OMRON

Machine Automation Controller

# NJ-series

# Troubleshooting Manual

**NJ501-1500**
**NJ501-1400**
**NJ501-1300**
**NJ301-1200**
**NJ301-1100**

SYSMAC
always in control

W503-E1-05

## Trademarks

# Introduction

Thank you for purchasing an NJ-series CPU Unit.
This manual contains information that is necessary to use the NJ-series CPU Unit. Please read this manual and make sure you understand the functionality and performance of the NJ-series CPU Unit before you attempt to use it in a control system.
Keep this manual in a safe place where it will be available for reference during operation.

## Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).

- Personnel in charge of introducing FA systems.
- Personnel in charge of designing FA systems.
- Personnel in charge of installing and maintaining FA systems.
- Personnel in charge of managing FA systems and facilities.

For programming, this manual is intended for personnel who understand the programming language specifications in international standard IEC 61131-3 or Japanese standard JIS B3503.

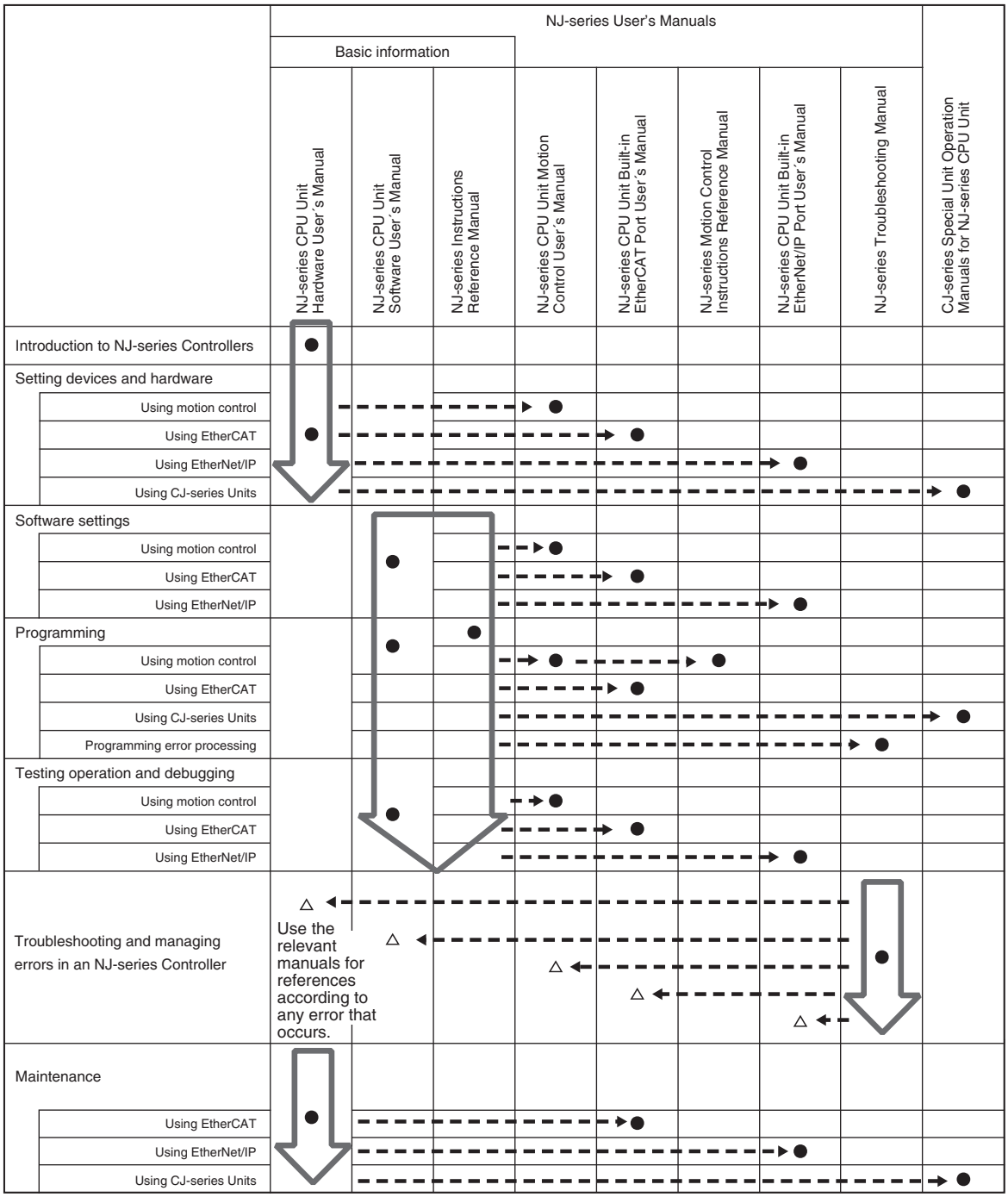
## Applicable Products

This manual covers the following products.

