https://cltsn.fastech-motions.com/en

FASTECH
Fast Accurate Smooth Motion







Programmable Automation Controllers
**MELSEC MX Controller**

Ezi-STEP® Micro Stepping System
CC-Link IE TSN ALL

# Connection Guide

## MELSEC MX Controller and Ezi-STEP® Micro Stepping System CC-Link IE TSN ALL

**Mitsubishi Electric Products**
MXR300-16 / MXR300-32 / MXR300-64
MXR300-128 / MXR300-256 / MXF100-8
MXF100-16

**FASTECH Products**
Ezi-STEP CC-Link IE TSN ALL

# Before you begin

- Thank you for using our company's products.
- The Ezi-STEP CC-Link IE TSN ALL is a stepping motor unit consisting of a driver equipped with a 32-bit high-performance ARM processor and various motors. It is used as a remote station in a CC-Link IE TSN network.
- Ezi-STEP CC-Link IE TSN ALL is an industrial product. Do not use it for any other purpose. Our company shall not be liable for any damages incurred due to non-compliance with this instruction.
- This connection guide provided by our company explains how to connect the Ezi-STEP CC-Link IE TSN ALL to Mitsubishi Electric's MELSEC MX controller. It covers CSP+ file registration, system configuration, parameter settings, and programming methods.
- Before writing the PLC program, be sure to read this connection guide, understand its contents accurately, and use the product correctly.
- This connection guide is subject to change without notice. For the latest version, please refer to our company's CC-Link IE TSN website (https://cltsn.fastech-motions.com/en).

# Manual Information

- Ezi-STEP CC-Link IE TSN ALL manuals can be downloaded from the FASTECH website.

  https://cltsn.fastech-motions.com/en/download/quick

| Manual Name | Manual Number |
|---|---|
| [Manual][CC-Link IE TSN][Ezi-STEP ALL] Micro Stepping System | |
| [Connection Guide][CC-Link IE TSN][MELSEC MX Controller][Ezi-STEP ALL] | |

- The MELSEC MX Controller Manual can be downloaded from the Mitsubishi Electric website.

  https://www.mitsubishielectric.com/fa/index.html

| Manual Name | Manual Number |
|---|---|
| MELSEC MX Controller (MX-R Model) User's Manual | SH-082640 |
| MELSEC MX Controller (MX-R Model) Programming Manual | SH-082643 |
| GX Works3 Operating Manual | SH-081214 |

# Terminology

- This section covers terms used in the connection guide.

| Terminology | Description |
|---|---|
| CC-Link IE TSN | An open network that adopts 'TSN (Time-Sensitive Networking)', an extension of the standard Ethernet specification, enabling simultaneous processing of real-time control and information from other open networks. |
| Master station (Manager station) | The station that manages the entire network, capable of performing cyclic and transient transmission with all stations. The MELSEC MX controller corresponds to this role. |
| Remote station | A station that performs cyclic transmission of bit-level I/O signals and word-level I/O data, and also supports transient transmission. Ezi-STEP CC-Link IE TSN ALL corresponds to this. |
| PDO | Abbreviation for Process Data Object. A collection of application objects periodically transmitted between multiple CANopen nodes. |
| Object | Various data held by device stations corresponding to CANopen. |

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# 1. Overview

# 1-1. Overview

- **MELSEC MX Controller and Ezi-STEP CC-Link IE TSN ALL Connection Guide**

### ◆ Master station: MXR300-16 / MXR300-32 / MXR300-64 / MXR300-128 / MXR300-256 MXF100-8 / MXF100-16

**PLCopen® Motion Control FB (Function Block)**

- Control programs can be easily written using the PLCopen Motion Control FB library, an international standard specification.
- This program allows third parties to easily understand its contents, significantly reducing design and maintenance time.

### ◆ Engineering software

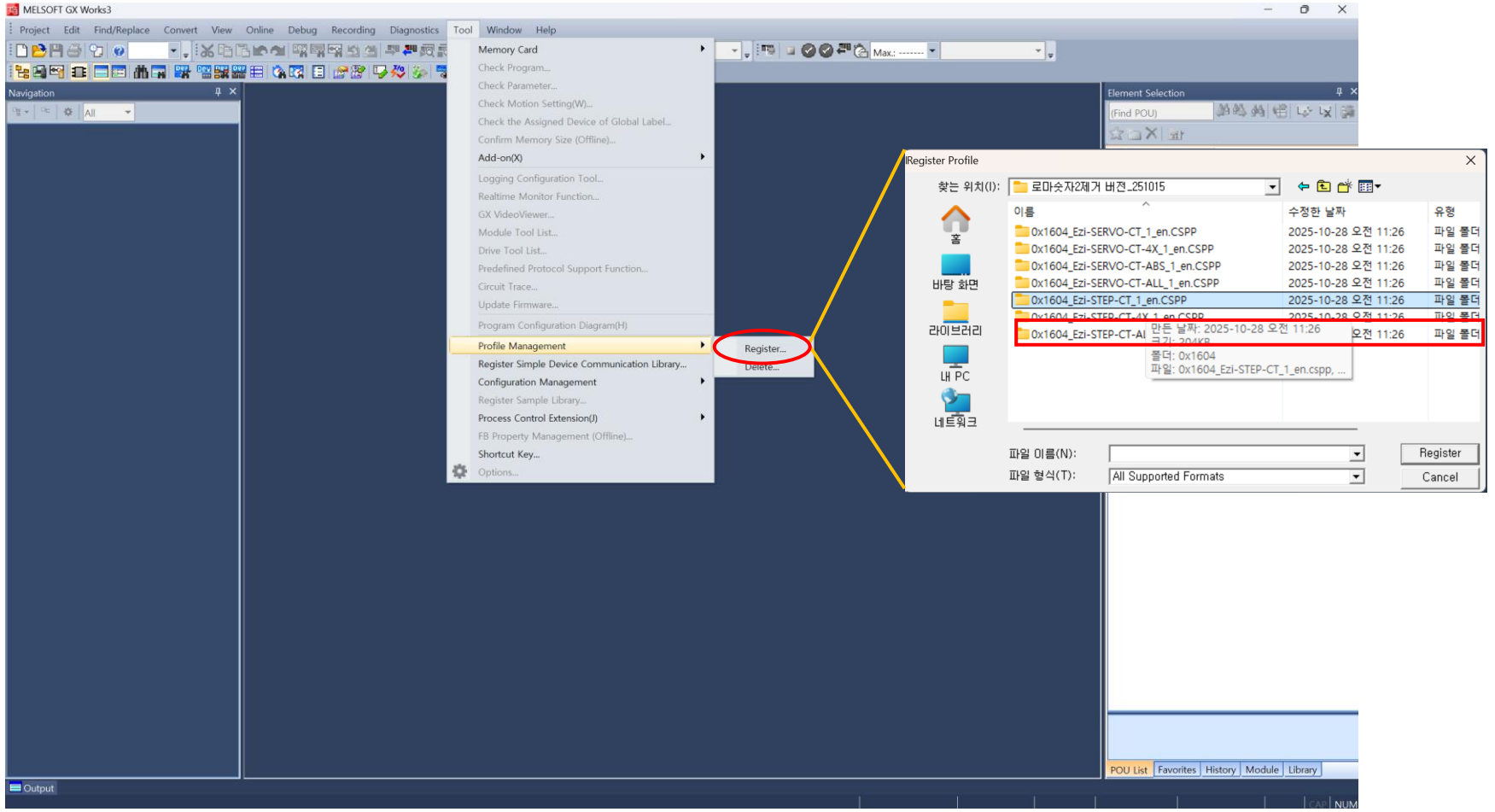
- GX Works3: Ver. 1.105K or higher
- For the latest files, please refer to the Mitsubishi Electric website. (https://www.mitsubishielectric.com/fa/download/index.html)

### ◆ Remote station: Ezi-STEP CC-Link IE TSN ALL

- CSP+ File Download address: https://cltsn.fastech-motions.com/en/download/quick
- File name: 0x1604_Ezi-STEP-CT-ALL_1_en_CSPP

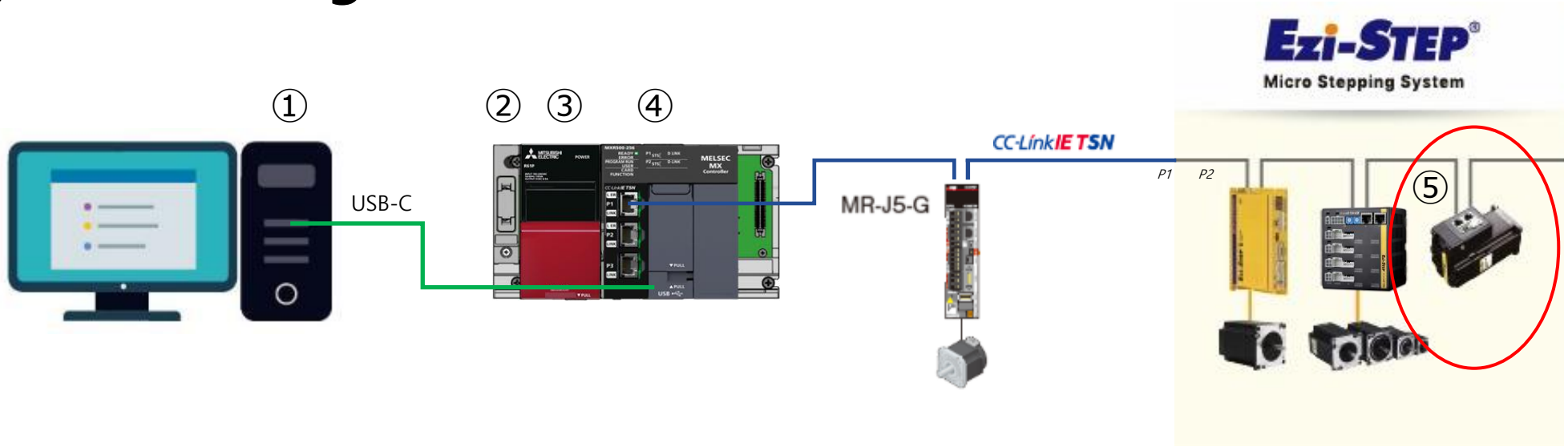
# 1-2. Ezi-STEP CC-Link IE TSN ALL CSP+ File Registration

- **CSP+ Registration**
  - [GX Works3] Tool / Profile Management / Register ※ Registration is only possible before opening a project.



# 1-3. CC-Link IE TSN Configuration

## ● System Configuration




| Configuration | | Product name | IP address |
|---|---|---|---|
| ① | Engineering software | GX Works3 | - |
| ② | Main base | R33B | - |
| ③ | Power supply module | R61P | - |
| ④ | Controller | MXR300-16 | 192.168.3.253 |
| ⑤ | Driver + Motor | Ezi-STEP-CT-ALL-42S-R | 192.168.3.1 |

# 1-3. CC-Link IE TSN Configuration

- **Ezi-STEP Specifications**

| Item | | Specifications |
|---|---|---|
| Communication protocol | | CC-Link IE TSN Class B |
| Communication speed | | 1Gbps / 100Mbps |
| Modes of operation | | 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 synchronization communication | Synchronous Communication (CSP, PP, HM) / Asynchronous Communication (PP, HM) |
| Encoder type | | Incremental type |

# 1-4. Setup Sequence

- **Ezi-STEP, MX Controller Parameter Settings**

| No | Item | Description |
|---|---|---|
| 1 | Ezi-STEP Settings  | Configure parameters using the driver configuration program (Ezi-CT Manager). Please download the configuration program and its usage guide from the FASTECH Co., Ltd. website.<br>※ Address: https://cltsn.fastech-motions.com/en/download/quick |
| 2 | MX Controller Setup  | Create a project for the MX controller using GX-Works3, then configure the unit parameters (communication method, connection target) and axis parameters (for motion control). |
| 3 | MX Controller + Ezi-STEP Operation Verification  | Write a program to verify that the MX Controller and Ezi-STEP are configured correctly.<br>Manipulate labels to verify the motor operates normally. |

# 1-4. Setup Sequence

## ● Ezi-STEP Setup Notes

| Item | Details |
|---|---|
| IP address setting | ① Set using the driver's rotary switch<br>② Rotary Switch → Setting value: '00', IP address (Index: 2101h, Subindex: 01~04h) |
| Driver homing method setting | ① Homing method (Index: 6098h, Subindex:00h) setting<br>- Set homing method: '0' (default) → '33', etc. ※ Refer to [Appendix] Homing Method<br>② Home offset (Index: 607Ch, Subindex:00h) → Set to '0'<br>Caution) Setting a value other than 0 may cause rapid acceleration or deceleration upon homing completion. |
| Limit stop method setting | ① Limit stop method (Index:2003h, Subindex:00h) setting<br>- 0: PP, HM → Quick stop / CSP → No stop<br>- 1: PP, HM → Deceleration stop / CSP → Does not stop<br>② Setting a value other than '0' or '1' may cause '1ED0H: Drive error' when detecting the hardware stroke limit. |
| In-position range | ① In-position range (Index:2B21h, Subindex:00h, Data type:Unsigned32) setting<br>- Register a value within the In-position range (5 to 20000 pulses) considering the operating environment<br>② If [Md.102: Deviation counter value] is less than the setting value, [Md.108: Servo status 1: In-position] turns ON. As a rule, this object should not be made public. Please configure it using the servo transient transmission function of the FX5 CPU module. |

# 1-5. Restrictions

## Motion Control Function Constraints (MX Controller and Ezi-STEP)

| Item | Restriction |
|---|---|
| Torque limit function | The driver does not support the following object, so the Torque limit function cannot be used.<br>• Positive torque limit value (Index:60E0h, Subindex:00h)<br>• Negative torque limit value (Index:60E1h, Subindex:00h) |
| Absolute position system | The encoder is of the incremental type, so the Absolute position system cannot be used. |
| Virtual servo amplifier function | Emulated by MR-J5-G. |
| Follow up function | This product must perform homing when the servo is turned ON.<br>As this is an open-loop control system, the 'Position actual value (Index:6064h, Subindex: 00h)' is not updated when the servo is OFF.<br>In the Follow Up function, the motor rotation amount is reflected in the controller command based on the 'Position actual value (Index:6064h, Subindex:00h)'. Therefore, if the motor rotates while the servo is OFF, the controller command and the motor position will be misaligned. |
| Mark detection function | The driver's TPR1 (Touch Probe 1) cannot be used for [Pr.800: Mark detection signal setting]. |
| Optional data monitor function | When using the Optional data monitor function, set the objects to monitor in [Pr.91~94: Optional data monitor: Data type setting 1~4] and [Pr.591~594: Optional data monitor: Data type expansion setting 1~4].<br>The default value is "0: Not set". Therefore, [Md.109~112: Optional data monitor output 1~4] will be '0'. |

# 1-5. Restrictions

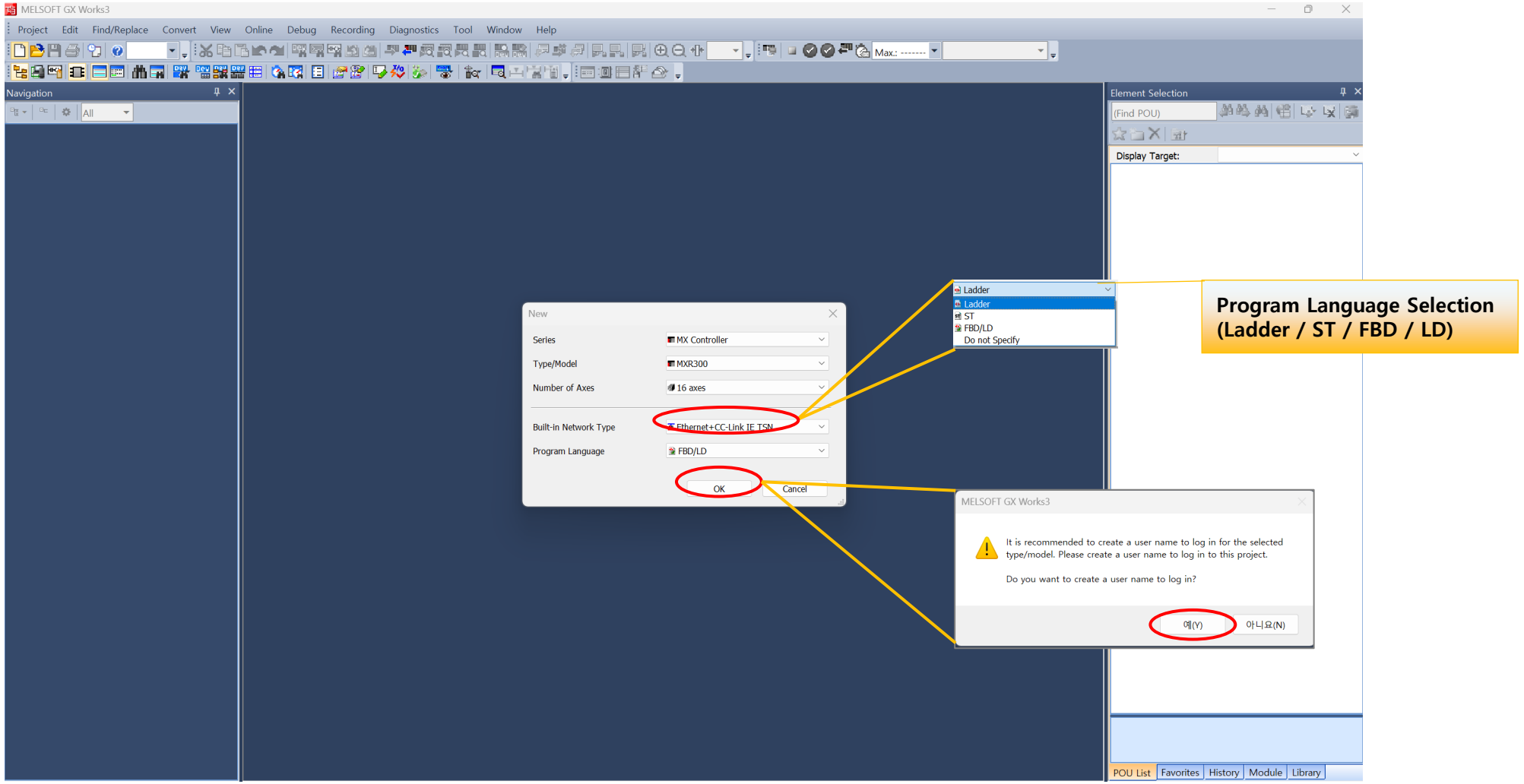
## Motion Control Function Constraints (MX Controller and Ezi-STEP)

| Item | Restriction |
|---|---|
| Md.103: Motor rotation speed | Since the driver does not support 'SI unit velocity (Index:60A9h, Subindex:00h)', it outputs the motor rotation speed in pulses per second. |
| Md.104: Motor current value | Since the driver does not support 'Torque actual value (Index:6077h, Subindex:00h)', it always displays "0". |
| Md.108: Servo status 1 | The following bits in the monitor data are always in the 'OFF' state.<br>· Gain switching (b4)<br>· Fully closed control switching (b5)<br>· Torque limit active (b13)<br>· Absolute position lost (b14)<br>· Servo warning (b15) |
| Md.119: Servo status 2 | The following bits in the monitor data are always in the 'OFF' state.<br>· Zero point pass (b0)<br>· Zero speed (b3)<br>· Speed limit active (b4)<br>· PID control active (b8) |
| Md.115: Servo alarm detail number | Not supported. This monitor data is always displayed as '0'. |
| Cd.108: Gain switching command flag | Not supported. Only MELSERVO responds to this data. |
| Cd.133: Semi/Fully closed loop switching request | Not supported. Only MELSERVO supports this data. |
| Cd.136: PI-PID switching request | Not supported. Only MELSERVO supports this data. |

# 2. MX Controller Settings

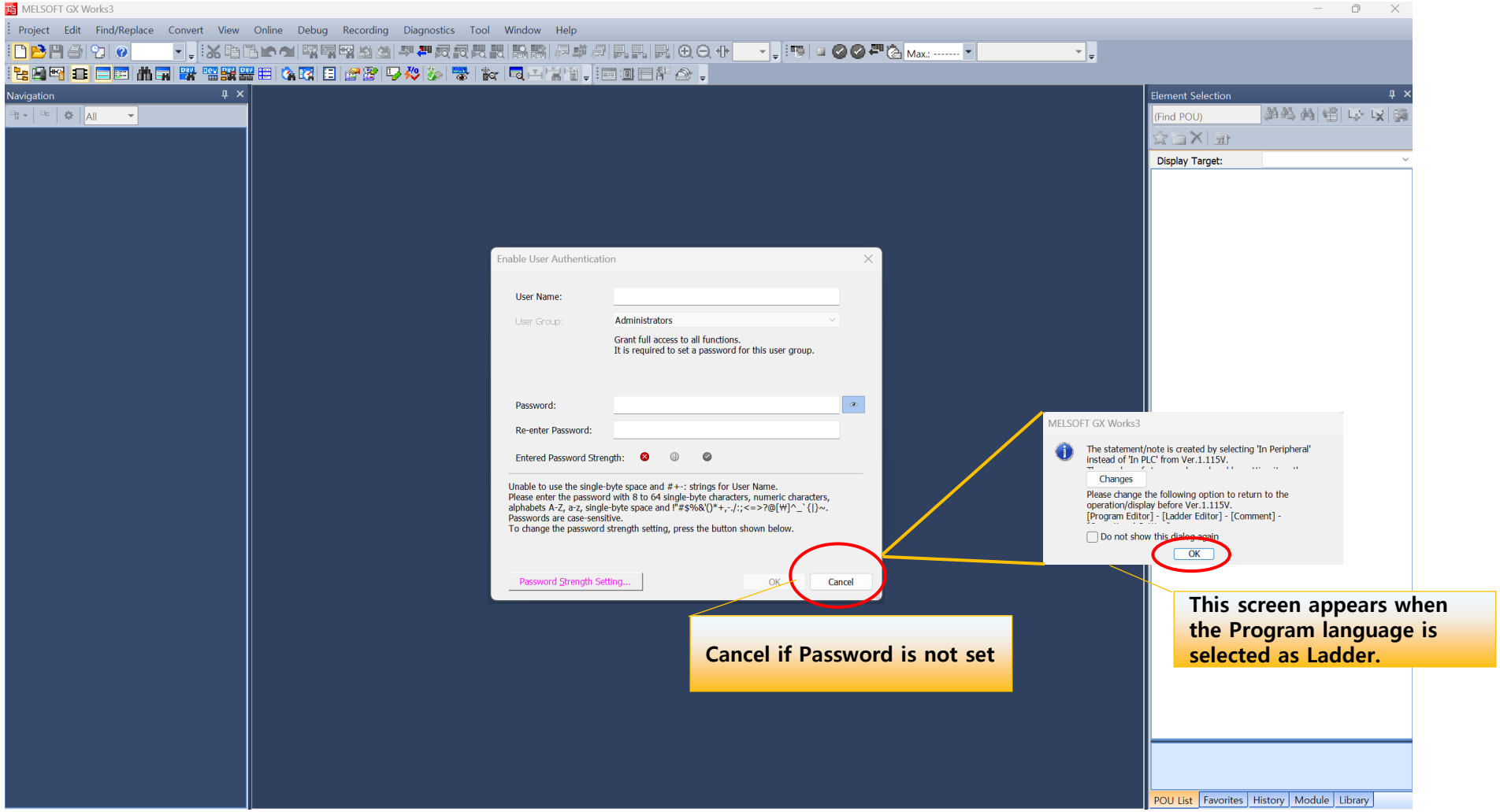
# 2-1. Project Creation

- **When creating a new project, select the MX Controller, model name, number of axes used, and programming language**



