MITSUBISHI ELECTRIC
Changes for the Better

MELSEC MX Controller Connection Guide For Drive Unit Manufactured By FASTECH Co., Ltd.

Target models

- MXR300-16
- MXR300-32
- MXR300-64
- MXR500-128
- MXR500-256
- MXF100-8-N32
- MXF100-8-P32
- MXF100-16-N32
- MXF100-16-P32

Safety Precautions

- For precautions related to machine design and wiring, please read the safety instructions in the manual for your machine.
- For details regarding the product warranty, please read the warranty information in the manual for your machine.

Note

- The examples described in this document are provided for reference only and do not guarantee functionality. When implementing them, please verify the functionality and safety of the equipment or devices yourself before use.
- Available features and settings may vary depending on the product version you are using. Depending on the product version, settings, procedures, and screens may differ from those described in this document. In such cases, refer to your product manual or the software's built-in help.
- Please note that the contents of this manual, including specifications, are subject to change without notice for improvement purposes.
- For information on connecting the software used in this manual to devices, refer to the manuals for each software and device.
- For more detailed information on the contents of this manual, please refer to the relevant manuals.

This section explains the terms used in this document.
For terms not described here, refer to the manuals listed in the “Relevant Manuals” section.

Term	Description
CC-Link IE TSN	An open network that uses “TSN (Time-Sensitive Networking)”, which is an extension of the Ethernet standard, to ensure real-time control and handle information from other open networks simultaneously.
Master station	A station that controls the entire network. This station can perform cyclic transmission and transient transmission with all stations. In this document it refers to the MELSEC MX Controller.
Remote station	A station that exchanges I/O signals (bit data) and I/O data (word data) with another station by cyclic transmission. A transient transmission is available. In this document it refers to a drive unit manufactured by FASTECH Co., Ltd.
PDO	An abbreviation for Process Data Object. A collection of the application objects transmitted periodically between multiple CANopen nodes.
Object	Various data held by the CANopen-compatible device station.

Relevant Manuals

The latest PDF manuals are available from MITSUBISHI ELECTRIC Factory Automation Global website.
www.MitsubishiElectric.com/fa

Manual name	Manual number
MELSEC MX Controller MX-R Model User's Manual	SH-082641ENG
MELSEC MX Controller MX-R Model Programming Manual	SH-082644ENG
MELSEC MX Controller MX-F Model User's Manual	SH-082634ENG
MELSEC MX Controller MX-F Model Programming Manual	SH-082691ENG
GX Works3 Operating Manual	SH-081215ENG

The latest manuals, library files, and configuration/setup software for drive units manufactured by FASTECH Co., Ltd. are available for download from FASTECH Co., Ltd.'s website.
cltsn.fastech-motions.com/en

Table of Contents

1. OVERVIEW

This document explains the configuration steps to connect the MELSEC MX Controller MX-R Model*1 and a drive unit manufactured by FASTECH Co., Ltd. over CC-Link IE TSN.

In this document the MELSEC MX Controller MX-R Model is referred to as the controller.

By referring to this document and using engineering tools to configure network connections and create programs, you can:

(1) Connect various CC-Link IE TSN compatible devices (drive units, inverters, etc.)

Through the controller, you can connect to drive units and inverters compatible with CC-Link IE TSN. Therefore, the options for equipment selection expand when building or modifying equipment.

(2) With PLCopen® Motion Control FB, each drive unit can be controlled with a consistent user experience

You can program using Motion Control FB compliant with IEC 61131-3. Therefore, program specifications such as operation specifications and interface specifications are standardized regardless of a drive unit, allowing each drive unit to be controlled with a consistent user experience.

*1: You can connect a drive unit manufactured by FASTECH Co., Ltd. to the MX-F Model using the same procedure.

1.2 Drive Unit Manufactured by FASTECH Co., Ltd.

Below is the product lineup of drive units manufactured by FASTECH Co., Ltd. compatible with CC-Link IE TSN. For details on each product, please contact FASTECH Co., Ltd.

- Ezi-SERVO-CT
- Ezi-STEP-CT

Below are the product specifications for the drive units.

Item		Specification
Communication protocol		CC-Link IE TSN Class B
Communication speed		1Gbps / 100Mbps
Operating mode		CiA402 Drive profile: Cyclic synchronous position mode (CSP) / Profile position mode (PP) / Homing mode (HM)
Synchronization method	Time synchronization method	IEEE1588 / IEEE802.1AS
	Communication cycle	Minimum 250 μs
	Network synchronous communication	Synchronous communication (CSP, PP, HM) / Asynchronous communication (PP, HM)
Encoder type		Incremental type

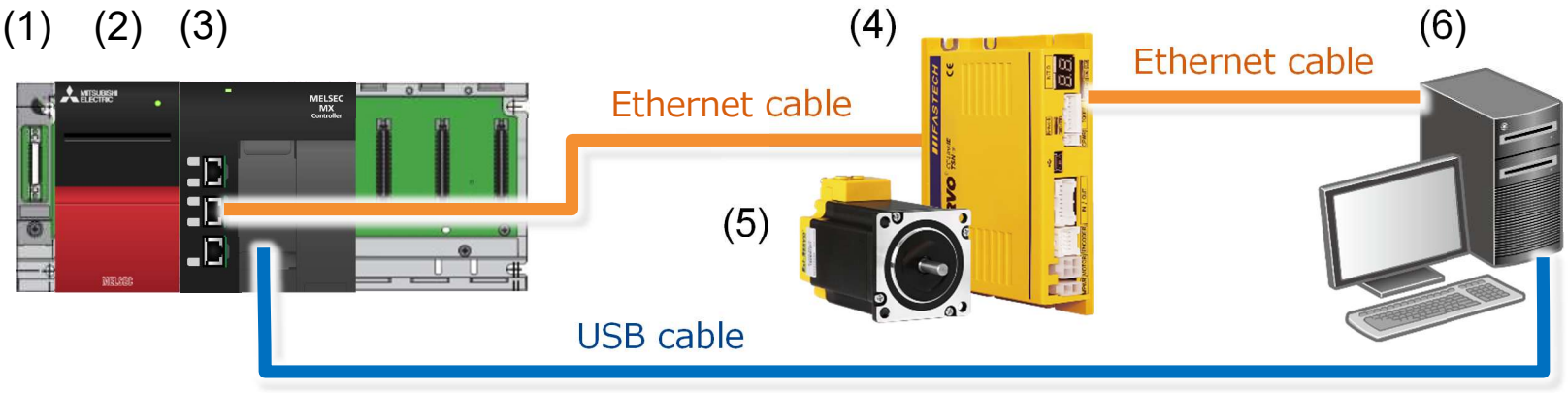
1.3 List of Restrictions

Below are the limitations of motion control functions when the controller is connected to the drive unit. For details on each function, please refer to the controller manual.

Item	Restriction
Follow up	For the following models, always perform a home position return after turning servo ON. Because this is an open-loop control system, the “Position actual value (Index: 6064h, Sub index: 00h)” is not updated during servo OFF. The follow up function uses the “Position actual value (Index: 6064h, Sub index: 00h)” to reflect motor rotation in the controller’s command; therefore, any motor rotation during servo OFF will cause a discrepancy between the controller’s command position and the motor’s actual position. ・Ezi-STEP-CT
Absolute position control	Since the encoder is of the incremental type, the absolute position system cannot be used.
Driver homing method	The home position switch (AbsSwitch) for MC_Home (OPR) cannot be used to transmit the dog signal to the drive unit.
Speed to positioning move control	External signal high-accuracy input is not supported.
Velocity control	Since the drive unit does not support Cyclic synchronous velocity mode (CSV), MC_MoveVelocity (Speed Control) cannot be used.
Torque control	Since the drive unit does not support Cyclic synchronous torque mode (CST), MC_TorqueControl(Torque control) cannot be used.
Pressure control	Since only MELSERVO supports the pressure control, MCv_PressureControl (Pressure Control) cannot be used.

Item	Restriction
Torque limit	Since the drive unit does not support “Positive torque limit value (Index: 60E0h, Sub index: 00h)” and “Negative torque limit value (Index: 60E1h, Sub index: 00h),” the following functions cannot be used. ・AxisName.PrConst.TorqueLimit_Max (Torque Limit Maximum Value) ・AxisName.PrConst.TorqueLimit_PositiveInitial (Positive Direction Torque Limit Initial Value) ・AxisName.PrConst.TorqueLimit_NegativeInitial (Negative Direction Torque Limit Initial Value) ・AxisName.Cd.TorqueLimit_Positive (Positive Direction Torque Limit Value) ・AxisName.Cd.TorqueLimit_Negative (Negative Direction Torque Limit Value) ・MCv_SetTorqueLimit (Torque Limit Value)
External signal selection	External signal high-accuracy input is not supported.
Touch probe	External signal high-accuracy input is not supported.
Axis emulation	It is emulated as an MR-J5-G.
Advanced synchronous control	External signal high-accuracy input cannot be used for the clutch signal setting.
Positioning data history	Among this history data, the following data will always remain “0.” ・Home cycle counter ・Home ABS counter ・Encoder multiple revolution position ・Encoder 1 revolution position

In this document, the explanation is based on the following system configuration.



Device		Model name / Software	Supported version	Version used in this document
(1)	Main base module	R35B	—	—
(2)	Power supply module	R64P	—	—
(3)	Controller	MXR500-256	“01” or later	“04”
(4)	Drive unit	Ezi-SERVO-CT	—	“1.0”
(5)	Motor	EzM2-42L-A	—	—
(6)	Configuration PC	GX Works3	“1.115V” or later	“1.120A”
		Ezi-CT Manager	—	“1.0.5.16”

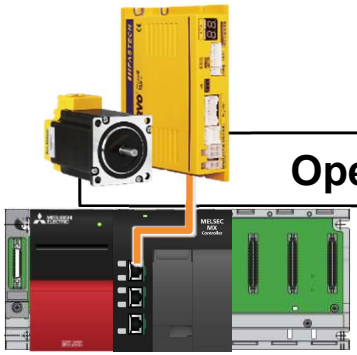
This section describes the setup procedures to connect the controller and drive unit in the system configuration described above.
Follow the steps below to perform the setup and verify operation.

Drive Unit Settings

Using the engineering tool, configure the parameters of the drive unit.

Controller Settings

Using the engineering tool, create the controller project, configure the unit parameters (communication method, connection destination), and set up motion control (axis parameters).



Operation Check

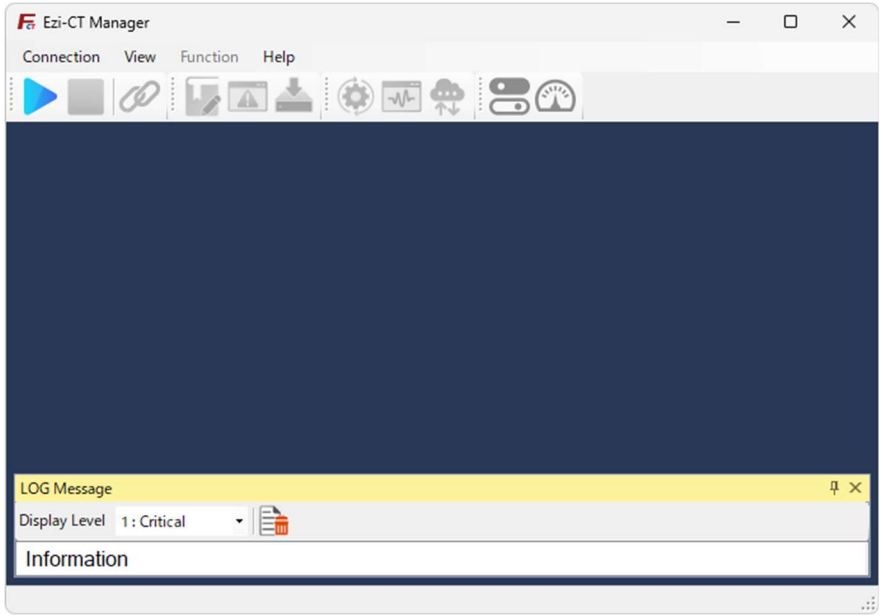
Create a program to verify that the controller and drive unit are correctly configured.
Operate the label to confirm that the motor operates properly.

2. DRIVE UNIT SETTINGS

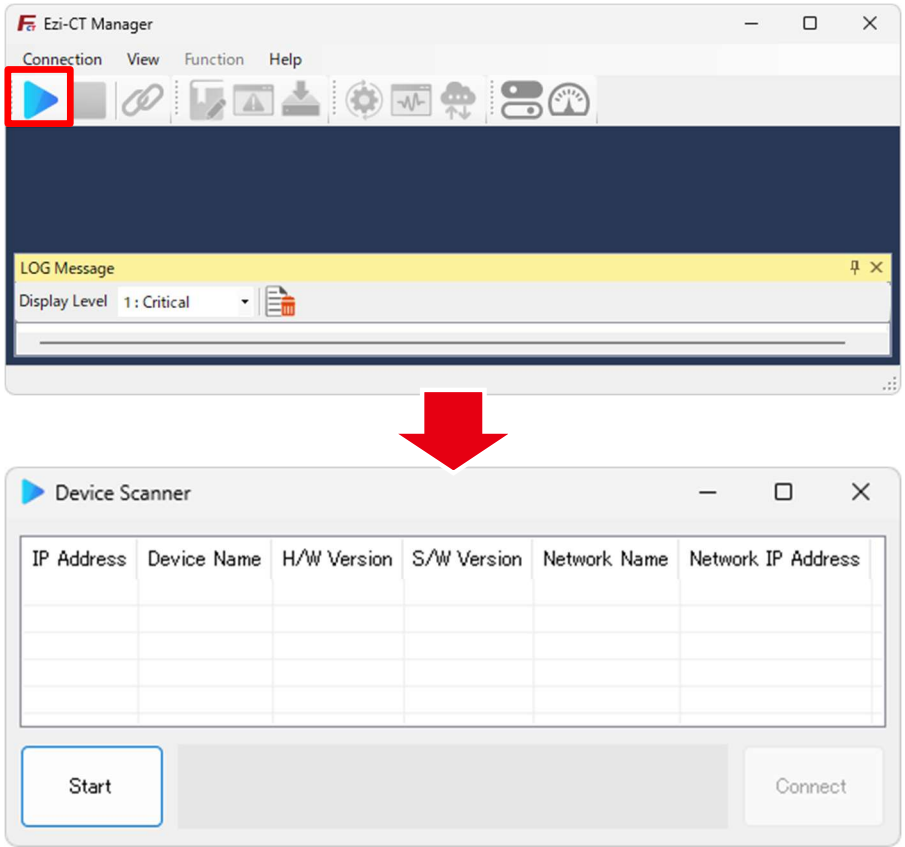
This section explains the procedure for configuring the drive unit parameters using Ezi-CT Manager.
Before launching Ezi-CT Manager, turn on the power to the drive unit and connect it to the configuration PC via an Ethernet cable.

■ Connection

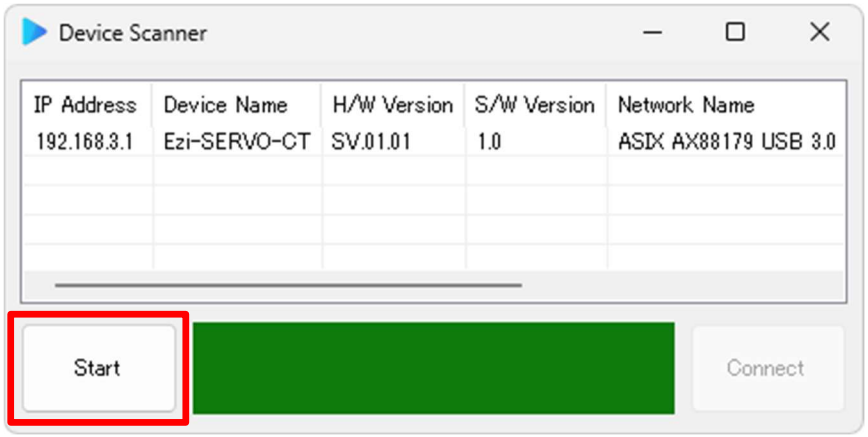
1. **Start Ezi-CT Manager.**



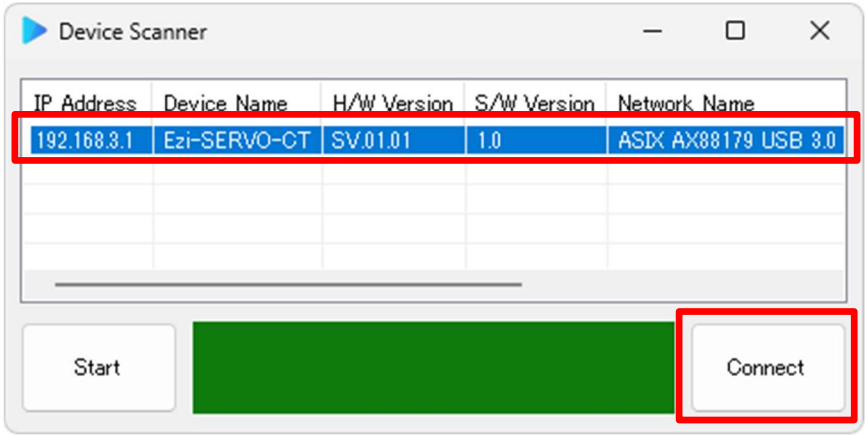
2. **Click the icon at the top of the screen to open the “Device Scanner” window.**



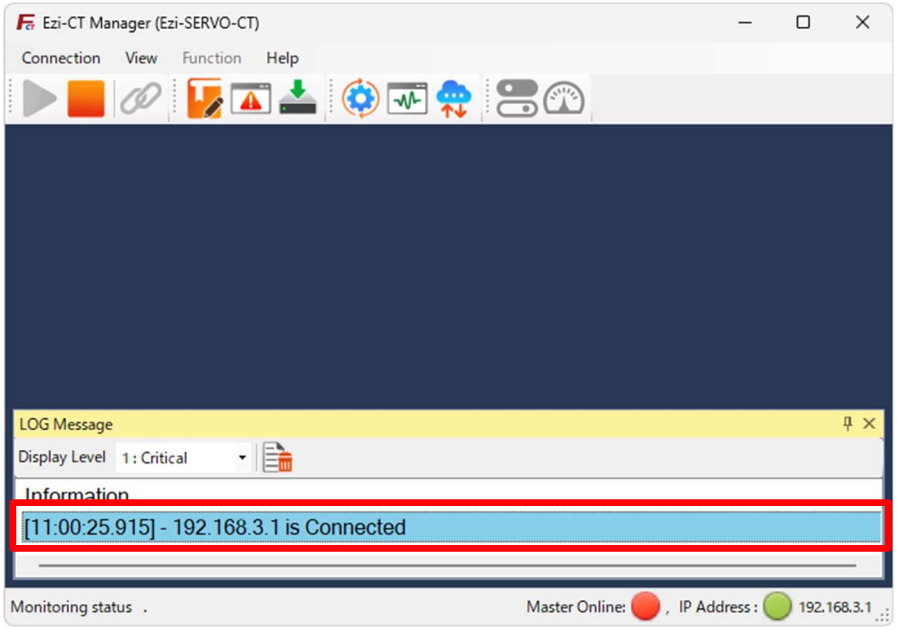
3. Click the [Start] button. After a short wait, the drive unit connected to the configuration PC will be displayed.



4. Select the drive unit shown in the window and click the [Connect] button.

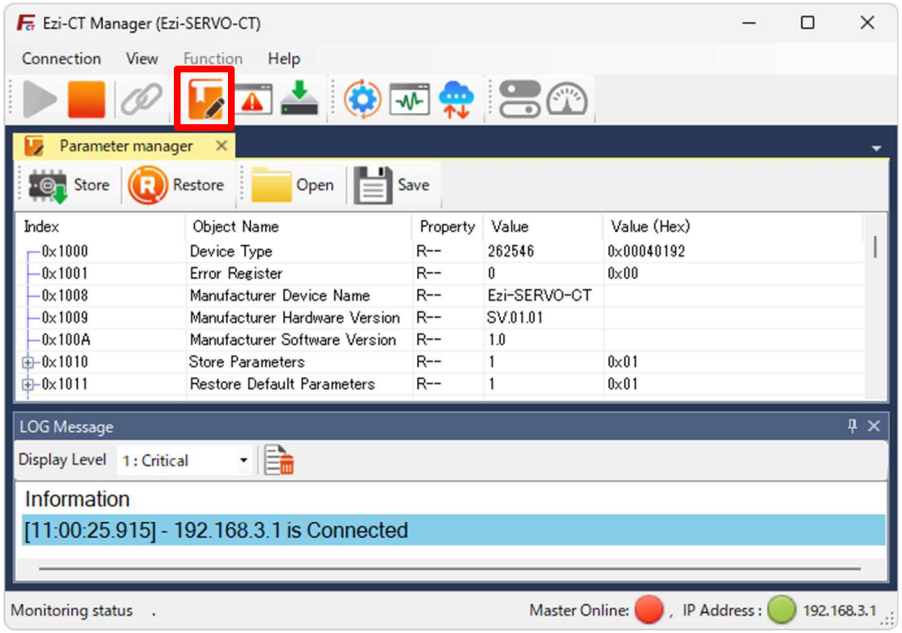


5. Once the connection between Ezi-CT Manager and the drive unit is established, the information will be displayed in the “LOG Message” window.