- NJ-series CPU Units
  - NJ501-1500
  - NJ501-1400
  - NJ501-1300
  - NJ301-1200
  - NJ301-1100

# Relevant Manuals

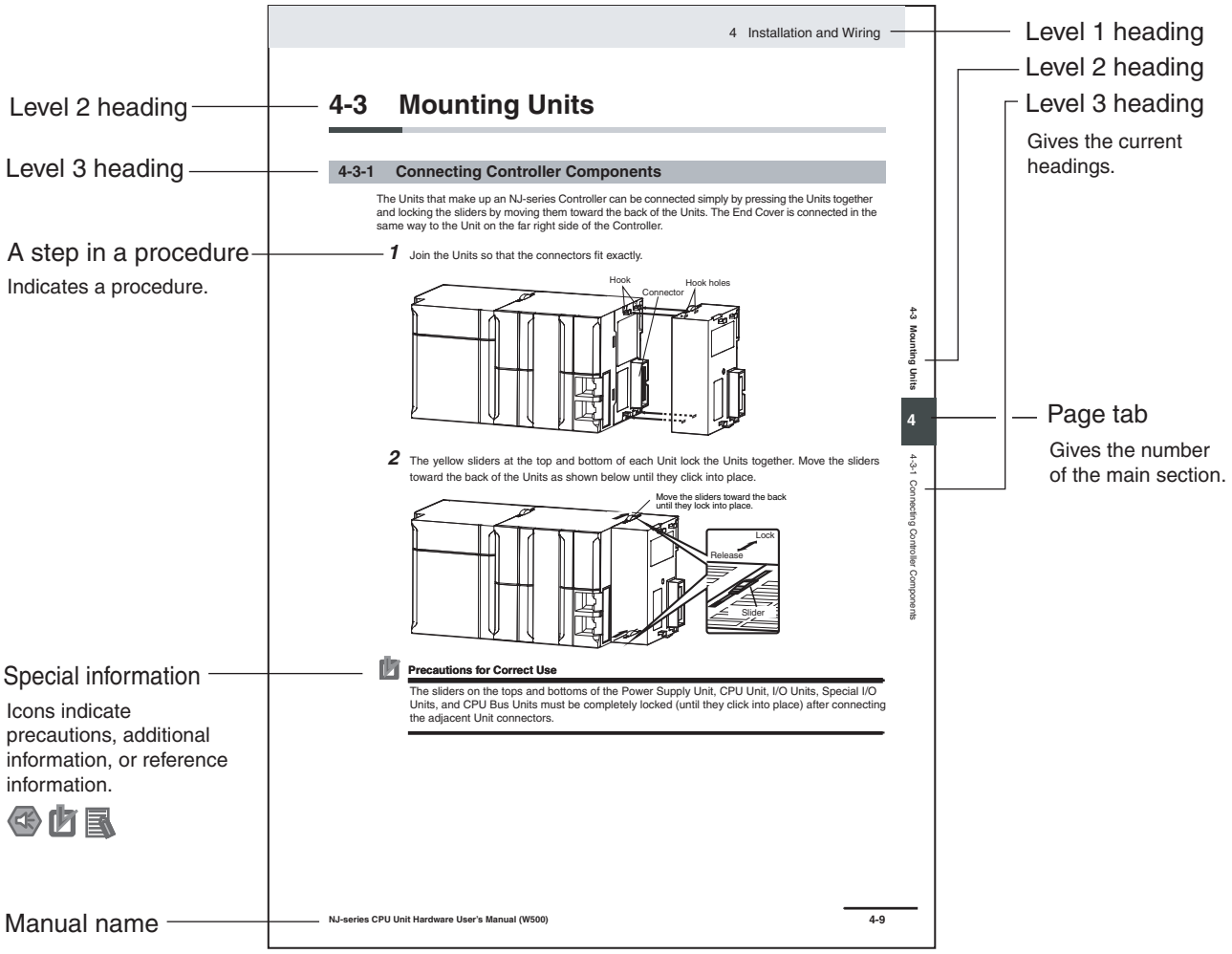
There are three manuals that provide basic information on the NJ-series CPU Units: the *NJ-series CPU Unit Hardware User's Manual*, the *NJ-series CPU Unit Software User's Manual*, and the *NJ-series Instructions Reference Manual*.
Most operations are performed from the Sysmac Studio Automation Software. Refer to the *Sysmac Studio Version 1 Operation Manual* (Cat. No. W504) for information on the Sysmac Studio.
Other manuals are necessary for specific system configurations and applications.
Read all of the manuals that are relevant to your system configuration and application to make the most of the NJ-series CPU Unit.