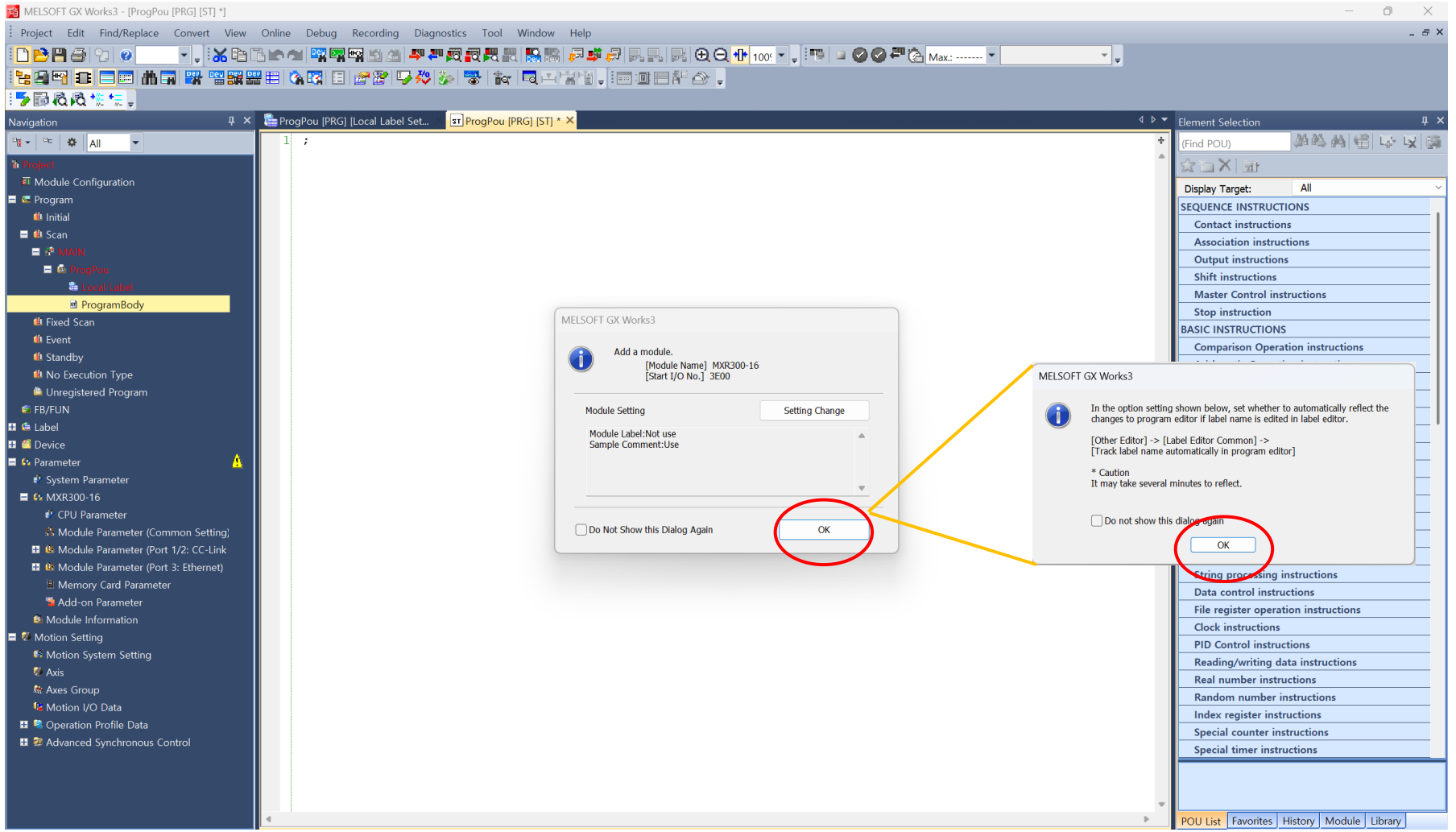
# 2-2. User Authentication Settings

- **Password Setting** ※ In this chapter, Cancel is selected when no password is set.



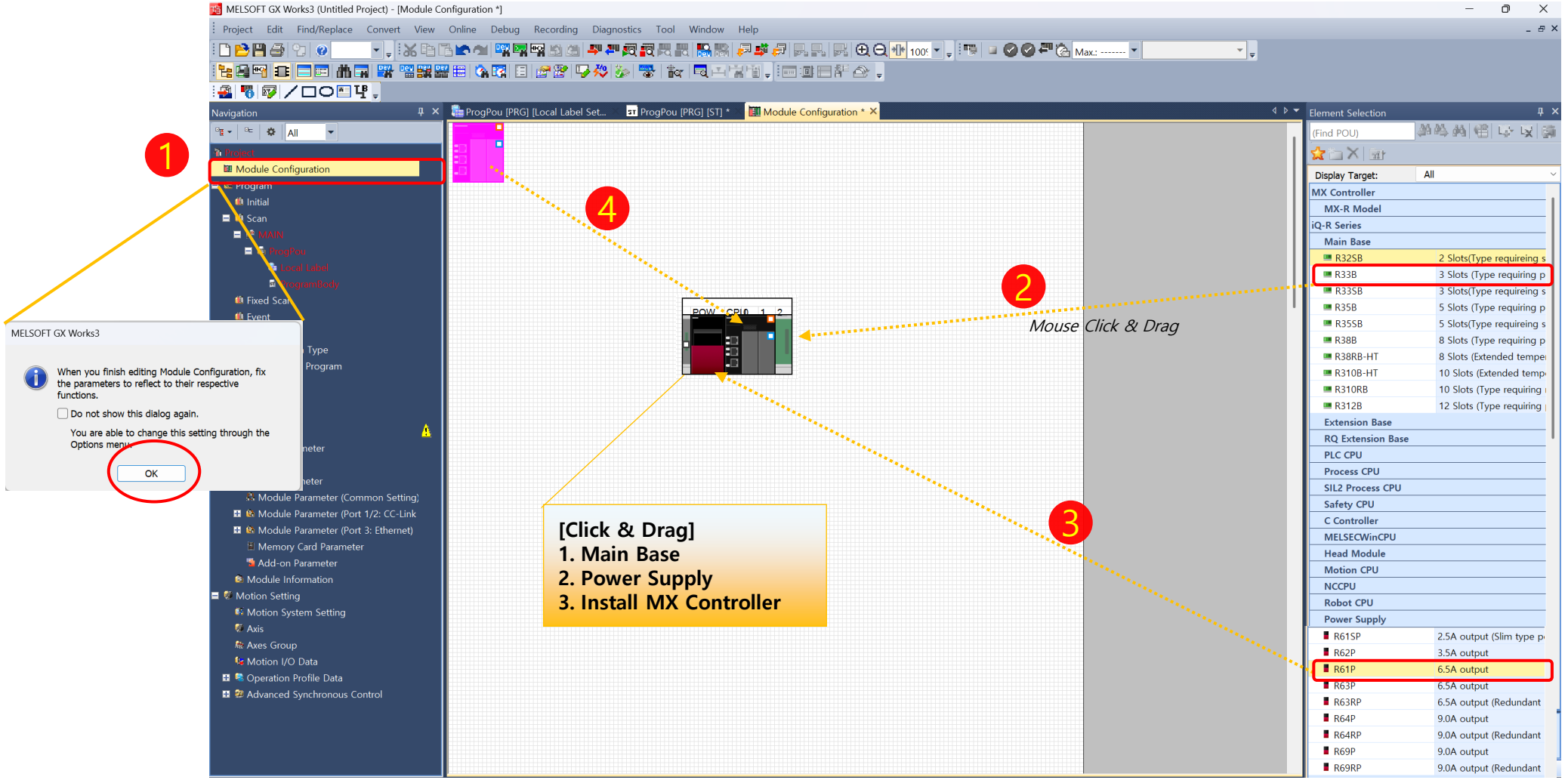
# 2-3. Module Registration

- **MXR300-xx Registration**



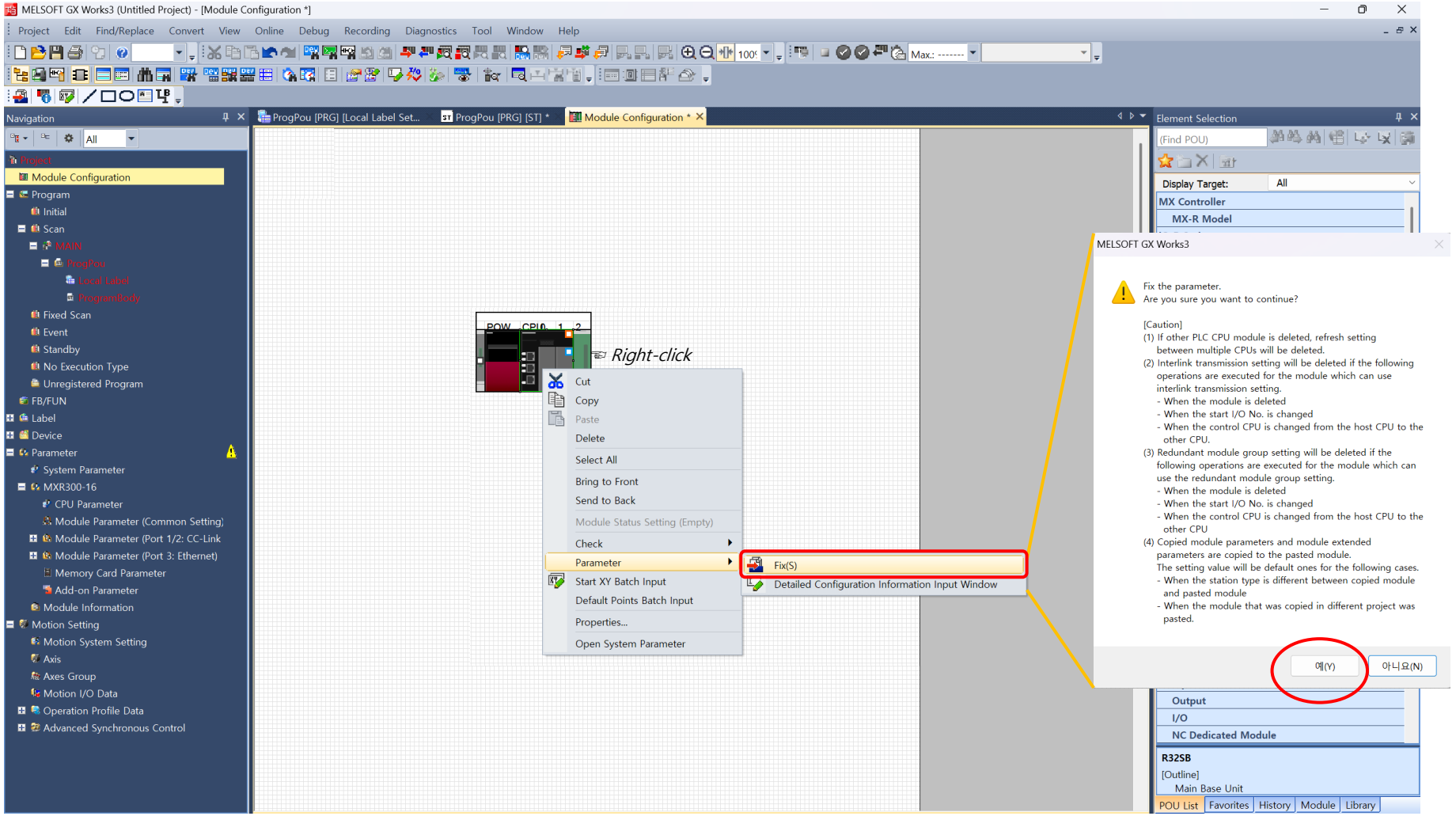
# 2-4. Module Configuration – H/W

- **Configure the Main Base, CPU Module, and Power Supply by clicking and dragging with the mouse**



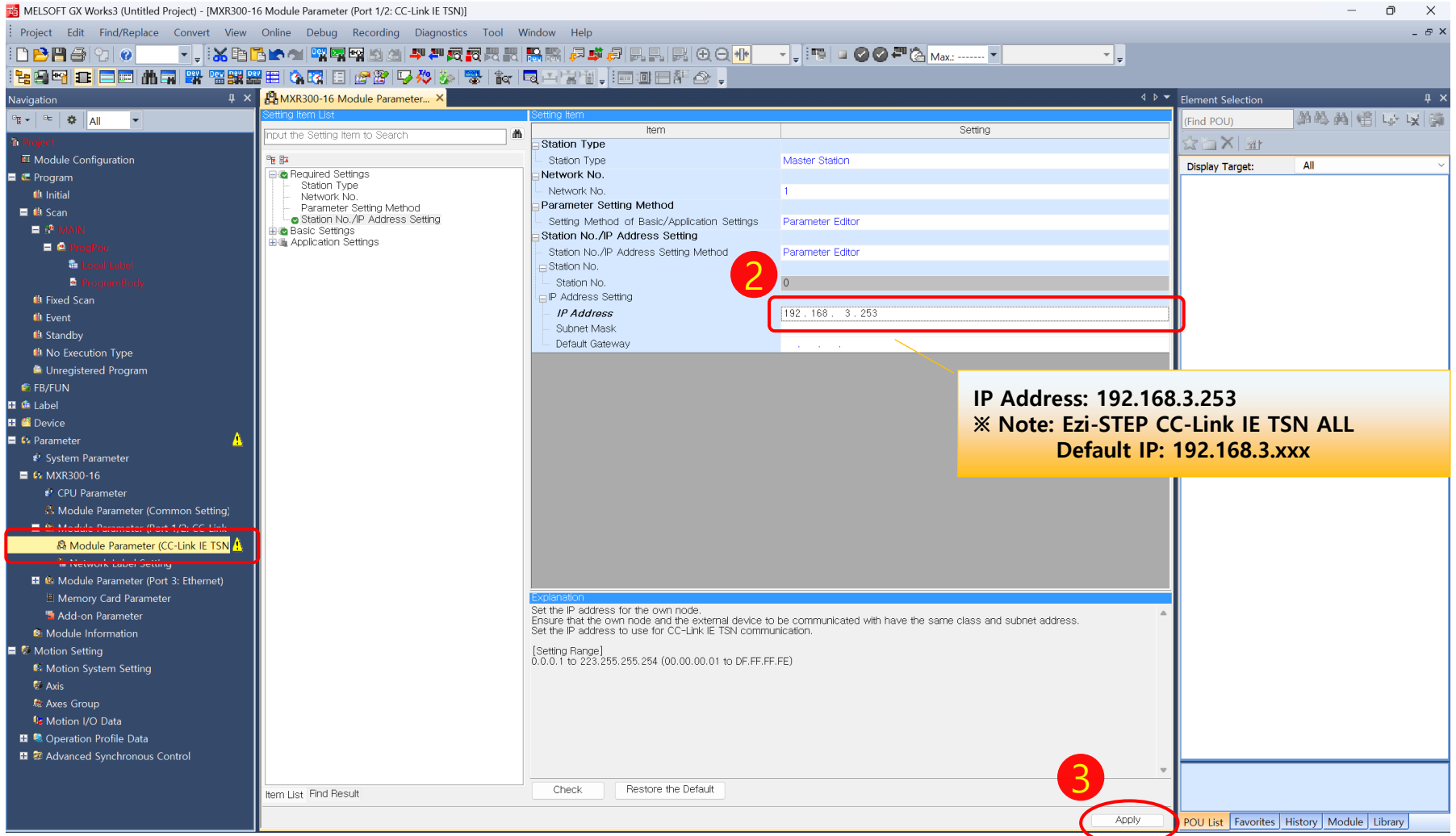
# 2-4. Module Configuration – H/W

- **Right-click the mouse and select Fix(S) to complete the module configuration**