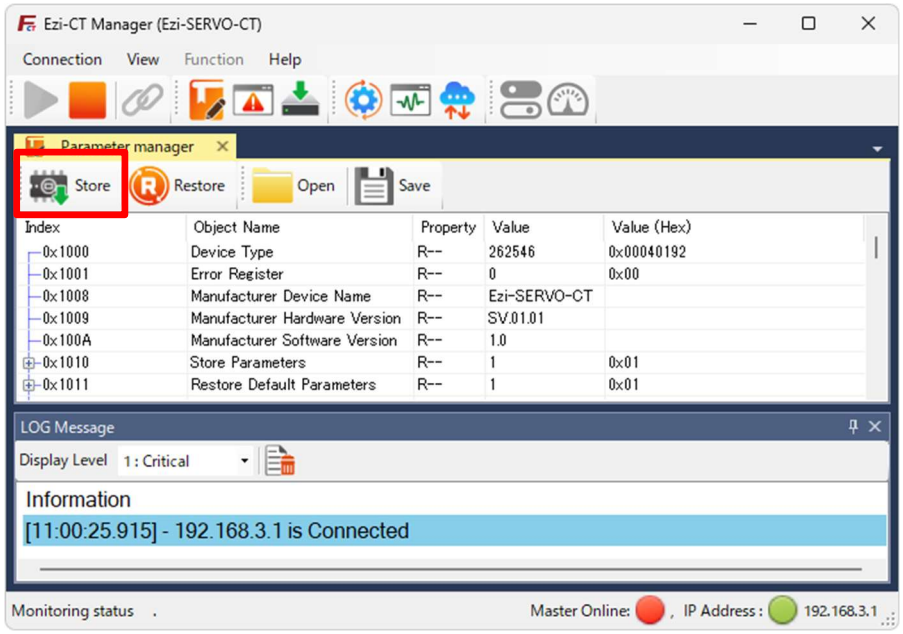


■ Parameter Settings

1. Click the icon at the top of the screen to open the “Parameter manager” window.



2. Configure the parameters as appropriate for your environment.
   When you have finished setting the parameters, click the [Store] button.



3. **Click the [OK] button, then turn the power of the drive unit OFF and back ON.**

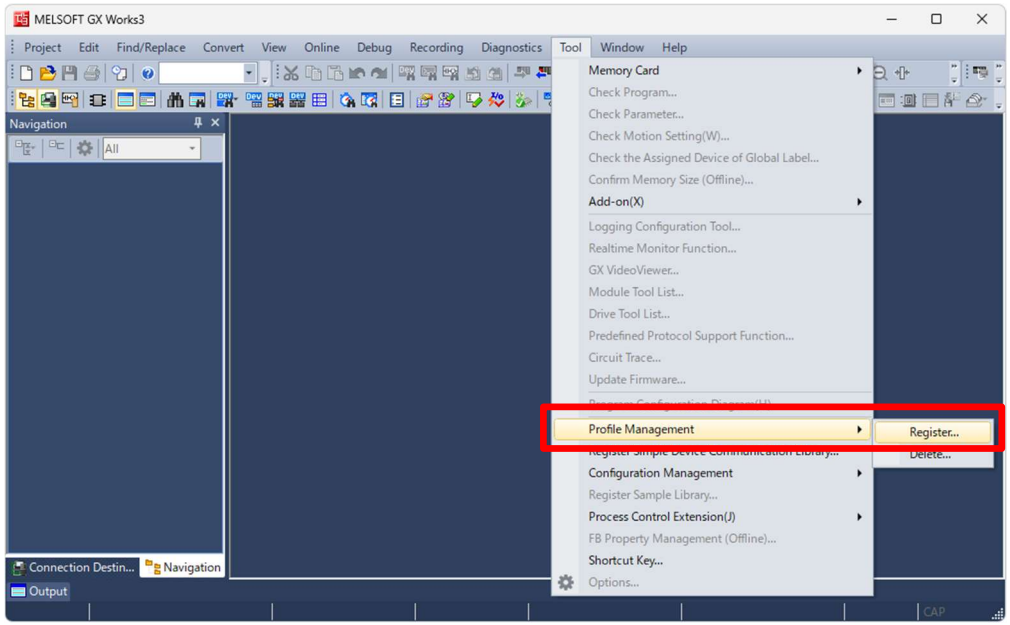
Here are the key points regarding the drive unit parameter settings. For detailed information on the parameters, please refer to the drive unit manual.

- The IP address can be set using the rotary switch on the drive unit. By setting the rotary switch to “00,” you can also configure it via “IP Address (Index: 2101h, Sub index: 01-04h).”
- When performing driver-based home position return, the initial value of “Homing method (Index: 6098h, Sub index: 00h)” is “0 (No Mode)” so please set it to a valid value. Also, set “Home offset (Index: 607Ch, Sub index: 00h)” to “0.” If a value other than “0” is set, the system may accelerate or decelerate abruptly upon completion of home position return.
- Set “Limit stop method (Index: 2003h, Sub index: 00h)” to “3 (Quick stop)” or “4 (Deceleration stop).” If a value other than “3” or “4” is set, the drive unit will not stop even when a hardware stroke limit is detected.

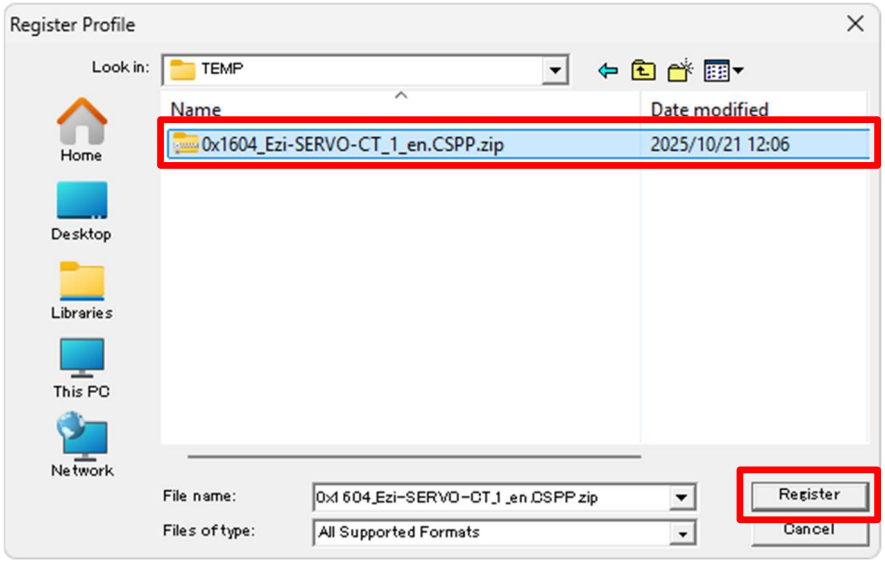
3. CONTROLLER SETTINGS

Register the drive unit profile (*.zip) in GX Works3. Since you cannot register the profile while a project is open, please do this before creating a project.
The profile can be downloaded from FASTECH Co., Ltd.'s website.
cltsn.fastech-motions.com/en

1. **Start GX Works3.**
   Select [Tool] → [Profile Management] → [Register] from the menu bar.



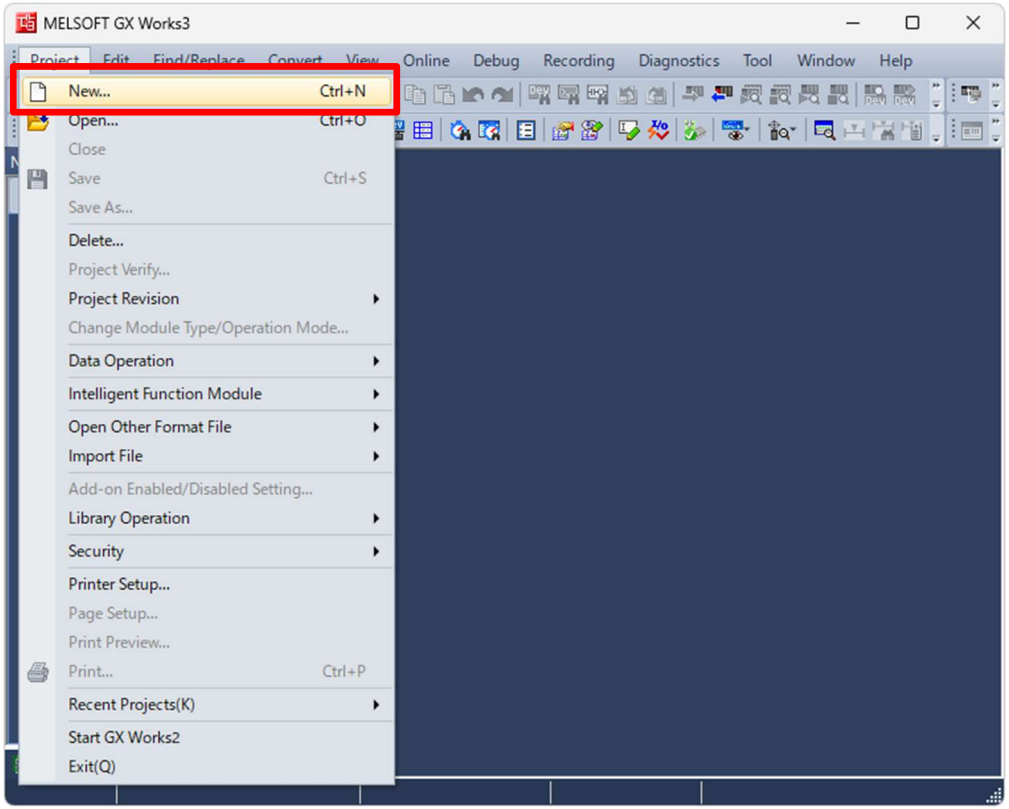
2. **Choose the profile and click the [Register] button.**



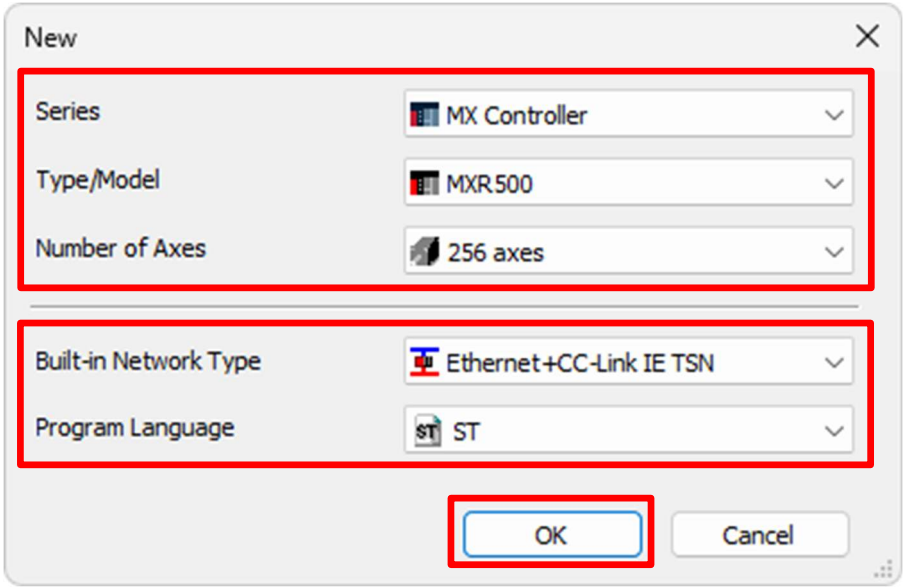
3. **Click the [OK] button.**

Create a controller project in GX Works3.

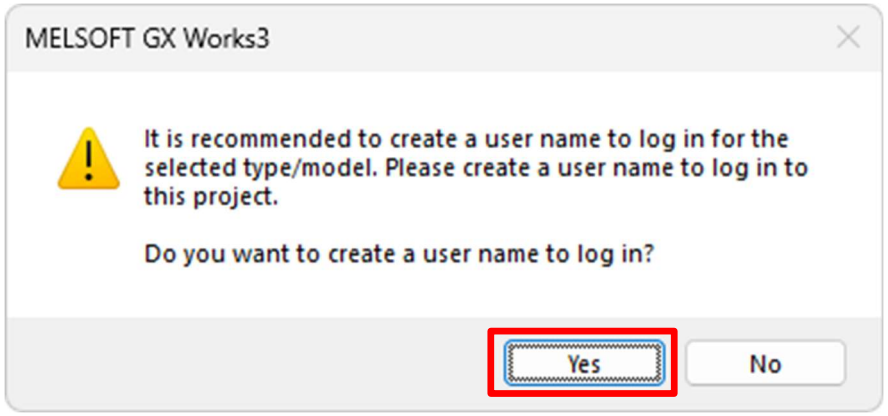
1. **Create a new project.**
   Select [Project] → [New] from the menu bar.



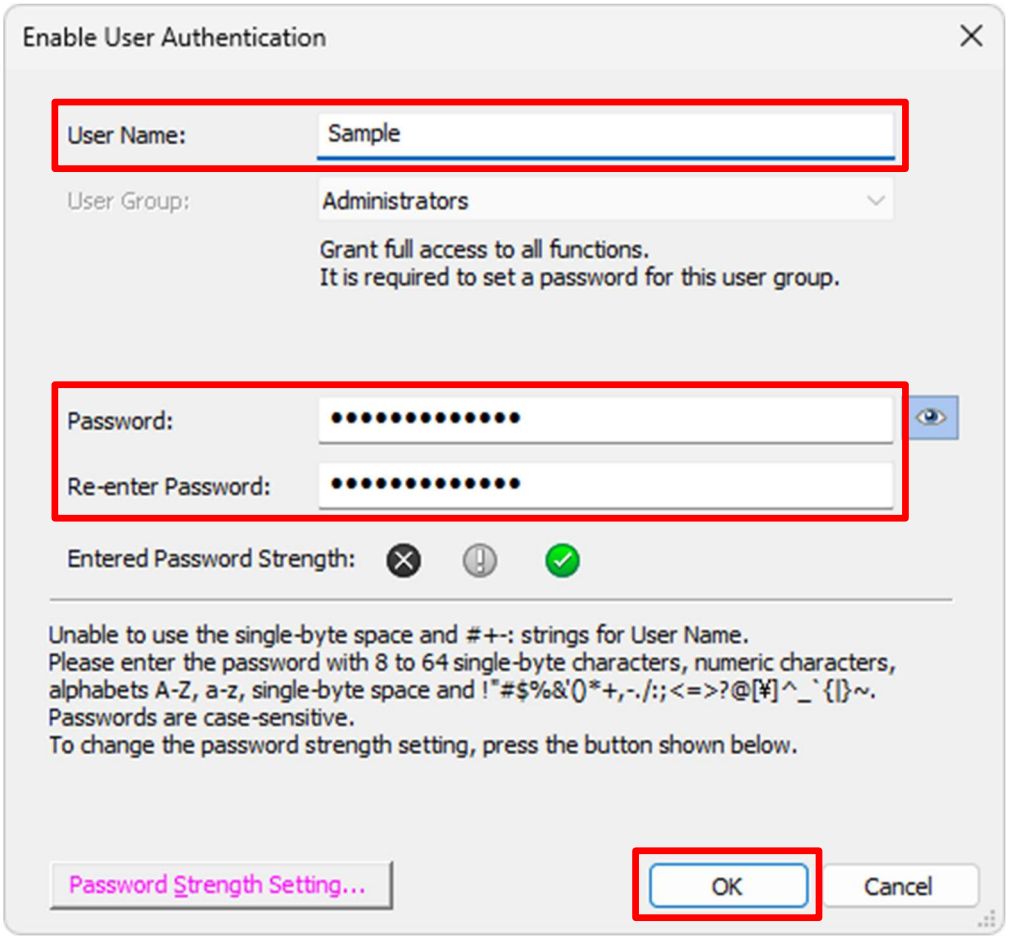
2. **In the "New" window, choose the following items and click the [OK] button.**
   - **Series: MX Controller**
   - **Type/Model: MXR500**
   - **Number of Axis: 256 axes**
   - **Built-in Network Type: Ethernet + CC-Link IE TSN**
   - **Program Language: ST**



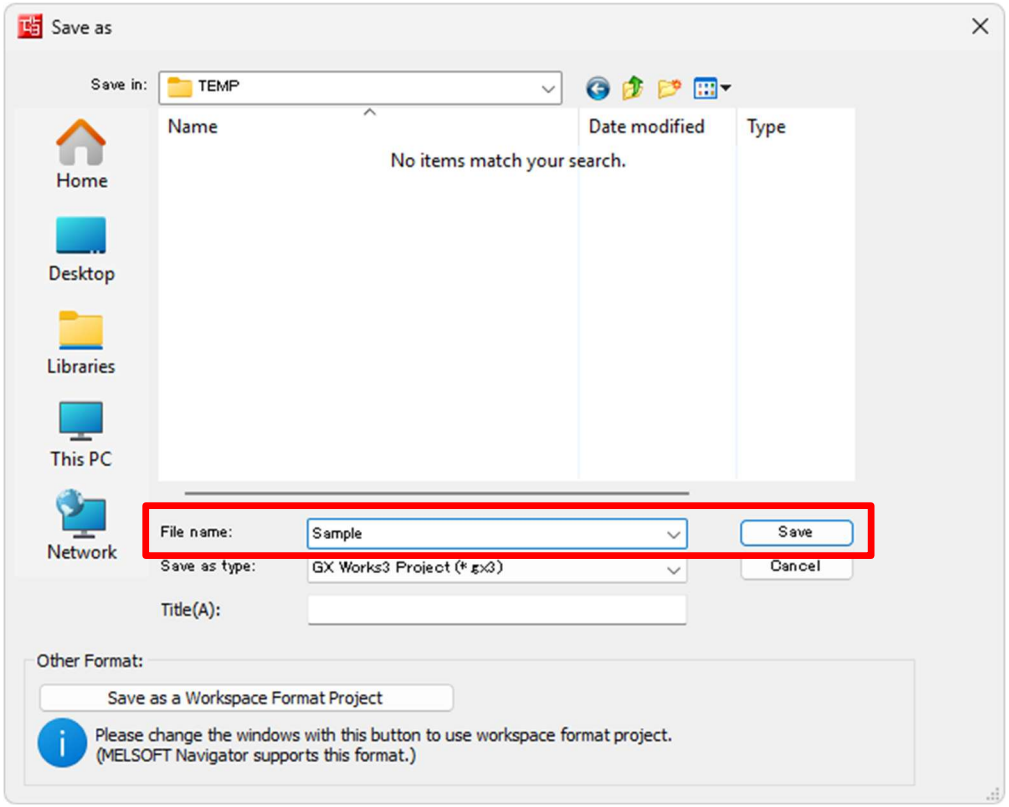
3. **Register the username and password used to log in to the project. In the next window, click the [Yes] button.**



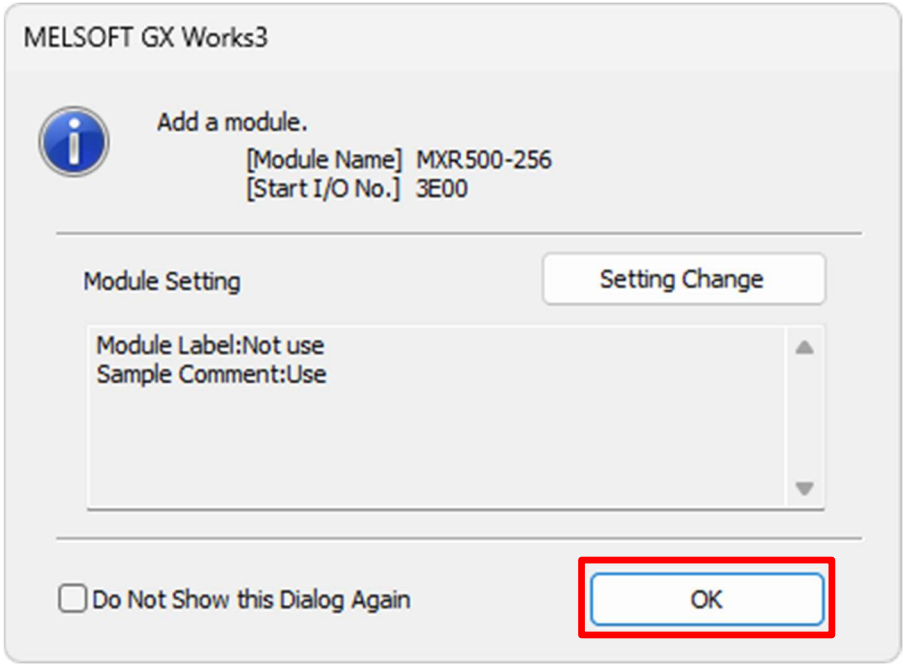
4. **In the "Enable User Authentication" window, enter the username and password, then click the [OK] button.**



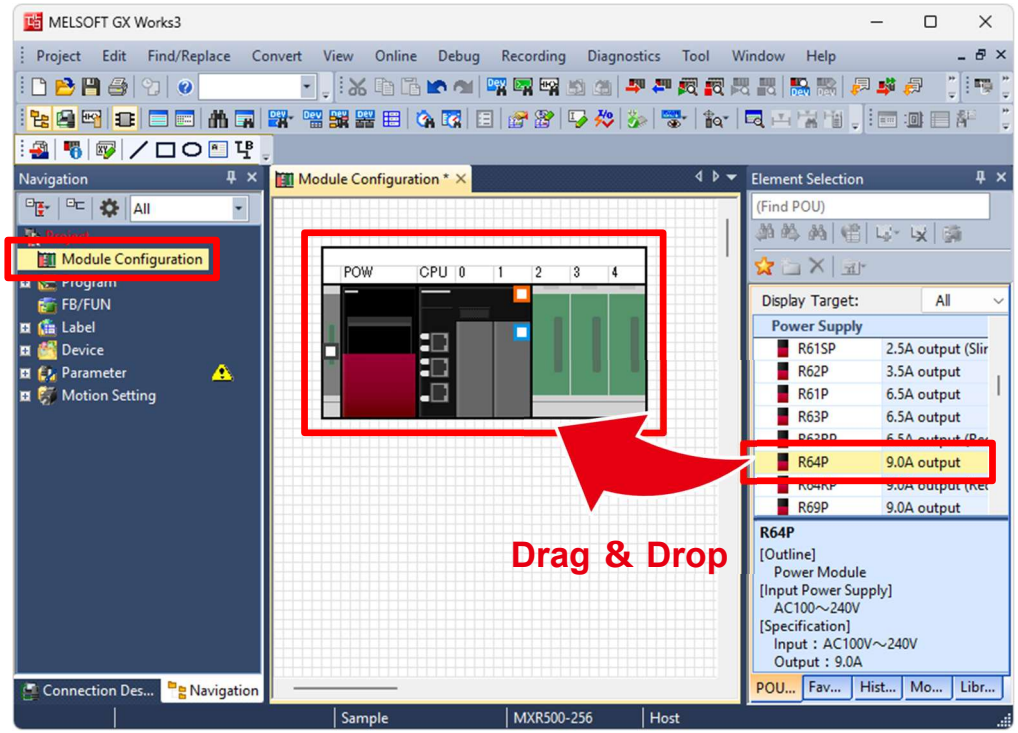
5. In the next window, enter the file name, then click the [Save] button to save the project.



