parameters Dialog Box.



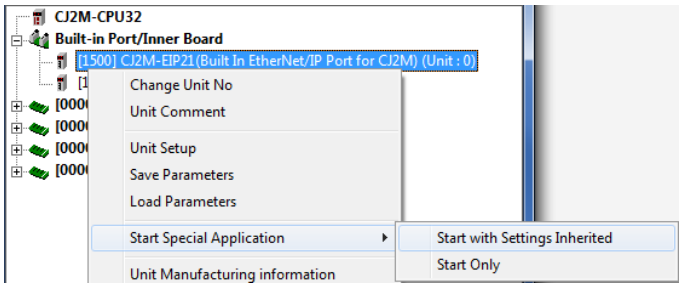
7.4. Network Settings

Set EtherNet/IP tag data links.

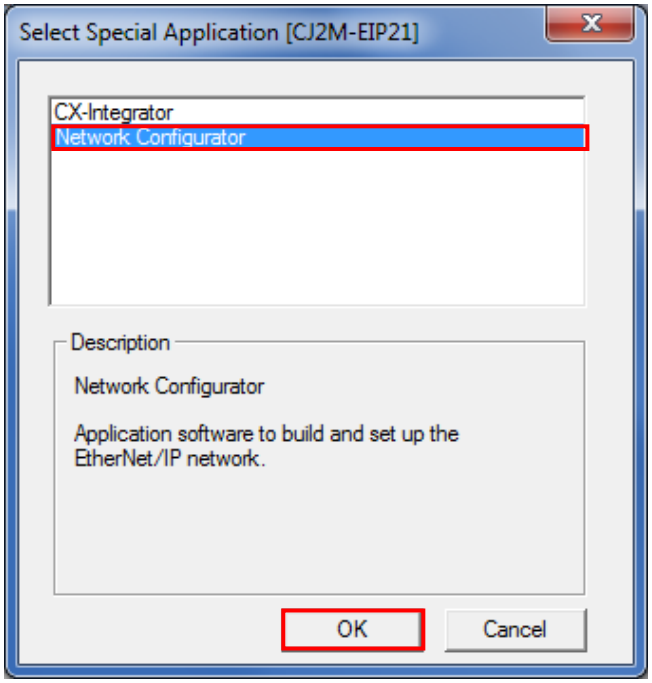
7.4.1. Starting Network Configurator and Going Online with PLC

Start Network Configurator and go online with the PLC.

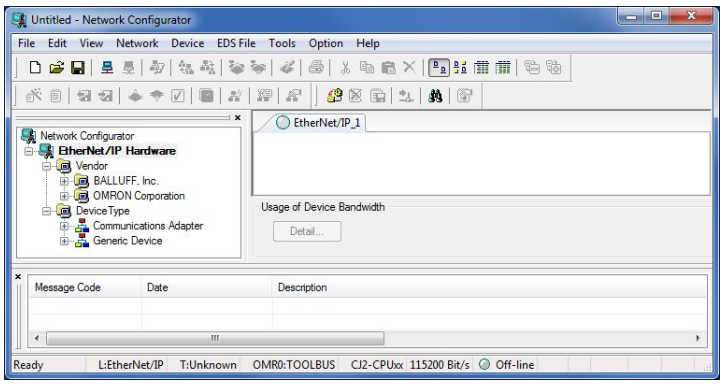
1 Right-click **CJ2M-EIP21** in the PLC IO Table Window, and select ***Start Special Application*** - ***Start with Settings Inherited***.



The Select Special Application Dialog Box is displayed.
Select *Network Configurator* and click **OK**.

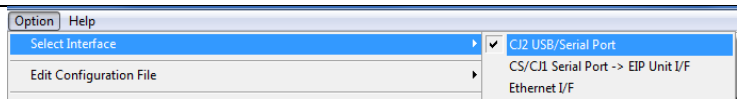
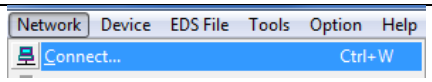
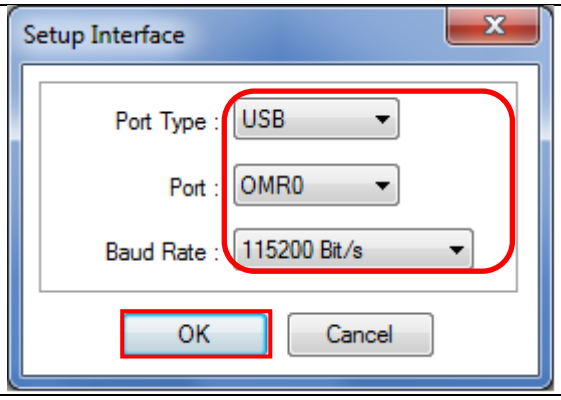
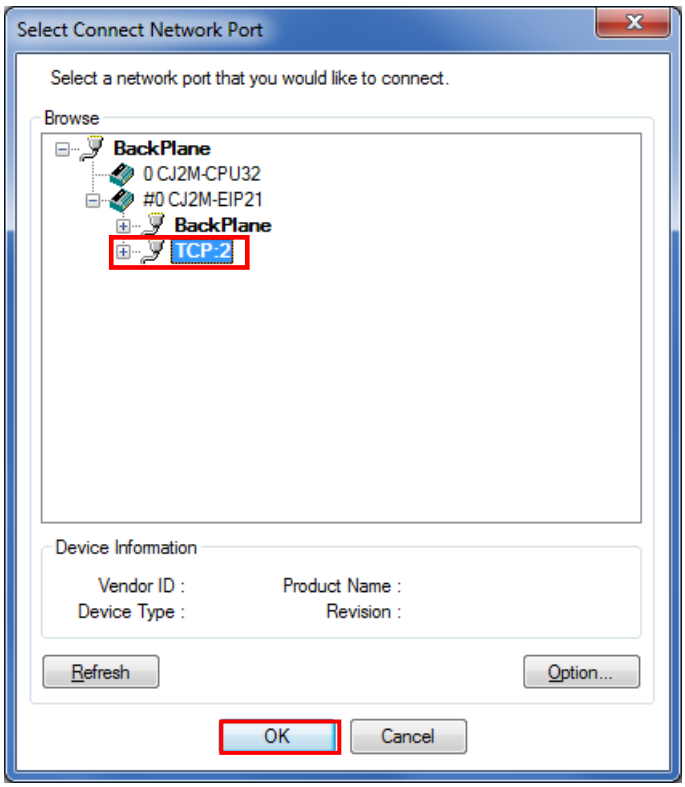
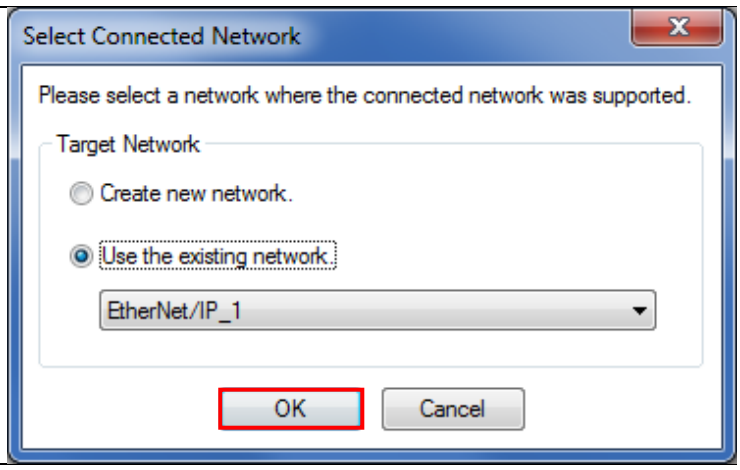


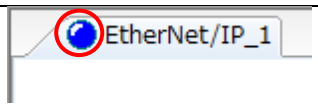
2 Network Configurator starts.



Precautions for Correct Use

Check that the LAN cable is connected before performing the following steps.
If not, turn OFF both devices, and then connect the LAN cable.

3	Select ***Select Interface*** - ***CJ2 USB/Serial Port*** from the Option Menu.	
4	Select ***Connect*** from the Network Menu.	
5	The Setup Interface Dialog Box is displayed. Check that the following settings are made. Port Type: USB Port: OMR0 Baud Rate: 115200 Bit/s Click **OK**.	
6	The Select Connect Network Port Dialog Box is displayed. Select **BackPlane** - **CJ2M-EIP21** - **TCP:2**. Click **OK**.	
7	The Select Connected Network Dialog Box is displayed. Check the contents and click **OK**.	