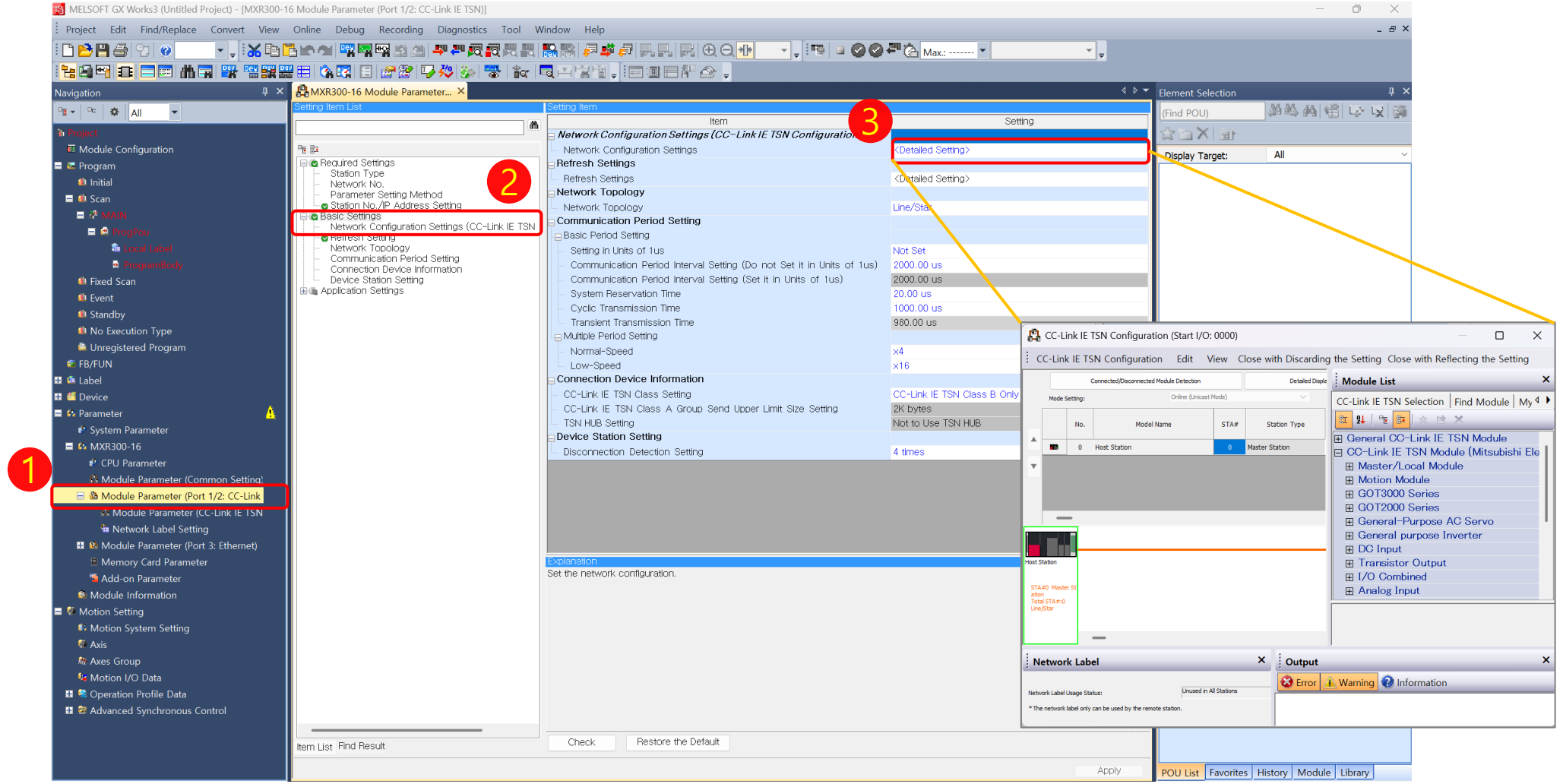
# 2-5. Module Parameters

- **Station No./IP Address Setting : Example) IP Address → 192.168.3.253**



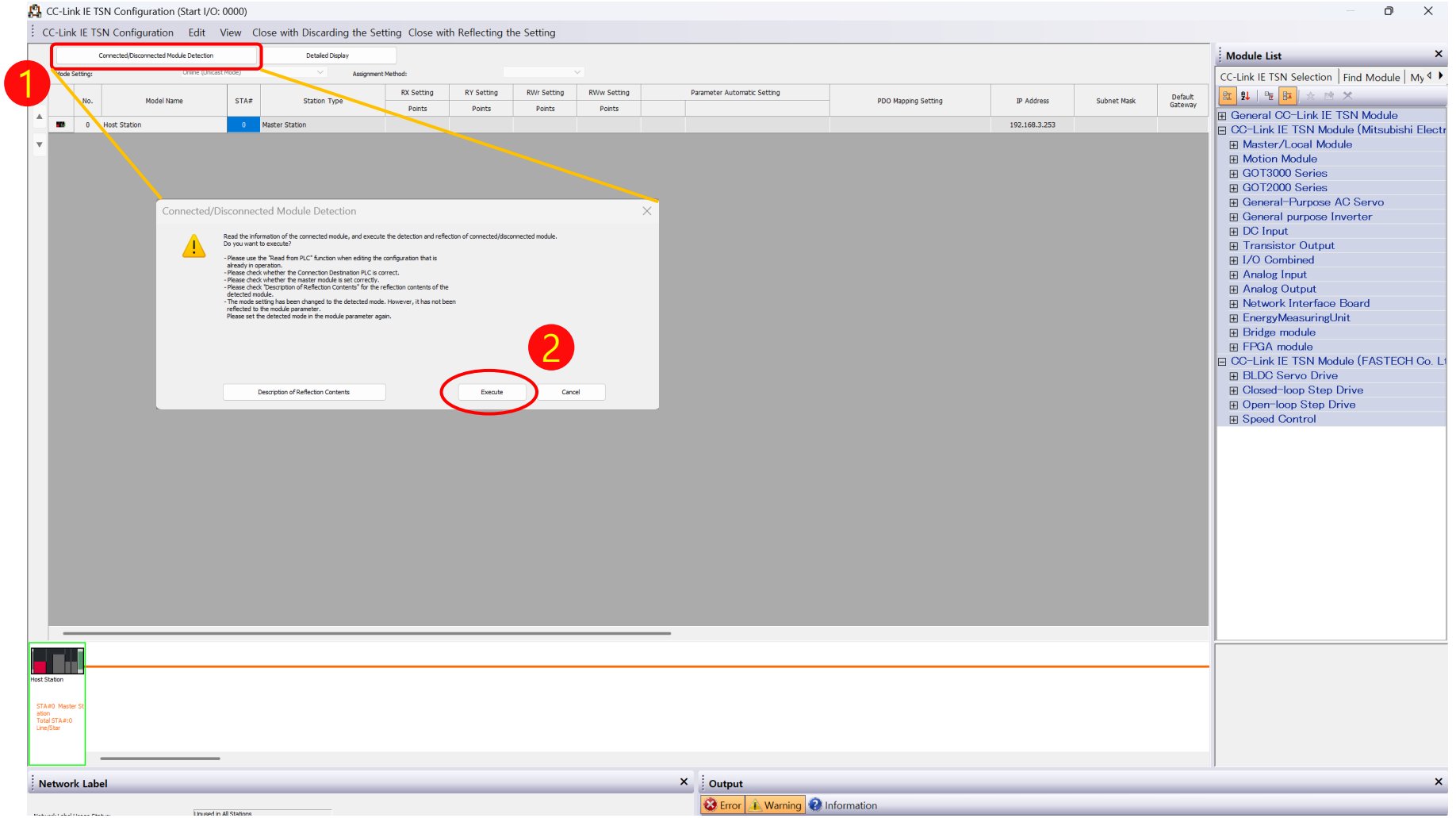
# 2-5. Module Parameter – Network Configuration

- **Network Configuration Settings**



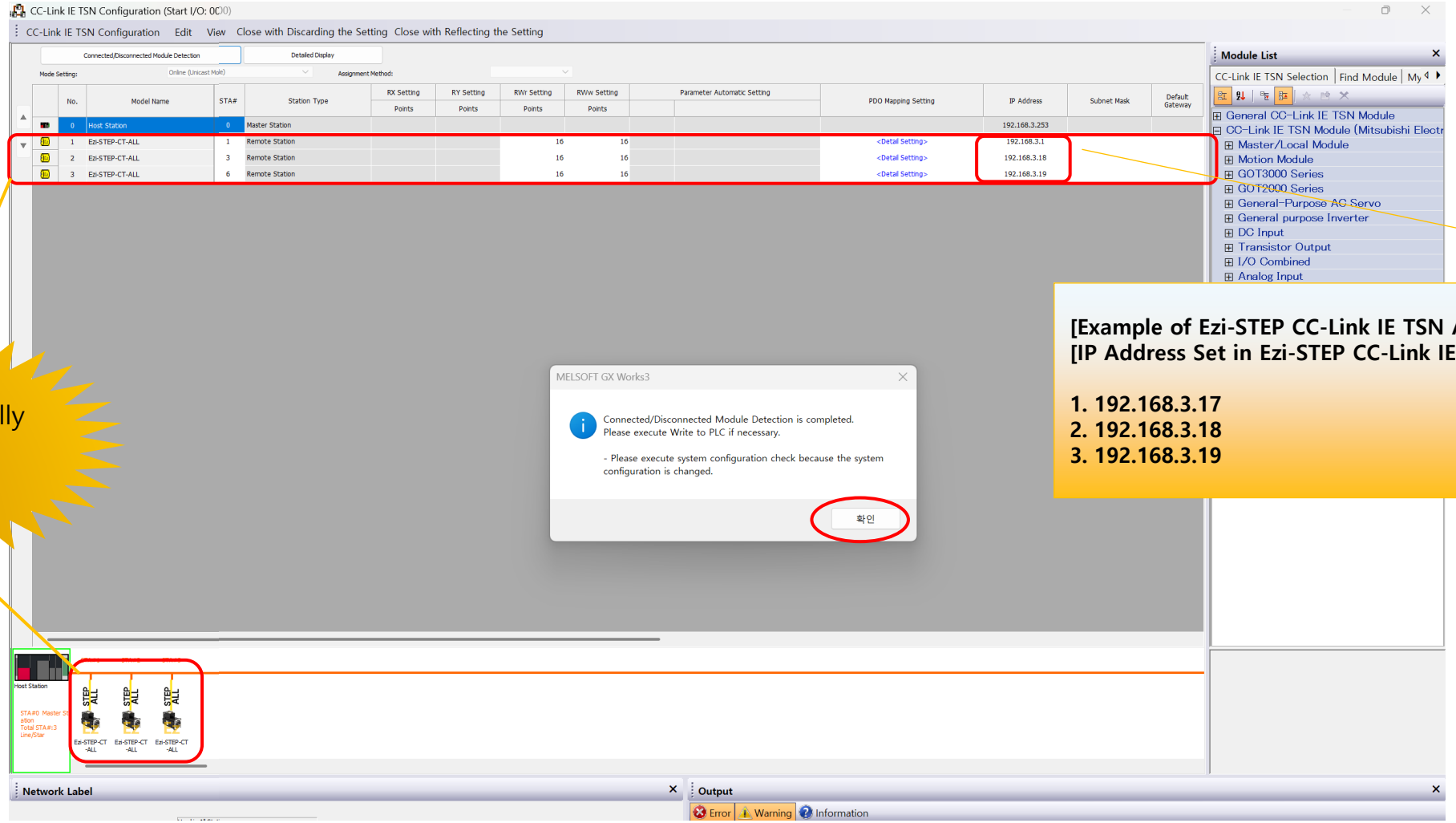
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Network Connected Status: Automatically detects and configures the CC-Link IE TSN Module**



# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Network Connected Status: Automatically finds and configures the CC-Link IE TSN Module with Ezi-STEP CC-Link IE TSN ALL**



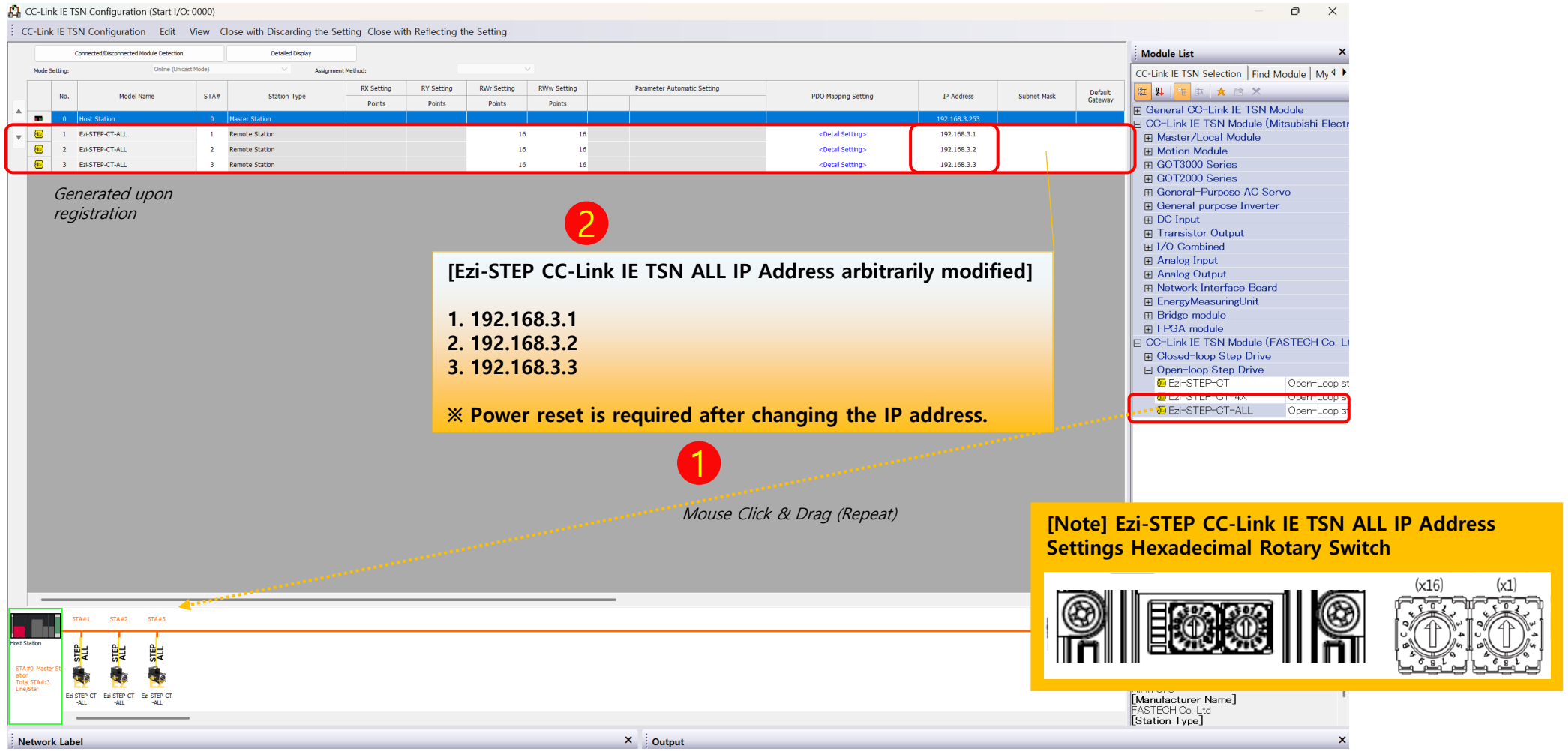

Automatically Found Module

**[Example of Ezi-STEP CC-Link IE TSN ALL 3-axis configuration]**
**[IP Address Set in Ezi-STEP CC-Link IE TSN ALL Driver]**

**1. 192.168.3.17**
**2. 192.168.3.18**
**3. 192.168.3.19**

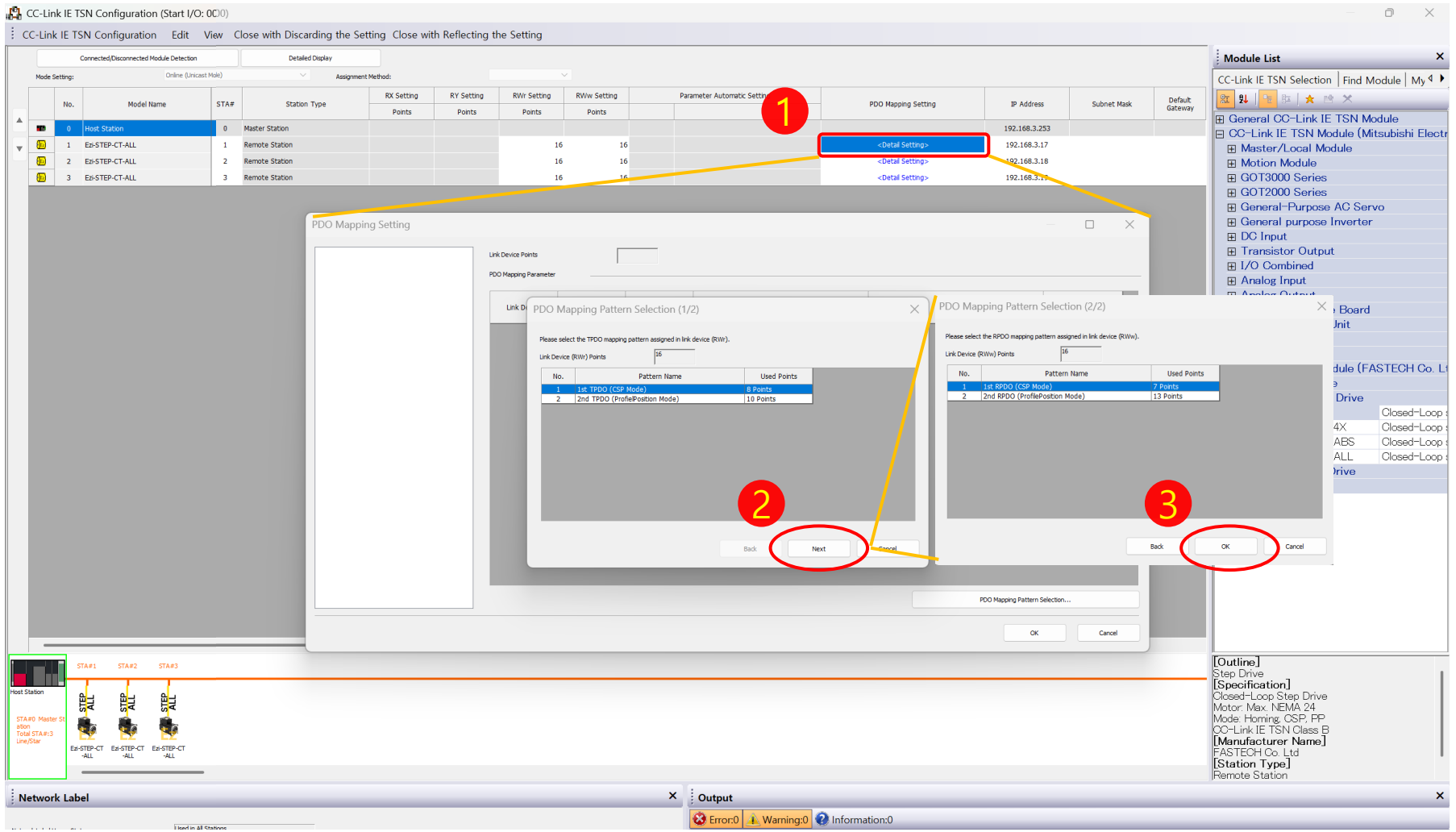
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Network Not Connected State: Manually configure the CC-Link IE TSN Module (click & drag)**



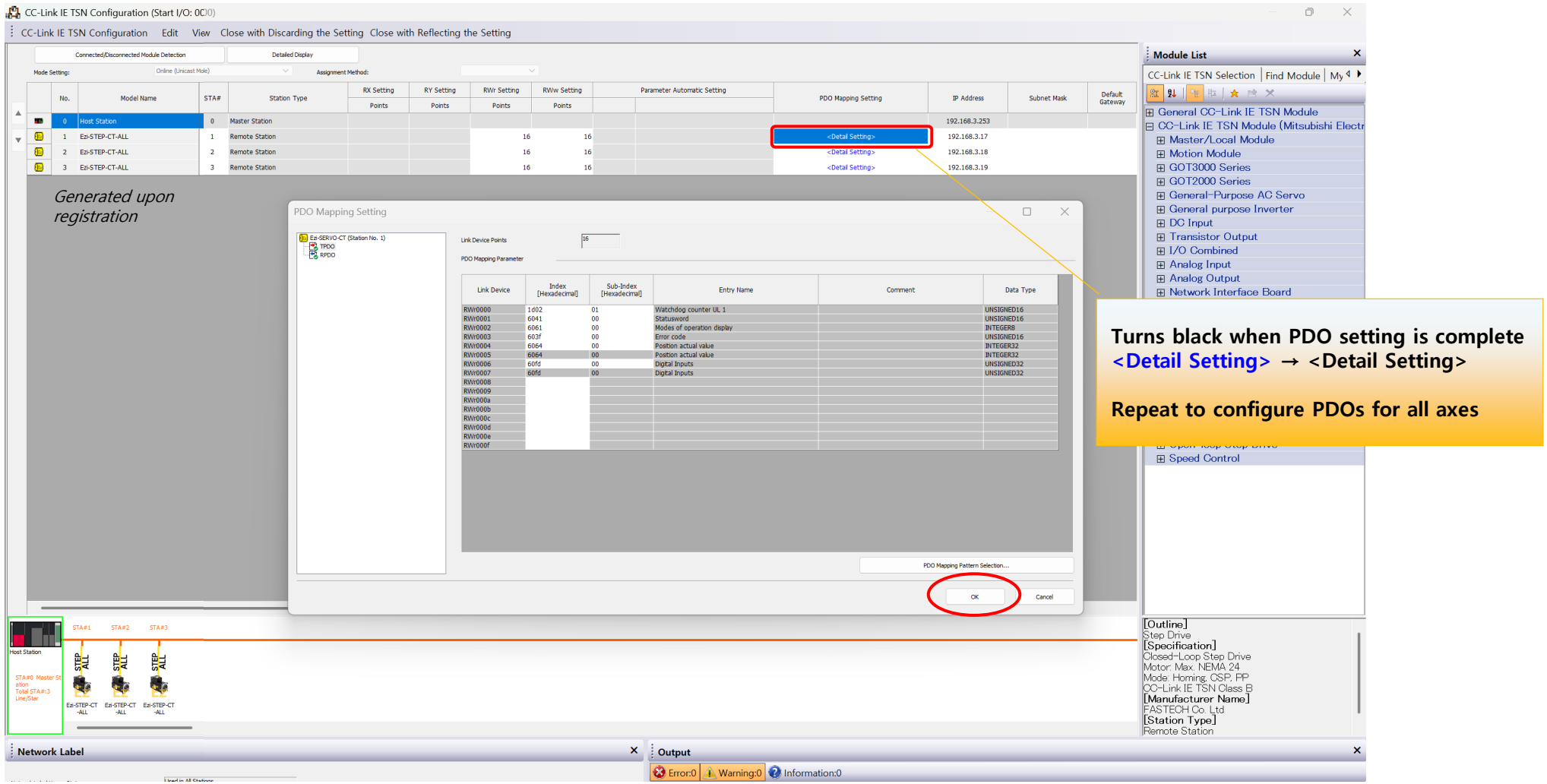
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **CC-Link IE TSN Module PDO Mapping Setting (Per-Axis Setting)**



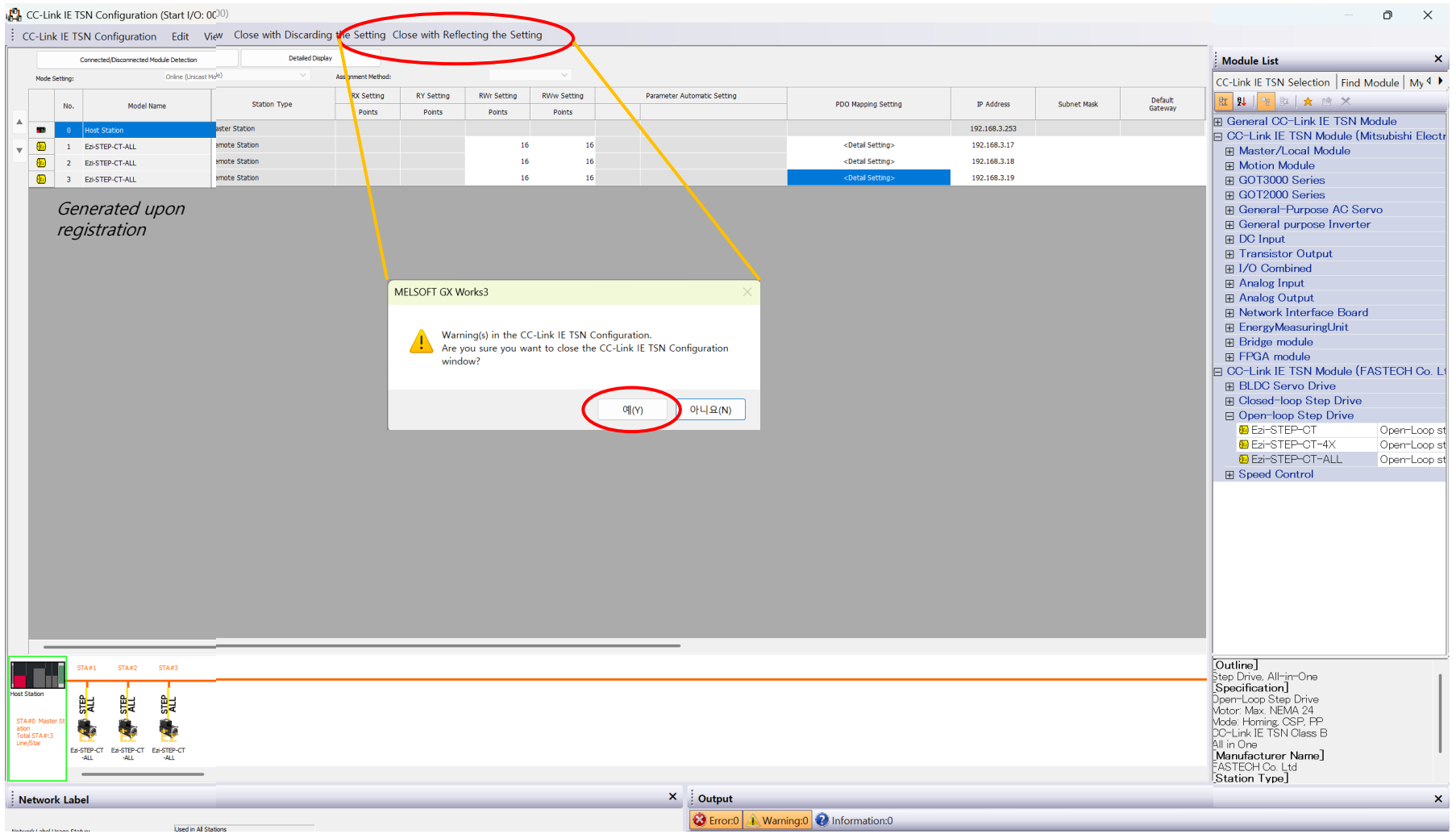
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **CC-Link IE TSN Module PDO Mapping Setting (Per-Axis Setting)**