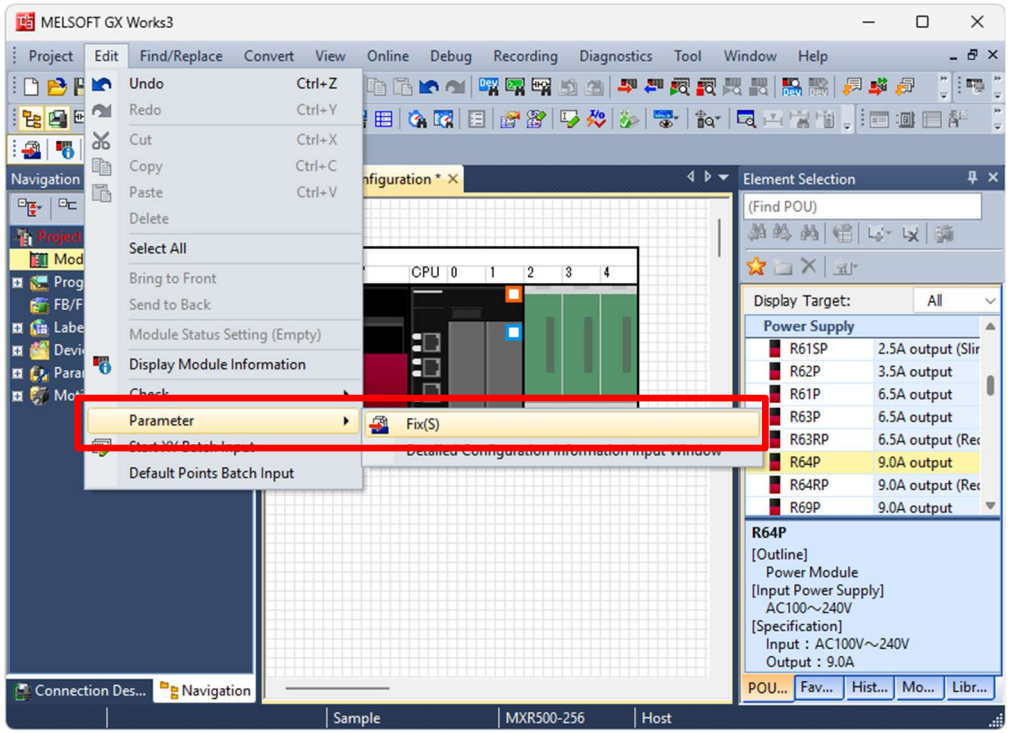
6. In the next window, click the [OK] button.



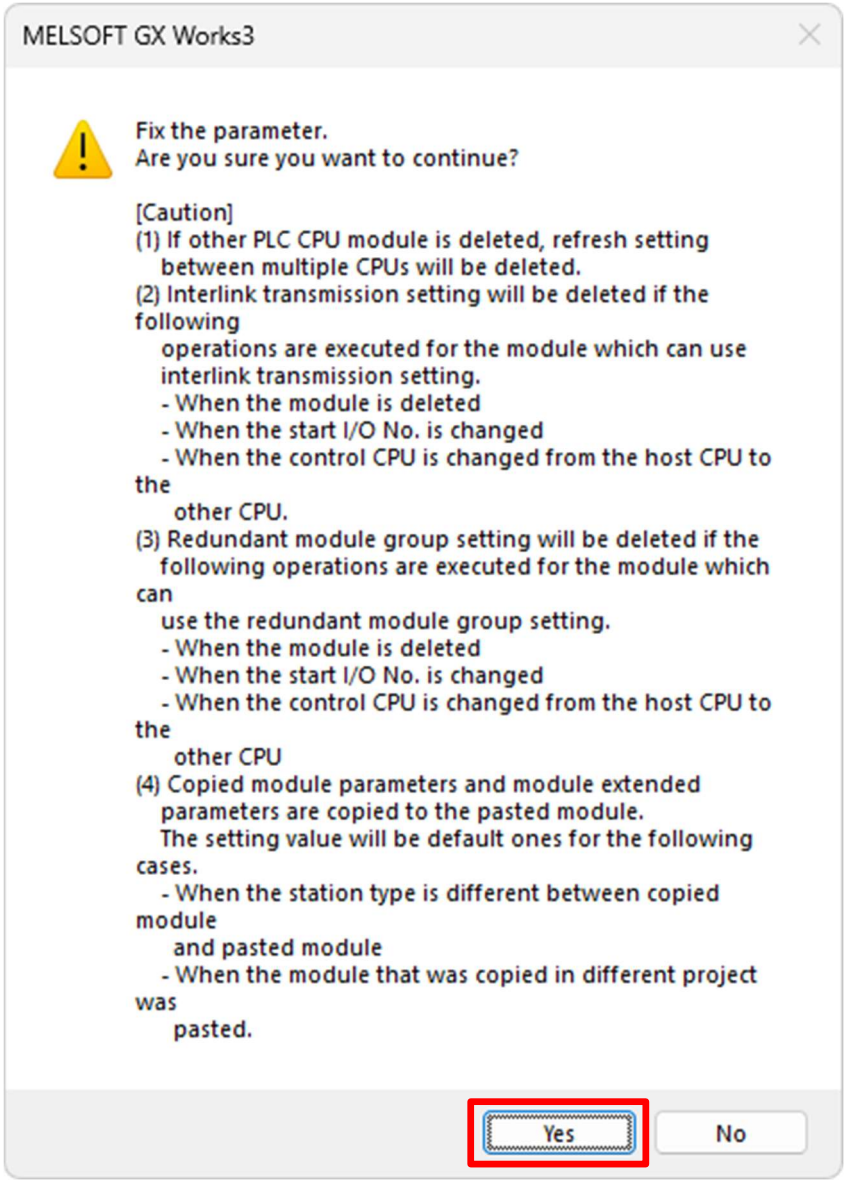
7. Double-click [Navigation] → [Module Configuration], and set up the module configuration diagram. Configure the necessary units according to your system setup.
   - Main Base: R35B
   - Power Supply: R64P
   - MX Controller: MXR500-256



8. Click [Edit] → [Parameter] → [Fix] from the menu bar.



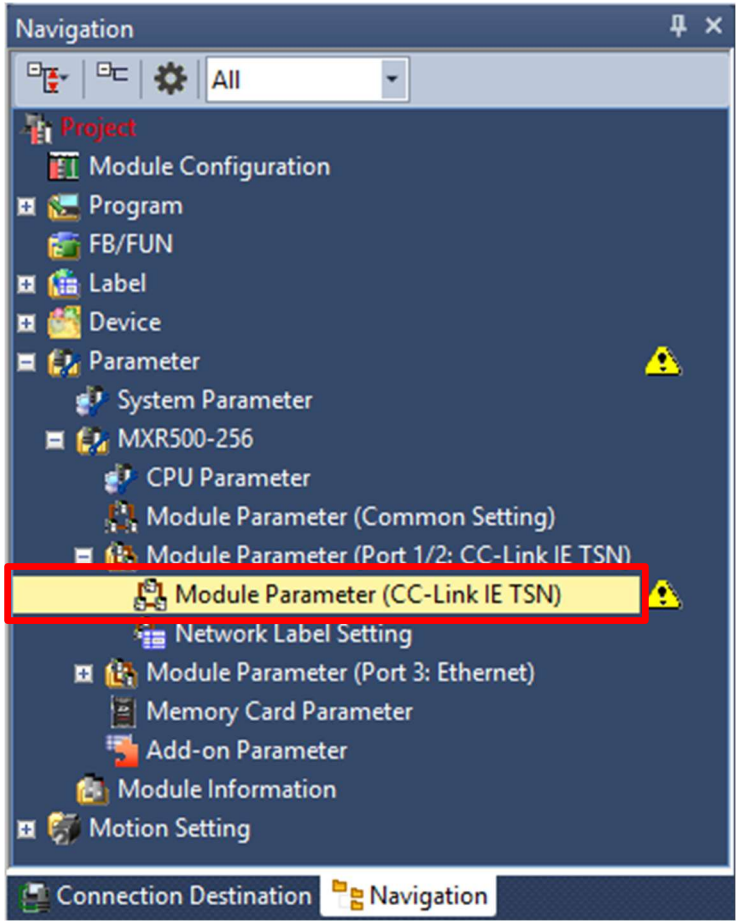
9. In the next window, click the [Yes] button.



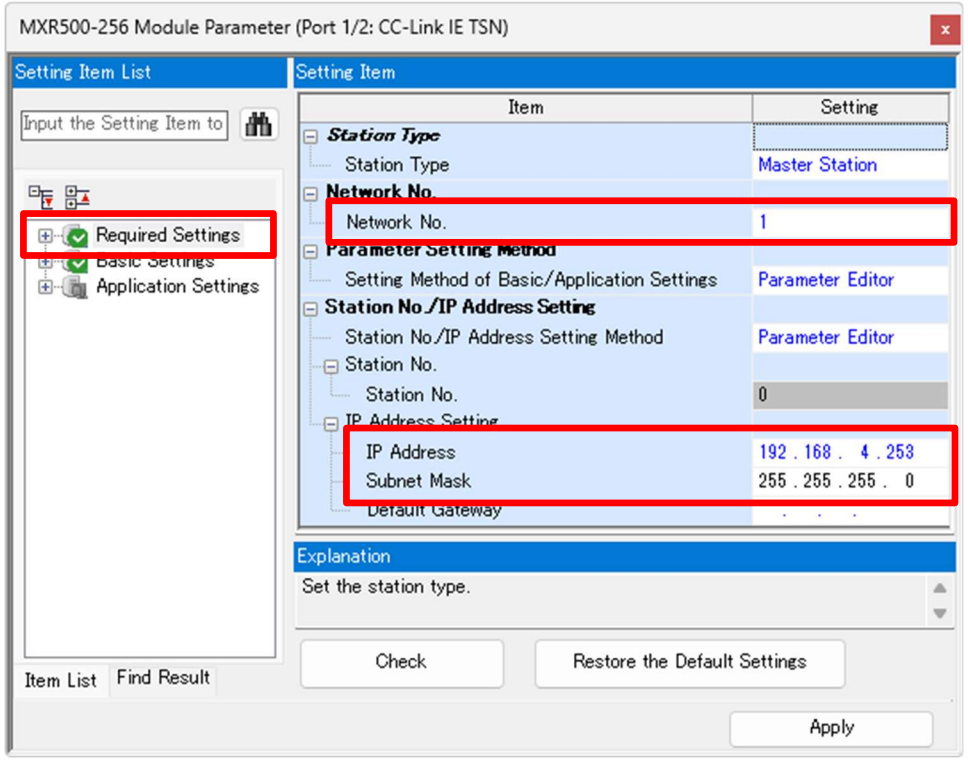
Set the master station parameters in the [Required Settings] of the [Module Parameter (CC-Link IE TSN)].

■ Required Settings

1. **Double-click [Navigation] → [Parameter] → [MXR500-256] → [Module Parameter (Port 1/2: CC-Link IE TSN)] → [Module Parameter (CC-Link IE TSN)].**



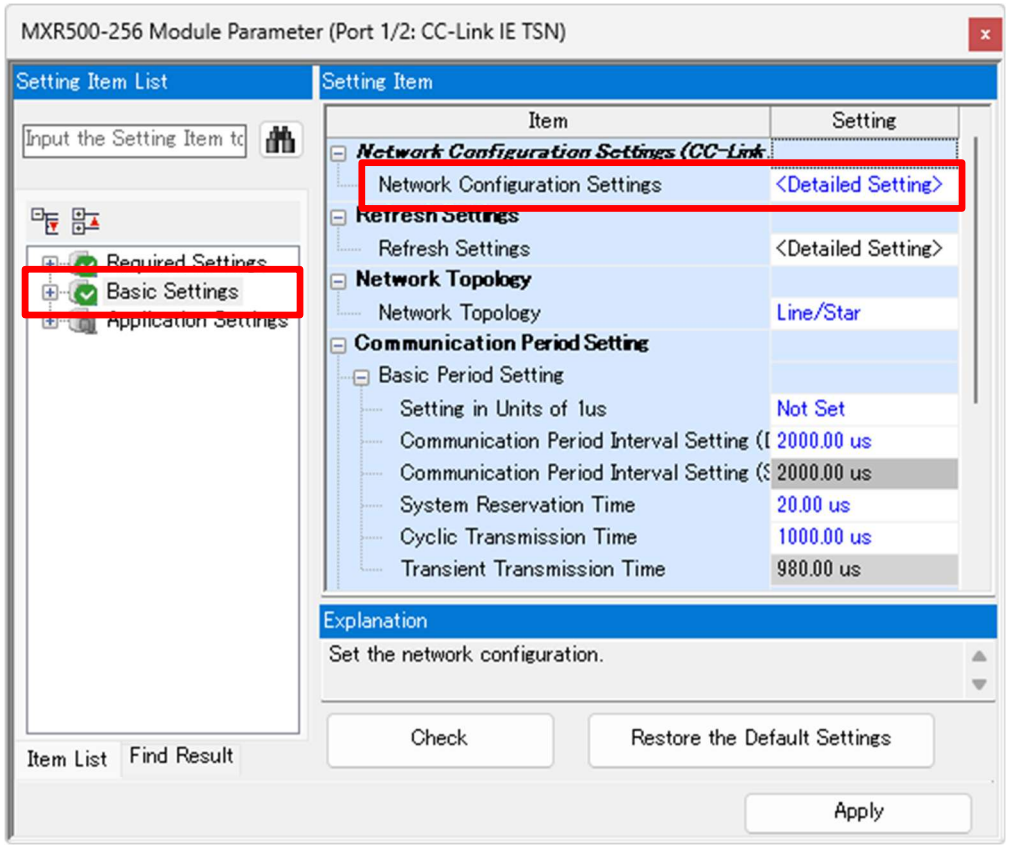
2. **The "Module Parameter" window opens. Select [Setting Item List] → [Required Settings], and configure the following items.**
   - **Network No.: 1 (Default)**
   - **IP Address: 192.168.4.253 (Default)**
   - **Subnet Mask: 255.255.255.0**



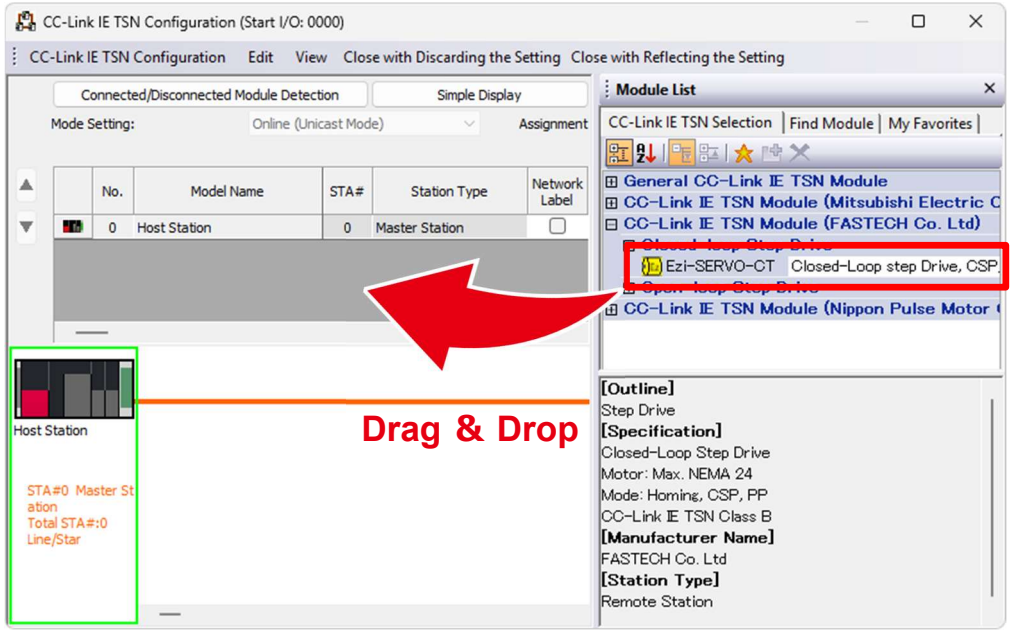
Set the network configurations in the [Basic Settings] of the [Module Parameter (CC-Link IE TSN)].

■ Basic Settings

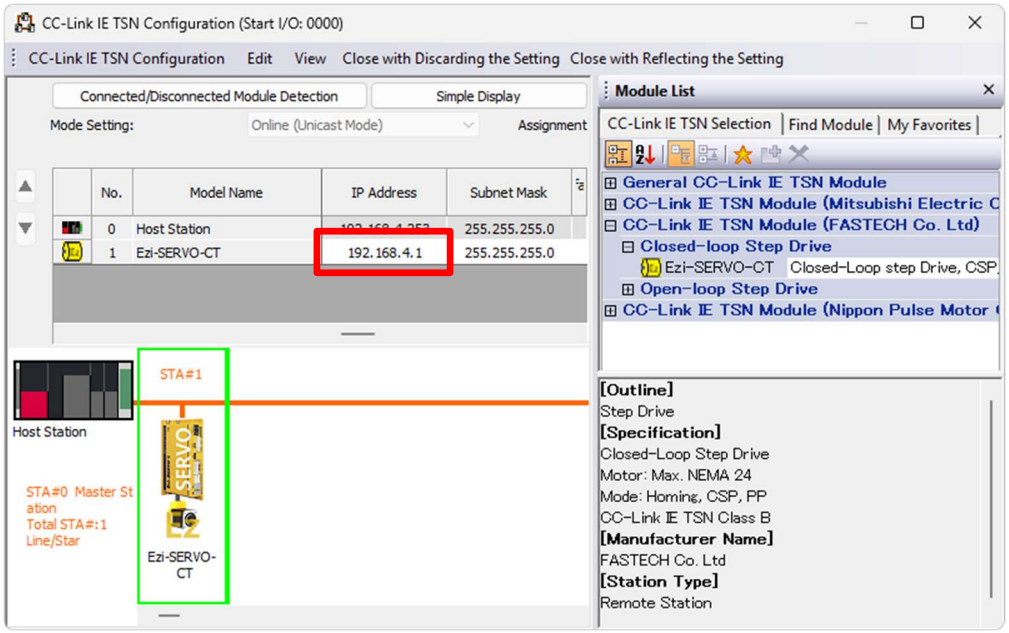
1. **Select [Setting Item List] → [Basic Settings], then double-click [Detailed Setting] in the [Network Configuration Settings].**



2. **The "CC-Link IE TSN Configuration" window opens. From [Module List] → [CC-Link IE TSN Module (FASTECH Co. Ltd)] → [Closed-loop Step Drive], select [Ezi-SERVO-CT] and drag and drop it.**



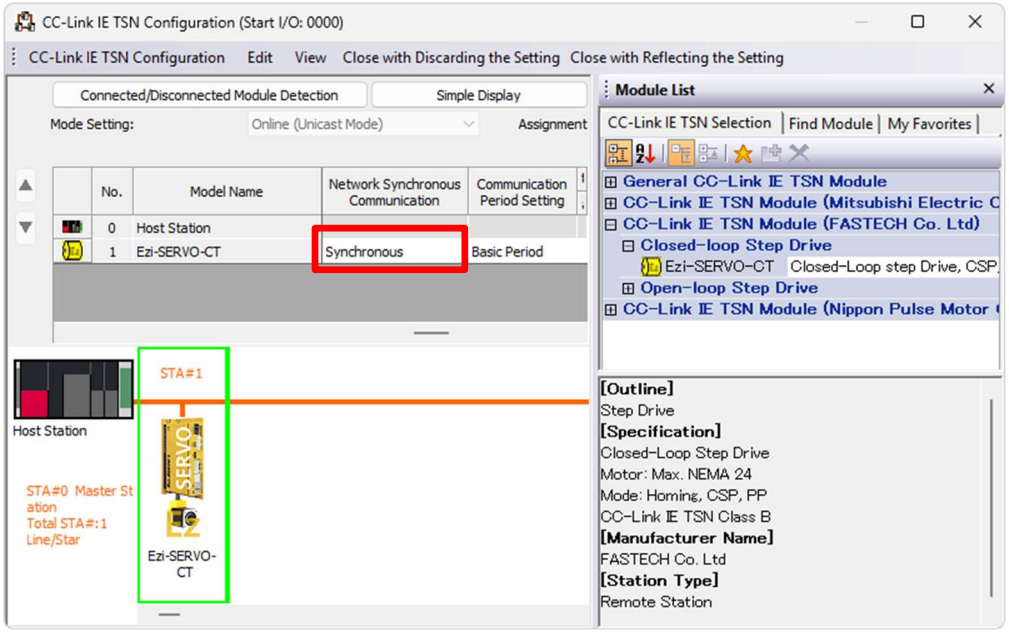
3. Set the [IP Address] for [Ezi-SERVO-CT].