# Manual Structure

## Page Structure

The following page structure is used in this manual.




This illustration is provided only as a sample. It may not literally appear in this manual.

## Special Information

Special information in this manual is classified as follows:

**Precautions for Safe Use**

Precautions on what to do and what not to do to ensure safe usage of the product.

**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.

**Note** References are provided to more detailed or related information.

## Precaution on Terminology

In this manual, “download” refers to transferring data from the Sysmac Studio to the physical Controller and “upload” refers to transferring data from the physical Controller to the Sysmac Studio.

For the Sysmac Studio, synchronization is used to both upload and download data. Here, “synchronize” means to automatically compare the data for the Sysmac Studio on the computer with the data in the physical Controller and transfer the data in the direction that is specified by the user.

# Sections in this Manual

# CONTENTS



## Section 1 Overview of Errors



## Section 2 Error Troubleshooting Methods

## Section 3 Error Tables



## Index

# Read and Understand this Manual

Please read and understand this manual before using the product. Please consult your OMRON representative if you have any questions or comments.

## *Warranty and Limitations of Liability*

### *WARRANTY*

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

### *LIMITATIONS OF LIABILITY*

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

# Application Considerations

## SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this manual.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

## PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

# Disclaimers

## CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

## DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

## PERFORMANCE DATA

Performance data given in this manual is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

## ERRORS AND OMISSIONS

The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

# Safety Precautions

Refer to the following manuals for safety precautions.

- NJ-series CPU Unit Hardware User's Manual (Cat No. W500)
- NJ-series CPU Unit Software User's Manual (Cat No. W501)

# Precautions for Safe Use

Refer to the following manuals for precautions for the safe use of the NJ-series Controller.
Installation precautions are also provided for the NJ-series CPU Unit and the NJ-series Controller system.

- NJ-series CPU Unit Hardware User's Manual (W500)
- NJ-series CPU Unit Software User's Manual (W501)

# Precautions for Correct Use

Refer to the following manuals for precautions for the correct use of the NJ-series Controller.
Installation precautions are also provided for the NJ-series CPU Unit and the NJ-series Controller system.

- NJ-series CPU Unit Hardware User's Manual (W500)
- NJ-series CPU Unit Software User's Manual (W501)

# Regulations and Standards

## Conformance to EC Directives

### Applicable Directives

- EMC Directives
- Low Voltage Directive

### Concepts

#### ● EMC Directive

OMRON devices that comply with EC Directives also conform to the related EMC standards so that they can be more easily built into other devices or the overall machine. The actual products have been checked for conformity to EMC standards.*
Whether the products conform to the standards in the system used by the customer, however, must be checked by the customer. EMC-related performance of the OMRON devices that comply with EC Directives will vary depending on the configuration, wiring, and other conditions of the equipment or control panel on which the OMRON devices are installed. The customer must, therefore, perform the final check to confirm that devices and the overall machine conform to EMC standards.

* Applicable EMC (Electromagnetic Compatibility) standards are as follows:
EMS (Electromagnetic Susceptibility): EN 61131-2 and EN 61000-6-2
EMI (Electromagnetic Interference): EN 61131-2 and EN 61000-6-4 (Radiated emission: 10-m regulations)

#### ● Low Voltage Directive

Always ensure that devices operating at voltages of 50 to 1,000 VAC and 75 to 1,500 VDC meet the required safety standards. The applicable directive is EN 61131-2.

#### ● Conformance to EC Directives

The NJ-series Controllers comply with EC Directives. To ensure that the machine or device in which the NJ-series Controller is used complies with EC Directives, the Controller must be installed as follows:

- The NJ-series Controller must be installed within a control panel.
- You must use reinforced insulation or double insulation for the DC power supplies connected to DC Power Supply Units and I/O Units.
- NJ-series Controllers that comply with EC Directives also conform to the Common Emission Standard (EN 61000-6-4). Radiated emission characteristics (10-m regulations) may vary depending on the configuration of the control panel used, other devices connected to the control panel, wiring, and other conditions.
  You must therefore confirm that the overall machine or equipment complies with EC Directives.