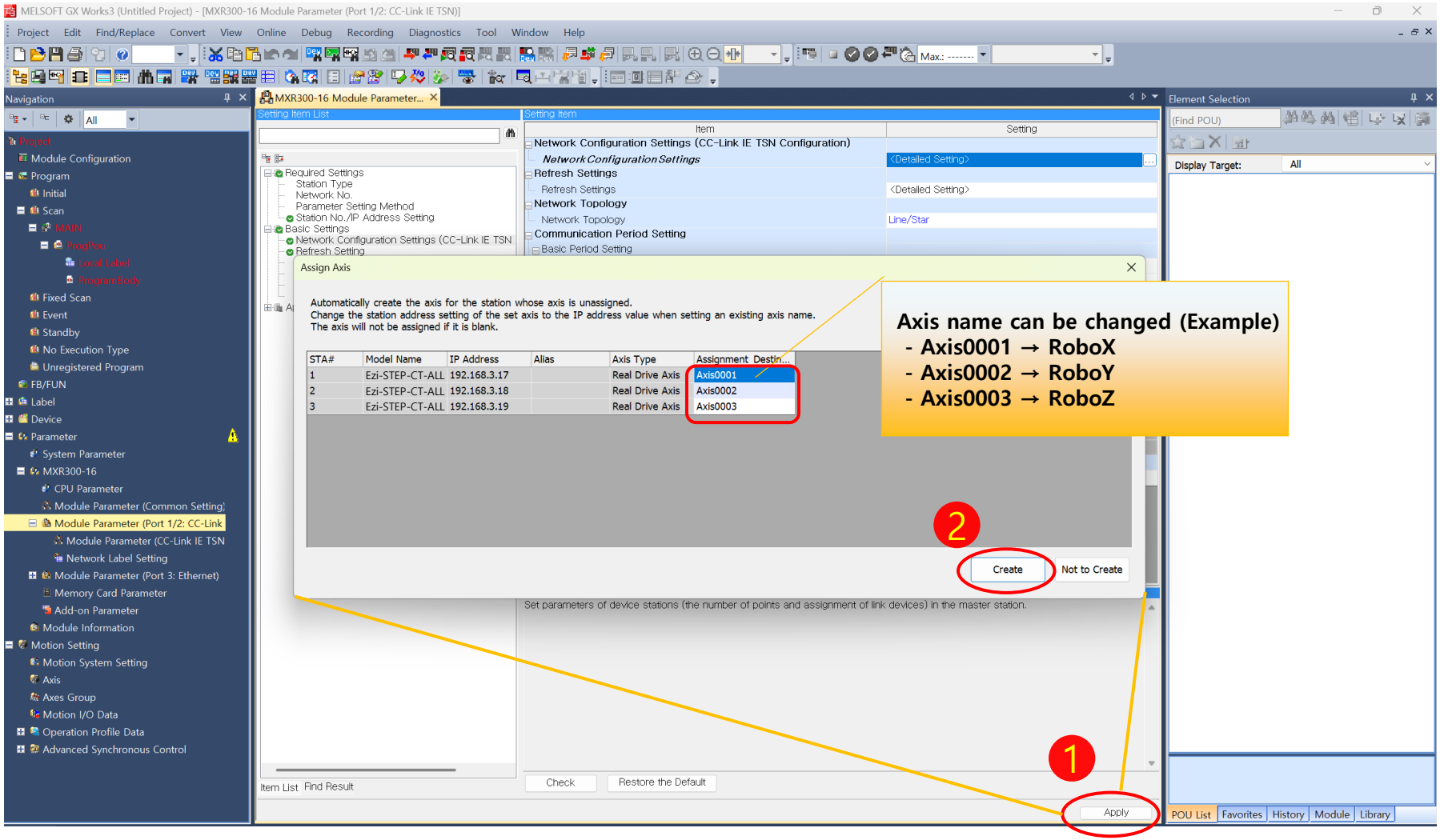
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **CC-Link IE TSN Module Setting applied**



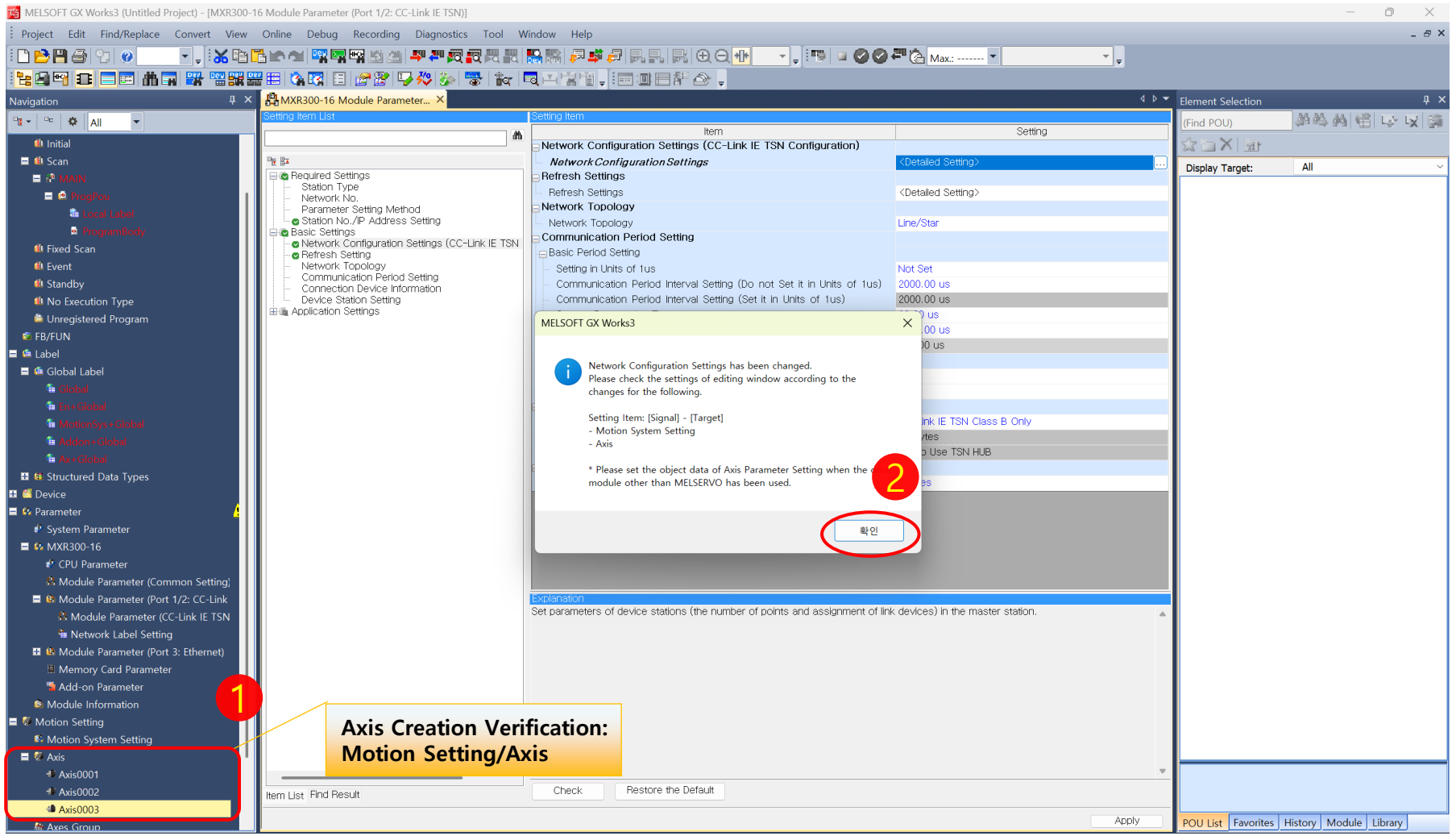
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Axis Creation**



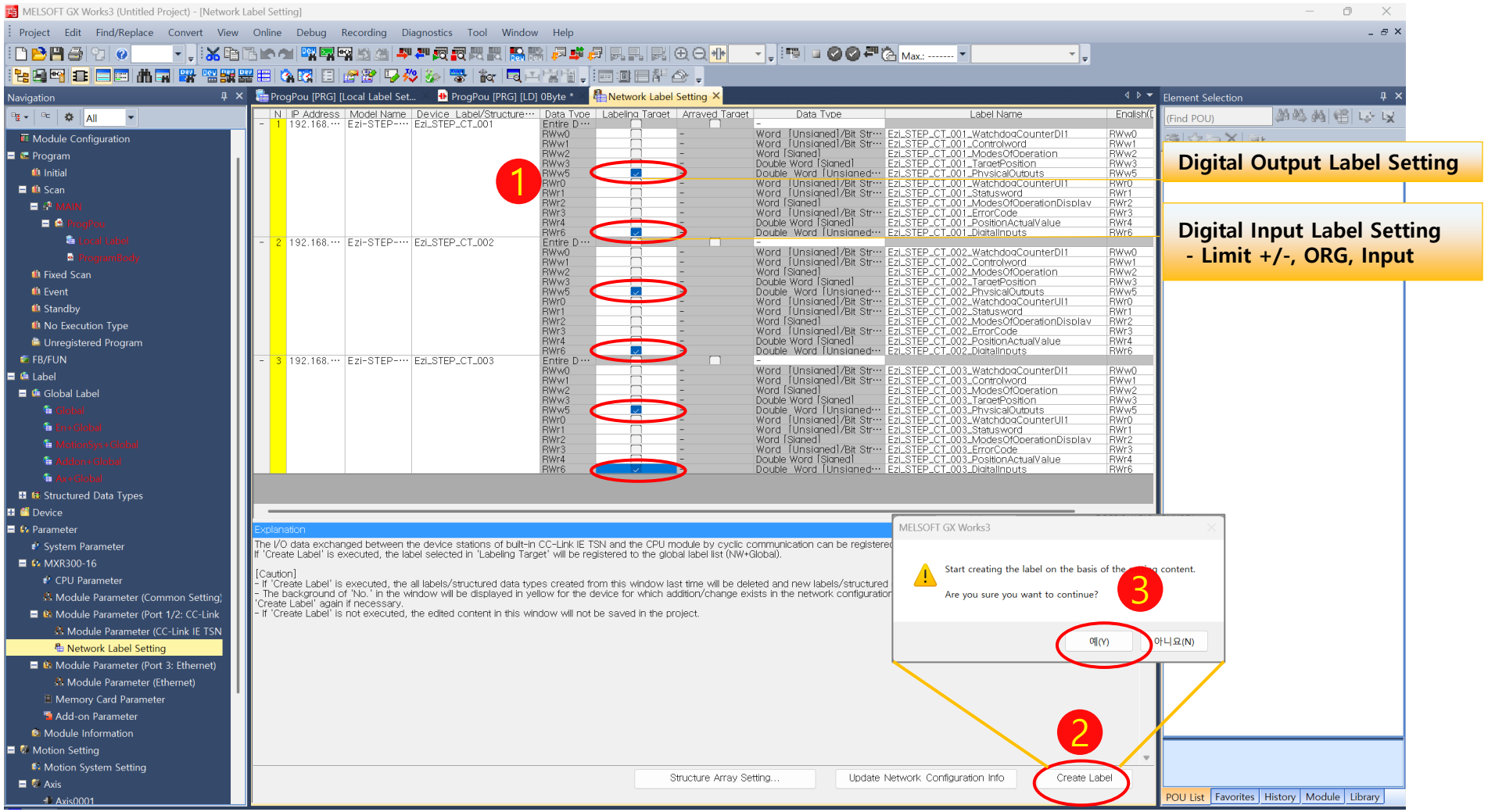
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Confirm Axis Generation**



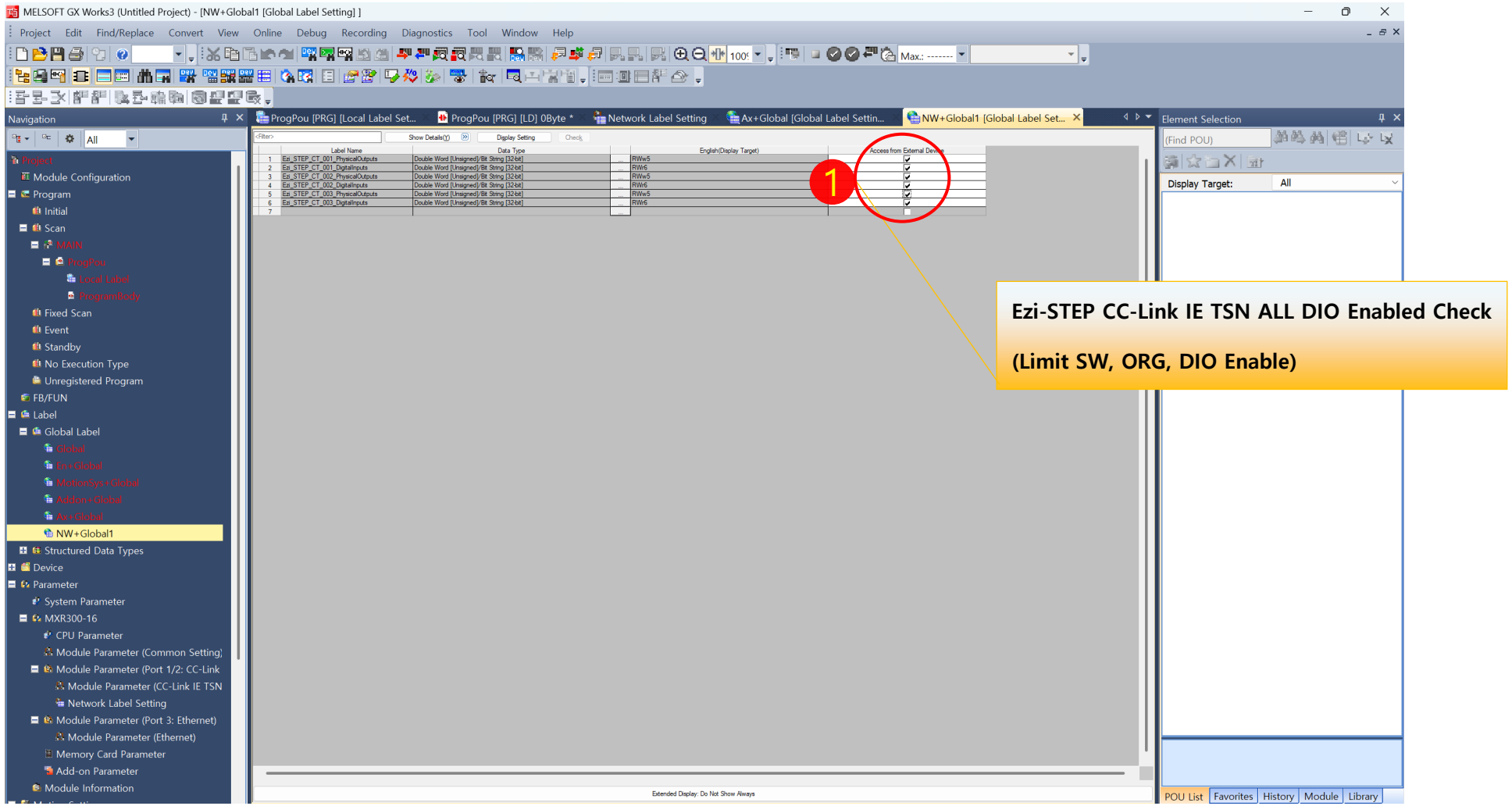
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Network Label Setting – Digital Input/Output Settings per Channel**



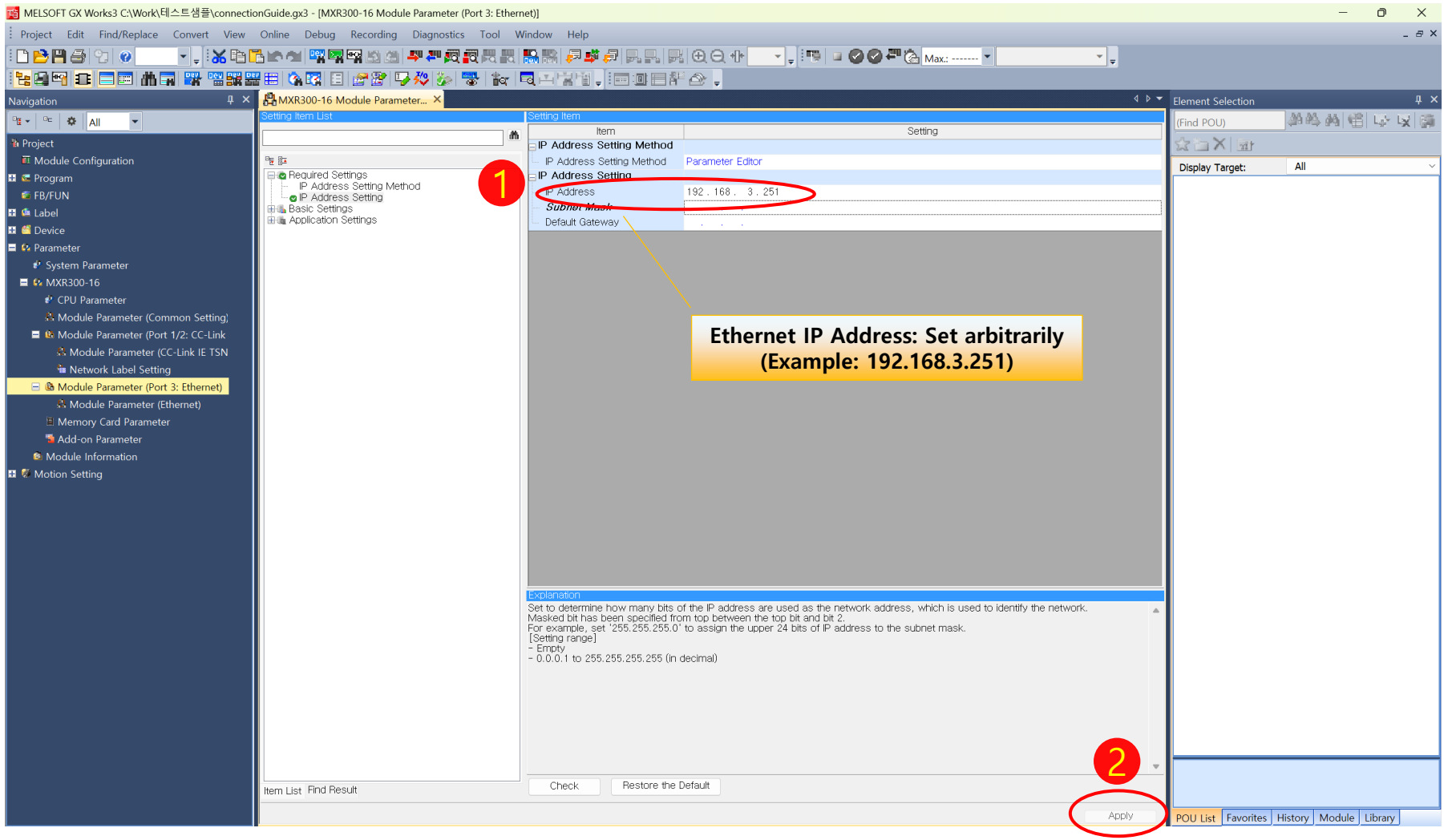
# 2-5. Module Parameter – CC-Link IE TSN Configuration

- **Network Label Setting – Digital In/Output Enable per Axis**
  ***Limit SW, ORG SW, DIO Enable Settings**