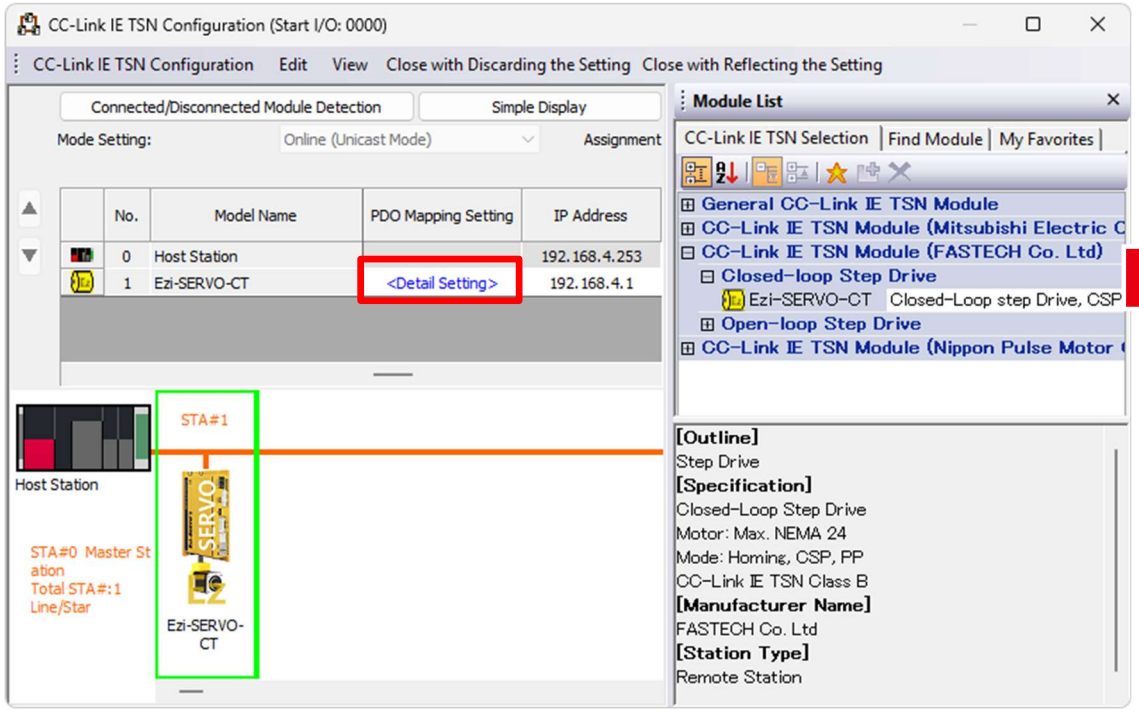
Point

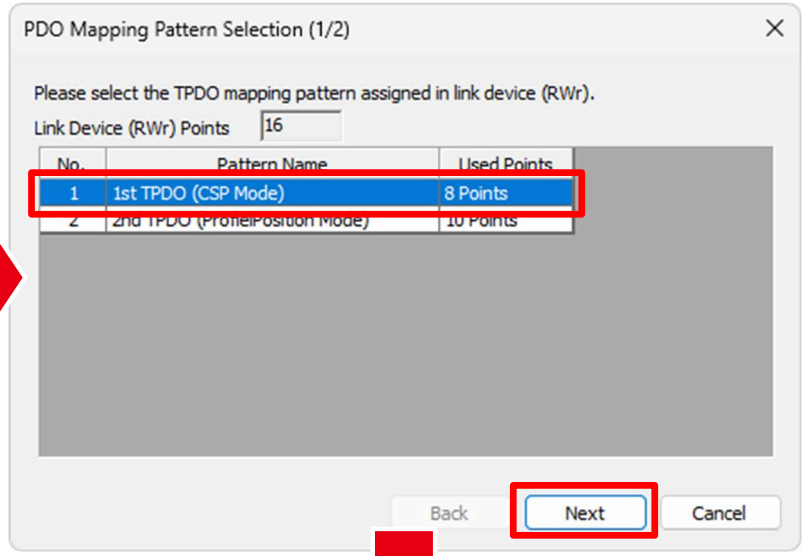
Match the fourth octet of the IP address to the rotary switch setting of the drive unit [Ezi-SERVO-CT].

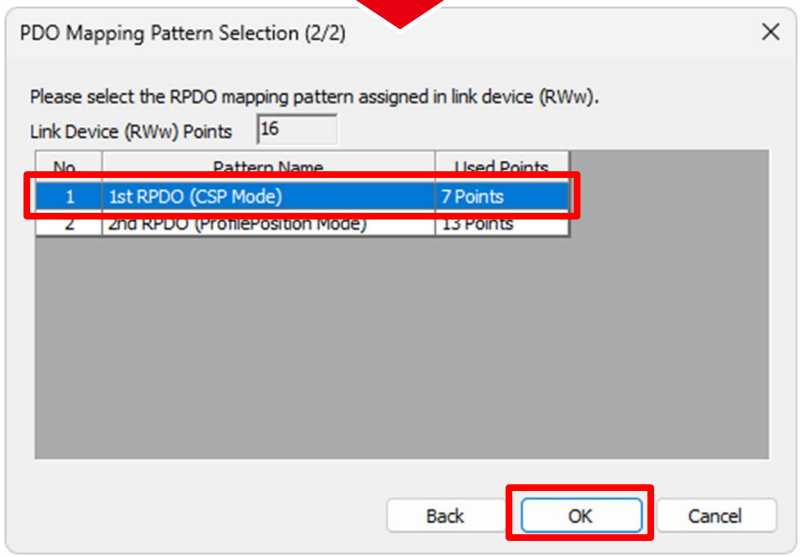
4. Set the [Network Synchronous Communication] for [Ezi-SERVO-CT] to “Synchronous.”



5. **Double-click [Detail Setting] in the [PDO Mapping Setting] for [Ezi-SERVO-CT], and select a PDO mapping pattern. For each link device, choose the option specified in the table below.**







Link device	Pattern name
RWr	1st TPDO (CSP Mode)
RWw	1st RPDO (CSP Mode)

6. **Map the objects required for motion control to PDO.**
   Configure the TPDO and RPDO to match the table below.

■ **TPDO**

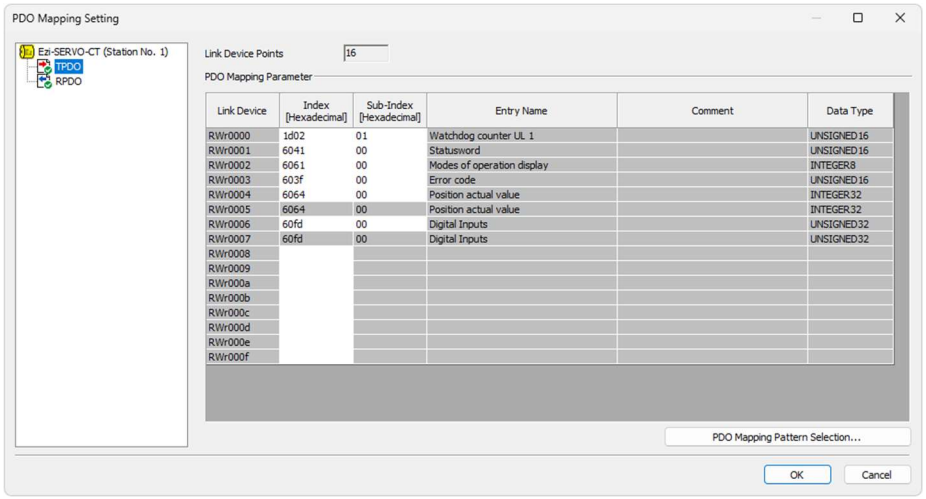
Index	Sub index	Data type	Name
1D02	01	U16	Watchdog counter UL 1
6041	00	U16	Statusword
6061	00	I8	Modes of operation display
603F	00	U16	Error code
6064	00	I32	Position actual value
60FD	00	U32	Digital inputs

■ **RPDO**

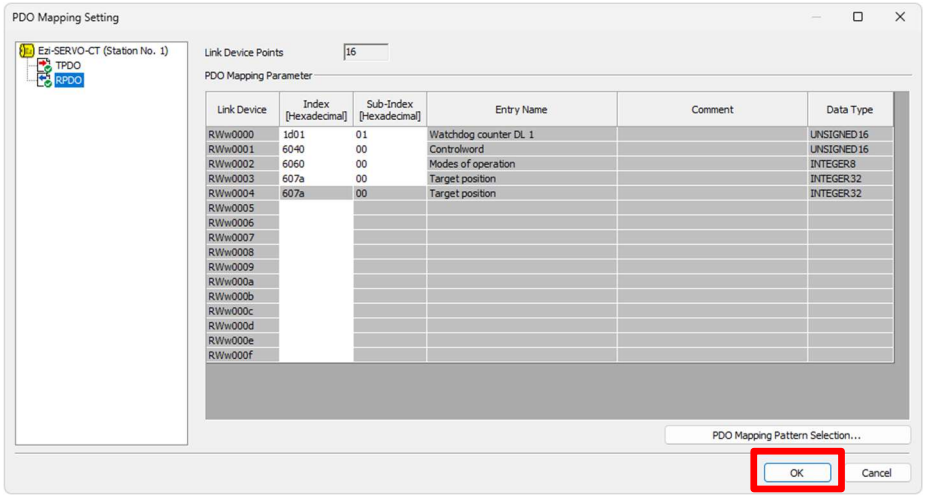
Index	Sub index	Data type	Name
1D01	01	U16	Watchdog counter DL 1
6040	00	U16	Controlword
6060	00	I8	Modes of operation
607A	00	I32	Target position

7. After completing the TPDO and RPDO settings, click the [OK] button.

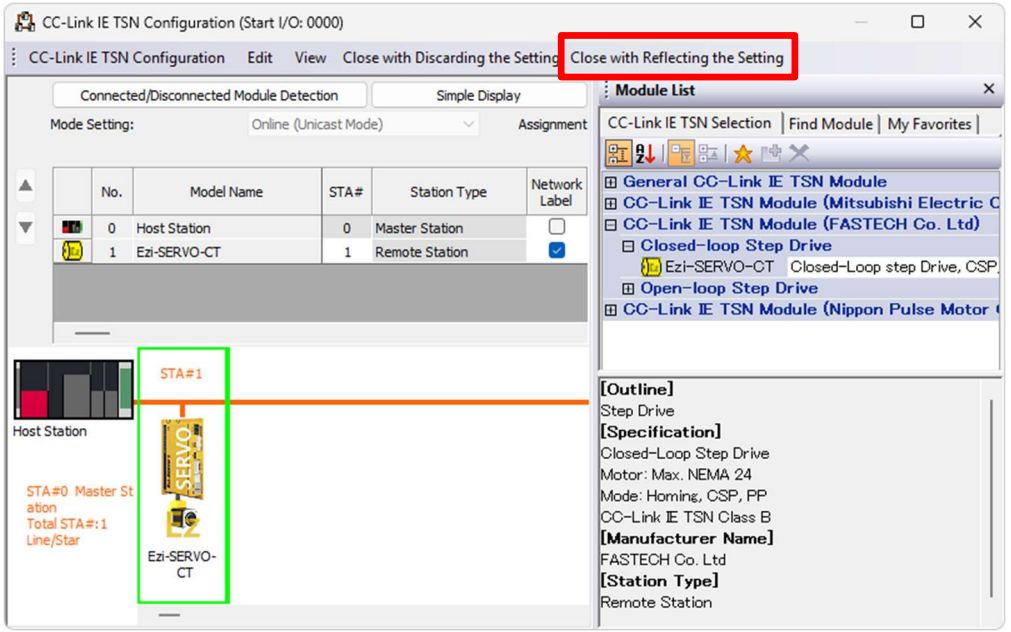
■ TPDO



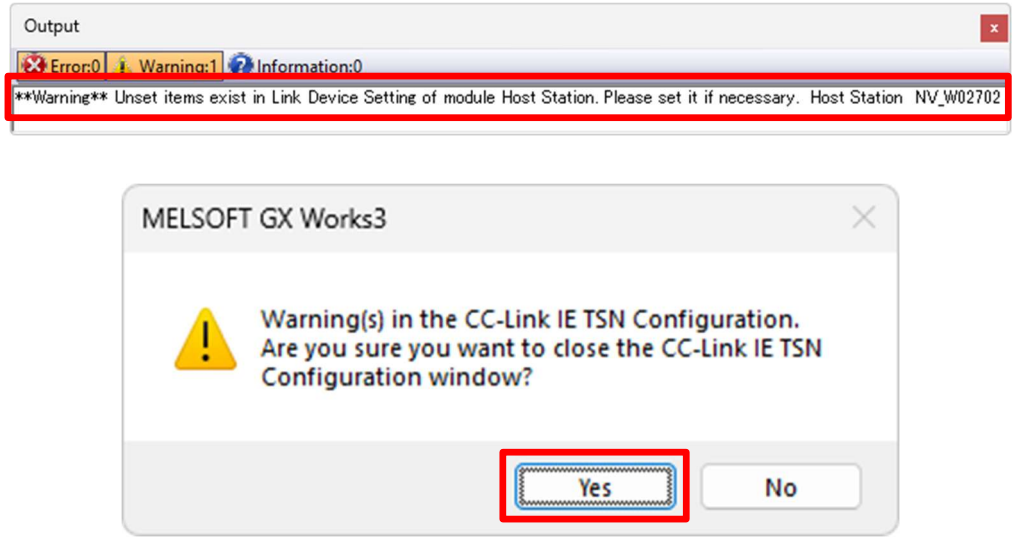
■ RPDO



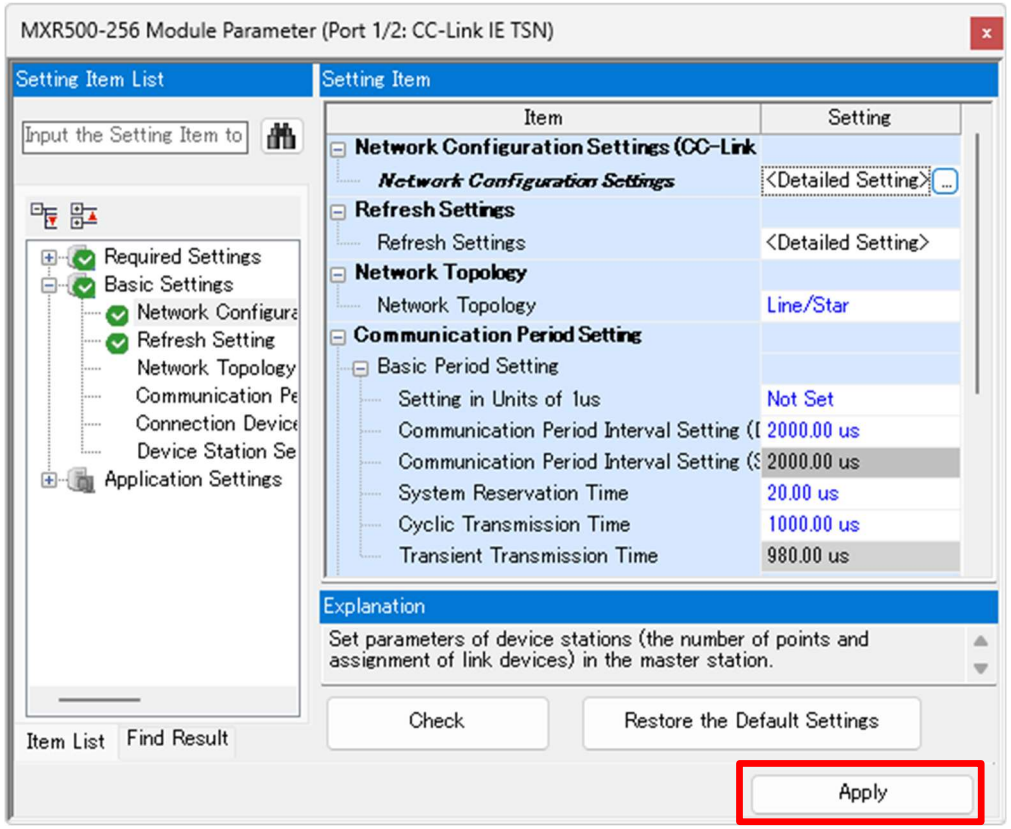
8. Click [Close with Reflecting the Setting].



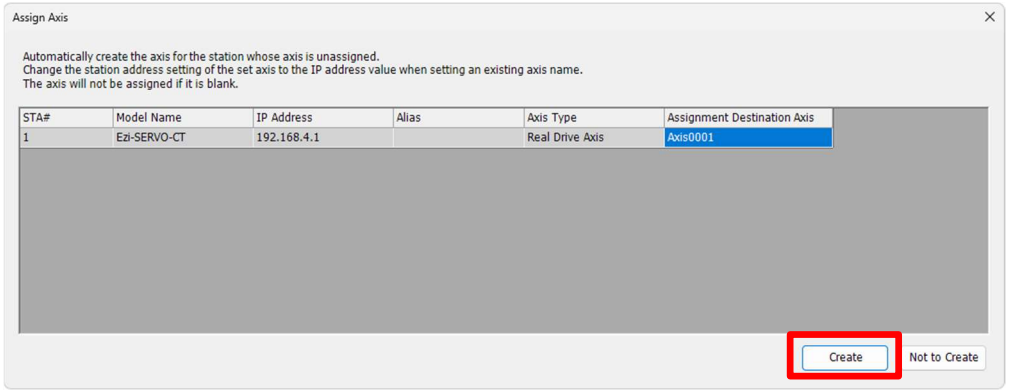
9. If the following warning appears, click the [Yes] button.



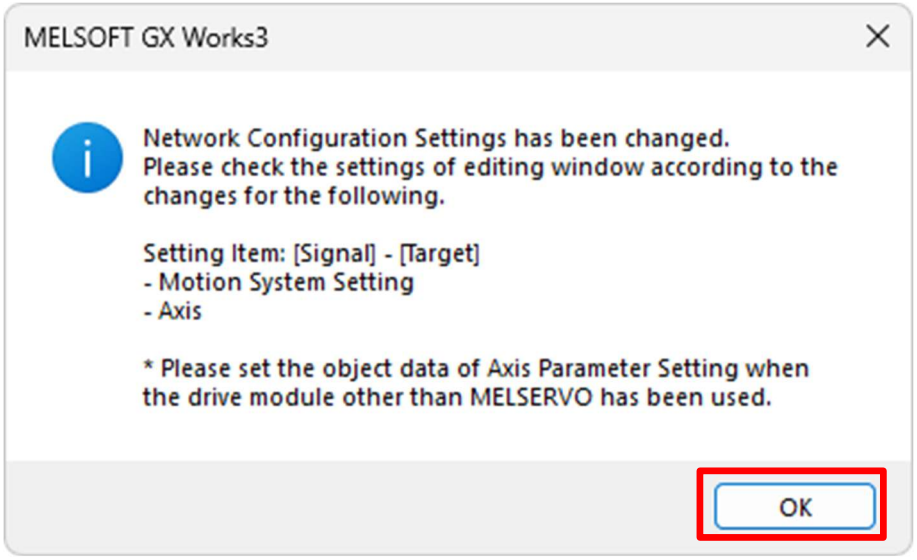
10. In the “Module Parameter” window, click the [Apply] button.