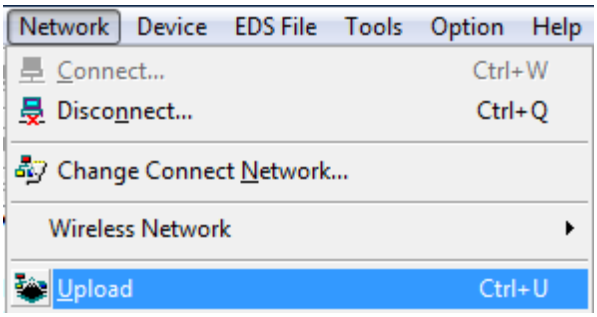
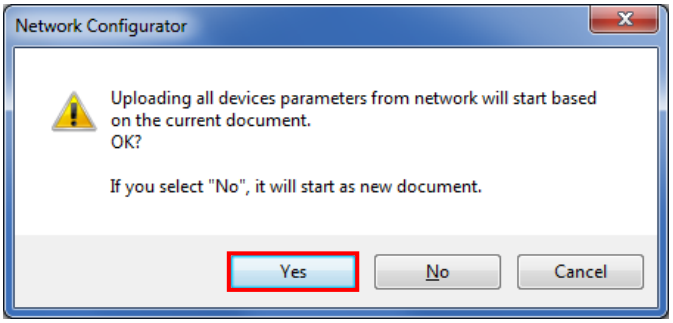
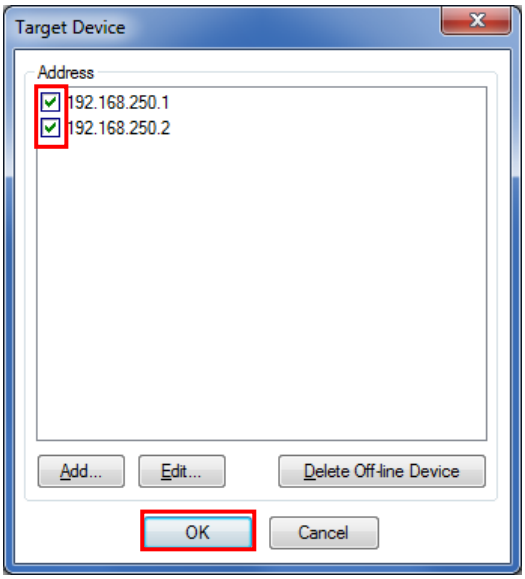
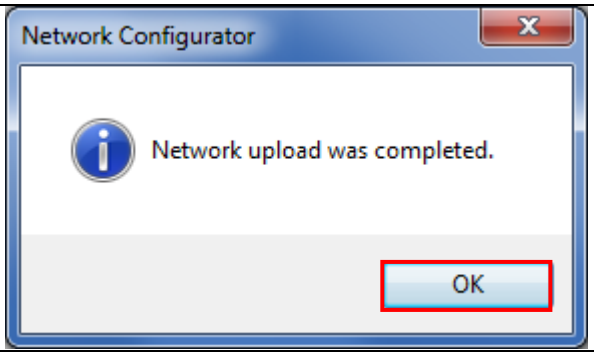
8	Check that the color of the network connection icon changes to blue on the **EtherNet/IP_1** Tab of the Network Configuration Pane. *It indicates that Network Configurator and PLC are online.	

Additional Information

If the online connection to the PLC cannot be established, check the cable connection.
Or, return to step 3, check the settings and repeat each step.
For details, refer to *6-2-9 Connecting the Network Configurator to the Network* of the *CJ Series EtherNet/IP™ Units OPERATION MANUAL* (Cat. No. W465).

7.4.2. Uploading the Network Configuration

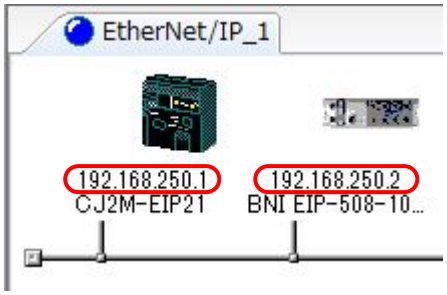
Upload the network configuration.

1	Select ***Upload*** from the Network Menu to upload device parameters from the network.	
2	The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.	
3	The Target Device Dialog Box is displayed. Select *192.168.250.1* and *192.168.250.2*. Click **OK**. *If 192.168.250.1 and 192.168.250.2 are not displayed in the dialog box, click **Add** to add the addresses. *The address displayed in the dialog box varies with the status of Network Configurator.	
4	The parameters of Destination Device are uploaded. After completing the upload, the dialog box on the right is displayed. Check the contents and click **OK**.	

5 Check that the nodes with the following IP addresses are configured in the Network Configuration Pane.

・PLC (Node 1)
IP address: 192.168.250.1

・Network Module (Node 2)
IP address: 192.168.250.2



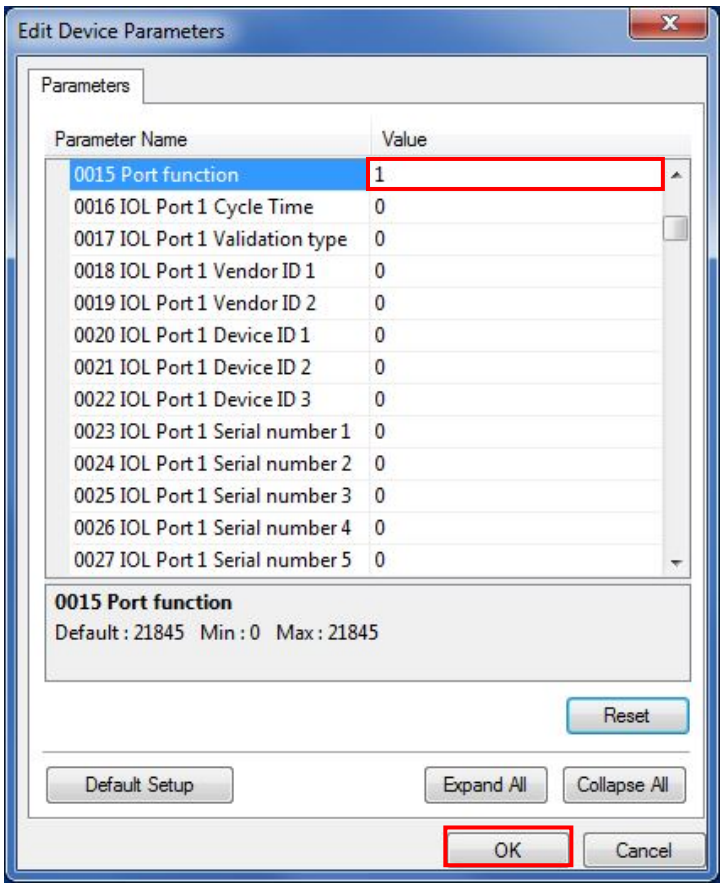
6 Right-click the device icon of Network Module (Node 2) and select ***Parameter*** - ***Edit*** from the menu.

7 The Edit Device Parameters Dialog Box is displayed.
Enter the following value and click **OK**.

0015 Port function: *1*

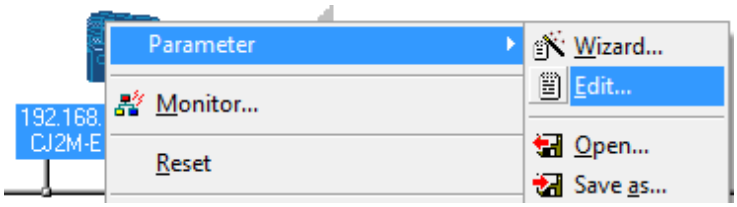
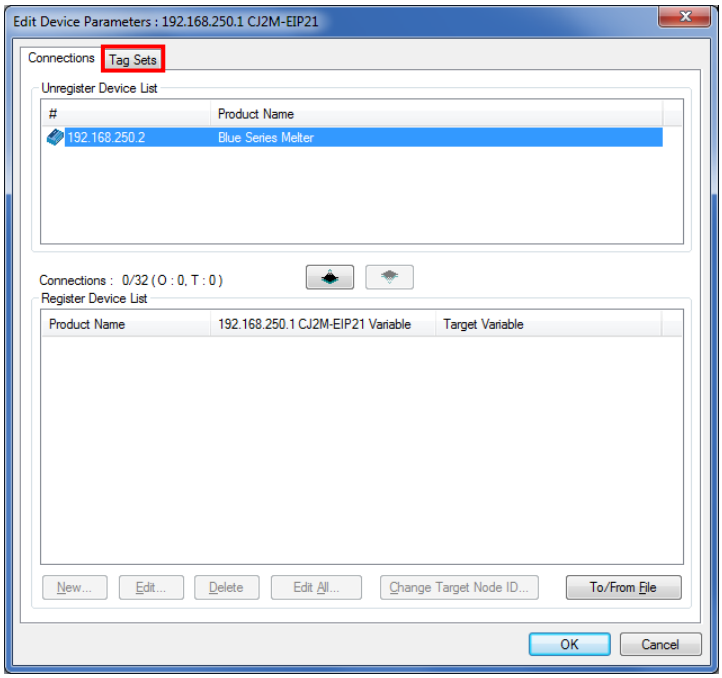
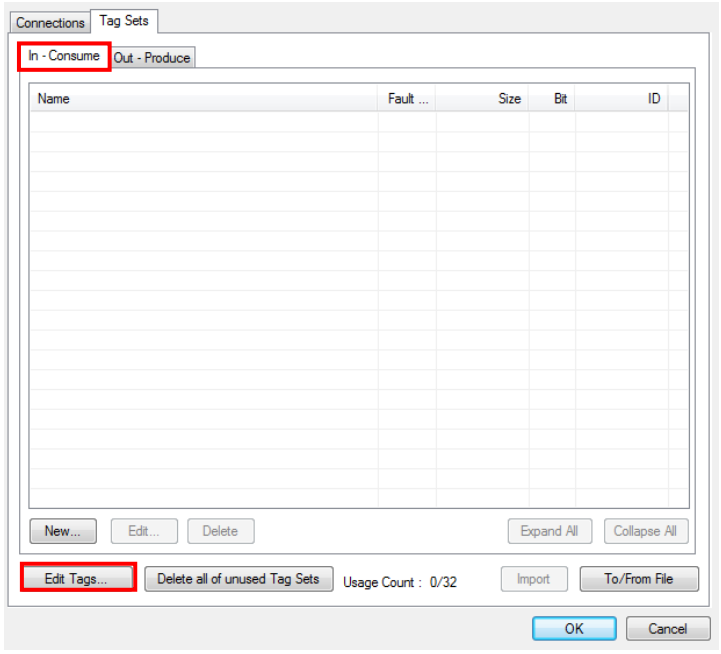
*The device parameters set in the dialog box are included in the connection information set in *7.4.4. Setting Connections* and are transferred to PLC in *7.4.5. Transferring the Tag Data Link Parameters*. There is no need to transfer the device parameters to Network Module.

*If the device parameters are changed, it is necessary to delete the already set connections and set them as new ones again. For details, refer to *Precautions for Correct Use* in *7.5.2. Checking Sent and Received Data*.