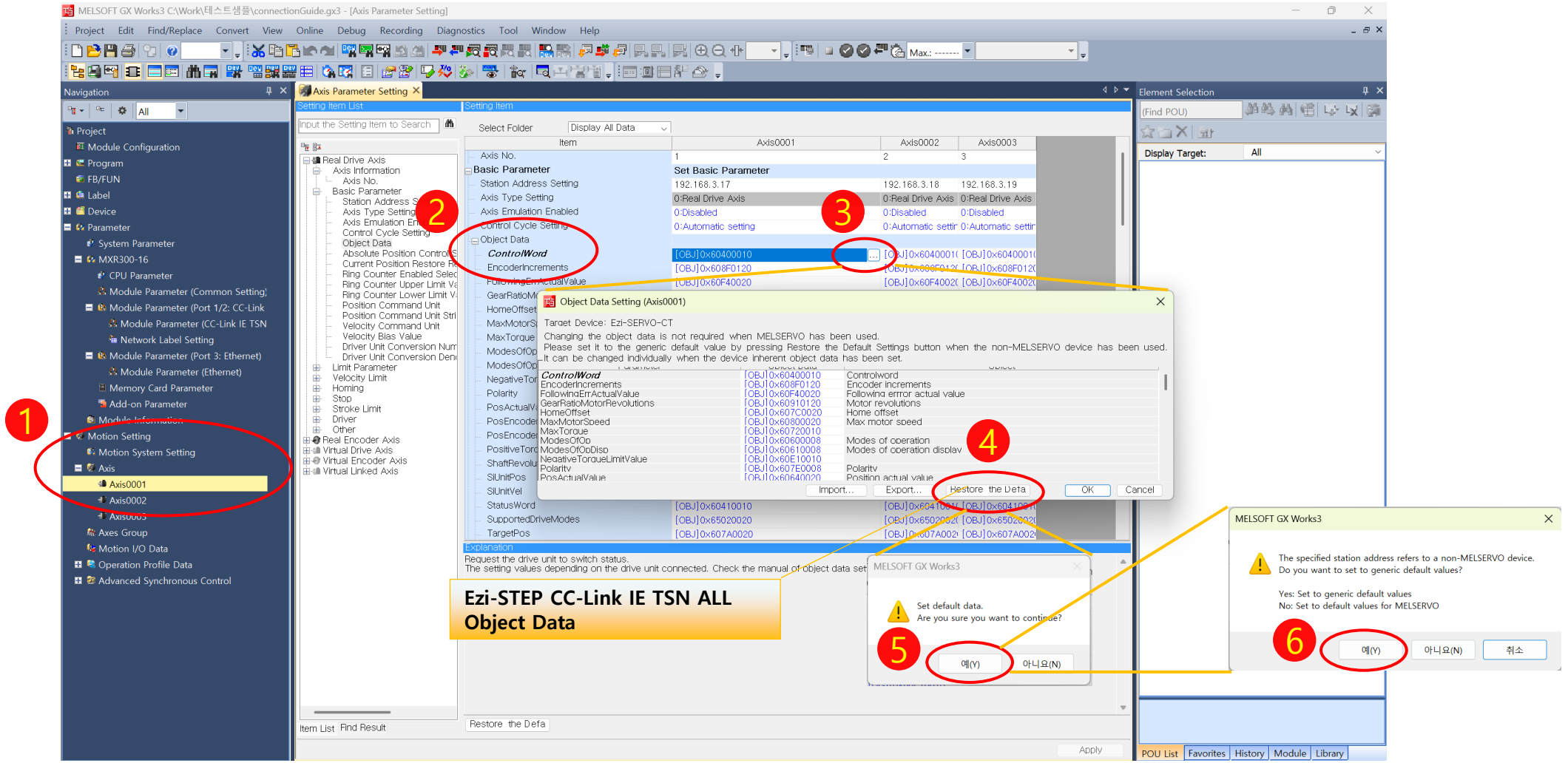
# 2-5. Module Parameter – Port 3: Ethernet

- **Ethernet IP Address Setting**



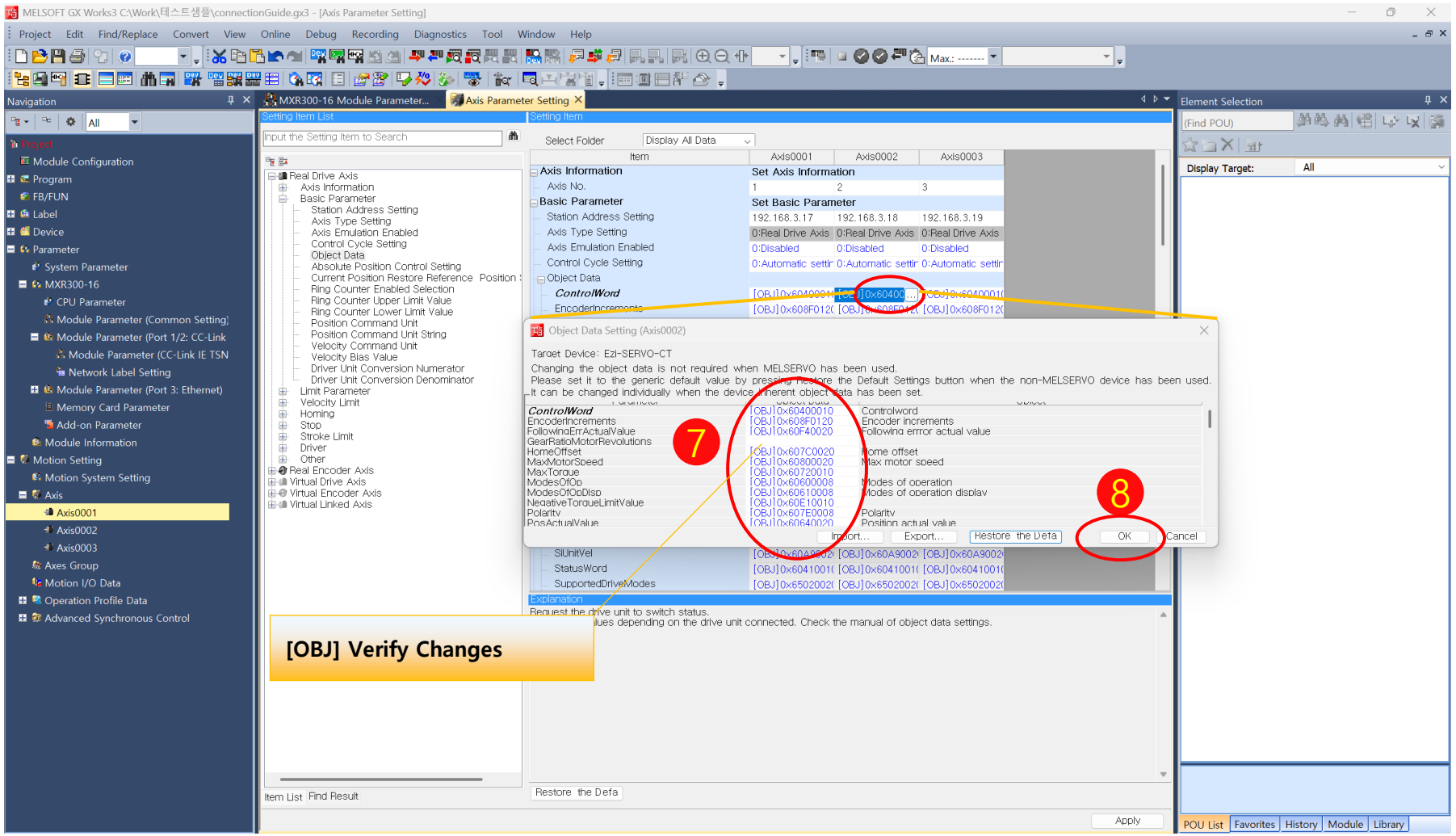
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Object Data Settings (1/3)**
  ***Ezi-STEP CC-Link IE TSN ALL Object Data Registration**



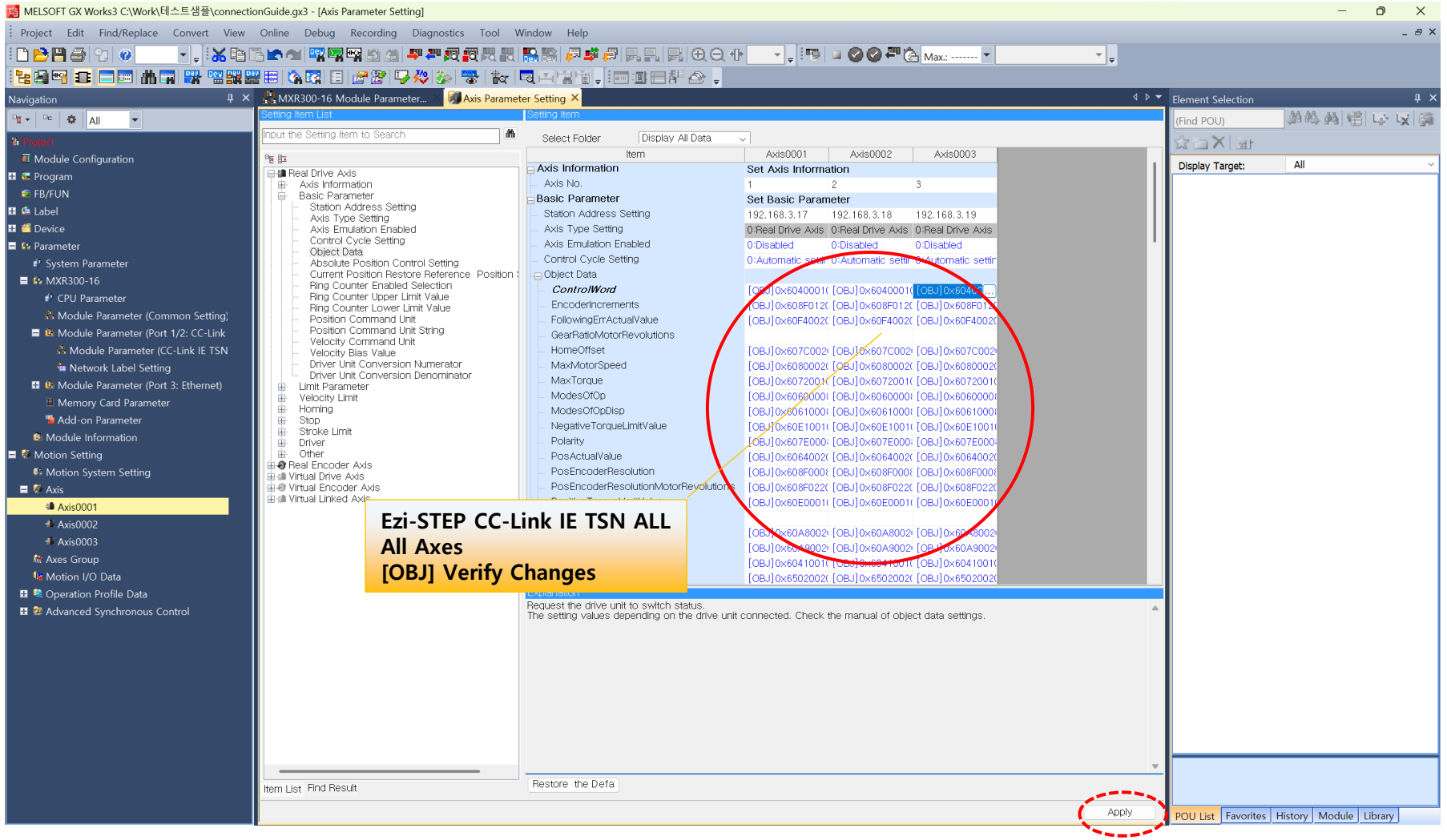
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Object Data Settings (2/3)**
  ***Ezi-STEP CC-Link IE TSN ALL Object Data Registration**



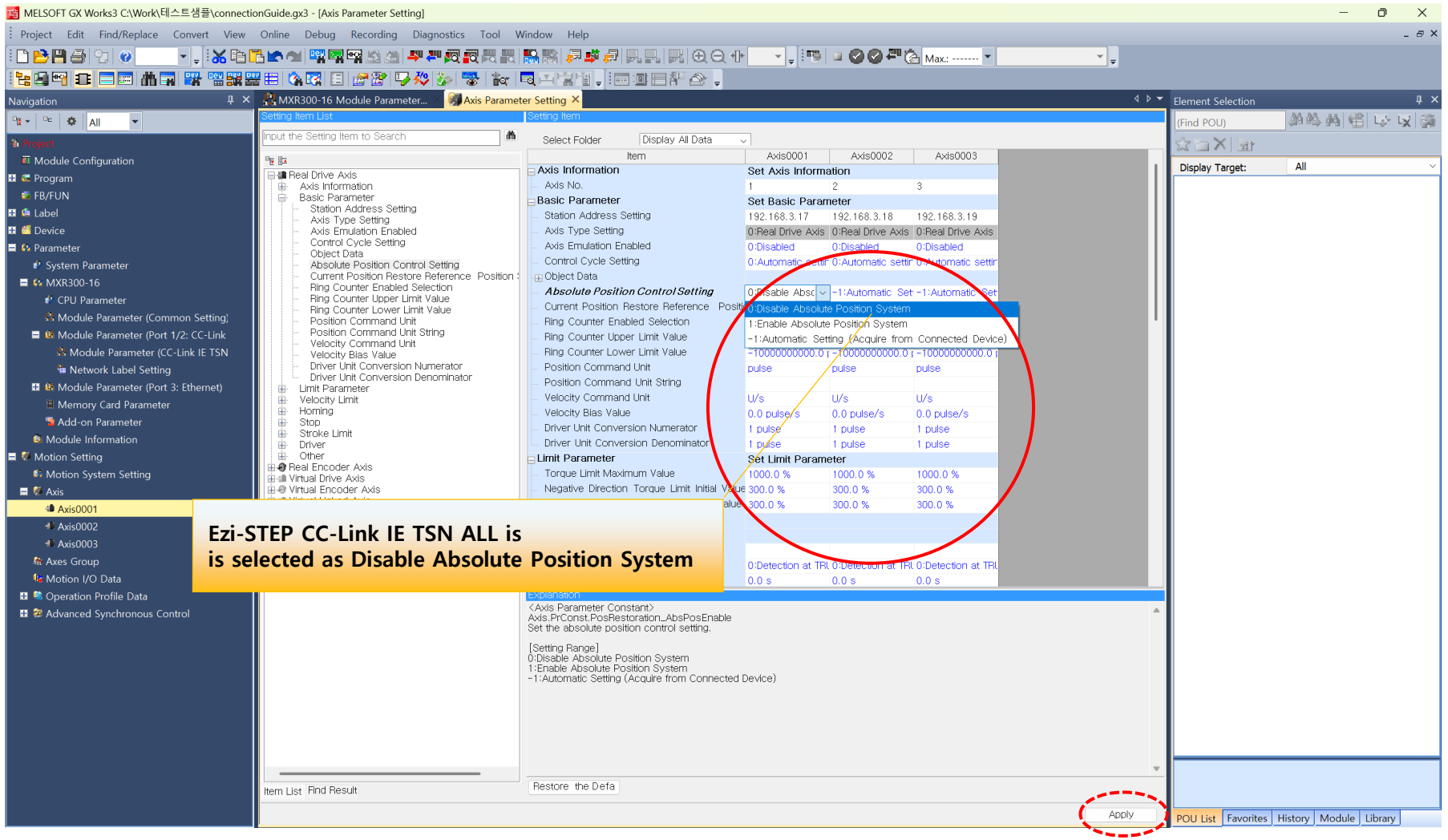
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Object Data Settings (3/3)**
  ***Ezi-STEP CC-Link IE TSN ALL Object Data Registration**



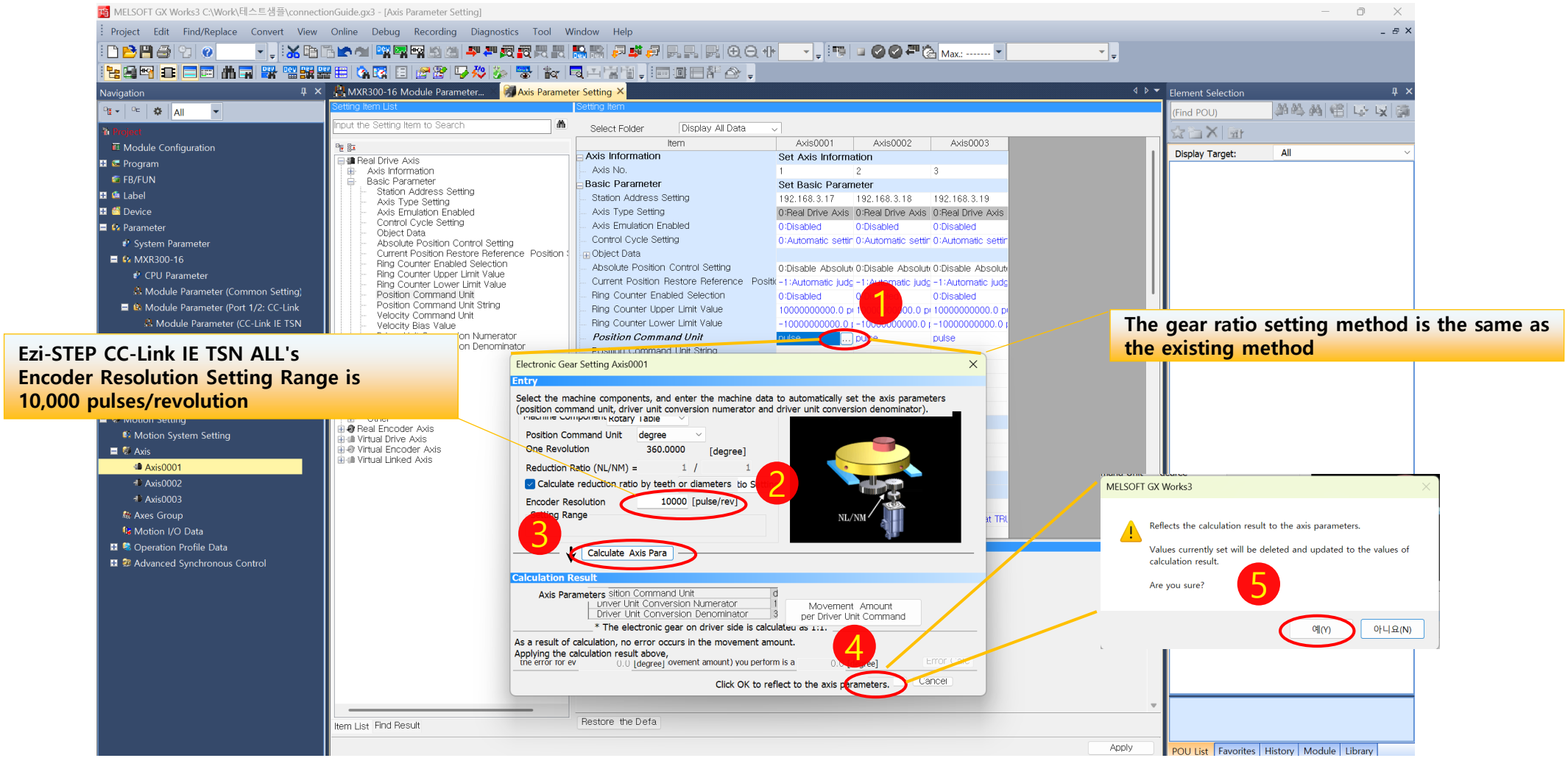
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Absolute Position Control Setting - Disable selected**



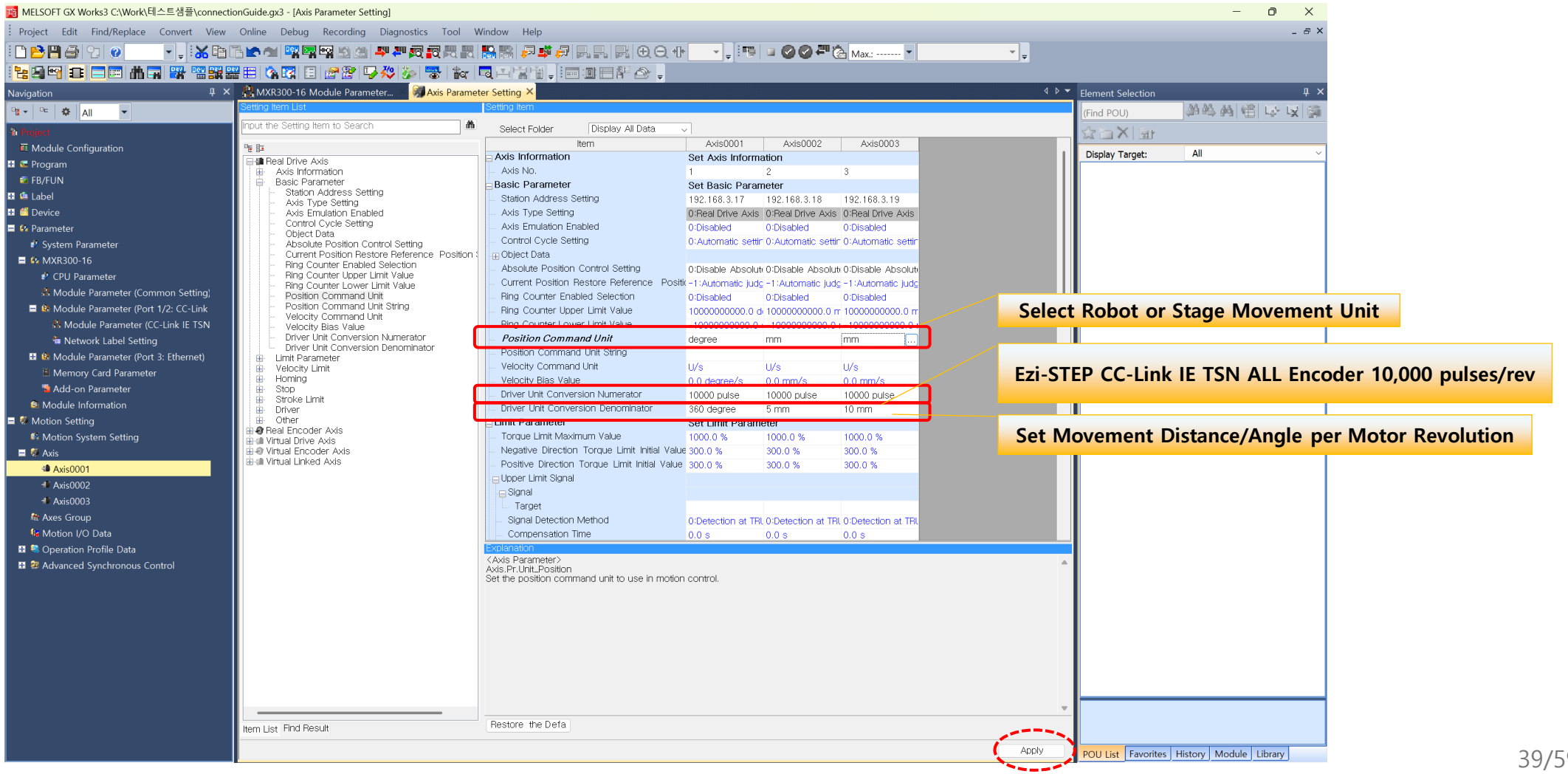
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Position Command Unit Settings (Ezi-STEP ALL 10,000ppr)**