11. If the following window appears, click the [Create] button to assign the drive unit to the axis.

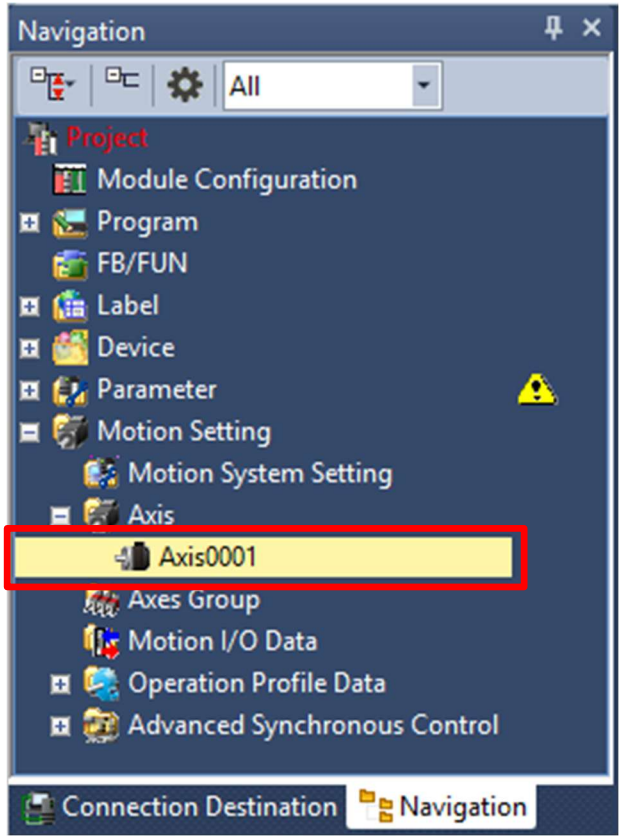


12. In the next window, click the [OK] button.

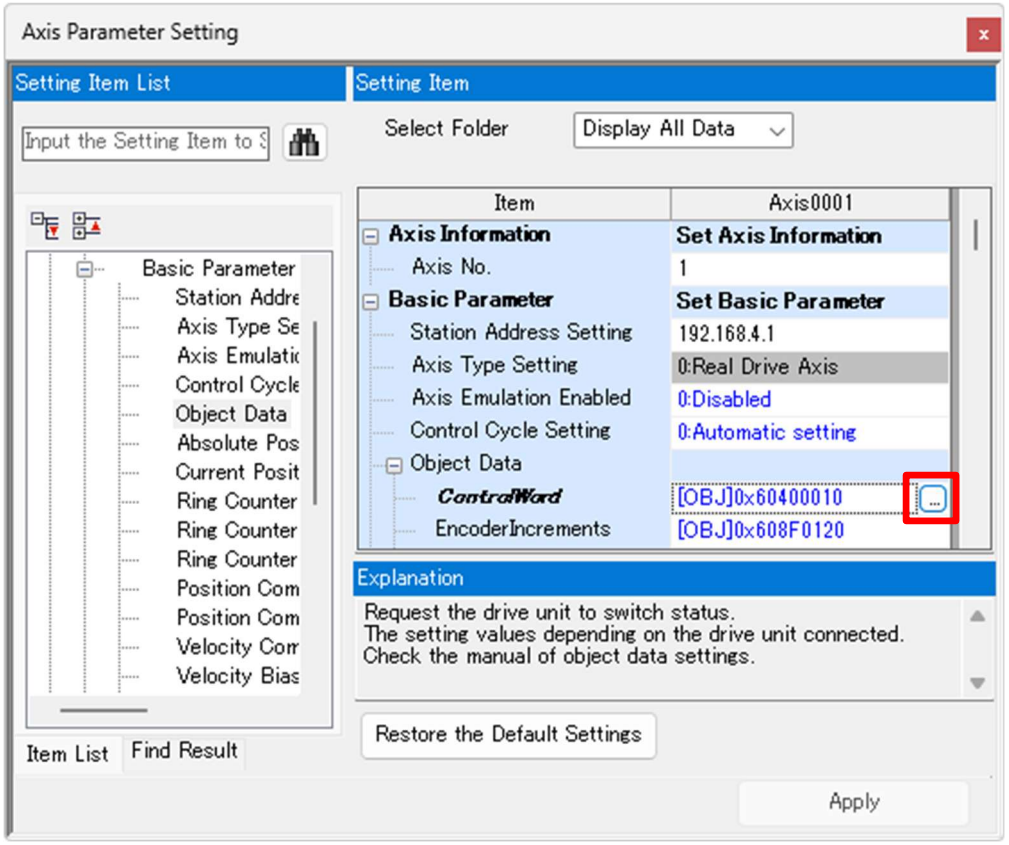


Configure the drive unit's axis parameters in the [Motion Setting].

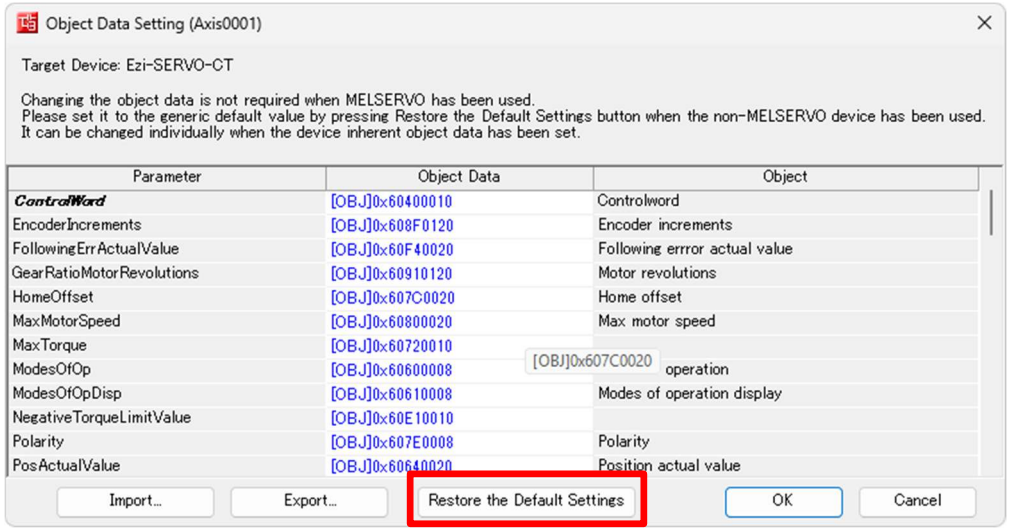
1. **Double-click [Navigation] → [Motion Setting] → [Axis] → [Axis0001].**



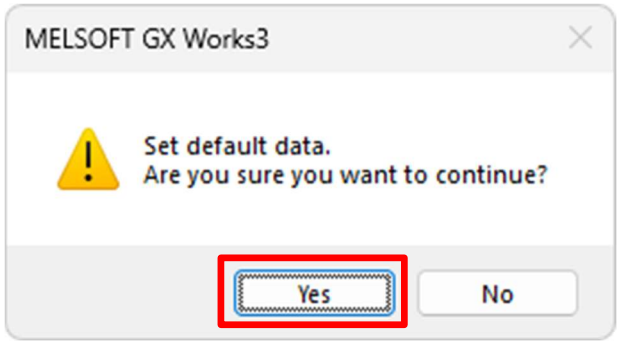
2. **The "Axis Parameter Setting" window opens. Select [Setting Item List] → [Real Drive Axis] → [Basic Parameter] → [Object Data], then click the [...] button next to any item.**



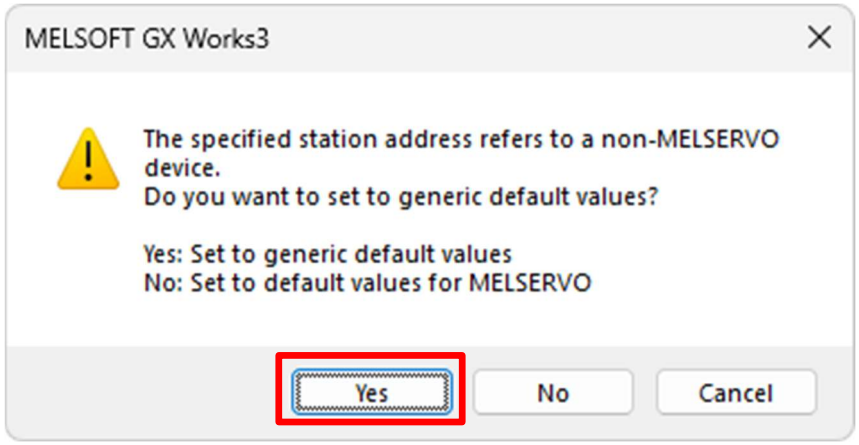
3. In the “Object Data Setting” window, click the [Restore the Default Settings] button.



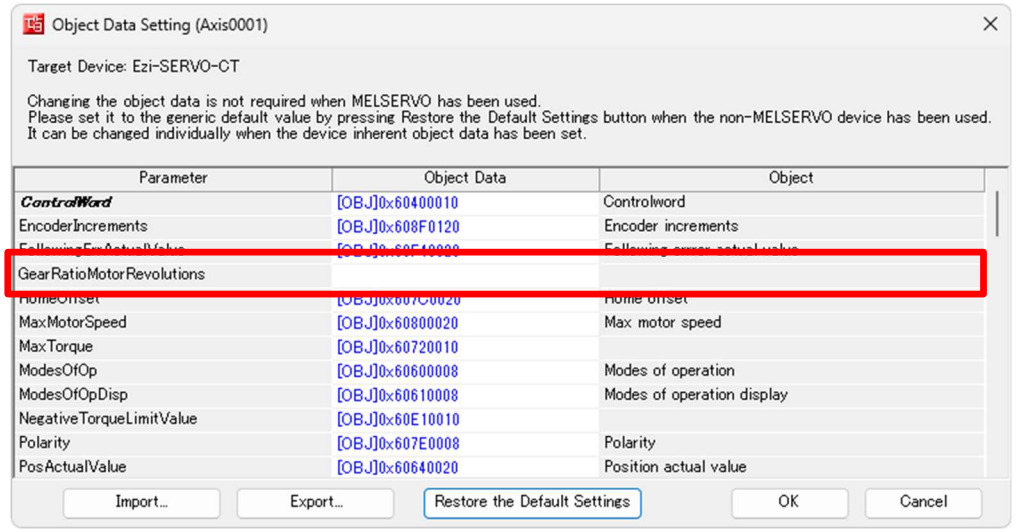
4. A confirmation dialog will appear asking whether to set the default data. Click the [Yes] button.



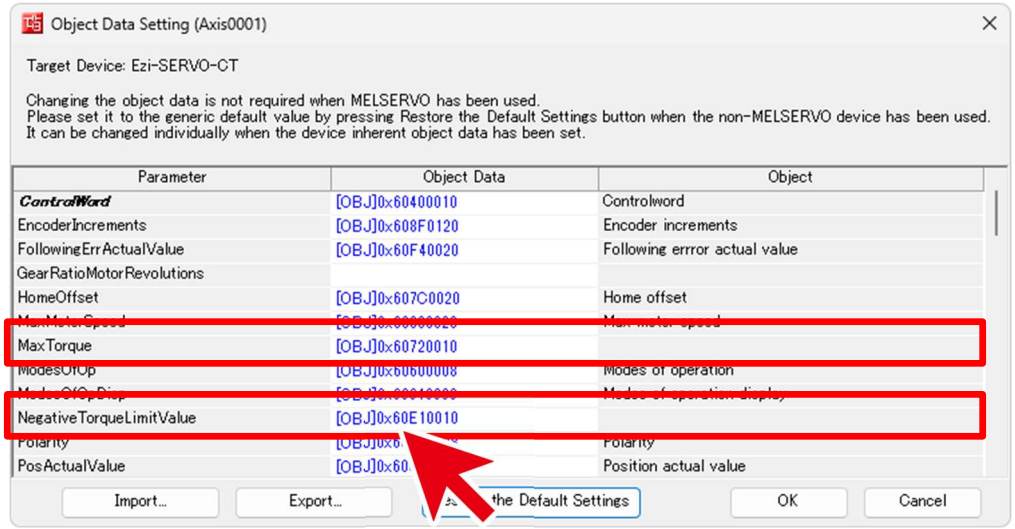
5. A confirmation dialog will appear asking whether to set the generic default values. Click the [Yes] button.



The [Object Data] column will be partially cleared.

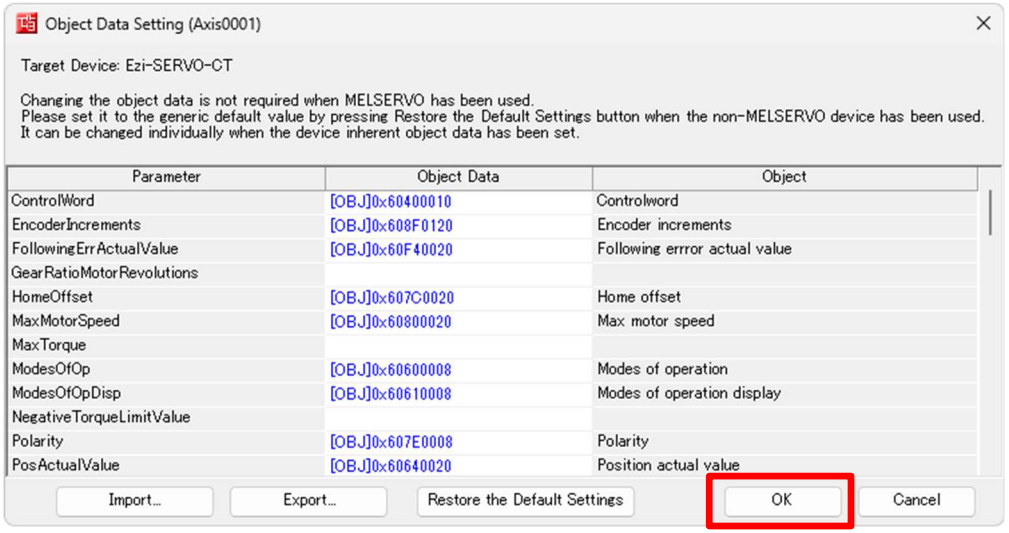


6. **Clear any object data settings that are not supported by the drive unit. Delete the values in the [Object Data] column for rows where the [Object] column is blank.**

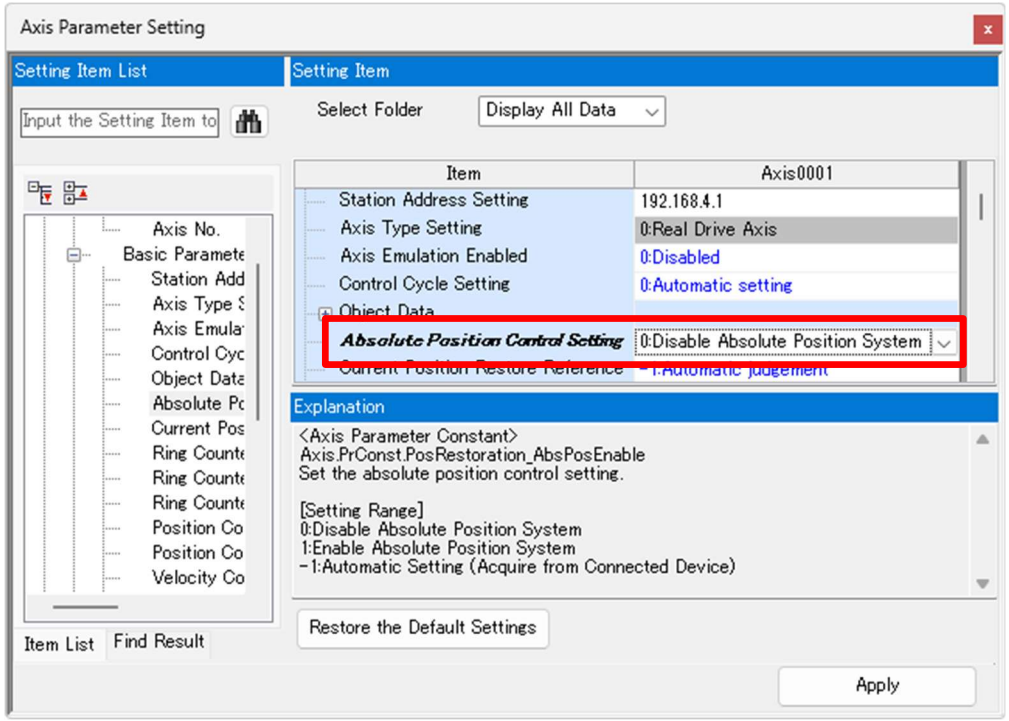


Click & Delete

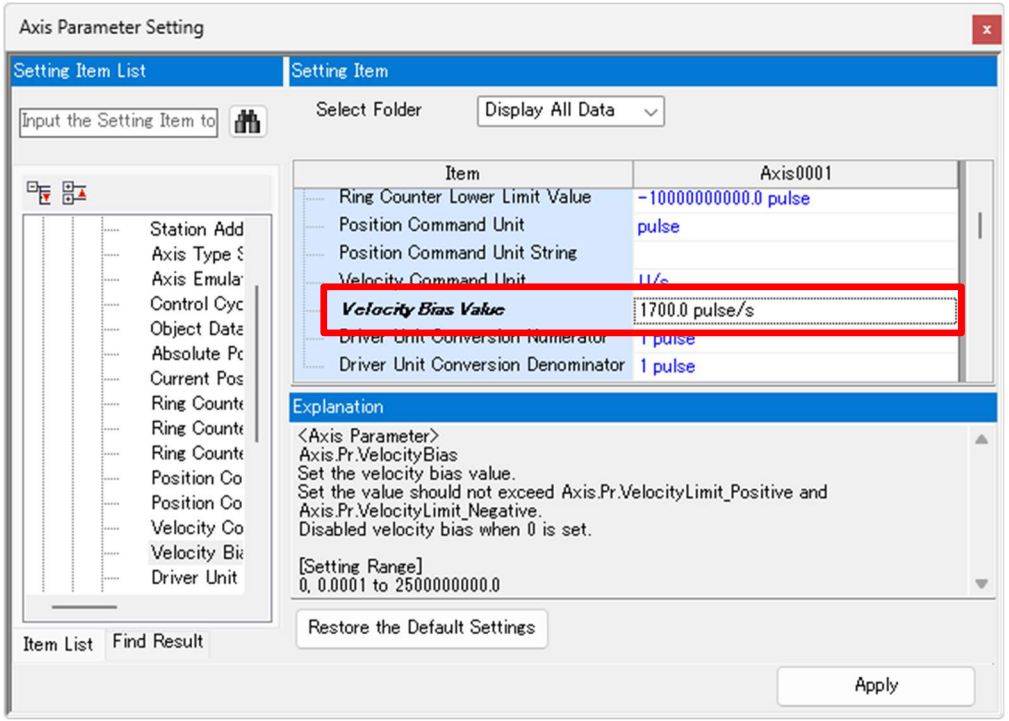
7. **Once you have completed the settings, click the [OK] button.**



8. **Select [Setting Item List] → [Real Drive Axis] → [Basic Parameter] → [Absolute Position Control Setting], and set it to "0: Disable Absolute Position System."**



9. **Select [Setting Item List] → [Real Drive Axis] → [Basic Parameter] → [Velocity Bias Value], and set the velocity bias value appropriate for the motor you will use.**



Point

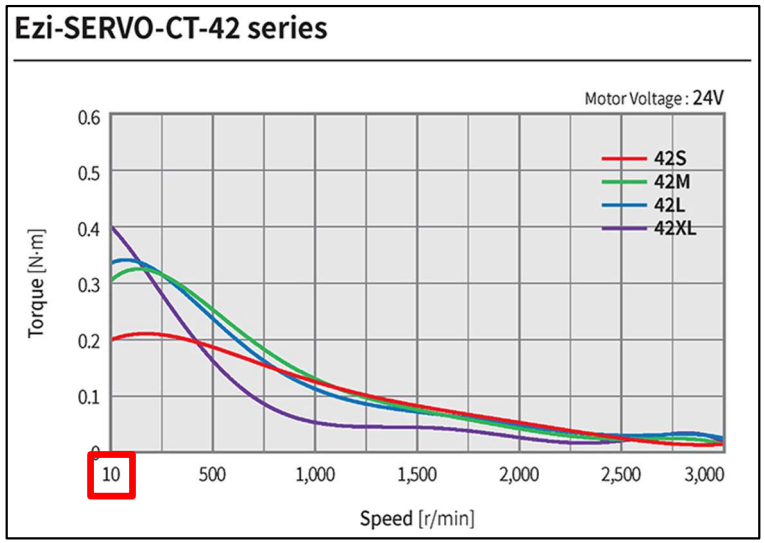
Set [Velocity Bias Value] using the motor specifications.
In this document, the value is calculated from the encoder resolution and the motor torque characteristics.

Velocity Bias Value [pulse/s]=

$$\frac{\text{Encoder resolution}}{\text{10000 pulse/r}} \times \frac{\text{Minimum rotational speed}}{\text{10 r/min (*1)}} \div 60$$

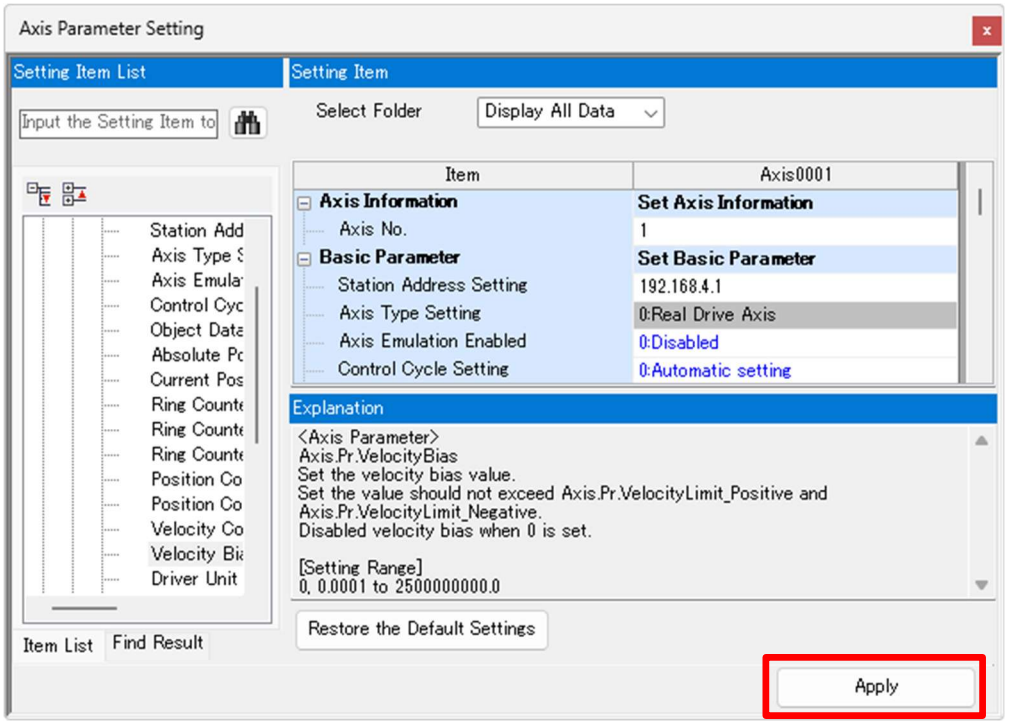
≒ 1700 pulse/s

*1: Refer to the torque characteristic graph below.