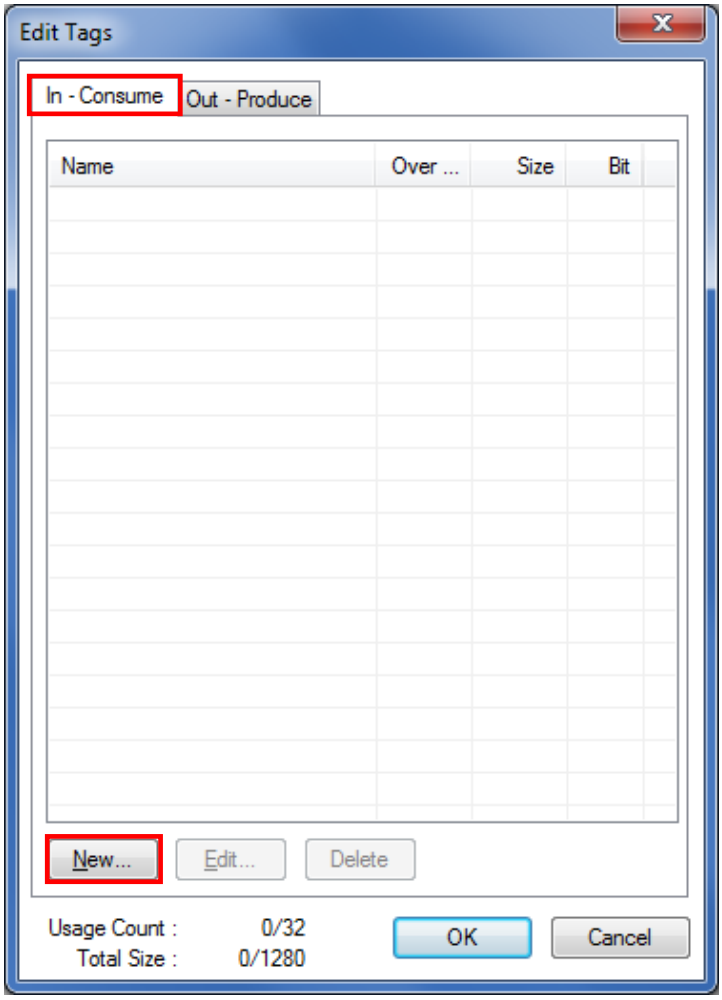


7.4.3. Tag Registration

Register tags and tag sets.

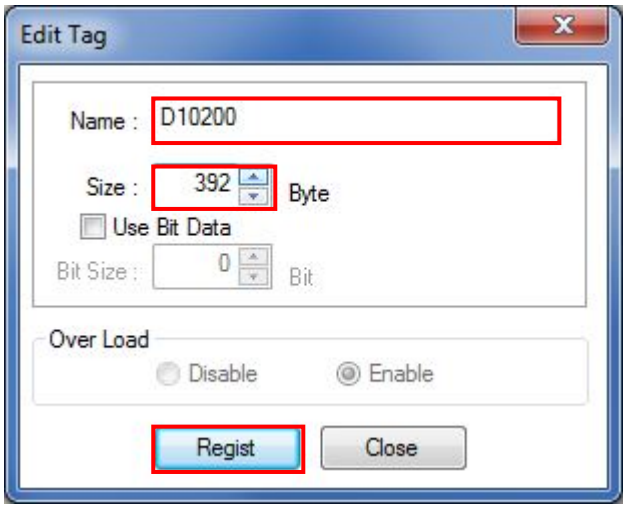
1	Right-click the device icon of PLC (Node 1) in the Network Configuration Pane and select ***Parameter*** - ***Edit*** from the menu.	
2	The Edit Parameters Dialog Box is displayed. Click the **Tag Sets** Tab.	
3	Click the **In - Consume** Tab, and then click **Edit Tags**.	

4 The Edit Tags Dialog Box is displayed.
Click the **In - Consume** Tab, and then click **New**.

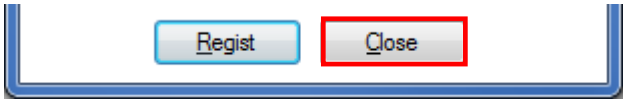


5 The Edit Tag Dialog Box is displayed. Enter the following values of the parameters.
Name: *D10200*
(Start address in the input area of the node 1)
Size: *392* (Byte)

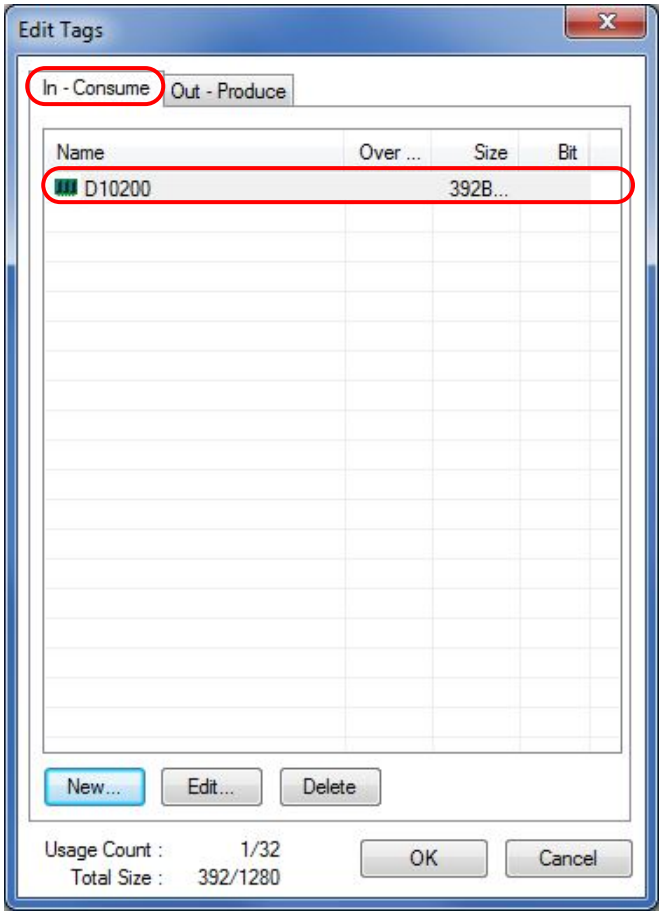
Click **Regist**.



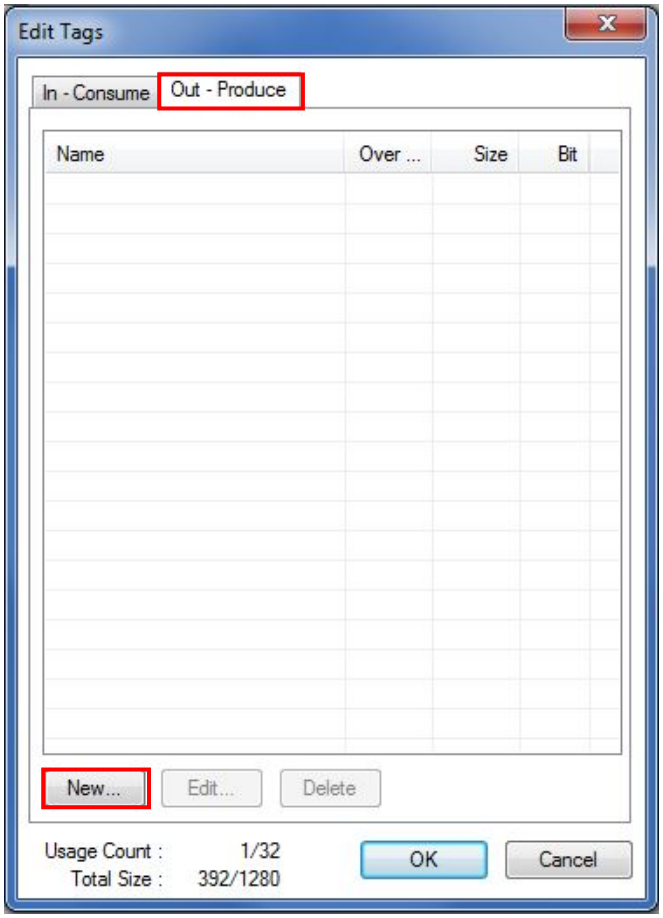
6 The Edit Tag Dialog Box is displayed again.
Click **Close**.