## Conformance to Shipbuilding Standards

The NJ-series Controllers comply with the following shipbuilding standards. Applicability to the shipbuilding standards is based on certain usage conditions. It may not be possible to use the product in some locations. Contact your OMRON representative before attempting to use a Controller on a ship.

### Usage Conditions for NK and LR Shipbuilding Standards

- The NJ-series Controller must be installed within a control panel.
- Gaps in the door to the control panel must be completely filled or covered with gaskets or other material.
- The following noise filter must be connected to the power supply line.

**Noise Filter**

| Manufacturer | Model |
|---|---|
| Cosel Co., Ltd. | TAH-06-683 |

## Software Licenses and Copyrights

This product incorporates certain third party software. The license and copyright information associated with this software is available at http://www.fa.omron.co.jp/nj_info_e/.

# Unit Versions

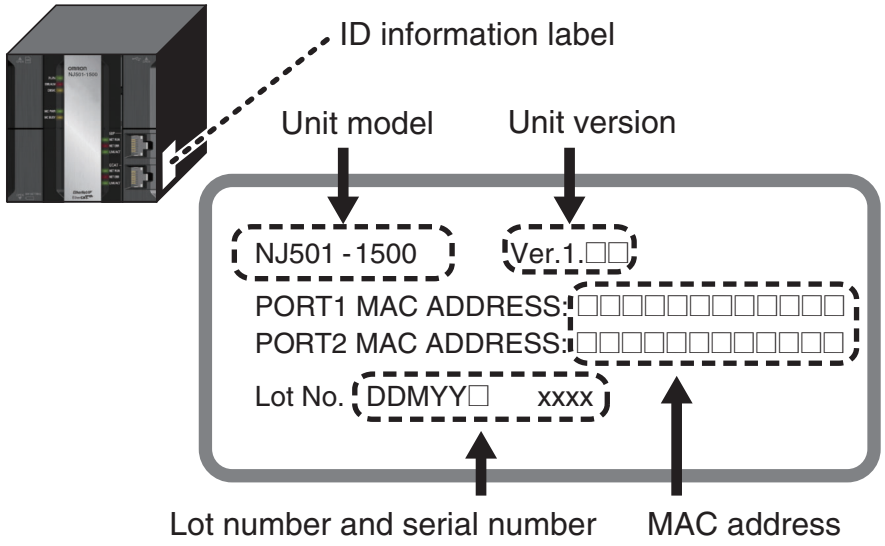
## Unit Versions

A “unit version” has been introduced to manage CPU Units in the NJ Series according to differences in functionality accompanying Unit upgrades.

### Notation of Unit Versions on Products

The unit version is given on the ID information label of the products for which unit versions are managed, as shown below.

Example for NJ-series NJ501-□□□□ CPU Unit:




The following information is provided on the ID information label.

| Item | Description |
|---|---|
| Unit model | Gives the model of the Unit. |
| Unit version | Gives the unit version of the Unit. |
| Lot number and serial number | Gives the lot number and serial number of the Unit.<br>DDMYY: Lot number, □: For use by OMRON, xxxx: Serial number<br>“M” gives the month (1 to 9: January to September, X: October, Y: November, Z: December) |
| MAC address | Gives the MAC address of the built-in port on the Unit. |

### Confirming Unit Versions with Sysmac Studio

You can use the Unit Production Information on the Sysmac Studio to check the unit version of the CPU Unit, CJ-series Special I/O Units, CJ-series CPU Bus Units, and EtherCAT slaves. The unit versions of CJ-series Basic I/O Units cannot be checked from the Sysmac Studio.

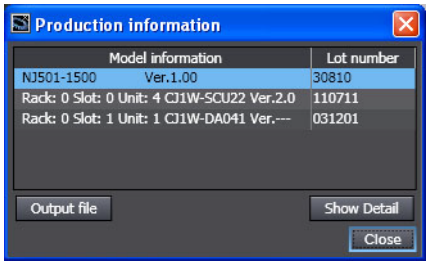
#### ● CPU Unit and CJ-series Units

***1*** Double-click **CPU/Expansion Racks** under **Configurations and Setup** in the Multiview Explorer. Or, right-click **CPU/Expansion Racks** under **Configurations and Setup** and select ***Edit*** from the menu.