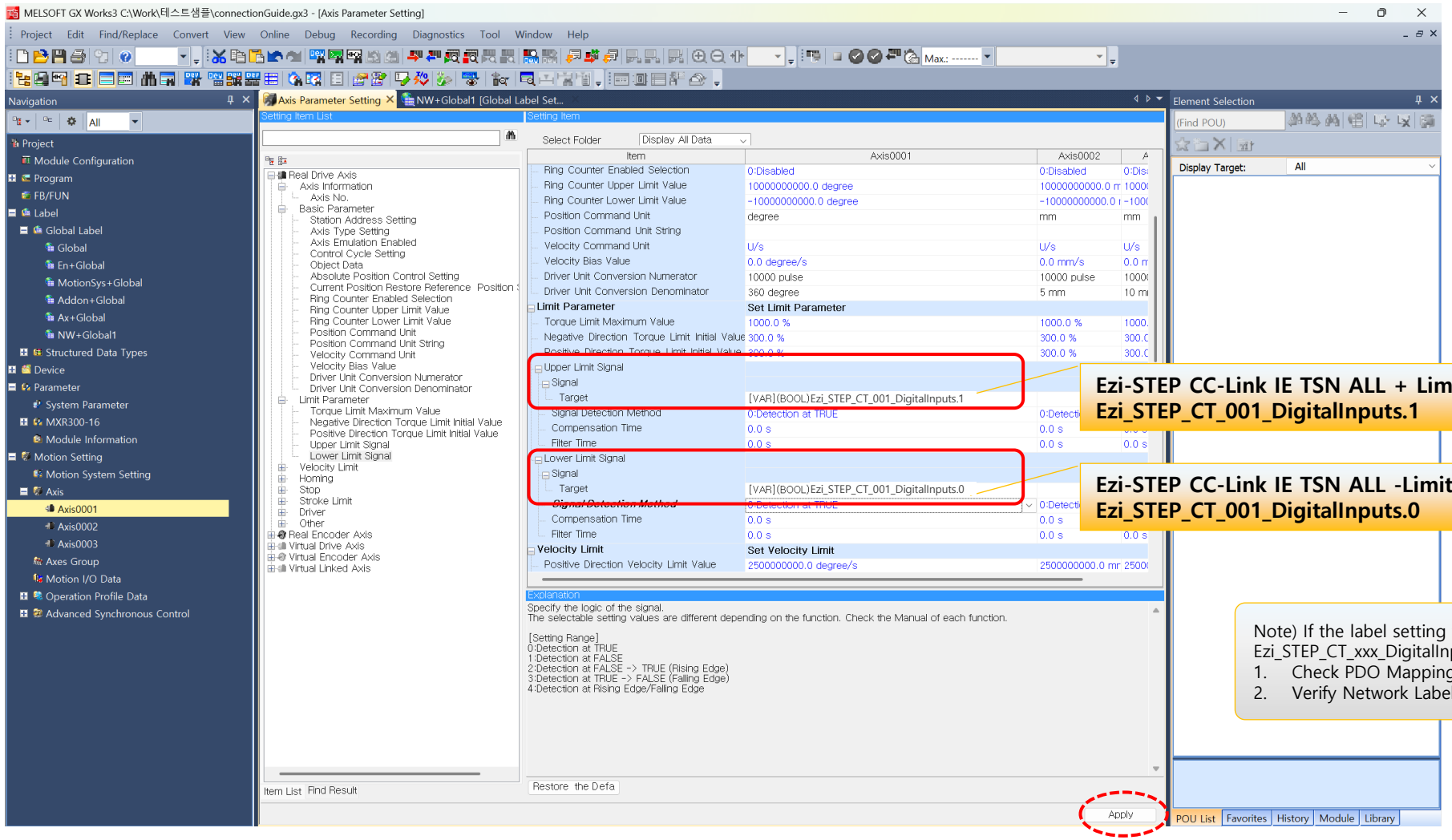
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Position Command Unit Settings** (Ezi-STEP ALL 10,000ppr)



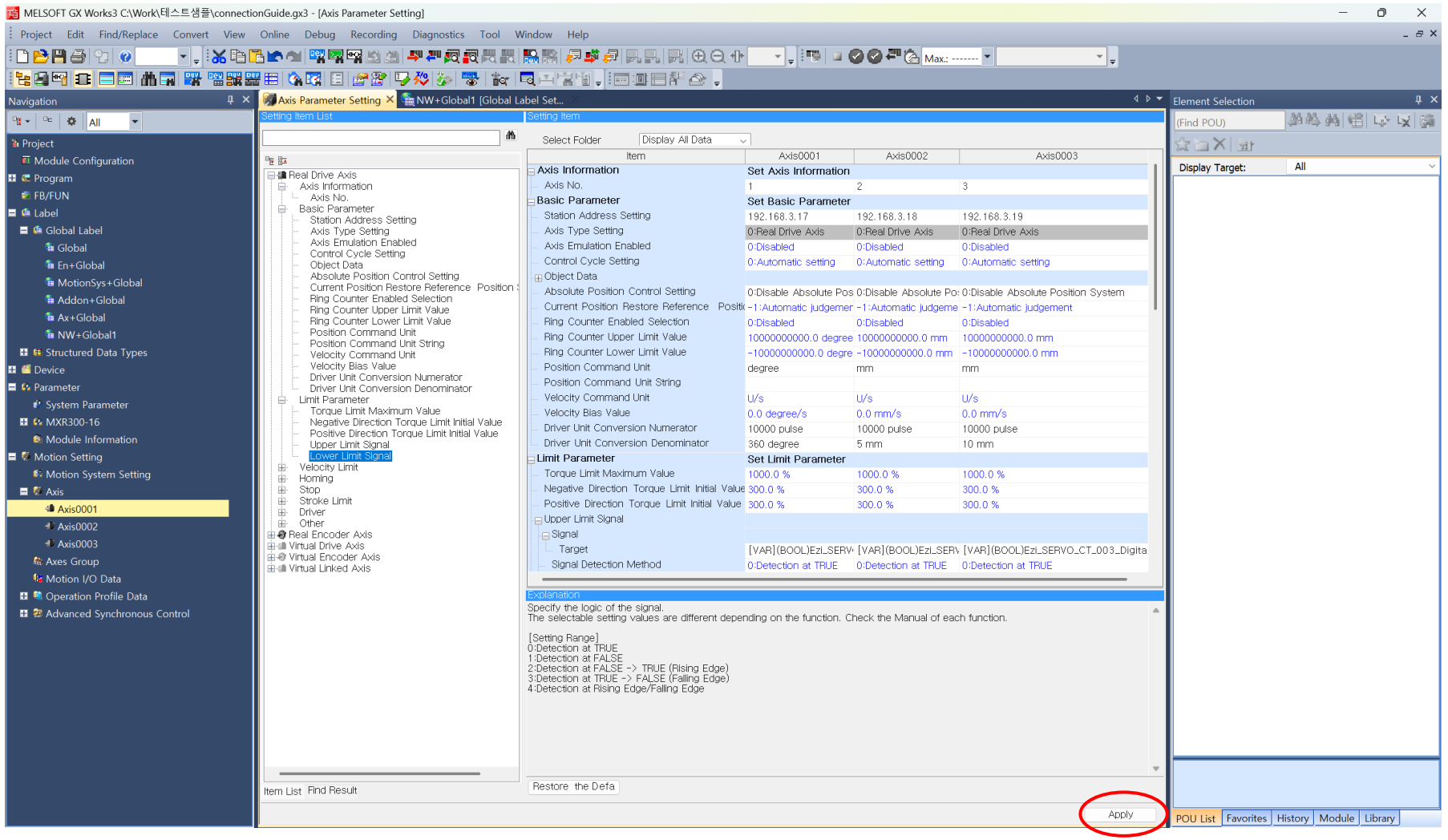
# 2-6. Motion Setting – Basic Parameter

- **Real Drive Axis / Basic Parameter / Limit Parameter**



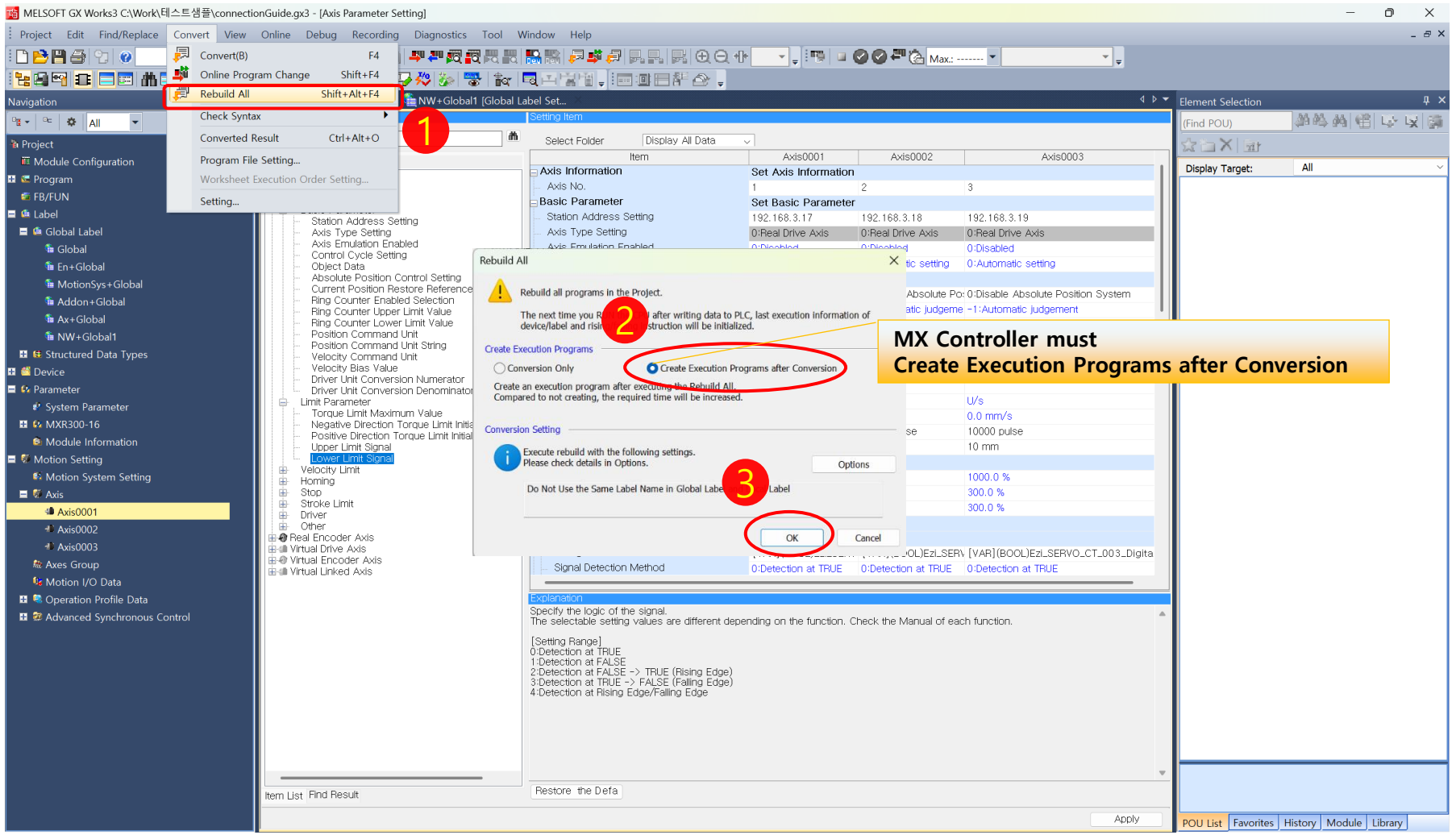
# 2-6. Motion Setting – Parameter Registration

- **Complete Motion Setting by registering parameters**



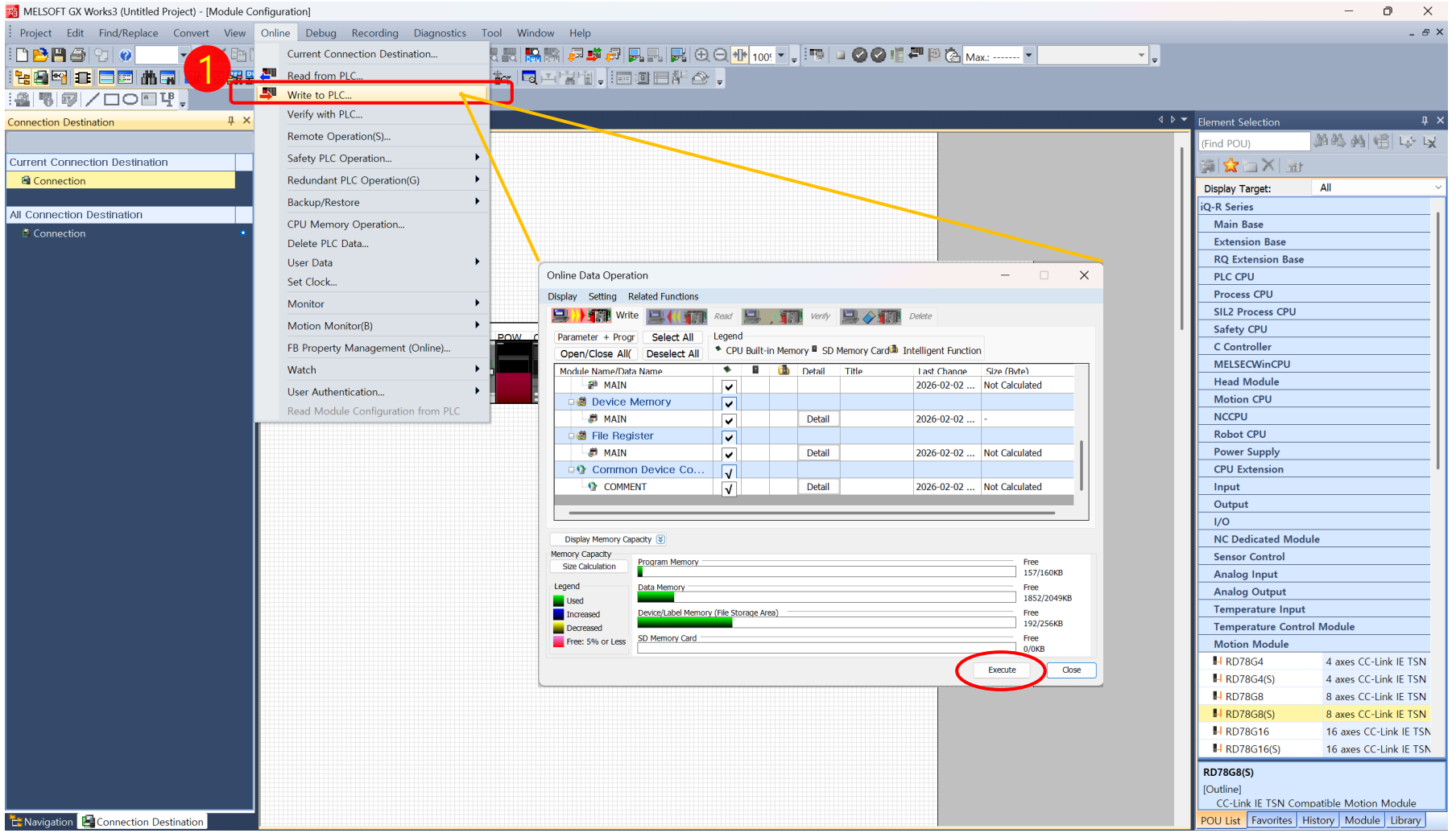
# 2-7. Convert

- **Regarding parameter settings, etc., "Create Execution Programs after Conversion"**



# 2-8. Write to PLC

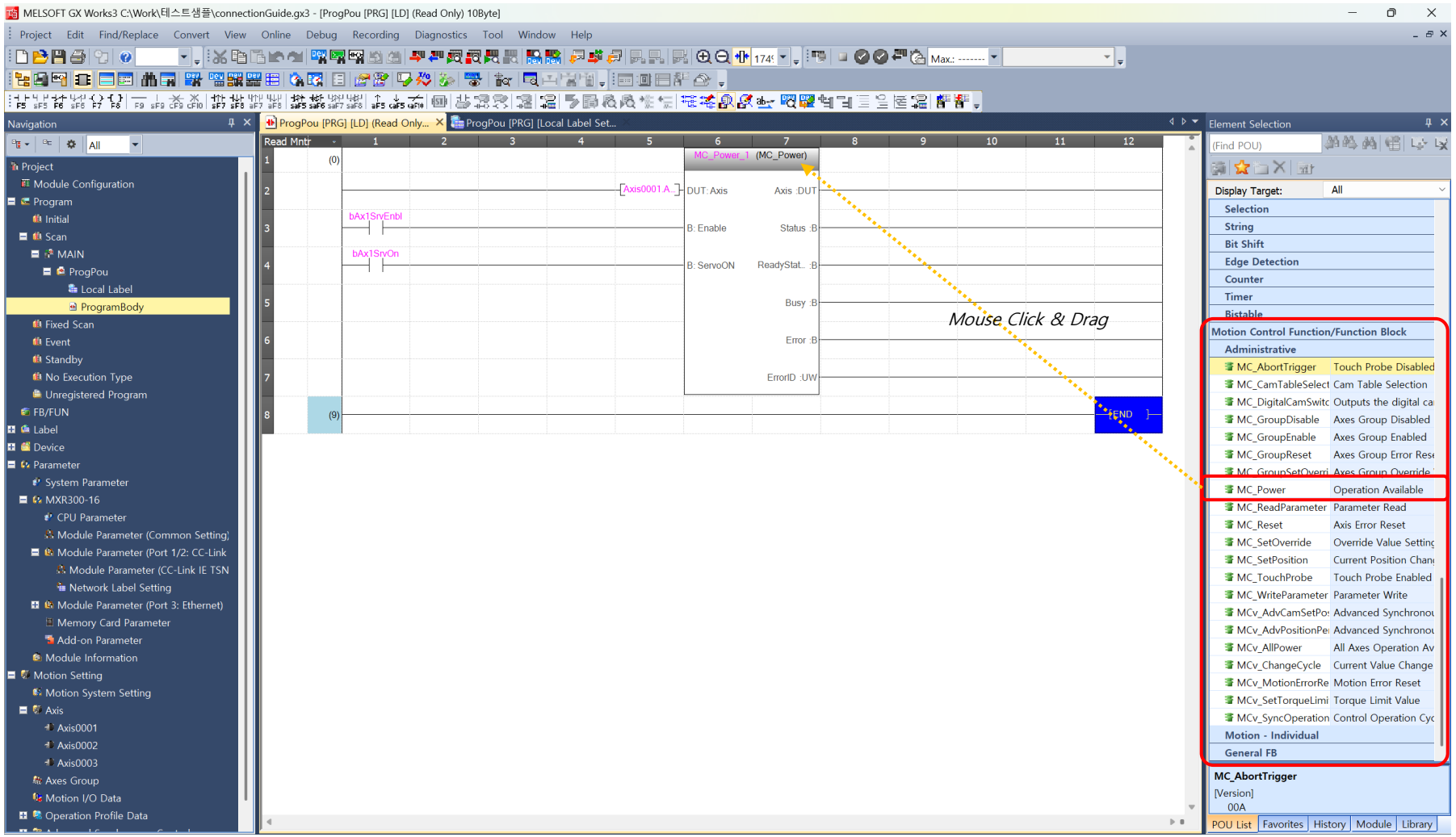
- **Online Data Operation**



# 3. Follow the Program

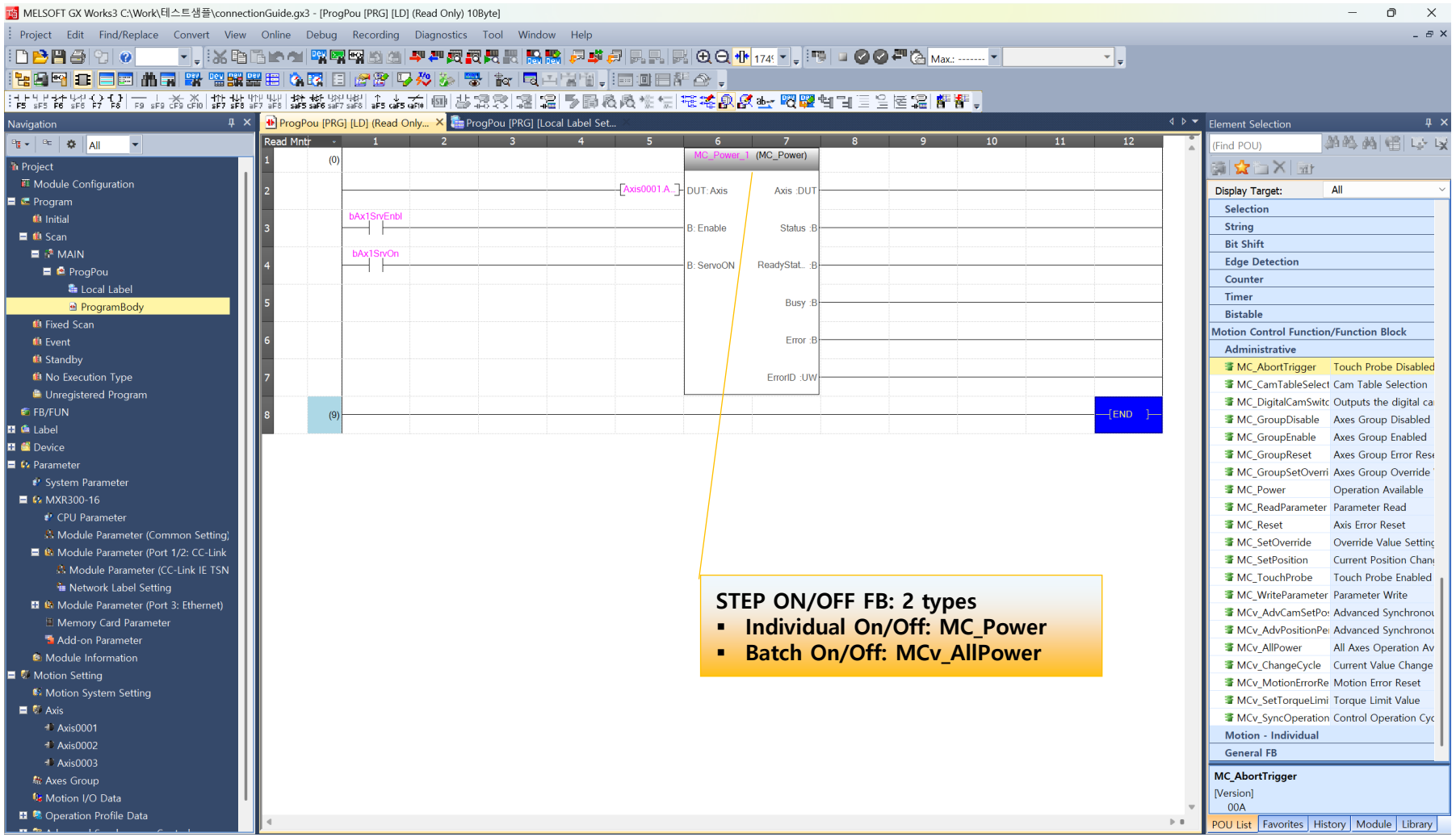
# 3-1. Exploring Motion Control Commands