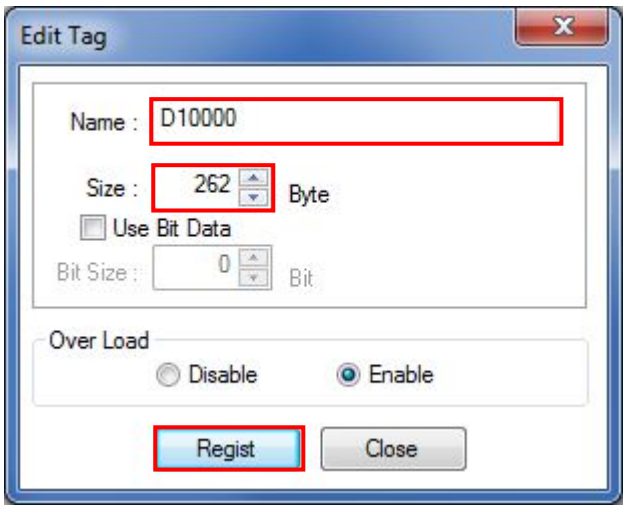
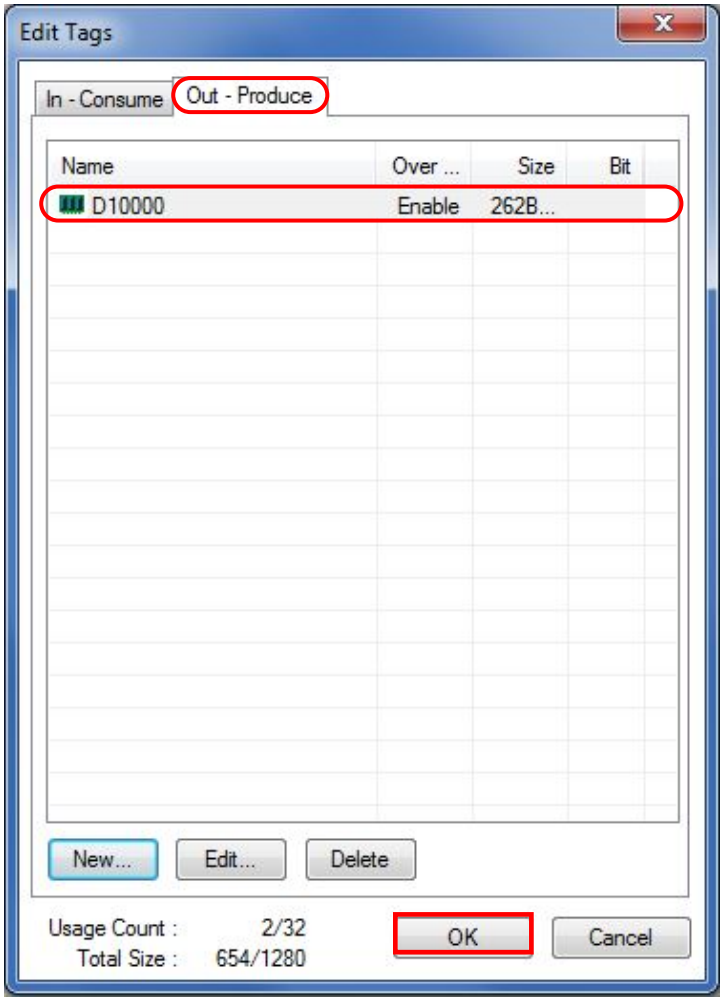


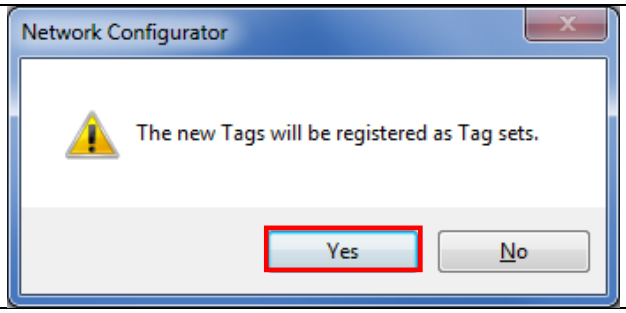
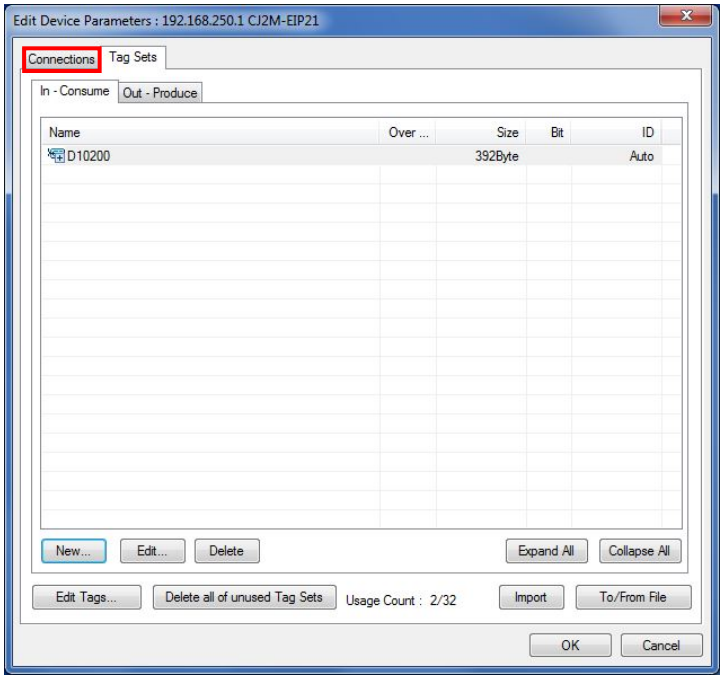
7 Check that D10200 is registered as a tag in the In - Consume Tab Page.



8 Click the **Out - Produce** Tab, and then click **New**.



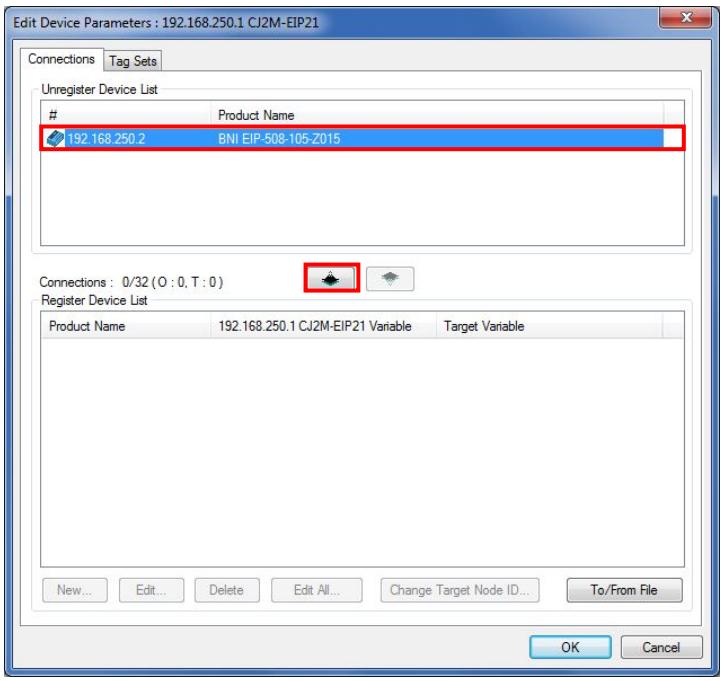
9	The Edit Tag Dialog Box is displayed. Enter the following values of the parameters. Name: *D10000* (Start address in the output area of the node 1) Size: *262* (Byte) Click **Regist**.	
10	The Edit Tag Dialog Box is displayed again. Click **Close**.	
11	Check that D10000 is registered as a tag in the Out - Produce Tab Page. Click **OK**.	

12	The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.	
13	Click the **Connections** Tab in the Edit Device Parameters Dialog Box.	

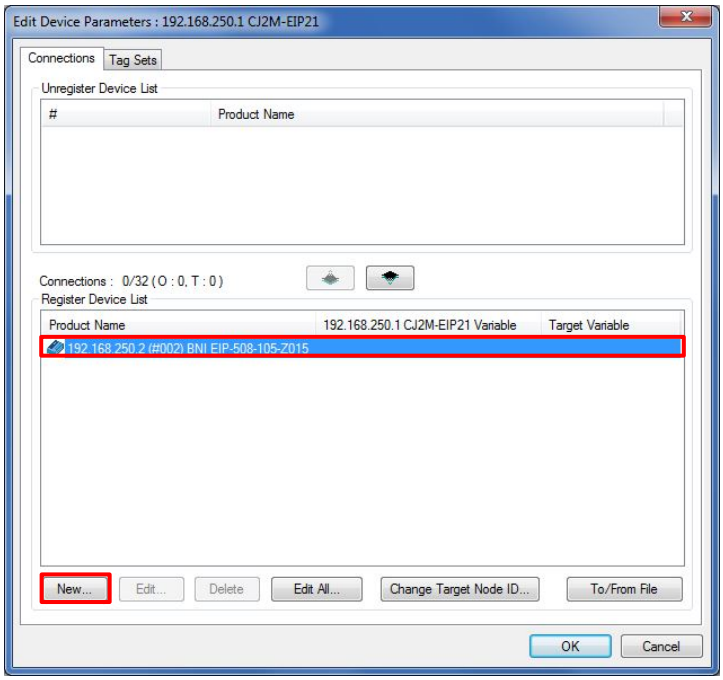
7.4.4. Setting Connections

Set connections to associate the tag sets of the target device with the tag sets of the originator device.

1 Select *192.168.250.2* from the Unregister Device List and click  .

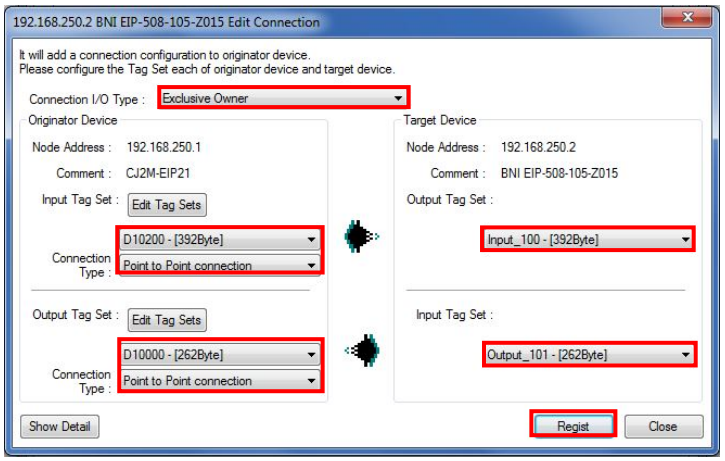


2 192.168.250.2 is registered in the Register Device List. Select *192.168.250.2* and click **New**.



3 The Edit Connection Dialog Box is displayed. Set the values listed in the following table in the *Connection I/O Type*, *Originator Device* and *Target Device* Fields.

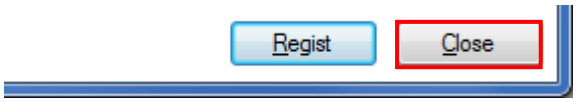
Click **Regist**.