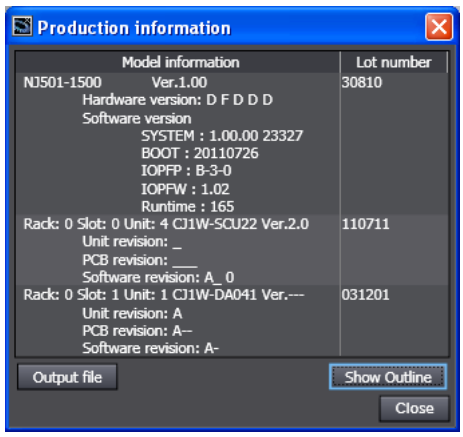
The Unit Editor is displayed for the Controller Configurations and Setup layer.

**2** Right-click any open space in the Unit Editor and select ***Production Information***.

The Production Information Dialog Box is displayed.




Simple Display




Detailed Display

In this example, “Ver.1.00” is displayed next to the unit model.

The following items are displayed.

| CPU Unit | CJ-series Units |
|---|---|
| Unit model | Unit model |
| Unit version | Unit version |
| Lot number | Lot number |
| | Rack number, slot number, and unit number |

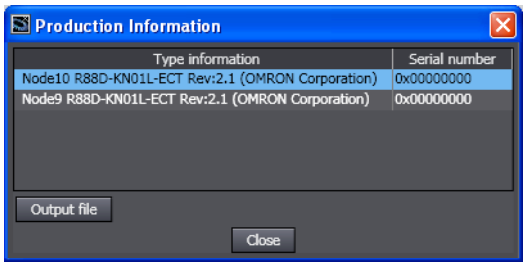
## ● EtherCAT Slaves

**1** Double-click **EtherCAT** under **Configurations and Setup** in the Multiview Explorer. Or, right-click **EtherCAT** under **Configurations and Setup** and select ***Edit*** from the menu.

The EtherCAT Configuration Tab Page is displayed for the Controller Configurations and Setup layer.

**2** Right-click the master in the EtherCAT Configurations Editing Pane and select **Display Production Information**.

The Production Information Dialog Box is displayed.




The following items are displayed.
Node address
Type information*
Serial number

* If the model number cannot be determined (such as when there is no ESI file), the vendor ID, product code, and revision number are displayed.

## Unit Versions and Sysmac Studio Versions

The events that can occur depend on the unit versions of the NJ-series CPU Unit and the EtherCAT slaves. You must use the corresponding version of Sysmac Studio to display events that were added for version upgrades when troubleshooting from the Sysmac Studio or from the Troubleshooter on an NS-series PT. Refer to the product manuals for information on the unit versions of the CPU Unit and EtherCAT slaves, and for the relationship with the version of the Sysmac Studio.

## Unit Version Notation

In this manual, unit versions are specified as shown in the following table.

| Product nameplate | Notation in this manual | Remarks |
|---|---|---|
| “Ver.1.0” or later to the right of the lot number | Unit version 1.0 or later | Unless unit versions are specified, the information in this manual applies to all unit versions. |

# Related Manuals

The following manuals are related to the NJ-series Controllers. Use these manuals for reference.