- **Motion Control Function/Function Block Commands – Element Selection (Left Menu)**



# 3-2. [Ladder] STEP Enable, STEP ON

- **Ezi-STEP CC-Link IE TSN ALL Enable/STEP ON Program**

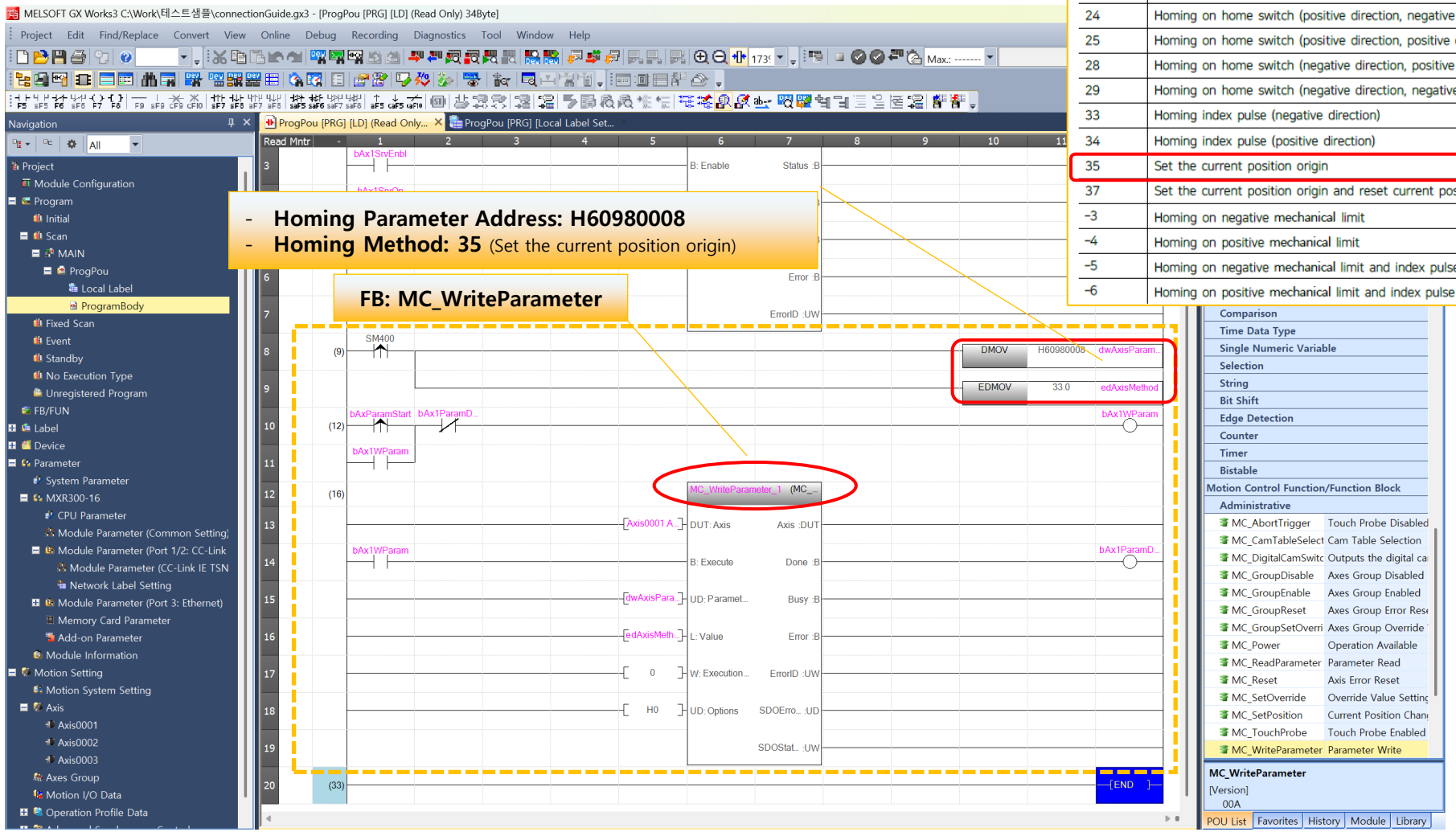


# 3-3. [Ladder] Specifying the homing method

- Specifying the Homing Method (MC_WriteParameter, 33: Homing i

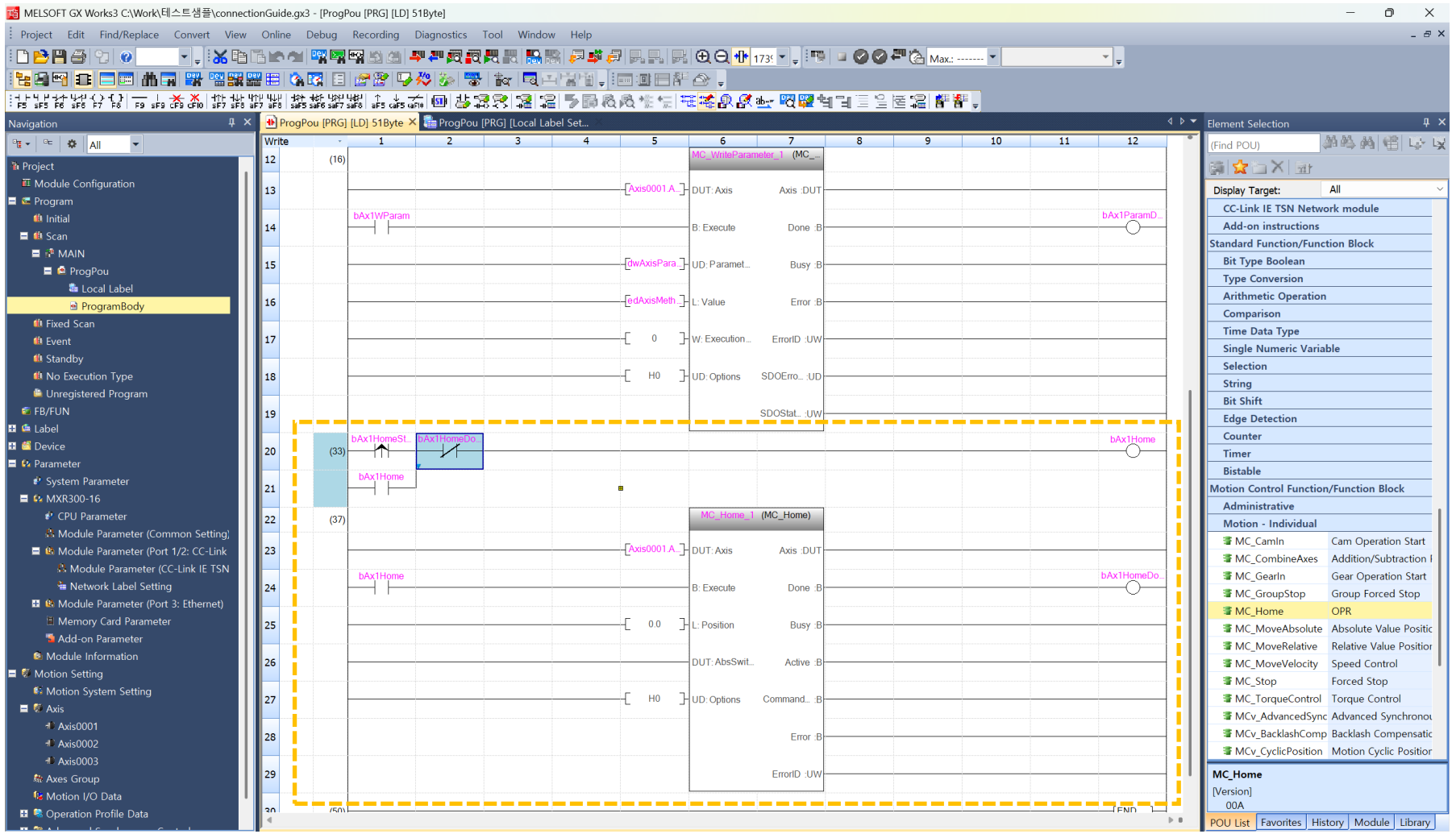
The homing method is classified as follows based on the setting value for Homing method (6098h):

| 설정값 | 내용 |
|---|---|
| 1 | Homing on negative limit switch and index pulse |
| 2 | Homing on positive limit switch and index pulse |
| 7 | Homing on home switch (positive direction, negative edge) and index pulse |
| 10 | Homing on home switch (positive direction, positive edge) and index pulse |
| 11 | Homing on home switch (negative direction, positive edge) and index pulse |
| 14 | Homing on home switch (negative direction, negative edge) and index pulse |
| 17 | Homing on negative limit switch |
| 18 | Homing on positive limit switch |
| 24 | Homing on home switch (positive direction, negative edge) |
| 25 | Homing on home switch (positive direction, positive edge) |
| 28 | Homing on home switch (negative direction, positive edge) |
| 29 | Homing on home switch (negative direction, negative edge) |
| 33 | Homing index pulse (negative direction) |
| 34 | Homing index pulse (positive direction) |
| 35 | Set the current position origin |
| 37 | Set the current position origin and reset current position |
| -3 | Homing on negative mechanical limit |
| -4 | Homing on positive mechanical limit |
| -5 | Homing on negative mechanical limit and index pulse |
| -6 | Homing on positive mechanical limit and index pulse |



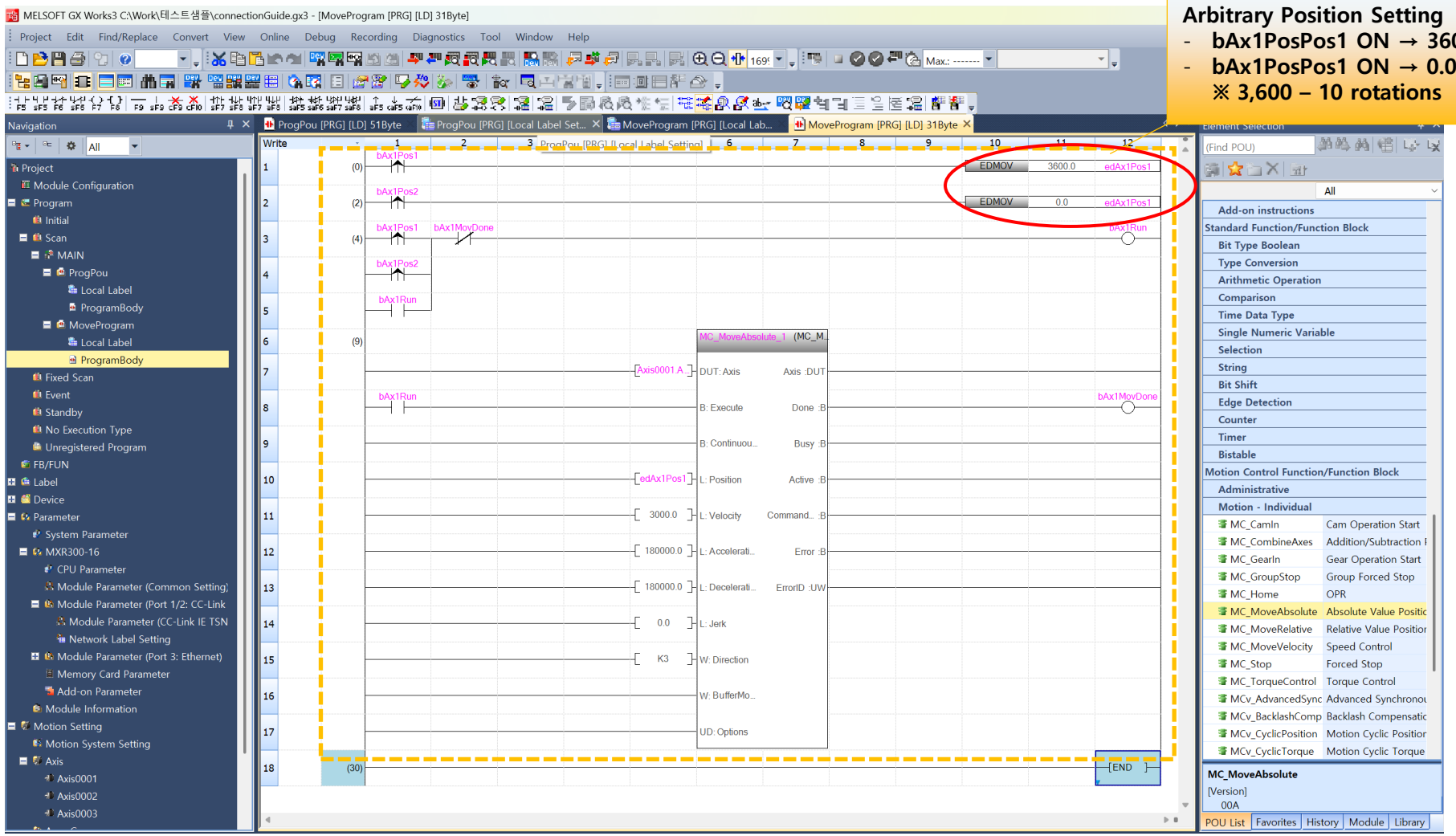
# 3-4. [Ladder] Execute Ezi-STEP homing

- Execute Homing (MC_Home)



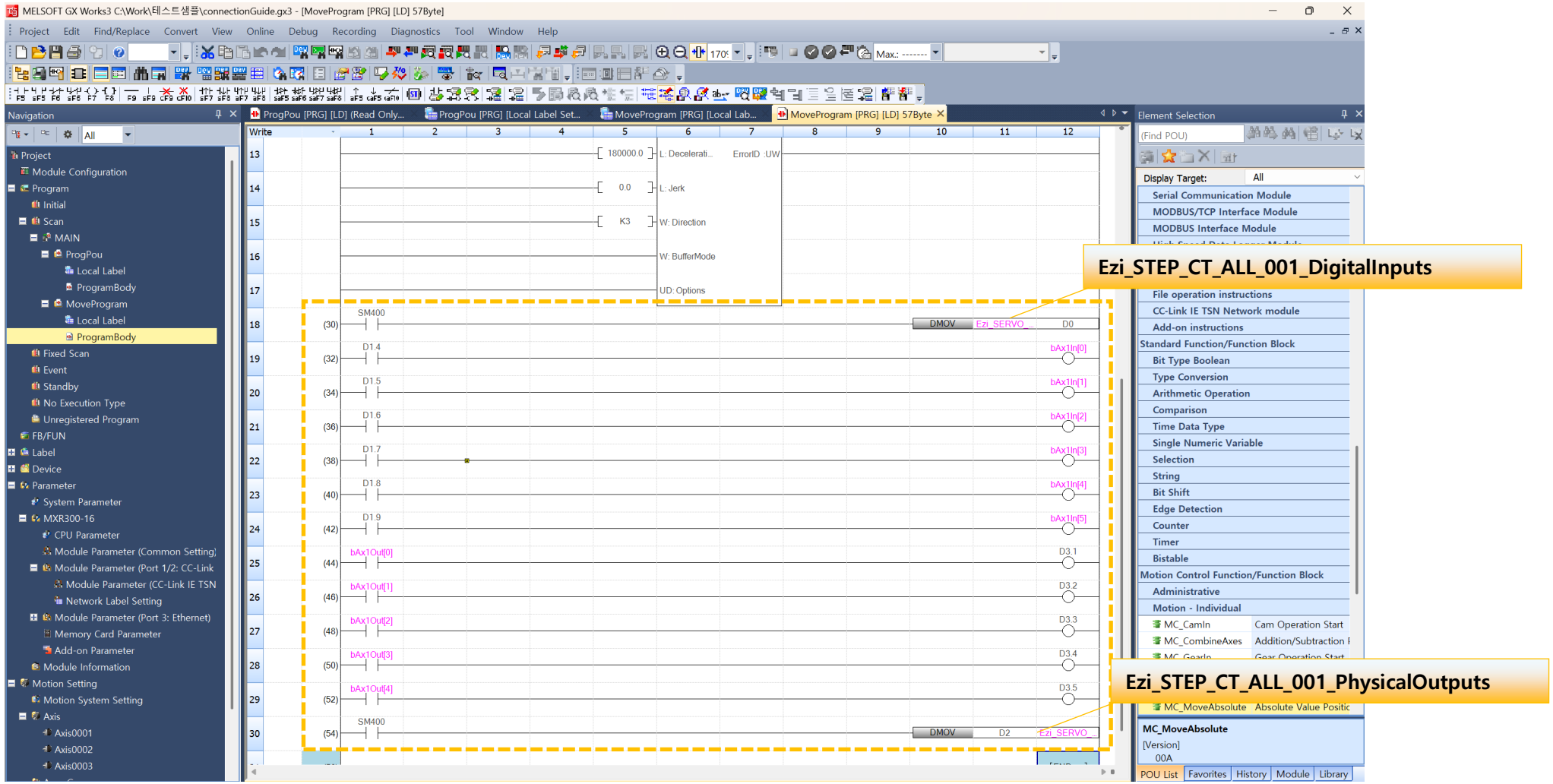
# 3-5. [Ladder] Execute Ezi-STEP Operation

- Execute Movement Action (MC_MoveAbsolute)



# 3-6. [Ladder] Ezi-STEP DIO Operation

- Digital Input, Output Operation Execution



# 3-6. [Ladder] Ezi-STEP DIO Map - Reference

- Digital Inputs

| Bit 31 | Bit 30 | Bit 29 | Bit 28 | Bit 27 | Bit 26 | Bit 25 | Bit 24 |
|---|---|---|---|---|---|---|---|
| - | Motor Power | TQOFF2 | TQOFF1 | - | - | User input 6 | User input 5 |
| Bit 23 | Bit 22 | Bit 21 | Bit 20 | Bit 19 | Bit 18 | Bit 17 | Bit 16 |
| User input 4 | User input 3 | User input 2 | User input 1 | Reserved | Reserved | Reserved | |
| Bit 15 | Bit 14 | Bit 13 | Bit 12 | Bit 11 | Bit 10 | Bit 9 | Bit 8 |
| - | - | - | - | - | - | - | - |
| Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
| - | - | - | - | - | Origin switch | Positive limit switch | Negative limit switch |