■Editing settings for connections

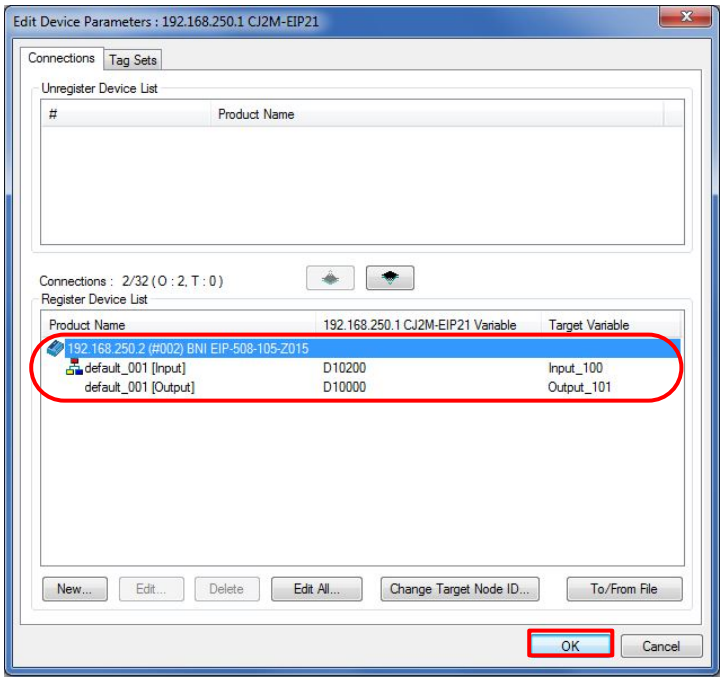
Setting item		Set value
Connection I/O Type		Exclusive Owner
Originator Device	Input Tag Set	D10200-[392 Byte]
	Connection Type	Point to Point connection
	Output Tag Set	D10000-[262 Byte]
	Connection Type	Point to Point connection
Target Device	Output Tag Set	Input_100-[392 Byte]
	Input Tag Set	Output_101-[262 Byte]

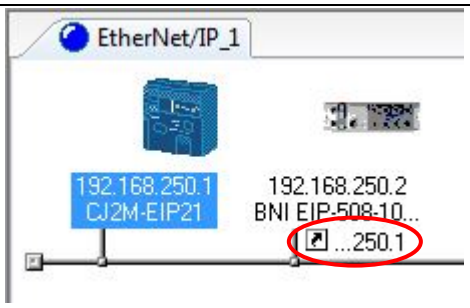
4 The Edit Connection Dialog Box is displayed again. Click **Close**.



5 The Edit Device Parameters Dialog Box is displayed again. Check that the connections set for 192.168.250.2 are registered.

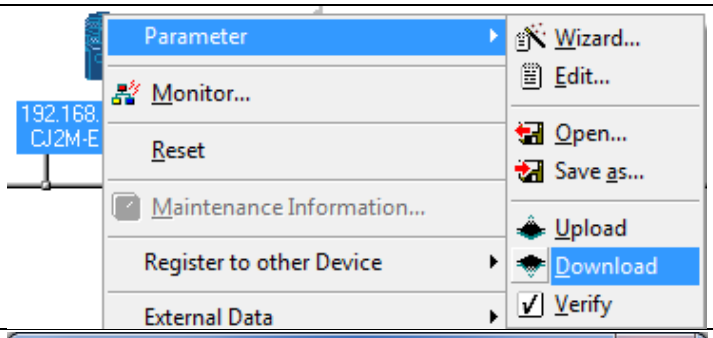
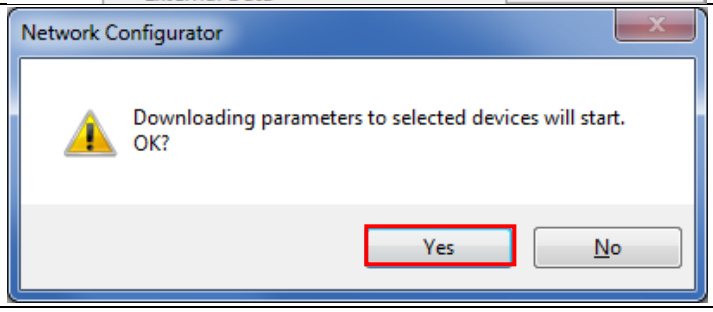
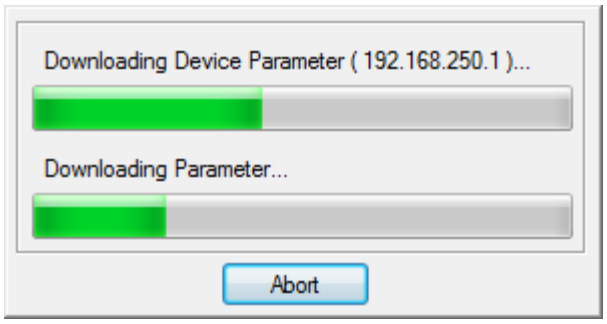
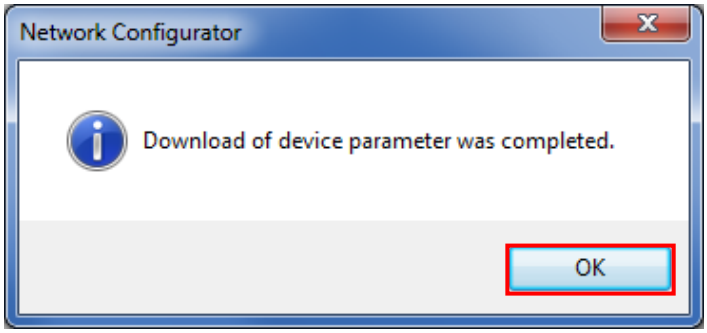
Click **OK**.



6	The IP address of PLC (Node 1) is displayed under the device icon of Network Module (Node 2) in the Network Configuration Pane. *It indicates that the connection settings are completed.	

7.4.5. Transferring the Tag Data Link Parameters

Transfer the tag data link parameters to the PLC.

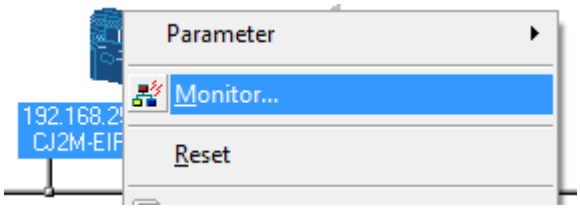
1	Right-click the device icon of PLC (Node 1) in the Network Configuration Pane and select ***Parameter*** - ***Download*** from the menu.	
2	The dialog box on the right is displayed. Confirm that there is no problem, and click **Yes**.	
3	The tag data link parameters are downloaded from Network Configurator to PLC.	
4	The dialog box on the right is displayed. Check the contents and click **OK**.	

7.5. EtherNet/IP Communication Status Check

Confirm that the EtherNet/IP tag data links perform normally.

7.5.1. Checking the Connection Status

Check the EtherNet/IP connection status.

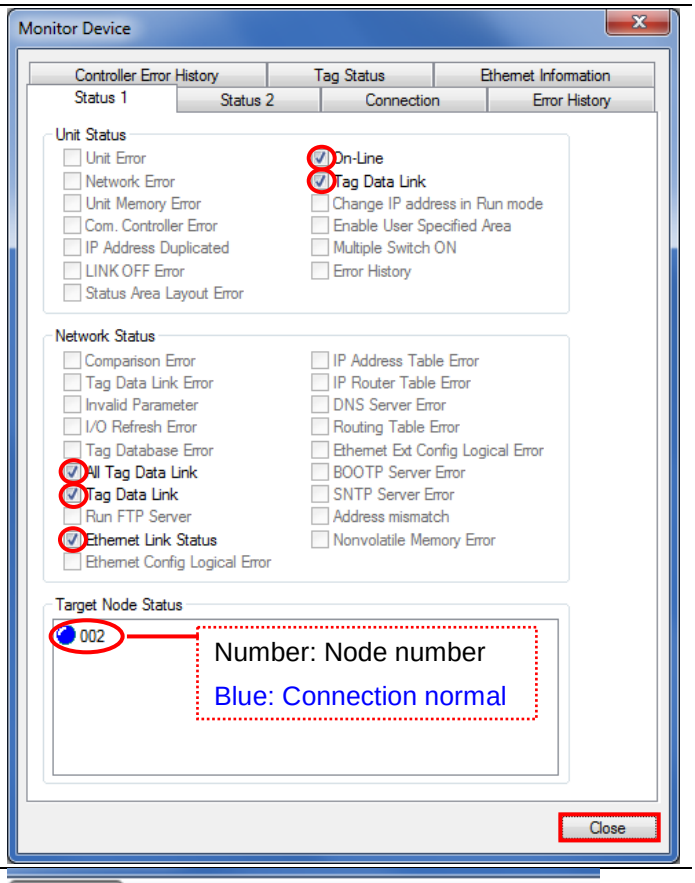
1	Check with LED indicators on PLC (EtherNet/IP Unit) that the tag data links perform normally. The LED indicators in normal status are as follows: MS: Green lit NS: Green lit COMM: Yellow lit 100M or 10M: Yellow lit	
2	Check Status LEDs on Network Module. The LED indicators in normal status are as follows: US: Green lit UA: Green lit Mod: Green lit Net: Green lit 100: Yellow lit LK1: Green flashing	
3	The normal performance of tag data links can be confirmed through the status information in the Monitor Device Dialog Box of Network Configurator. Right-click the device icon of PLC (Node 1) in the Network Configuration Pane and select ***Monitor***.	

4 The Monitor Device Dialog Box is displayed.
Check that the following check boxes are selected in the Status 1 Tab Page.

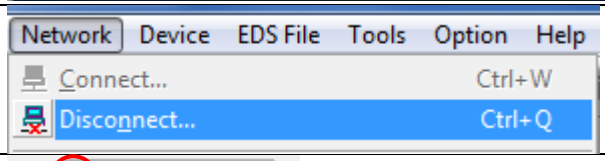
- On-Line
- Tag Data Link
- All Tag Data Link
- Tag Data Link
- Ethernet Link Status

Check that the target node status is displayed as shown on the right.