(Image source: cltsn.fastech-motions.com/upload/smarteditor/goods/20251229141549_1737.jpg)

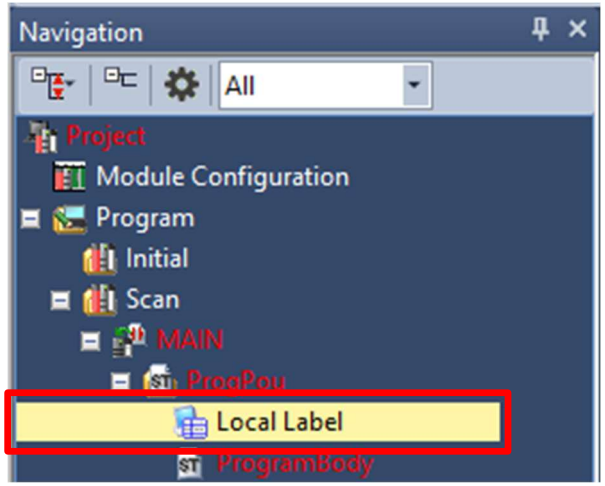
10. Click the [Apply] button.



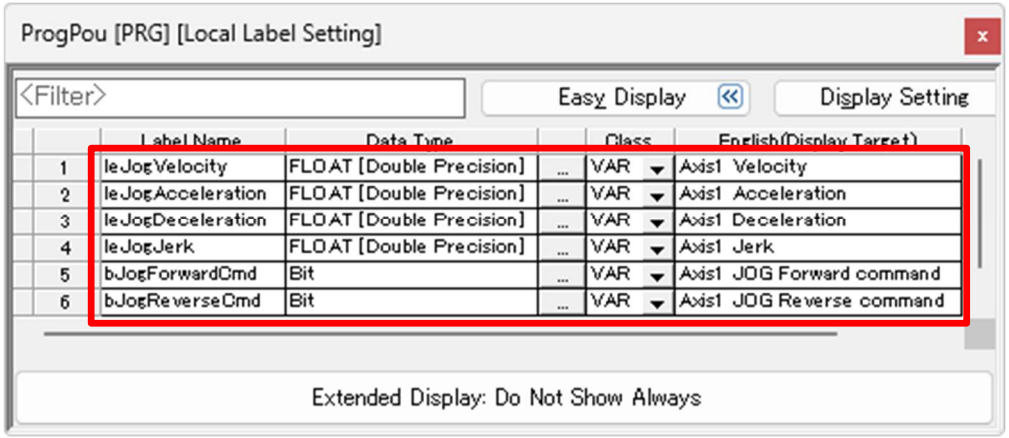
4. OPERATION CHECK

Verify that the controller and drive unit are properly connected over CC-Link IE TSN.
Create a JOG operation program for motion control, perform the connection test by confirming that JOG operation (motion control) runs correctly.

1. **Double-click [Navigation] → [Program] → [Scan] → [MAIN] → [ProgPou] → [Local Label].**

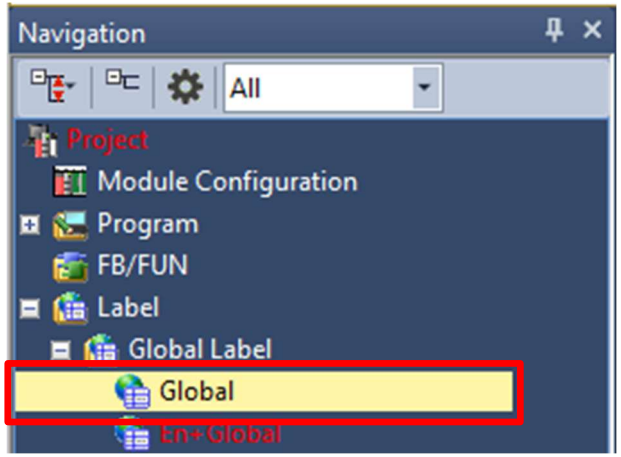


2. **Create the local labels necessary for operation check.**

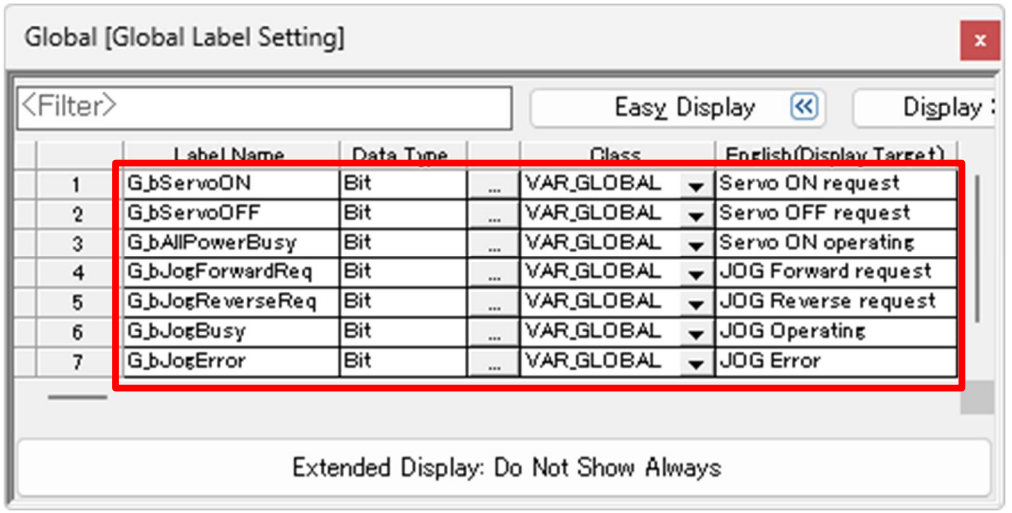


Category	Label name	Data type	Class	Content
Local	leJogVelocity	FLOAT [Double Precision]	VAR	Axis1 Velocity
Local	leJogAcceleration	FLOAT [Double Precision]	VAR	Axis1 Acceleration
Local	leJogDeceleration	FLOAT [Double Precision]	VAR	Axis1 Deceleration
Local	leJogJerk	FLOAT [Double Precision]	VAR	Axis1 Jerk
Local	bJogForwardCmd	Bit	VAR	Axis1 JOG Forward command
Local	bJogReverseCmd	Bit	VAR	Axis1 JOG Reverse command

3. **Double-click [Navigation] → [Label] → [Global Label] → [Global].**

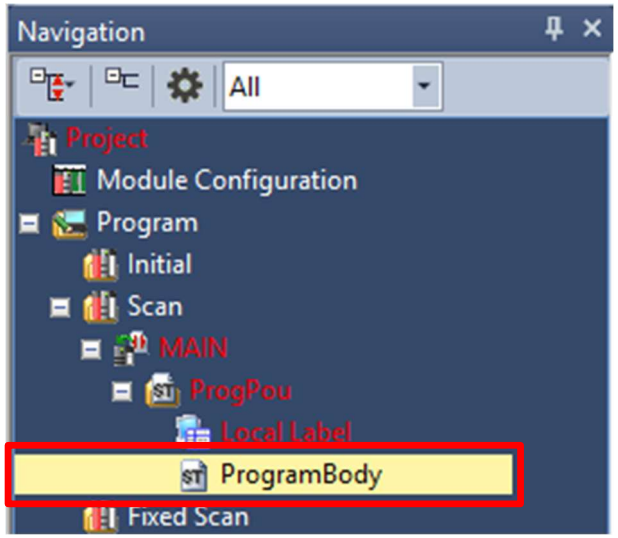


4. **Create the global labels necessary for operation check.**

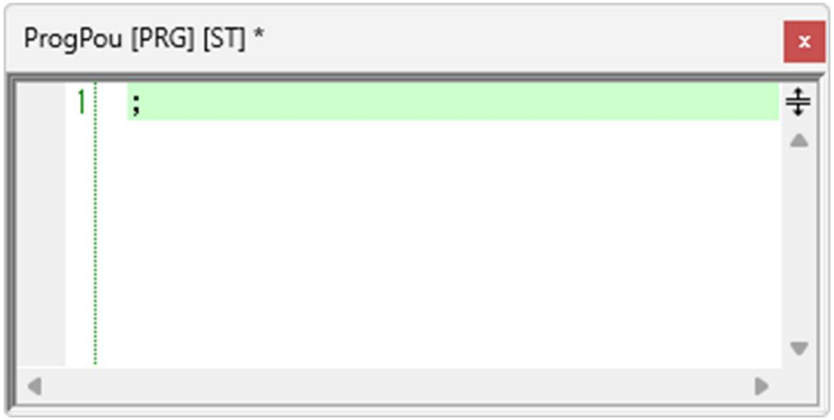


Category	Label name	Data type	Class	Content
Global	G_bServoON	Bit	VAR_GLOBAL	Servo ON request
Global	G_bServoOFF	Bit	VAR_GLOBAL	Servo OFF request
Global	G_bAllPowerBusy	Bit	VAR_GLOBAL	Servo ON operating
Global	G_bJogForwardReq	Bit	VAR_GLOBAL	JOG Forward request
Global	G_bJogReverseReq	Bit	VAR_GLOBAL	JOG Reverse request
Global	G_bJogBusy	Bit	VAR_GLOBAL	JOG Operating
Global	G_bJogError	Bit	VAR_GLOBAL	JOG Error

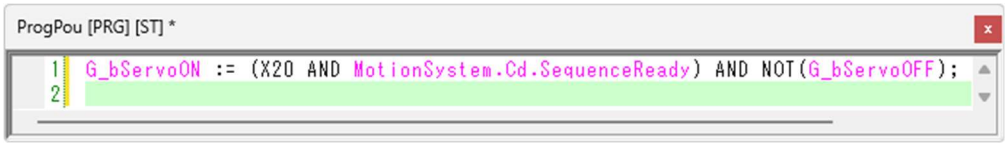
5. Double-click [Navigation] → [Program] → [Scan] → [MAIN] → [ProgPou] → [ProgramBody].



The ST editor opens.



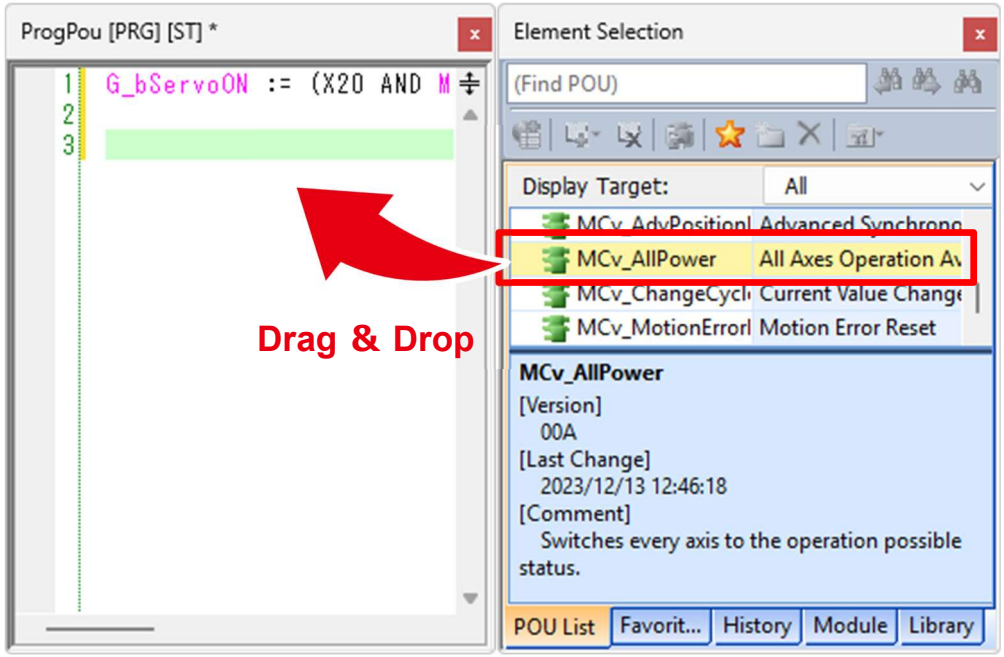
6. Write a program to check that motion control is ready. After the controller is powered on, when the following signals are turns ON, set “Servo ON request (G_bServoON)” to ON.
   - PLC READY (MotionSystem.Cd.SequenceReady)
   - Built-in Motion Ready [X20]



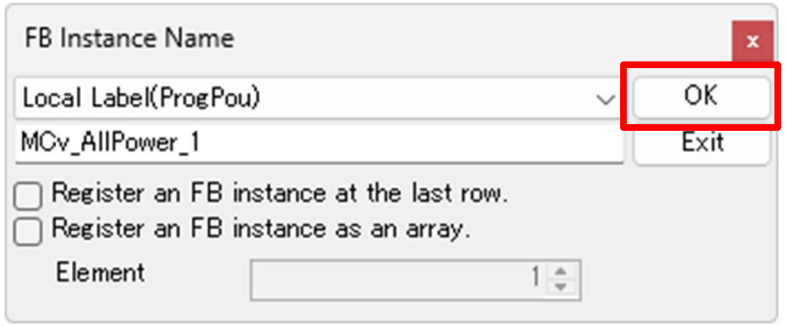
Point

In this document the program will be written in ST language, but it can also be written in other languages.

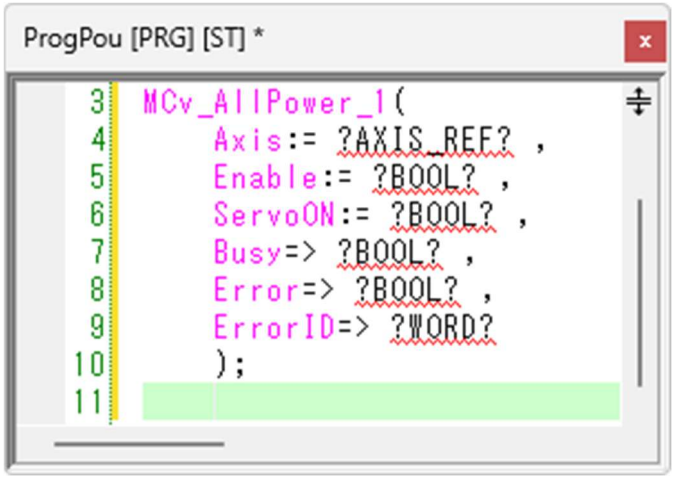
7. **Display the “POU List” tab in the “Element Selection” window.**
   Drag and drop [MCv_AllPower] from [Motion Control Function / Function Block] → [Administrative] into the ST editor, and insert the FB (MCv_AllPower).



8. **When the “FB Instance Name” window appears, click the [OK] button to accept the defaults and define the FB (MCv_AllPower_1).**

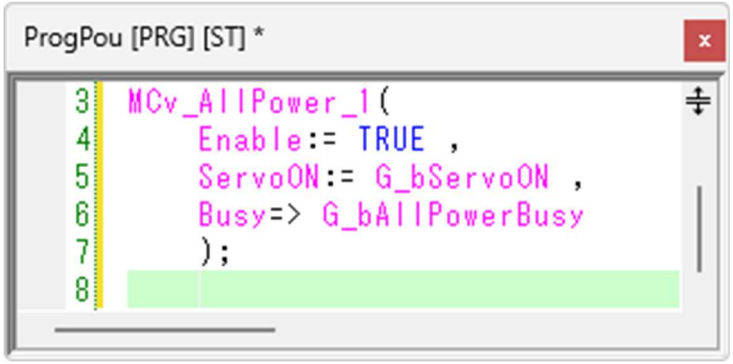


The FB (MCv_AllPower_1) is displayed in the ST editor as shown below.



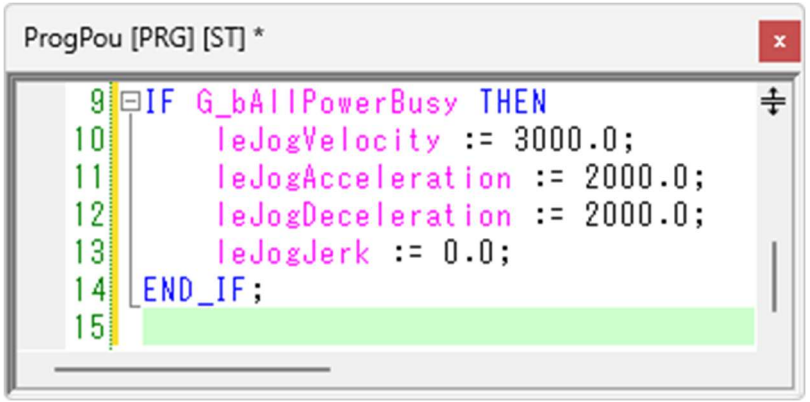
9. Describe the FB (MCv_AllPower_1).
   When “Servo ON request (G_bServoON)” is ON, execute the FB.
   Set the arguments of the FB as shown below. Any arguments other than those listed below are not required, please delete them.

   ■ FB (MCv_AllPower_1) arguments
   - Enable: TRUE
   - ServoON: G_bServoON
   - Busy: G_bAllPowerBusy



10. Write a program to configure the velocity, acceleration, deceleration, and jerk for JOG operation.
    In this document, they are set as follows:

    ■ Velocity settings for JOG operation
    - Velocity: 3000 [pulse/s]
    - Acceleration: 2000 [pulse/s^2]
    - Deceleration: 2000 [pulse/s^2]
    - Jerk: 0 [pulse/s^3]



Point

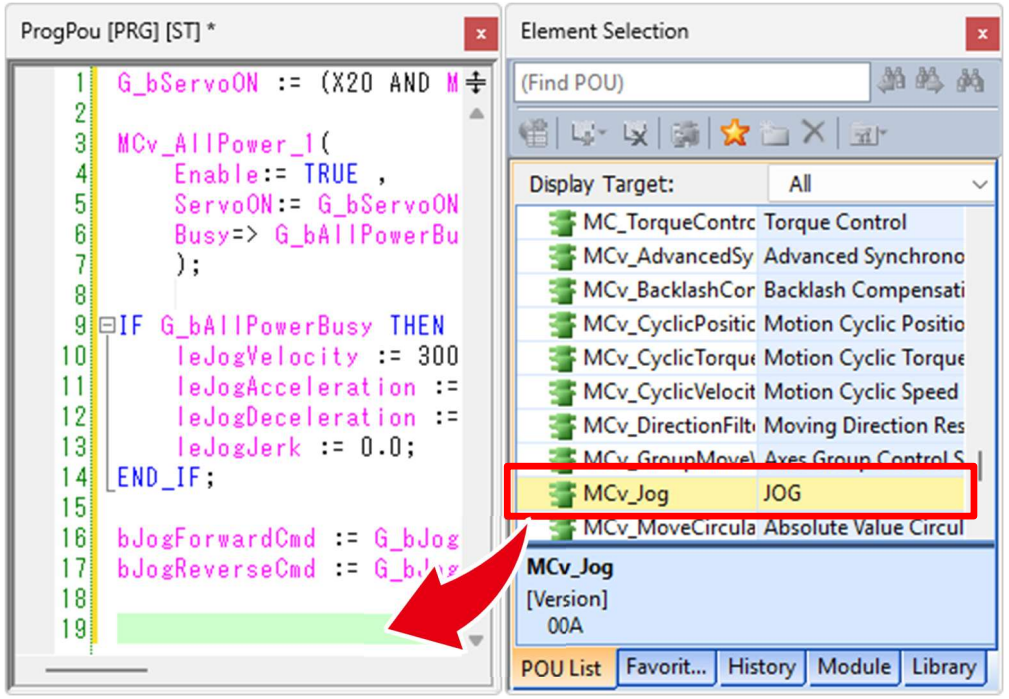
Jerk is the chronological change ratio of the acceleration or the deceleration.

11. Write an interlock program that prevents forward and reverse commands from being executed simultaneously when performing JOG operation.