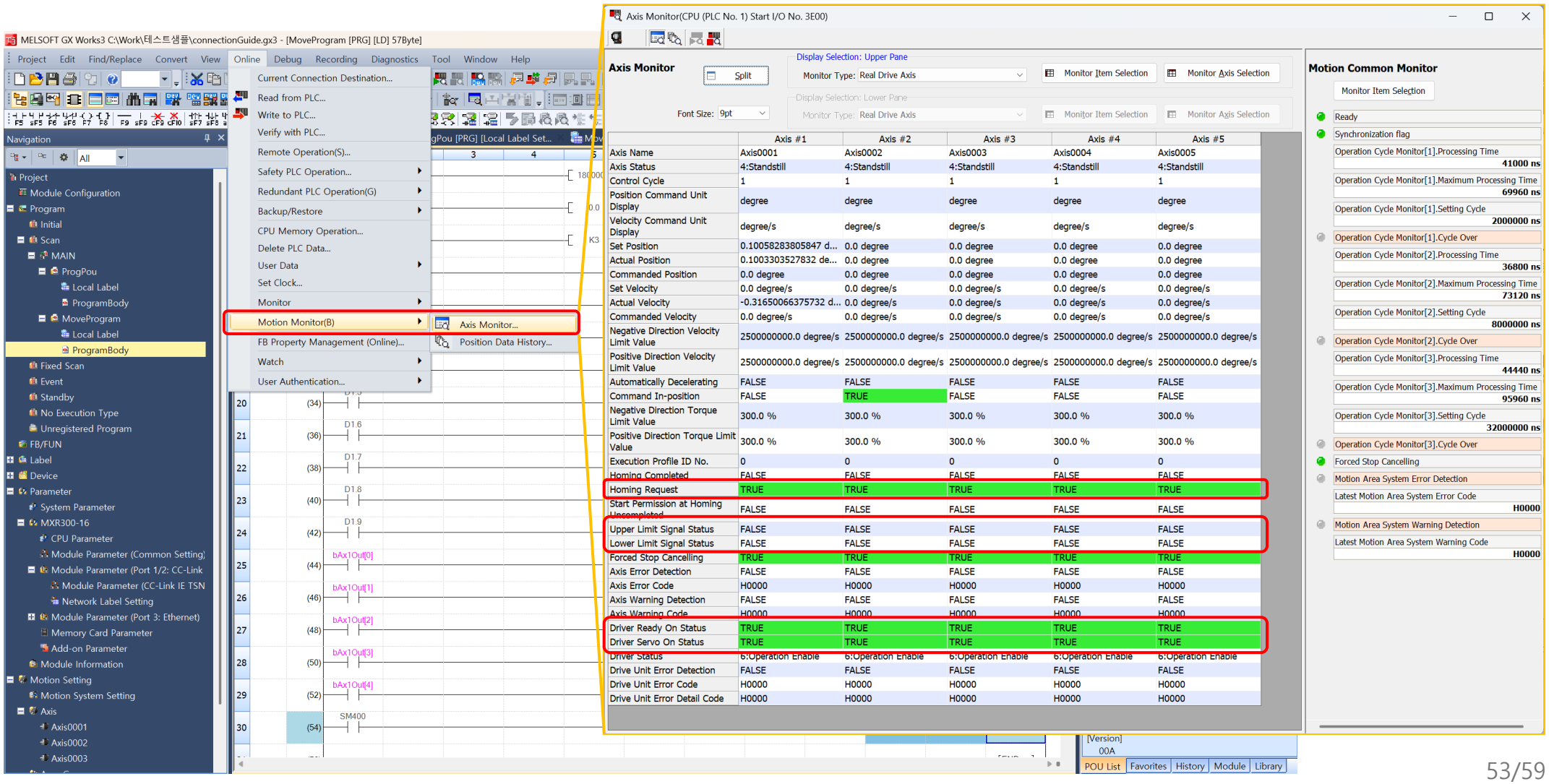
- Physical Outputs

| Bit 31 | Bit 30 | Bit 29 | Bit 28 | Bit 27 | Bit 26 | Bit 25 | Bit 24 |
|---|---|---|---|---|---|---|---|
| - | - | - | - | - | - | - | - |
| Bit 23 | Bit 22 | Bit 21 | Bit 20 | Bit 19 | Bit 18 | Bit 17 | Bit 16 |
| - | - | - | User output 5 | User output 4 | User output 3 | User output 2 | User output 1 |
| Bit 15 | Bit 14 | Bit 13 | Beat 12 | Bit 11 | Bit 10 | Bit 9 | Bit 8 |
| - | - | - | - | - | - | - | - |
| Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
| - | - | - | - | - | - | - | Set brake |

# Appendix

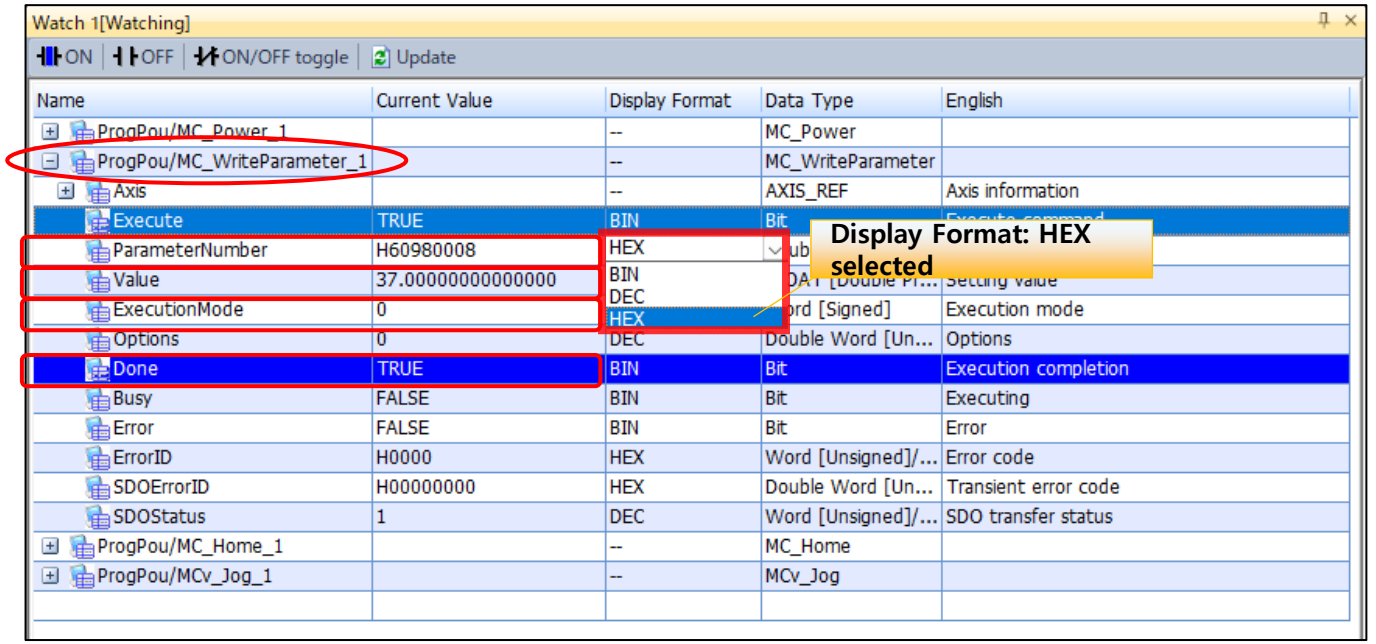
# [Operation Verification] Axis Monitor

- Monitor the status, position, homing, and error of each axis.



# [Operation Verification] Changing the Homing Method

- Change the homing method using Motion Control FB
  - ① Specify Parameter Number: H60980008
  - ② Value (Homing Method) Specified: 33.0
  - ③ ExecutionMode: TRUE (Write)
  - ④ Done: Becomes TRUE




The homing method is classified as follows based on the setting value for Homing method (6098h).

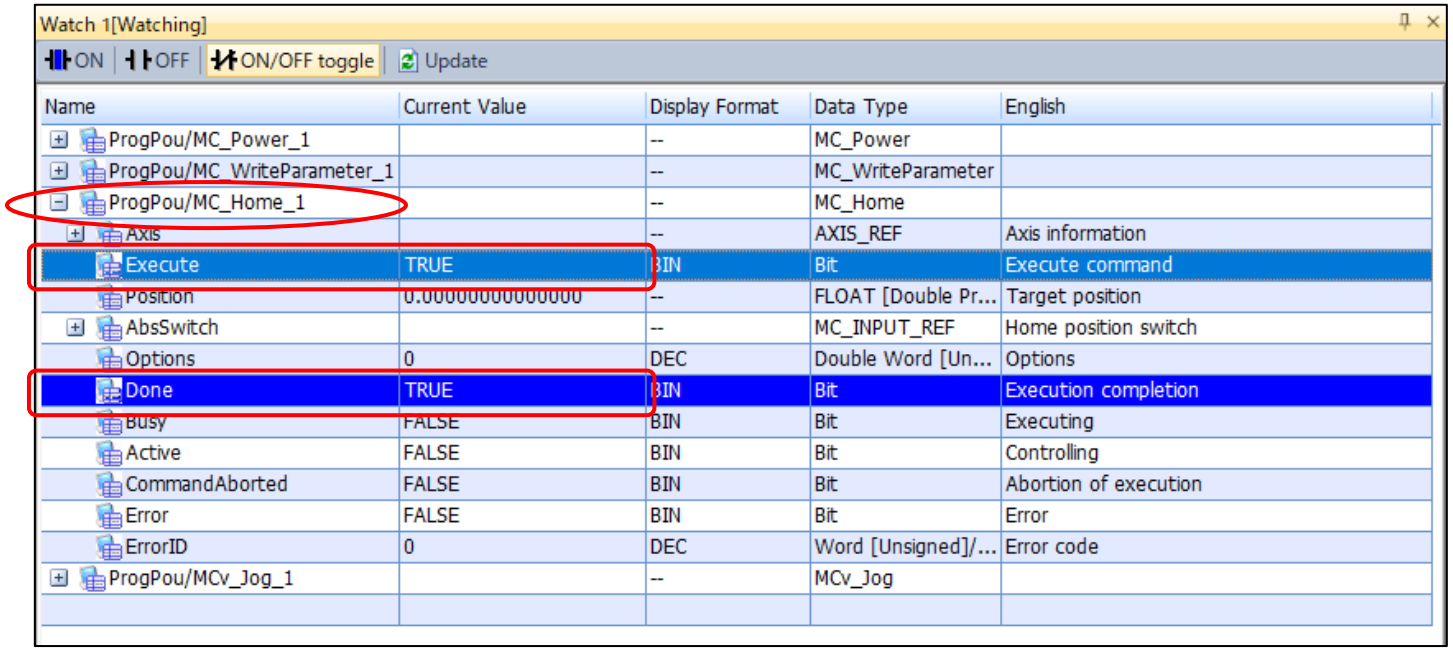
| 설정값 | 내용 |
|---|---|
| 1 | Homing on negative limit switch and index pulse |
| 2 | Homing on positive limit switch and index pulse |
| 7 | Homing on home switch (positive direction, negative edge) and index pulse |
| 10 | Homing on home switch (positive direction, positive edge) and index pulse |
| 11 | Homing on home switch (negative direction, positive edge) and index pulse |
| 14 | Homing on home switch (negative direction, negative edge) and index pulse |
| 17 | Homing on negative limit switch |
| 18 | Homing on positive limit switch |
| 24 | Homing on home switch (positive direction, negative edge) |
| 25 | Homing on home switch (positive direction, positive edge) |
| 28 | Homing on home switch (negative direction, positive edge) |
| 29 | Homing on home switch (negative direction, negative edge) |
| 33 | Homing index pulse (negative direction) |
| 34 | Homing index pulse (positive direction) |
| 35 | Set the current position origin |
| 37 | Set the current position origin and reset current position |
| -3 | Homing on negative mechanical limit |
| -4 | Homing on positive mechanical limit |
| -5 | Homing on negative mechanical limit and index pulse |
| -6 | Homing on positive mechanical limit and index pulse |

# [Operation Verification] Homing

- Execute homing using motion control FB

① Execute → TRUE (Write)

② Done → Becomes TRUE



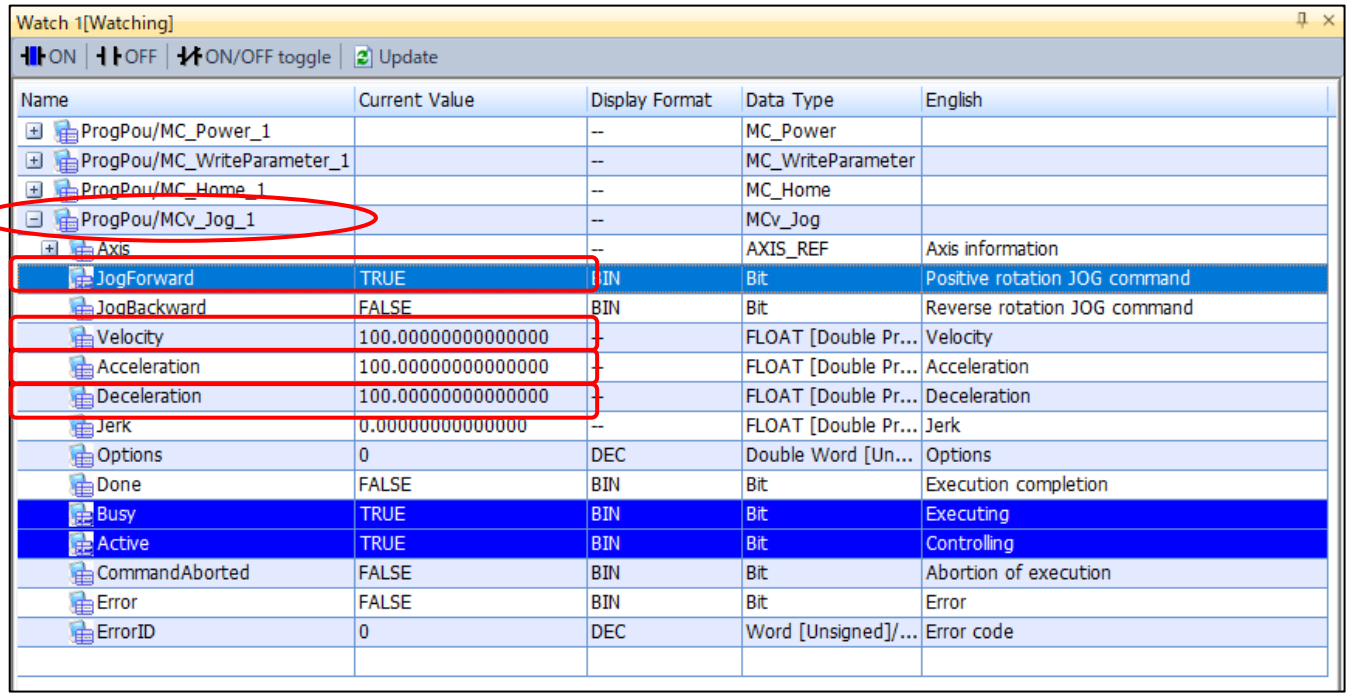

| Name | Current Value | Display Format | Data Type | English |
|---|---|---|---|---|
| ProgPou/MC_Power_1 | | -- | MC_Power | |
| ProgPou/MC_WriteParameter_1 | | -- | MC_WriteParameter | |
| ProgPou/MC_Home_1 | | -- | MC_Home | |
| Axis | | -- | AXIS_REF | Axis information |
| Execute | TRUE | BIN | Bit | Execute command |
| Position | 0.0000000000000 | -- | FLOAT [Double Pr... | Target position |
| AbsSwitch | | -- | MC_INPUT_REF | Home position switch |
| Options | 0 | DEC | Double Word [Un... | Options |
| Done | TRUE | BIN | Bit | Execution completion |
| Busy | FALSE | BIN | Bit | Executing |
| Active | FALSE | BIN | Bit | Controlling |
| CommandAborted | FALSE | BIN | Bit | Abortion of execution |
| Error | FALSE | BIN | Bit | Error |
| ErrorID | 0 | DEC | Word [Unsigned]/... | Error code |
| ProgPou/MCv_Jog_1 | | -- | MCv_Jog | |

- When using the LIMIT+ / LIMIT− signals of Ezi-STEP CC-Link IE TSN ALL as hardware stroke limits, set the following axis control data before startup (start).

[AxisName.Cd.HwStrokeLimit_Override] → 'DISABLE'

# [Operation Verification] Jog Operation

- Execute Jog operation using Motion Control FB
  - ① Velocity → 100.0
  - ② Acceleration → 100.0
  - ③ Deceleration → 100.0
  - ④ JogForward → TRUE (Write)

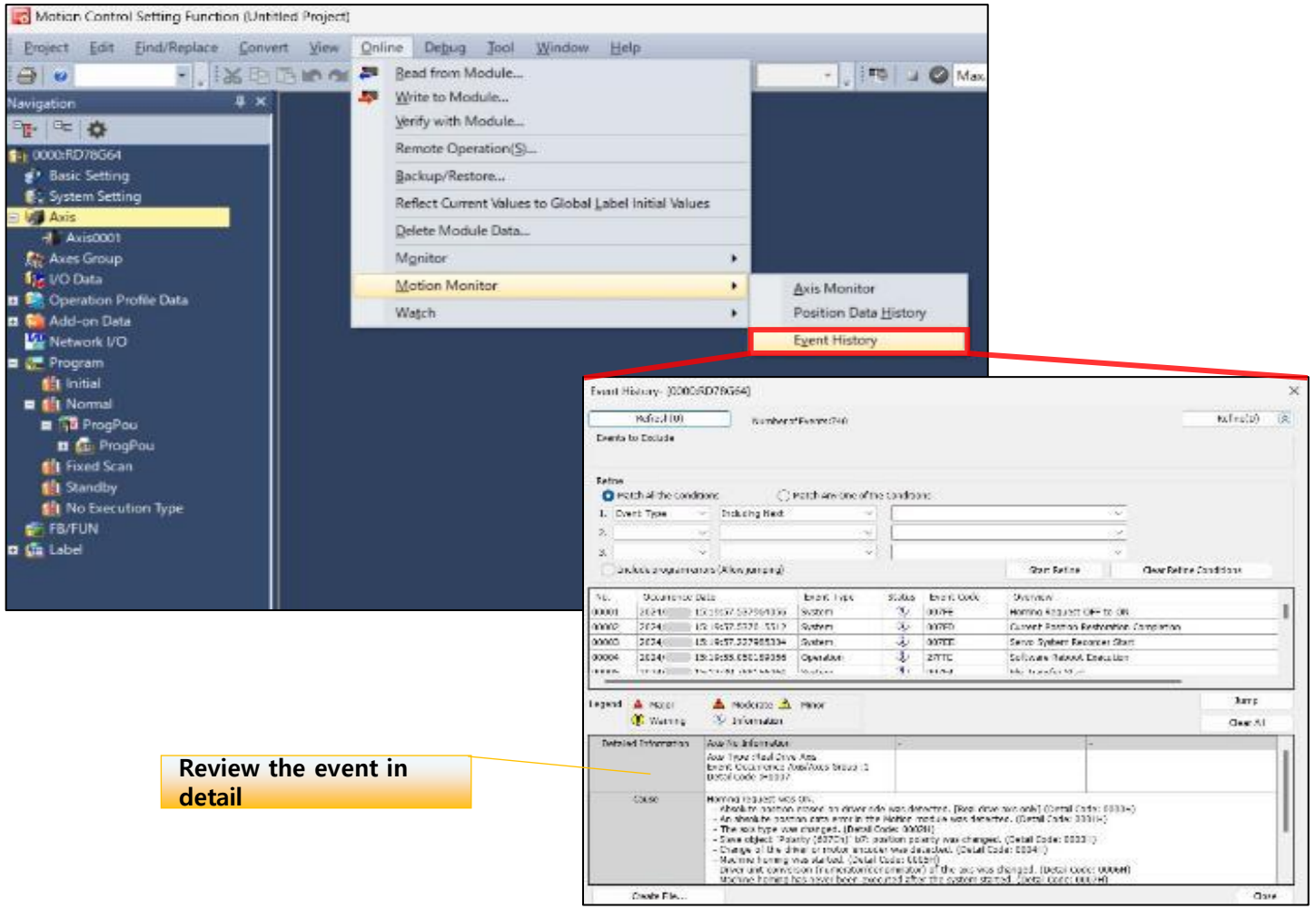



| Name | Current Value | Display Format | Data Type | English |
|---|---|---|---|---|
| ProgPou/MC_Power_1 | | -- | MC_Power | |
| ProgPou/MC_WriteParameter_1 | | -- | MC_WriteParameter | |
| ProgPou/MC_Home_1 | | -- | MC_Home | |
| ProgPou/MCv_Jog_1 | | -- | MCv_Jog | |
| Axis | | -- | AXIS_REF | Axis information |
| JogForward | TRUE | BIN | Bit | Positive rotation JOG command |
| JogBackward | FALSE | BIN | Bit | Reverse rotation JOG command |
| Velocity | 100.00000000000000 | -- | FLOAT [Double Pr... | Velocity |
| Acceleration | 100.00000000000000 | -- | FLOAT [Double Pr... | Acceleration |
| Deceleration | 100.00000000000000 | -- | FLOAT [Double Pr... | Deceleration |
| Jerk | 0.00000000000000 | -- | FLOAT [Double Pr... | Jerk |
| Options | 0 | DEC | Double Word [Un... | Options |
| Done | FALSE | BIN | Bit | Execution completion |
| Busy | TRUE | BIN | Bit | Executing |
| Active | TRUE | BIN | Bit | Controlling |
| CommandAborted | FALSE | BIN | Bit | Abortion of execution |
| Error | FALSE | BIN | Bit | Error |
| ErrorID | 0 | DEC | Word [Unsigned]/... | Error code |

# [Operation Verification] Troubleshooting

- When an error occurs, check the cause in the Event History (log)

  ① [Online] -> [Motion Monitor] -> [Event History]



# [Operation Verification] Troubleshooting

- If **"SLMP Communication Error" (1C43h)** occurs

  → Please set the object data by referring to the axis parameters.

- If the **"Warning: Connection settings error for drive unit other than MELSERVO" (0D4Ch)** occurs

  → Refer to the axis parameters and disable the Absolute position system.

- If **"Control Mode Switching Error" (1A1Dh)** occurs when **starting MC_Home**

  → In the network configuration settings (add driver),

  Set Network Synchronous Communication to **"Synchronous"**.

- When starting MC_Home using the driver's **LIMIT+ / –** signals, it detects upper/lower limit signals and stops

  → Set [AxisName.Cd.HwStrokeLimit_Override] to 'DISABLE' and configure the axis control data in the program, etc.

# [Parameter] Homing Parameter Settings

- Various settings related to homing are performed on the following object
  - Use MC_WriteParameter to write the setting values.
  - For detailed information on each object, refer to the Ezi-STEP CC-Link IE TSN ALL manual.

| Object Name | Index: Subindex | Setting Details |
|---|---|---|
| **Home Offset** | **Obj.607C: 00h** | **Difference between the zero position of the machine coordinate system and the homing position** |
| **Homing method** | **Obj.6098: 00h** | **Homing method** |
| **Homing speeds** | **Obj.6099: 01h** | **Homing speeds** |
| **Homing speeds** | **Obj.6099: 02h** | **Cliff speed during homing** |
| **Homing acceleration** | **Obj.609A: 00h** | **Acceleration during homing** |

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