Click **Close**.

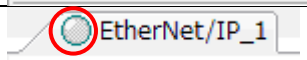


5 Select ***Disconnect*** from the Network Menu.

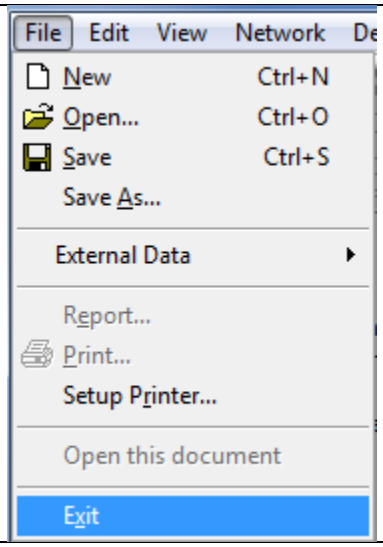


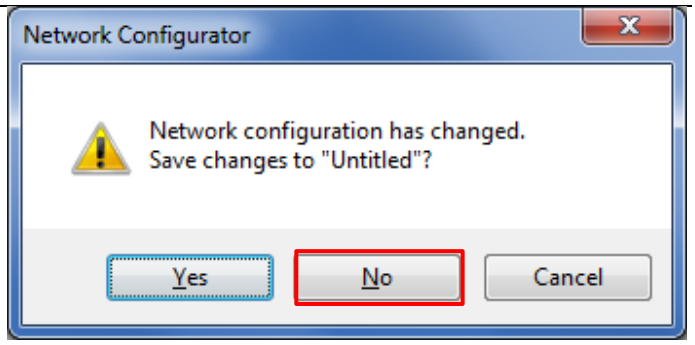
6 Check that the color of the network connection icon changes to gray on the **EtherNet/IP_1** Tab of the Network Configuration Pane.

*It indicates that Network Configurator and PLC are offline.



7 Select ***Exit*** from the File Menu to close Network Configurator.



8	A confirmation dialog box is displayed asking whether to save the parameters in a network configuration file. Confirm that there is no problem, and click **No**. *If you prefer to save the parameters in a network configuration file, click **Yes** to save the parameters.	

7.5.2. Checking Sent and Received Data

Check that correct data is sent and received.

⚠ Caution

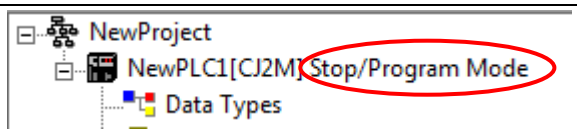
In this procedure, the output of the Network Module is performed, which may have a risk of unexpected operation of the devices connected to the Network Module.
Ensure safety before you proceed with this operation check described here.
If you cannot ensure safety, do not proceed. When you perform this operation check, make sure to complete all the steps and make the output of the Network Module safe.

⚠ Caution

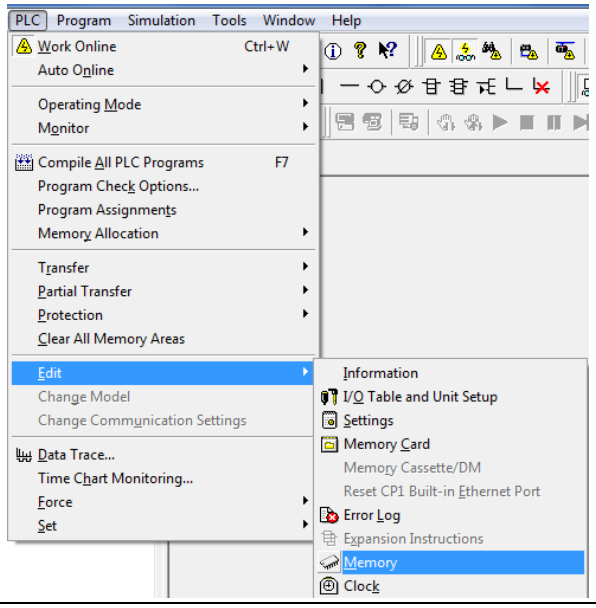
Ensure safety before wiring the I/O in a state where the devices are powered OFF.
Always read and follow the information provided in all safety precautions in the manuals for each device to be wired.

⚠ Caution

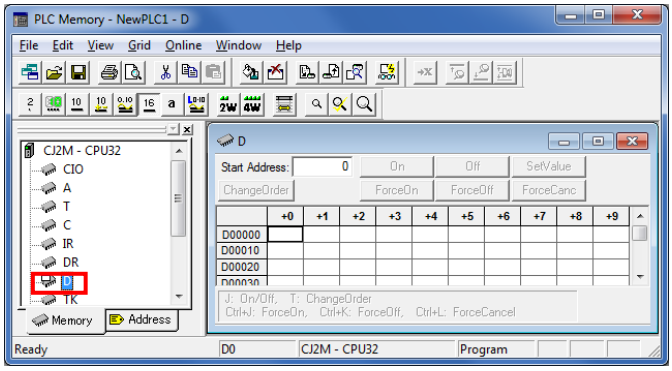
If the PLC memory is changed by malfunction during the monitoring of power flow and present value status in the Ladder Section Window or in the Watch Window, the devices connected to Output Units may malfunction, regardless of the operating mode of the CPU Unit.
Always ensure safety before monitoring power flow and present value status in the Ladder Section Window or in the Watch Window.

1	Check that the operating mode of PLC is Stop/Program Mode. *If not, change to Stop/Program Mode by referring to *step 1* of *7.3.4. Creating an I/O Table and Setting the IP Address*.	

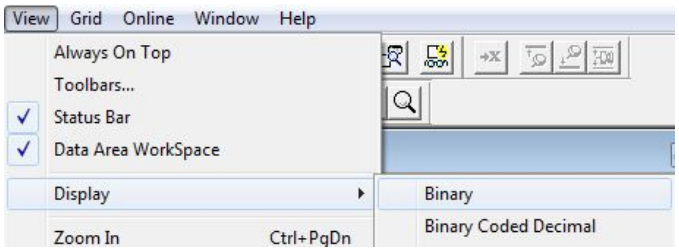
2 Select ***Edit*** - ***Memory*** from the PLC Menu.



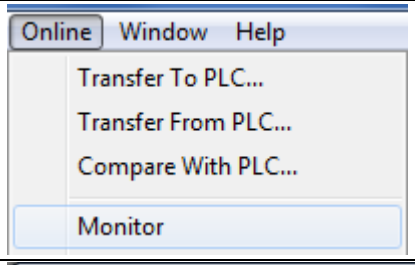
3 The PLC Memory Window is displayed.
Double-click **D** in the *Memory* Tab.



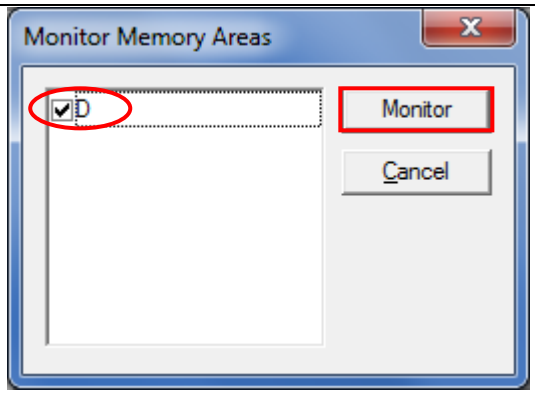
4 Select ***Display*** - ***Binary*** from the View Menu.



5 Select ***Monitor*** from the Online Menu.

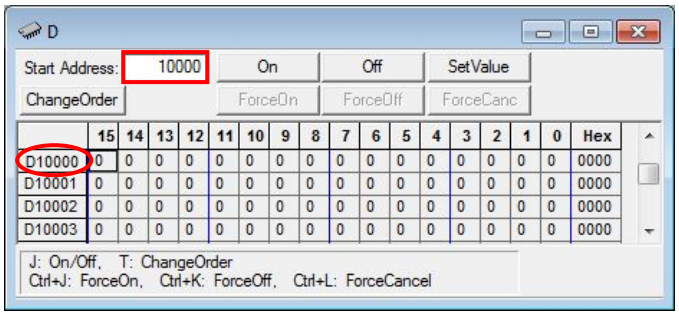


6 The Monitor Memory Areas Dialog Box is displayed.
Check that D is selected.
Click **Monitor**.

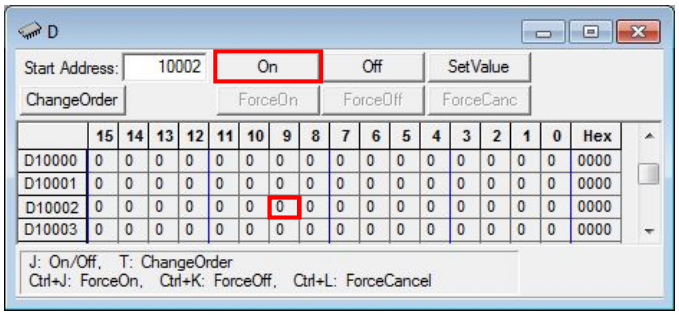


7 Enter *10000* in the *Start Address* Field of the D Area.

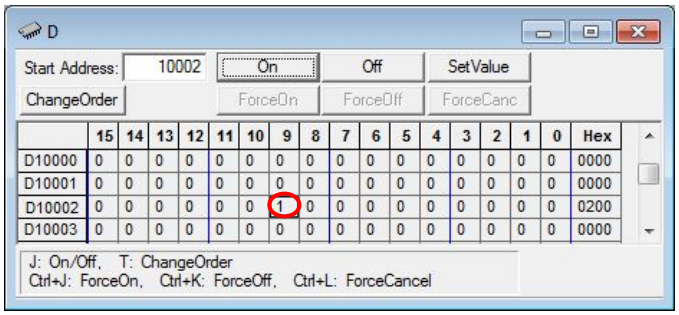
Check that the start address changes to D10000.