ProgPou [PRG] [ST] *

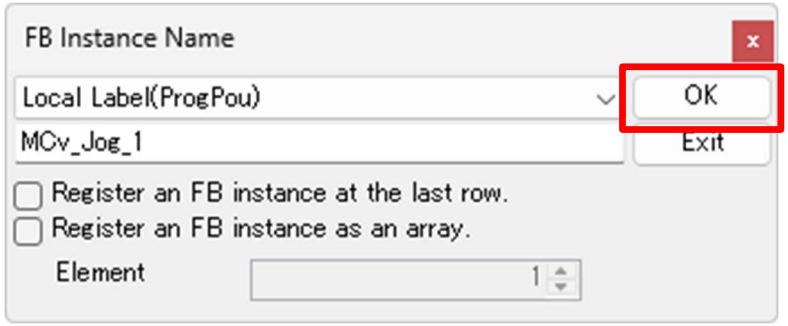
```
16 bJogForwardCmd := G_bJogForwardReq AND NOT(G_bJogReverseReq) AND G_bAllPowerBusy;
17 bJogReverseCmd := G_bJogReverseReq AND NOT(G_bJogForwardReq) AND G_bAllPowerBusy;
18
```

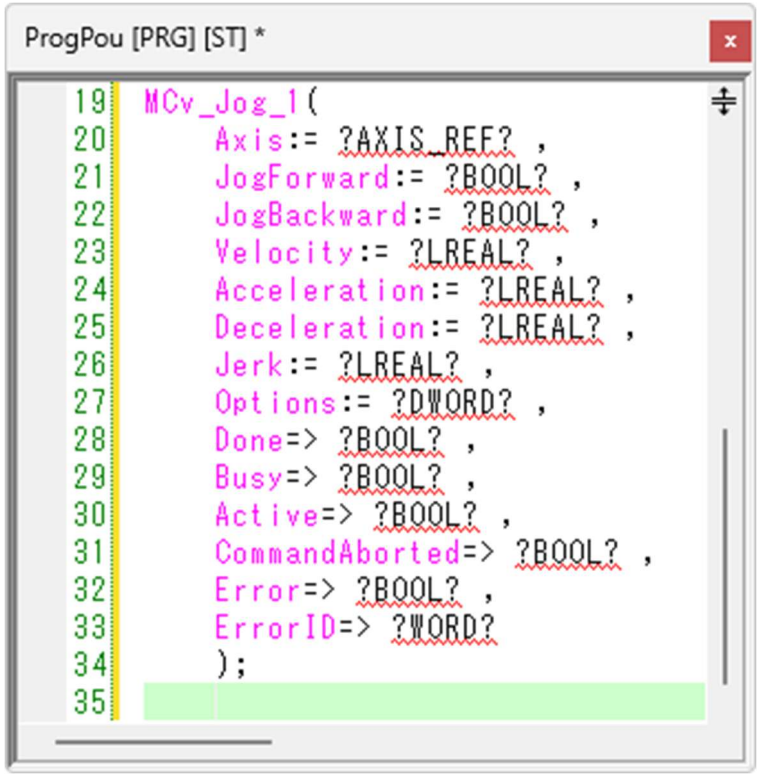
12. Drag and drop [MCv_Jog] from [Element Selection] → [Motion Control Function / Function Block] → [Motion - Individual] into the ST editor, and insert the FB (MCv_Jog).



Drag & Drop

13. When the “FB Instance Name” window appears, click the [OK] button to accept the defaults and define the FB (MCv_Jog_1). The FB (MCv_Jog_1) is displayed in the ST editor as shown below.





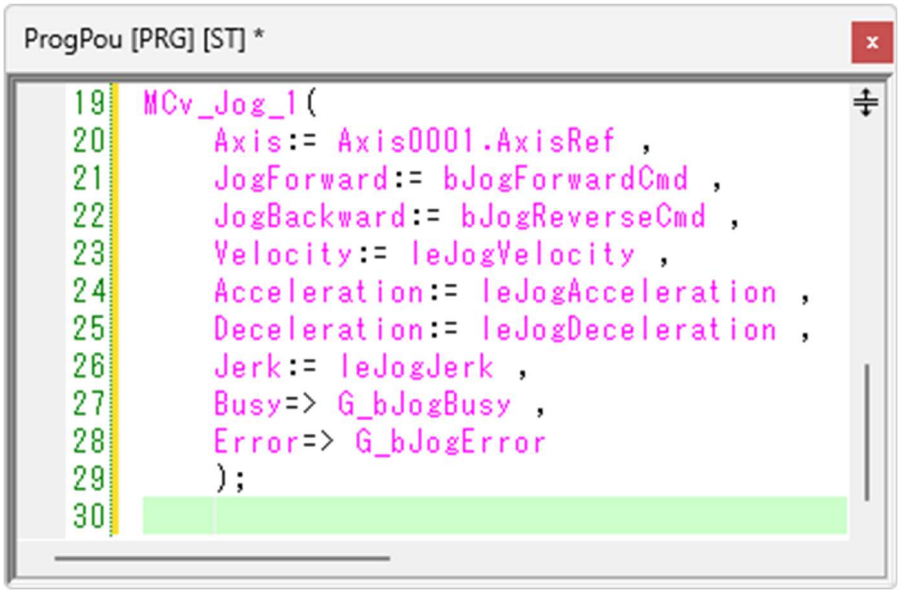
14. Describe the FB (MCv_Jog_1).

Execute the FB when either “JOG Forward request (G_bJogForwardReq)” or “JOG Reverse request (G_bJogReverseReq)” turns ON.

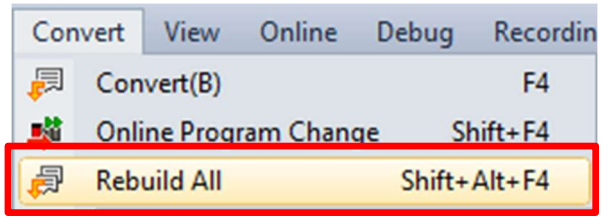
Set the arguments of the FB as shown below. Any arguments other than those listed below are not required, please delete them.

■ FB (MCv_Jog_1) arguments

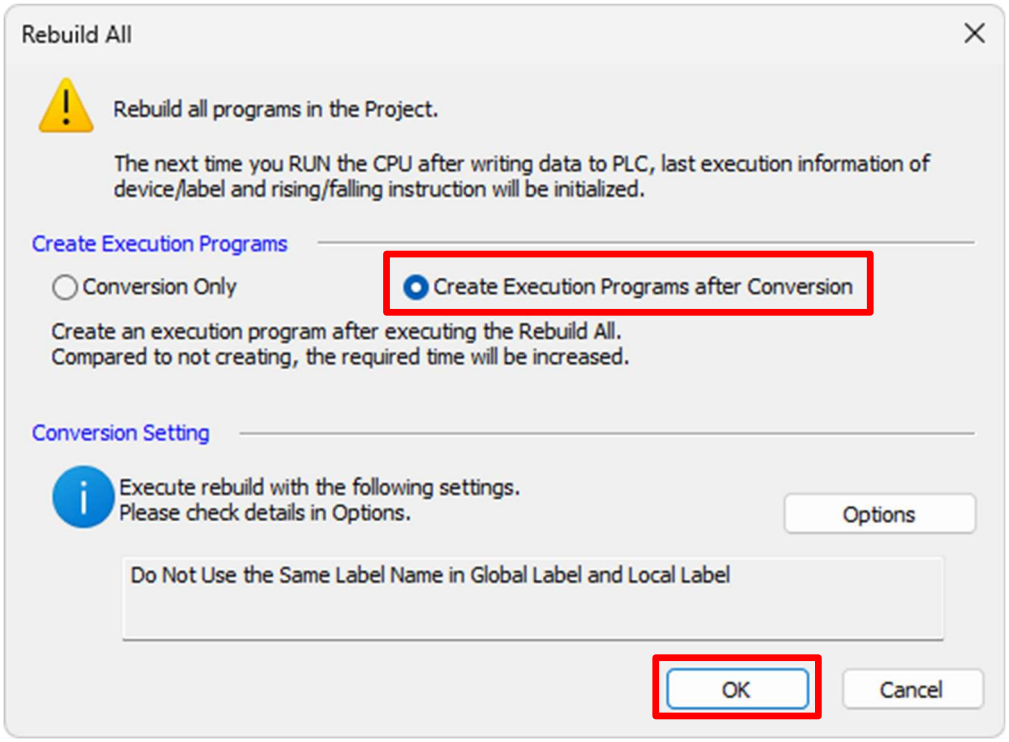
- Axis: Axis0001.AxisRef
- JogForward: bJogForwardCmd
- JogBackward: bJogReverseCmd
- Velocity: leJogVelocity
- Acceleration: leJogAcceleration
- Deceleration: leJogDeceleration
- Jerk: leJogJerk
- Busy: G_bJogBusy
- Error: G_bJogError



15. After creating the program, select [Convert] → [Rebuild All] from the menu bar to perform a full conversion of the program.



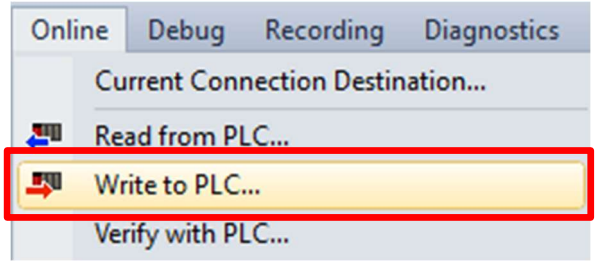
16. In the “Rebuild All" window, select “Create Execution Programs after Conversion” and click the [OK] button.



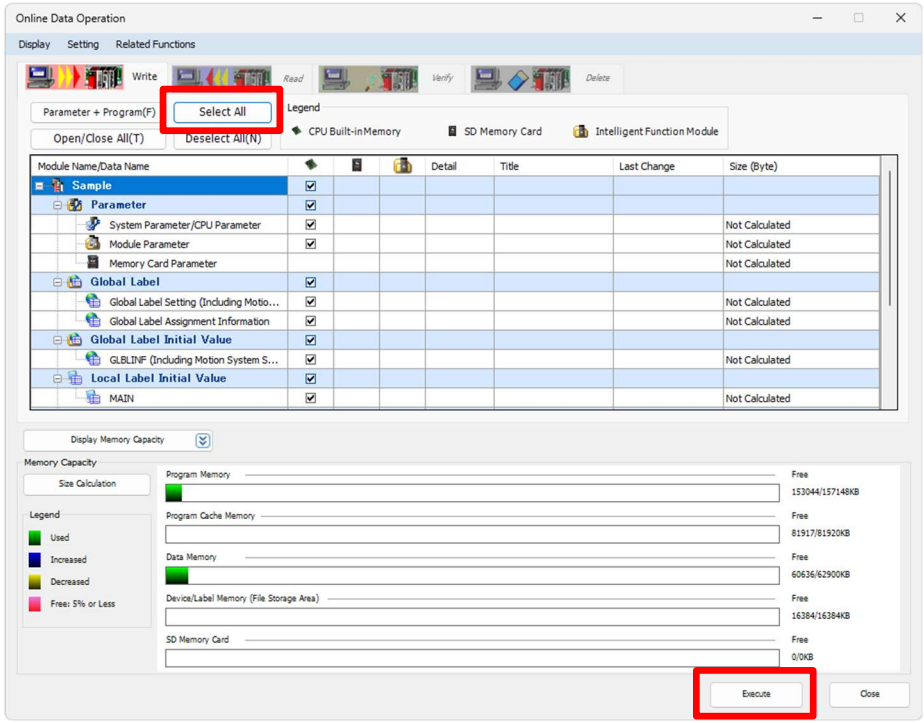
17. If no errors are reported in the “Progress” window, the full conversion is complete.

Perform a functional check to confirm that the controller and drive unit communicate correctly over CC-Link IE TSN. Also verify that the drive unit performs JOG operation when it receives the command signal.

1. **Click [Online] → [Write to PLC] from the menu bar. Make sure to connect the controller and the configuration PC with an Ethernet cable beforehand.**



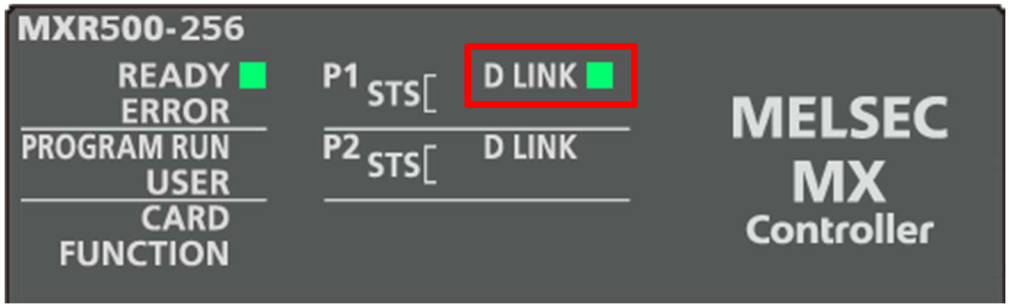
2. **Click the [Select All] button, then click the [Execute] button to write the parameters to the controller.**



Point

After the parameter writing is complete, reset the controller, or turn the power off and then on again.

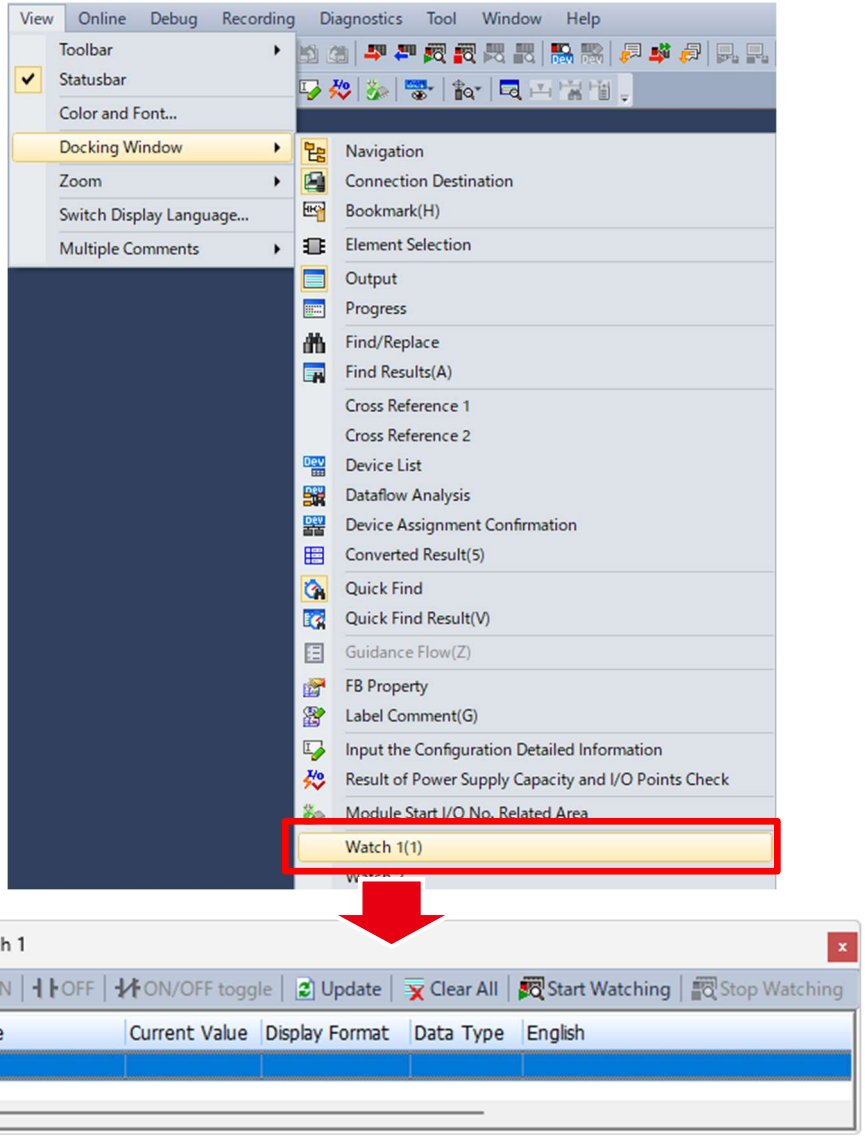
3. Connect the controller and the drive unit with an Ethernet cable.
   Check that the controller's [D LINK] LED is lit to ensure that network communication has been established.



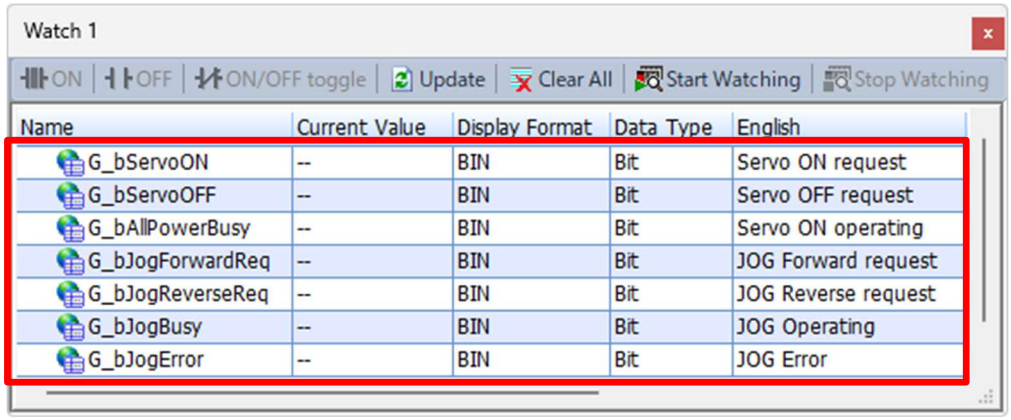
Point

If the LED is not lit, please refer to the following.
「MELSEC MX Controller MX-R Model User's Manual (SH-082641ENG)」
… Chapter 17 TROUBLESHOOTING

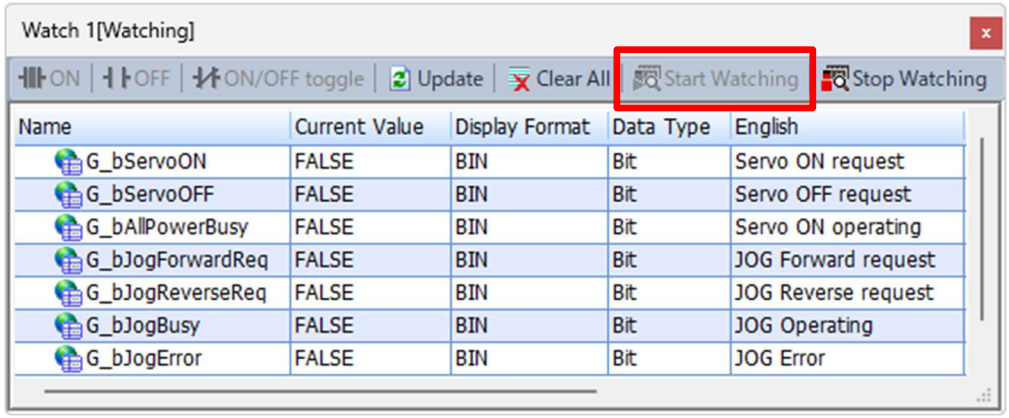
4. From the menu bar, click [View] → [Docking Window] → [Watch 1] to display the "Watch 1" window.