8 Select the bit 9 value of D10002 and click **On**.

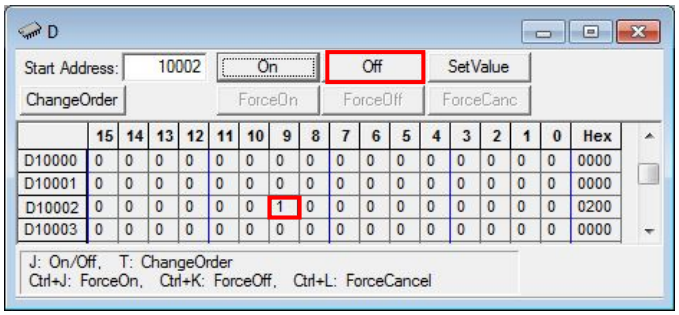


Check that the bit 9 value of D10002 changes from 0 to 1.

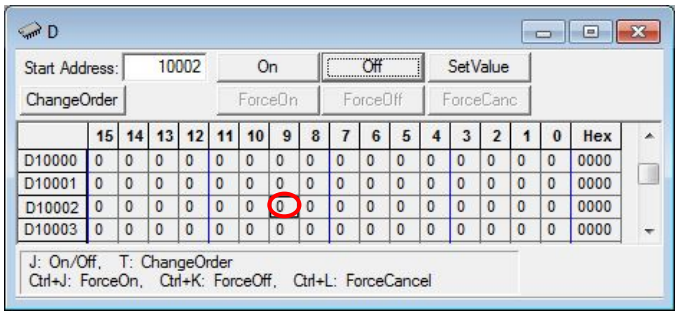


9 Check that the LEDs on Network Module are lit green.

10 In the D Area, select the bit 9 value of D10002 and click **Off**.



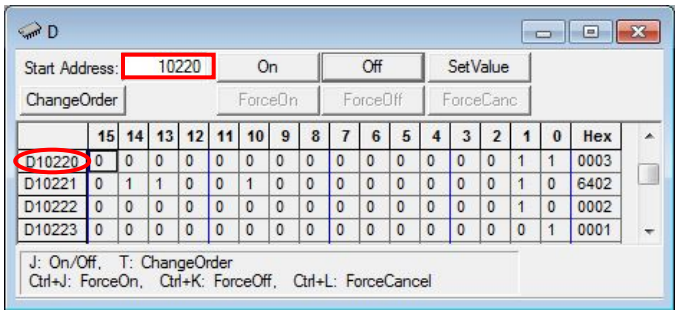
Check that the bit 9 value of D10002 changes from 1 to 0.



11 Check that the LEDs on Network Module turn OFF.

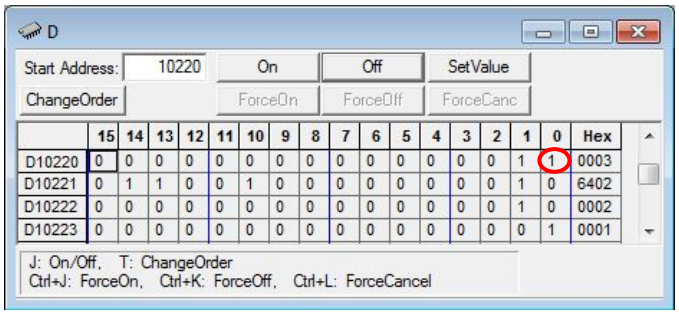
12 Check the Port 0 status of Network Module.
Enter *10220* in the *Start Address* Field of the D Area.

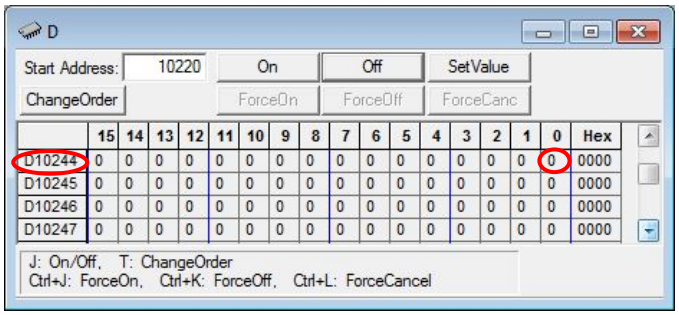
Check that the start address changes to D10220.



13 Check that the bit 0 value of D10220 is 1.

*It indicates that Port 0 of Network Module is in IO-Link mode.



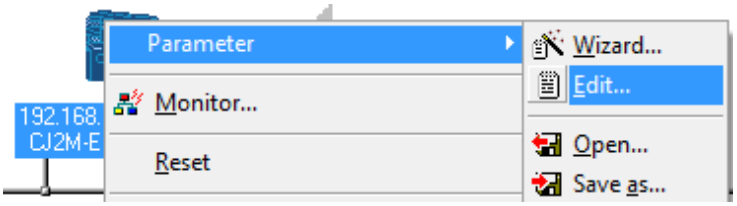
14	Check the Port 1 status of Network Module. Check that the bit 0 value of D10244 is 0. *It indicates that Port 1 of Network Module is in standard I/O mode.	
15	In the same way as step 14, check that the Ports 2 -7 statuses of Network Module are in standard I/O mode. The status of each port can be checked at the following channels. ・Port 2: Bit 0 of D10268 ・Port 3: Bit 0 of D10292 ・Port 4: Bit 0 of D10316 ・Port 5: Bit 0 of D10340 ・Port 6: Bit 0 of D10364 ・Port 7: Bit 0 of D10388	

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Hex
D10244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000

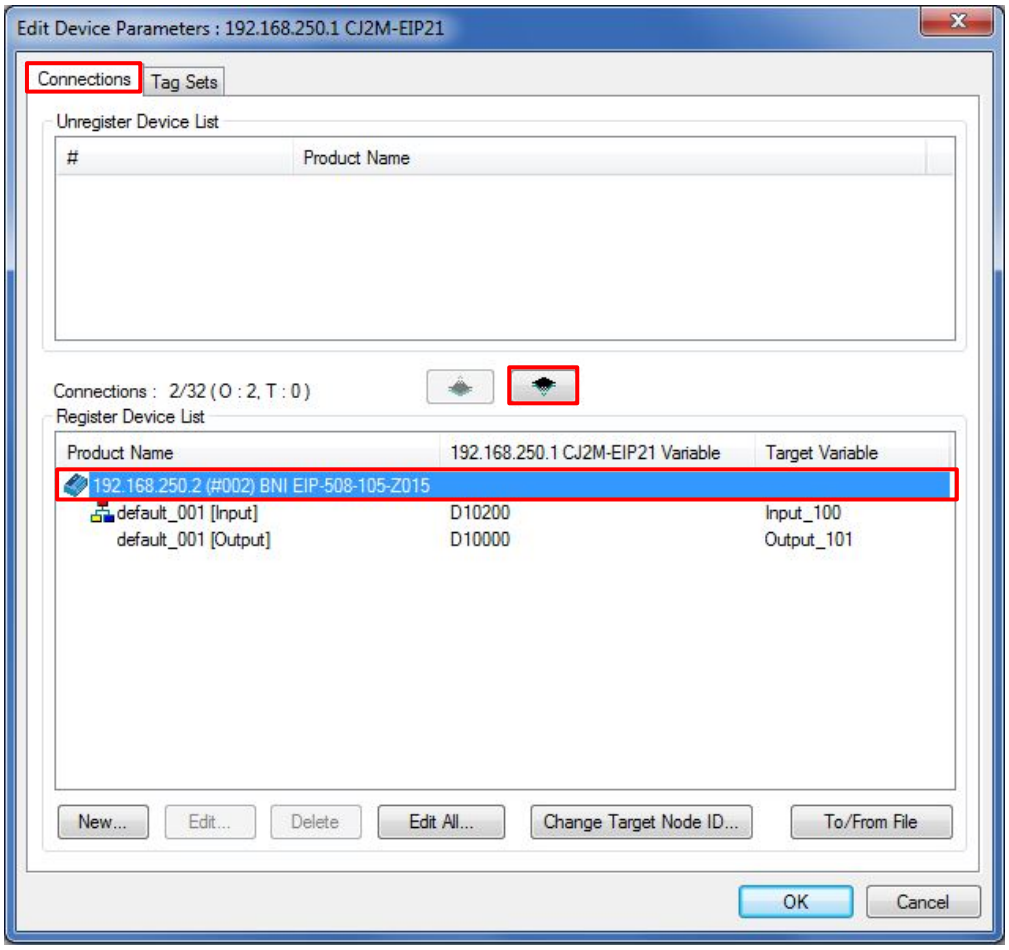
Precautions for Correct Use

If the Ports 0-7 statuses of the Network Module are different from the ones described in steps 13 to 15, go back to step 7 of *7.4.2. Uploading the Network Configuration*. Check and change the device parameters for the Ports 0-7 functions of the Network Module.
After changing the device parameters, delete the already set connections by following the steps below, and then follow each step of *7.4.4. Setting Connections* and the subsequent procedures again.
Note that changed device parameters of the Network Module are not reflected unless you retransfer the tag data link parameters to the PLC after deleting the already set connections and setting them as new ones again.

■How to delete the connections
(1)Right-click the device icon of PLC (Node 1) in the Network Configuration Pane and select ***Parameter*** - ***Edit*** from the menu.

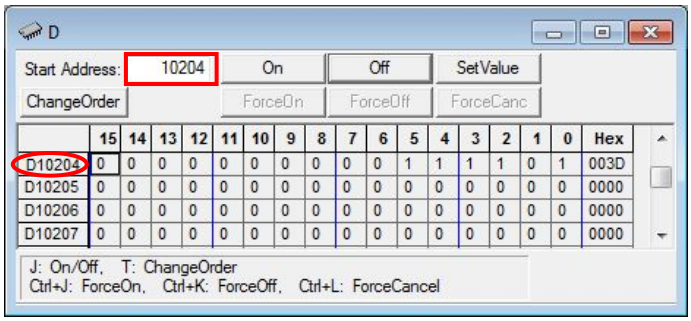


(2)Click the **Connections** Tab in the Edit Device Parameters Dialog Box.
(3)Select *192.168.250.2* from the Register Device List and click .



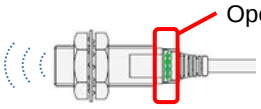
16 Check the input status of Proximity Sensor connected to Port 0 of Network Module.
Enter *10204* in the *Start Address* Field of the D Area.

Check that the start address changes to D10204.



	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Hex
D10204	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	003D
D10205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000

17 Make sure that there is no sensing object in front of Proximity Sensor and that Operation indicator is not lit (control output OFF).



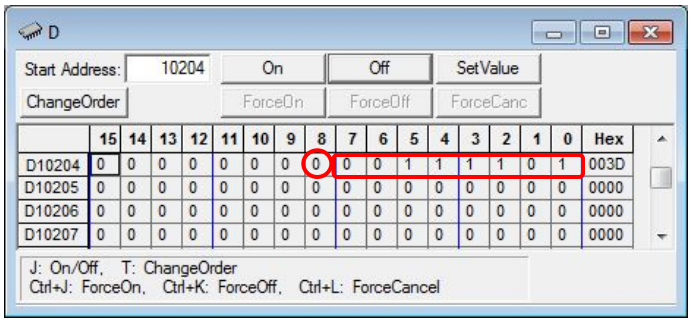
18 Check that the following values are displayed in bits 0 to 7 and bit 8 of D10204.

Bits 0 to 7: 00111101 (bin)
Bit 8: 0 (bin)

*The monitor output value varies depending on the surrounding environment of the location where Proximity Sensor is mounted.

*For details on each of the addresses, refer to *6.2. Tag Data Link Settings*.

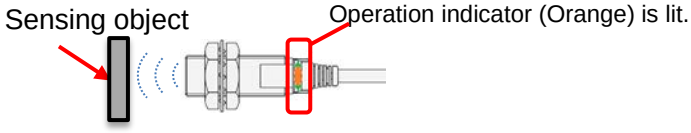
*You can check that the process data of Proximity Sensor (control output) is OFF. It shows the same status as in step 17.



	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Hex
D10204	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	003D
D10205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
D10207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000

D10204
Bits 0 to 7: 00111101 (bin) → 61 (dec)

19 Place Sensing object in front of Proximity Sensor and check that Operation indicator is lit orange (control output ON).



20

Check that the following values are displayed in bits 0 to 7 and bit 8 of D10204.

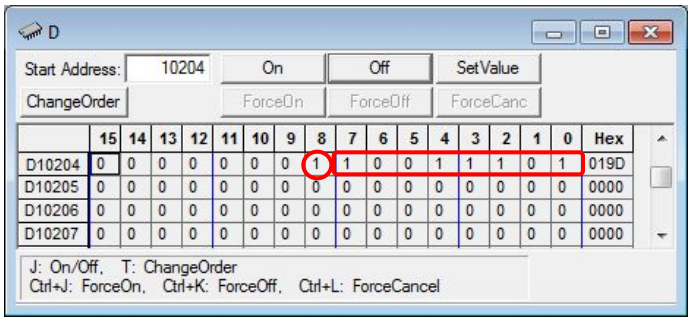
Bits 0 to 7: 10011101 (bin)

Bit 8: 1 (bin)

*The monitor output value varies depending on the surrounding environment of the location where Proximity Sensor is mounted.

*For details on each of the addresses, refer to *6.2. Tag Data Link Settings*.

*You can check that the process data of Proximity Sensor (control output) is ON. It shows the same status as in step 19.



D10204

Bits 0 to 7: 10011101 (bin) → 157 (dec)

8. Initialization Method

The setting procedures in this guide are based on the factory default settings.
Some settings may not be applicable unless you use the devices with the factory default settings.

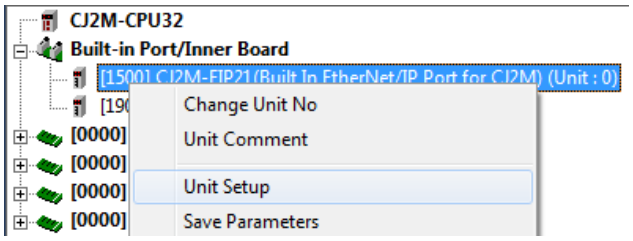
8.1. Initializing a PLC

To initialize the settings of a PLC, it is necessary to initialize an EtherNet/IP Unit and a CPU Unit. Change the operating mode of the PLC to PROGRAM mode before the initialization.

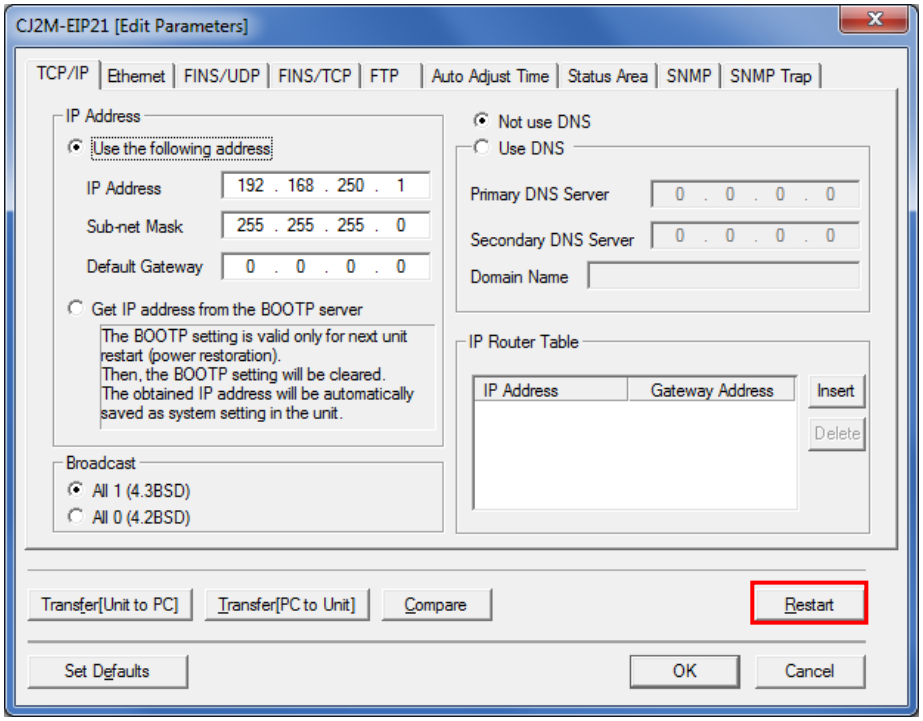
8.1.1. EtherNet/IP Unit

To initialize the settings of an EtherNet/IP Unit, select ***Edit*** - ***I/O Table and Unit Setup*** from the PLC Menu in CX-Programmer, and follow the steps below.

(1)Right-click EtherNet/IP Unit in the PLC IO Table Window and select ***Unit Setup*** from the menu.

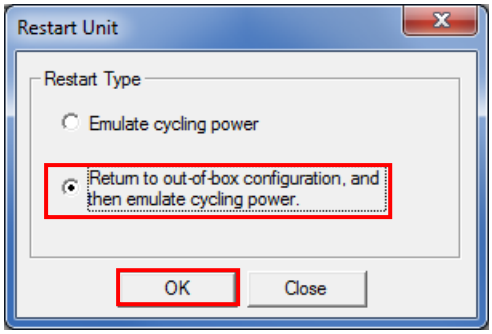


(2)Click **Restart** in the Edit Parameters Dialog Box.



(3)An execution confirmation dialog box is displayed. Confirm that there is no problem, and click **Yes**.

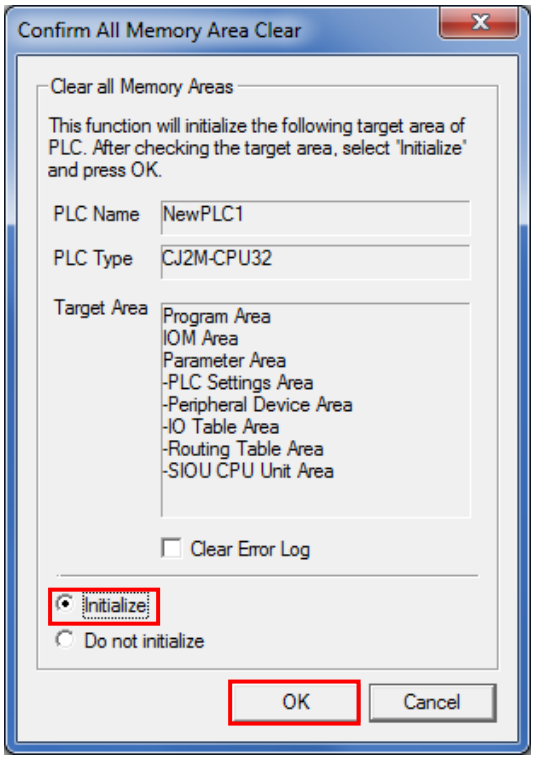
(4)The Restart Unit Dialog Box is displayed. Select *Return to out-of-box configuration, and then emulate cycling power*, and click **OK**.



(5)A dialog box is displayed stating that the execution is completed. Check the contents and click **OK**.

8.1.2. CPU Unit

To initialize the settings of a CPU Unit, select ***Clear All Memory Areas*** from the PLC Menu in CX-Programmer. Select *Initialize* in the Confirm All Memory Area Clear Dialog Box and click **OK**.



9. Revision History

Revision code	Date of revision	Description of revision
01	March 23, 2018	First edition

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