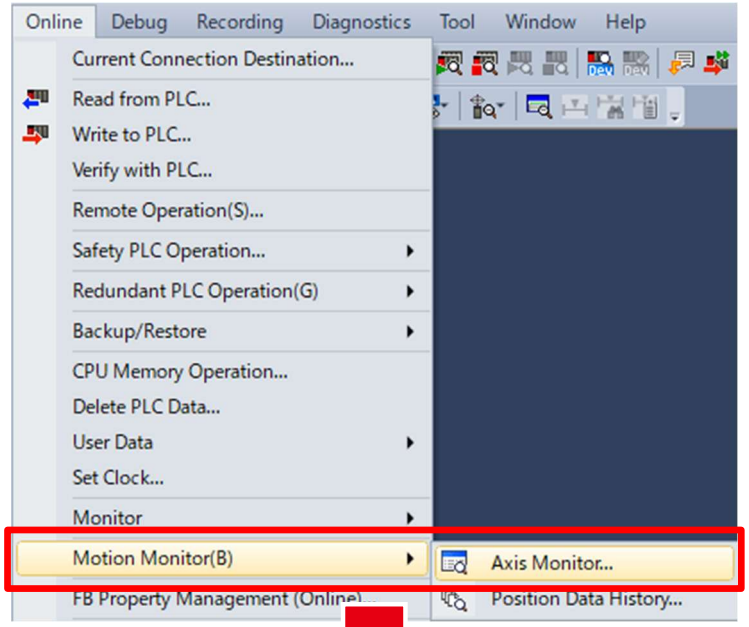
5. **Register the created global labels in the “Watch 1” window.**

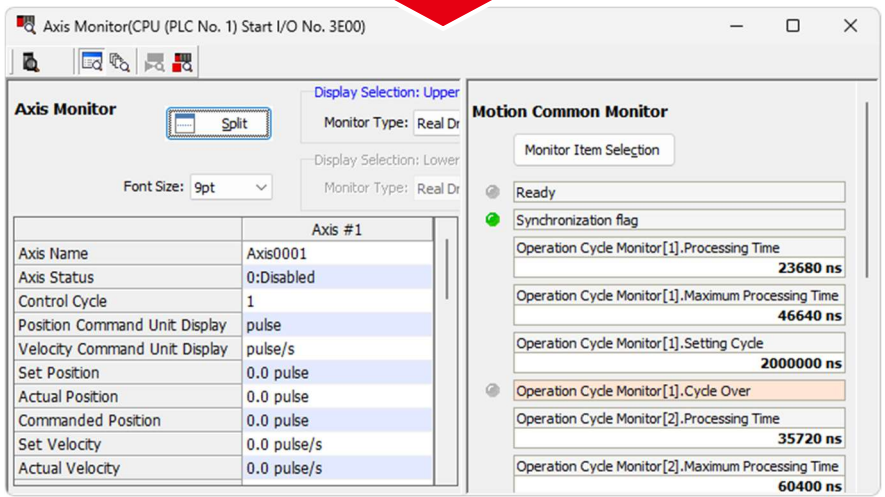


6. **In the “Watch 1” window, click [Start Watching] to begin monitoring.**

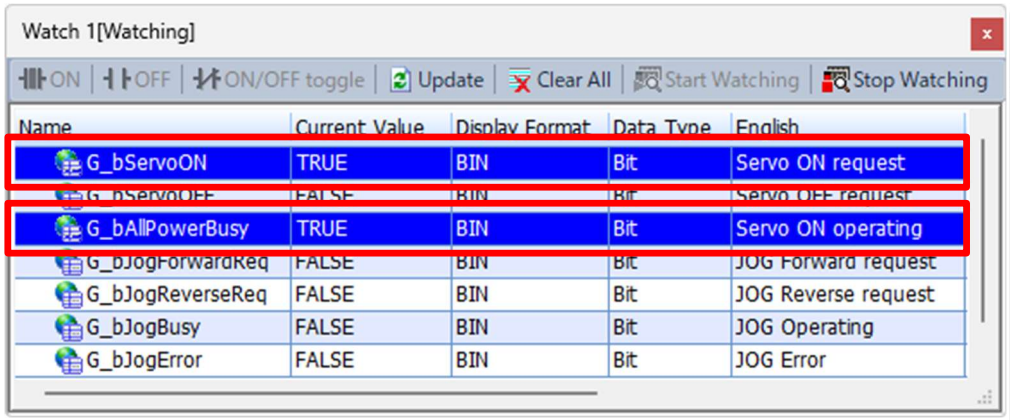


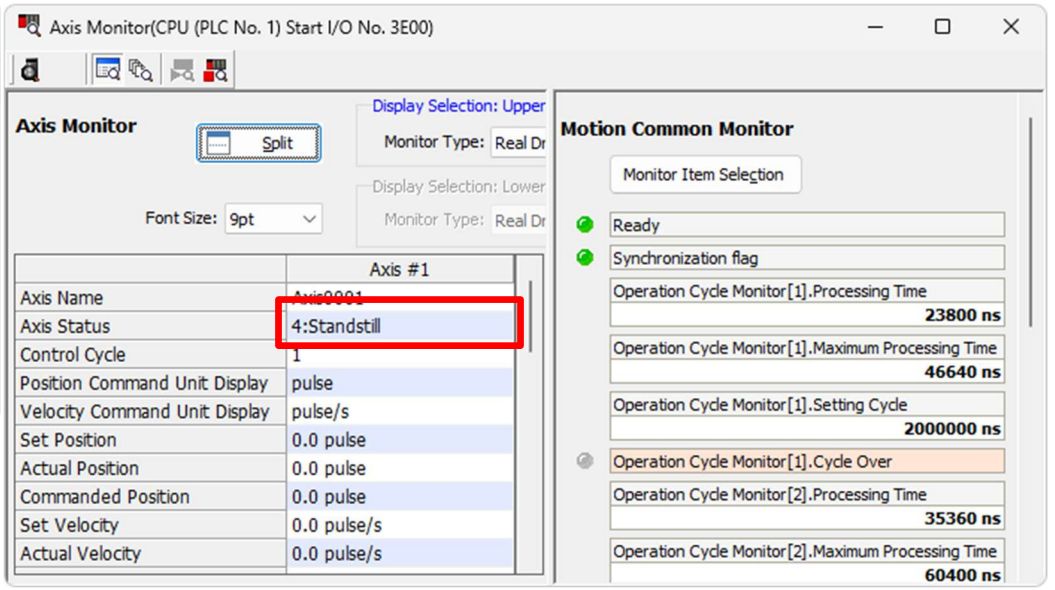
7. **From the menu bar, click [Online] → [Motion Monitor] → [Axis Monitor] to display the “Axis Monitor” window.**



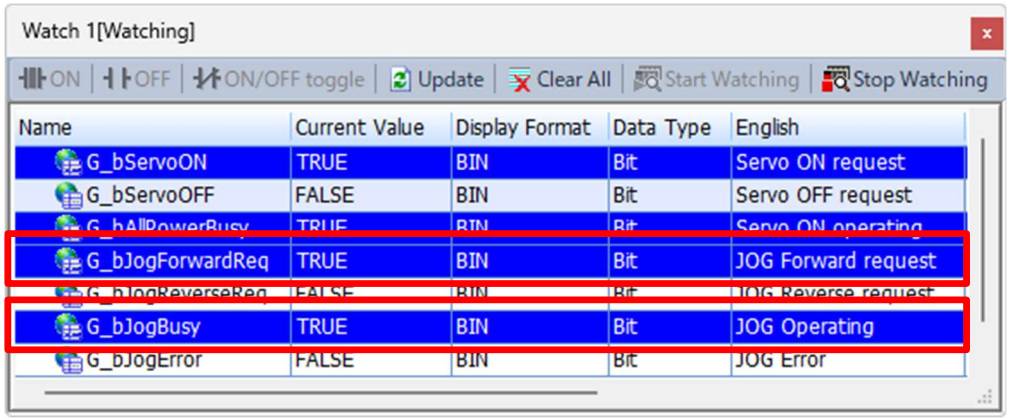


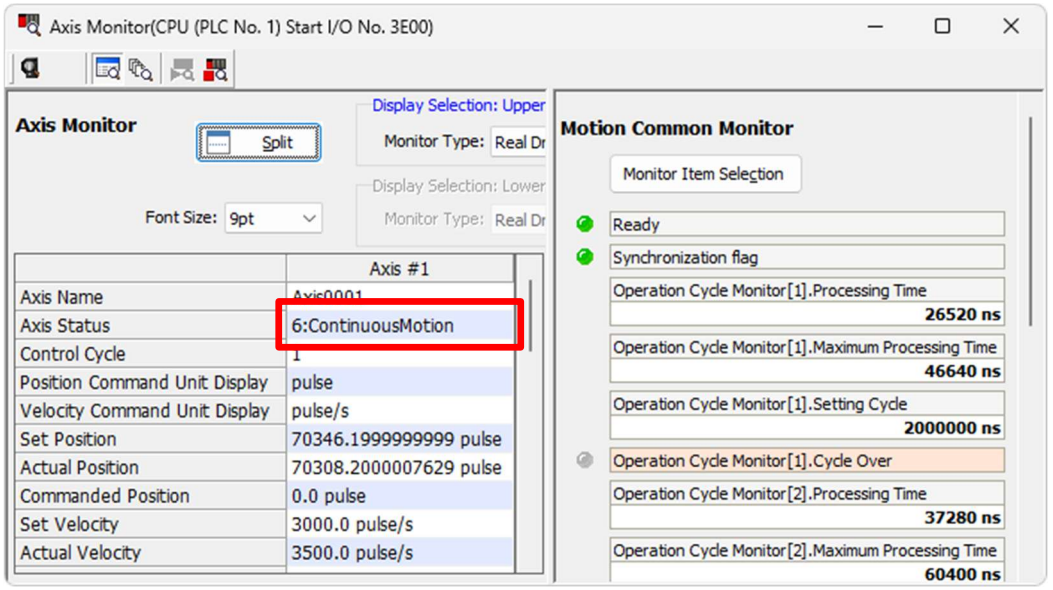
8. **Switch the controller to RUN.**
   When motion control preparation is complete, “Servo ON request (G_bServoON)” will be set TRUE and the FB (MCv_AllPower_1) will be executed. Confirm that “Servo ON operating (G_bAllPowerBusy)” is TRUE and that the [Axis Status] is “4:Standstill.” Once the FB (MCv_AllPower_1) completes successfully, Axis 1 will turn the servo ON state.





9. In the “Watch 1” window, set “JOG Forward request (G_bJogForwardReq)” or “JOG Reverse request (G_bJogReverseReq)” to TRUE to execute the FB (MCv_Jog_1).
   Confirm that “JOG Operating (G_bJogBusy)” is TRUE and that the [Axis Status] is “6:ContinuousMotion.”
   The FB (MCv_Jog_1) will operate normally, and the motor will perform a JOG operation.





10. This completes the operation check.

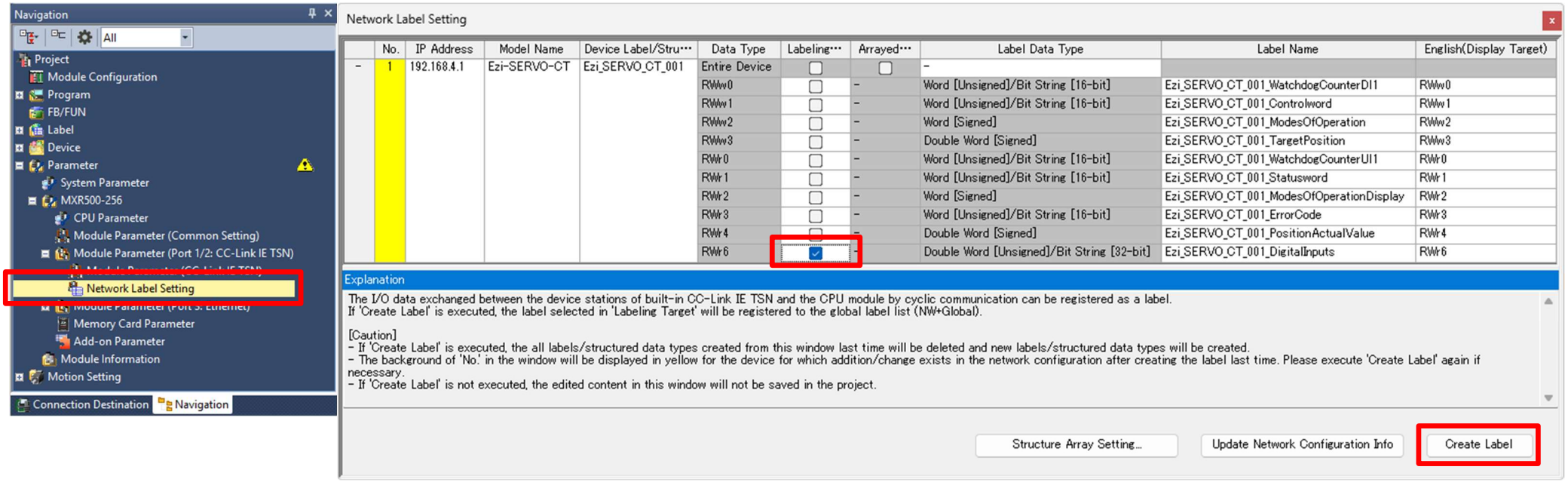
APPENDICES

This explains how to use external signals connected to a drive unit in the motion system.
You can make those external signals available to the motion system by registering them as labels in the "Network Label Setting."

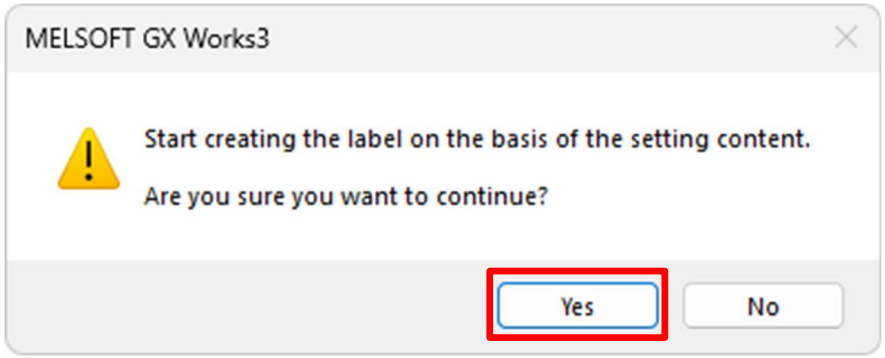
■ How to create network labels

1. **In GX Works3, double-click [Navigation] → [Parameter] → [MXR500-256] → [Module Parameter (Port 1/2: CC-Link IE TSN)] → [Network Label Setting] to open the "Network Label Setting" window.**

2. **Check the [Labeling target] box for the data corresponding to the object "Digital inputs," then click the [Create Label] button.**

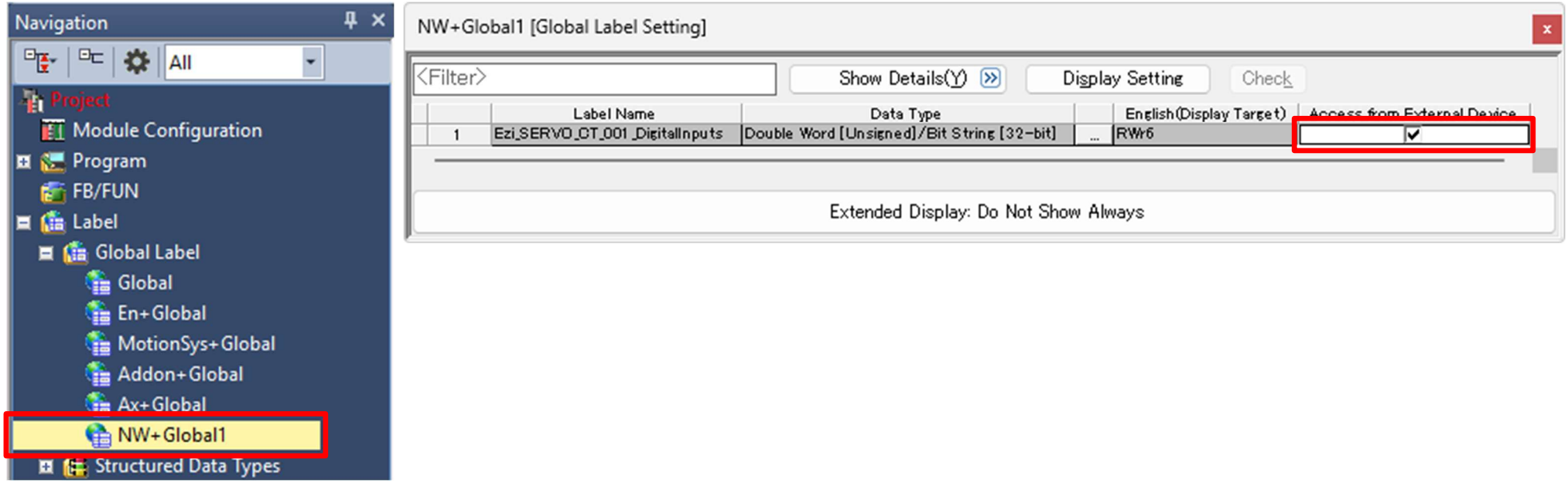


3. **Click the [Yes] button to generate the network labels in the Global Labels.**



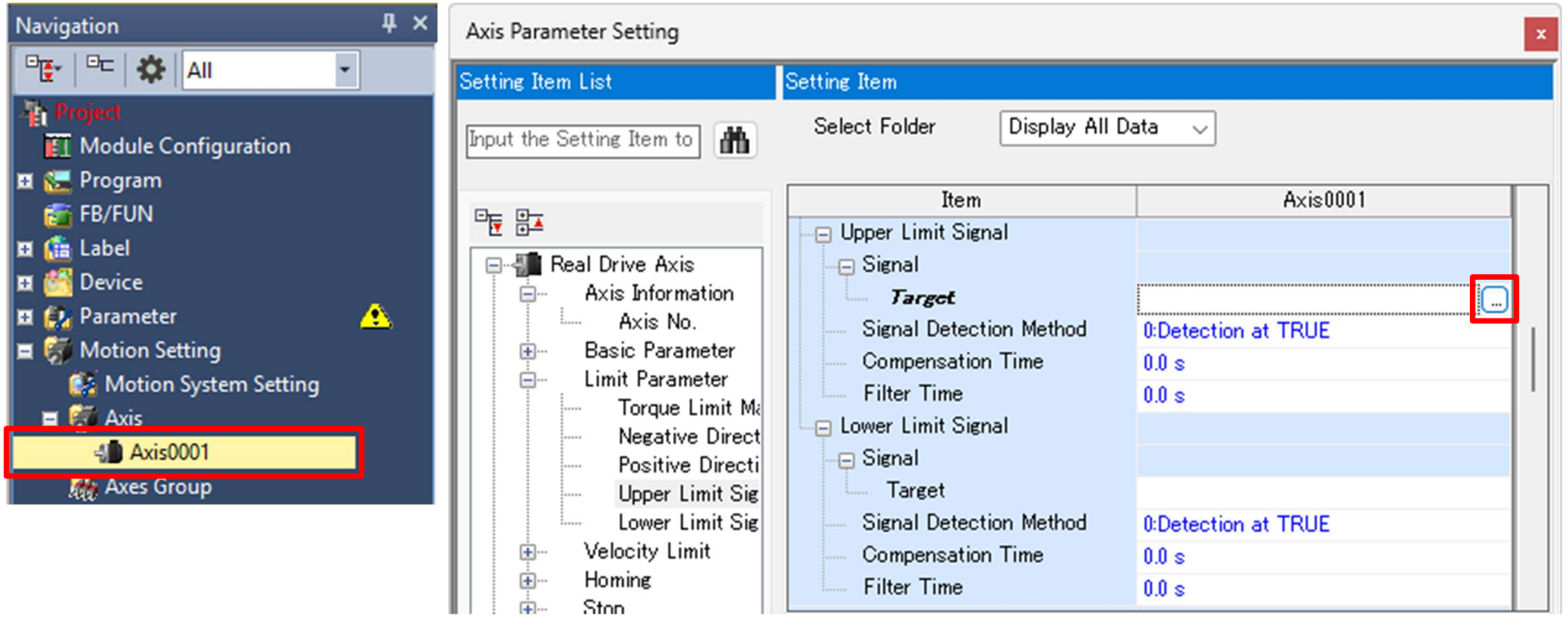
4. **Double-click [Navigation] → [Lablel] → [Global Label] → [NW+Global1] to open the "NW+Global1" window.**

5. **Check the "Access from External Device" checkbox for the generated network label.**



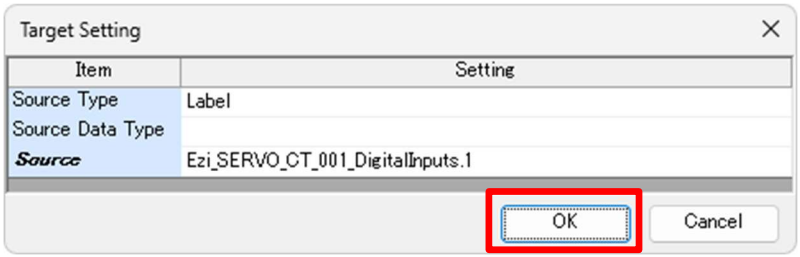
6. **Assign the network-labeled “Digital inputs” to the axis upper and lower limit signals.**
   Double-click [Navigation] → [Motion Setting] → [Axis] → [Axis0001] to open the “Axis Parameter Setting” window.

7. **In [Setting Item List] → [Real Drive Axis] → [Limit Parameter] → [Upper Limit Signal] → [Target], click the [...] button.**



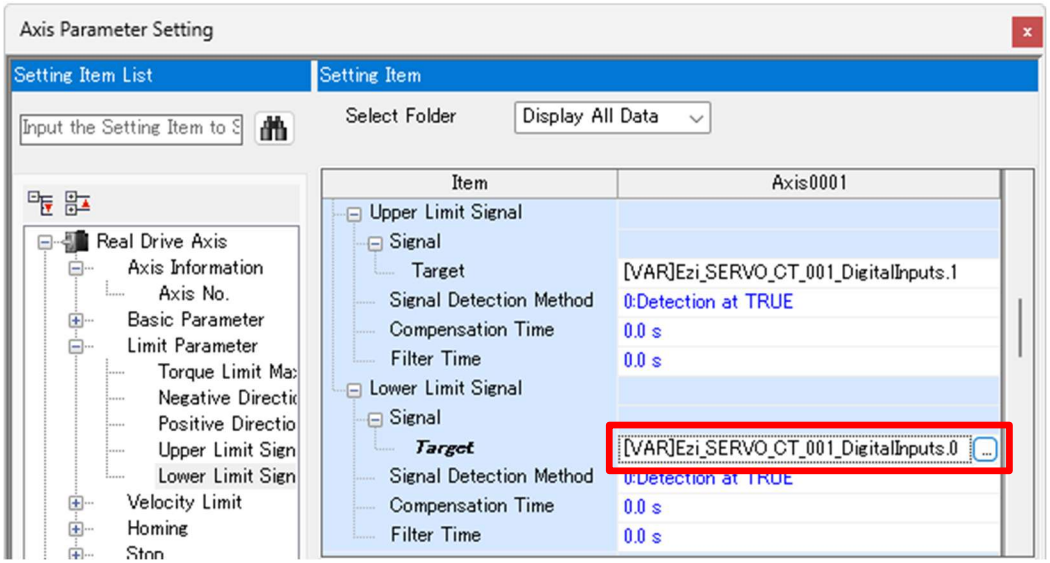
8. **In the “Target Setting” window, configure the following items and then click the [OK] button.**

Item	Setting
Source Type	Label
Source	Ezi_SERVO_CT_001_DigitalInputs.1



9. **Similarly, configure the following items for the [Lower Limit Signal].**

Item	Setting
Source Type	Label
Source	Ezi_SERVO_CT_001_DigitalInputs.0



10. **This completes the setup.**

If the operation checks described in this document do not result in correct operation, please refer to the manuals below.

「MELSEC MX Controller MX-R Model User's Manual (SH-082641ENG)」
… Chapter 17 TROUBLESHOOTING

「MELSEC MX Controller MX-F Model User's Manual (SH-082634ENG)」
… Chapter 18 TROUBLESHOOTING

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⚠ For safe use

- To use the products given in this publication properly, always read the relevant manuals before use.

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