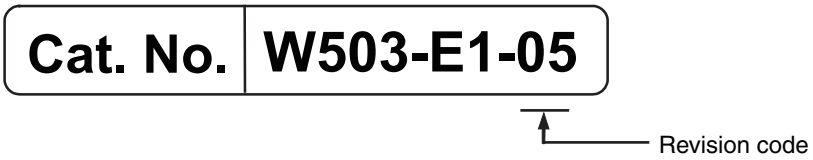
| Manual name | Cat. No. | Model numbers | Application | Description |
|---|---|---|---|---|
| NJ-series CPU Unit Hardware User's Manual | W500 | NJ501-□□□□<br>NJ301-□□□□ | Learning the basic specifications of the NJ-series CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided. | An introduction to the entire NJ-series system is provided along with the following information on the CPU Unit.<br>• Features and system configuration<br>• Introduction<br>• Part names and functions<br>• General specifications<br>• Installation and wiring<br>• Maintenance and inspection<br>Use this manual together with the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |
| NJ-series CPU Unit Software User's Manual | W501 | NJ501-□□□□<br>NJ301-□□□□ | Learning how to program and set up an NJ-series CPU Unit. Mainly software information is provided. | The following information is provided on a Controller built with an NJ501 CPU Unit.<br>• CPU Unit operation<br>• CPU Unit features<br>• Initial settings<br>• Programming based on IEC 61131-3 language specifications<br>Use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500). |
| NJ-series CPU Unit Motion Control User's Manual | W507 | NJ501-□□□□<br>NJ301-□□□□ | Learning about motion control settings and programming concepts. | The settings and operation of the CPU Unit and programming concepts for motion control are described. Use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) and *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |
| NJ-series Instructions Reference Manual | W502 | NJ501-□□□□<br>NJ301-□□□□ | Learning detailed specifications on the basic instructions of an NJ-series CPU Unit. | The instructions in the instruction set (IEC 61131-3 specifications) are described. When programming, use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) and *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |
| NJ-series Motion Control Instructions Reference Manual | W508 | NJ501-□□□□<br>NJ301-□□□□ | Learning about the specifications of the motion control instructions that are provided by OMRON. | The motion control instructions are described. When programming, use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500), NJ-series CPU Unit Software User's Manual (Cat. No. W501) and *NJ-series CPU Unit Motion Control User's Manual* (Cat. No. W507). |
| NJ-series CPU Unit Built-in EtherCAT® Port User's Manual | W505 | NJ501-□□□□<br>NJ301-□□□□ | Using the built-in EtherCAT port on an NJ-series CPU Unit. | Information on the built-in EtherCAT port is provided. This manual provides an introduction and provides information on the configuration, features, and setup. Use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) and *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |
| NJ-series CPU Unit Built-in EtherNet/IP™ Port User's Manual | W506 | NJ501-□□□□<br>NJ301-□□□□ | Using the built-in EtherNet/IP port on an NJ-series CPU Unit. | Information on the built-in EtherNet/IP port is provided. Information is provided on the basic setup, tag data links, and other features.<br>Use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) and *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |

| Manual name | Cat. No. | Model numbers | Application | Description |
|---|---|---|---|---|
| NJ-series Troubleshooting Manual | W503 | NJ501-□□□□<br>NJ301-□□□□ | Learning about the errors that may be detected in an NJ-series Controller. | Concepts on managing errors that may be detected in an NJ-series Controller and information on individual errors are described.<br>Use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) and *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |
| CJ-series Special Unit Manuals for NJ-series CPU Unit | W490<br>W498<br>W491<br>Z317<br>W492<br>W494<br>W497<br>W495<br>W493 | CJ1W-□□□□ | Learning how to use CJ-series Units with an NJ-series CPU Unit. | The methods and precautions for using CJ-series Units with an NJ501 CPU Unit are described, including access methods and programming interfaces. Manuals are available for the following Units.<br>Analog I/O Units, Insulated-type Analog I/O Units, Temperature Control Units, ID Sensor Units, High-speed Counter Units, Serial Communications Units, DeviceNet Units, EtherNet/IP Units, and CompoNet Master Units.<br>Use these manuals together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) and *NJ-series CPU Unit Software User's Manual* (Cat. No. W501). |
| Sysmac Studio Version 1 Operation Manual | W504 | SYSMAC-SE2□□□ | Learning about the operating procedures and functions of the Sysmac Studio. | Describes the operating procedures of the Sysmac Studio. |
| CX-Integrator CS/CJ/CP/NSJ-series Network Configuration Tool Operation Manual | W464 | | Learning how to configure networks (data links, routing tables, Communications Unit settings, etc.). | Describes operating procedures for the CX-Integrator. |
| CX-Designer User's Manual | V099 | | Learning to create screen data for NS-series Programmable Terminals. | Describes operating procedures for the CX-Designer. |
| CX-Protocol Operation Manual | W344 | | Creating data transfer protocols for general-purpose devices connected to CJ-series Serial Communications Units. | Describes operating procedures for the CX-Protocol. |
| GX-series EtherCAT Slave Unit User's Manual | W488 | GX-ID□□□□<br>GX-OD□□□□<br>GX-OC□□□□<br>GX-MD□□□□<br>GX-AD□□□□<br>GX-DA□□□□<br>GX-EC□□□□<br>XWT-ID□□<br>XWT-OD□□ | Leaning how to connect GX-series EtherCAT Slave Units. | Provides the specifications of and describes application methods for GX-series EtherCAT Slave Units. |
| MX2/RX Series Inverter EtherCAT Communication Unit User's Manual | I574 | 3G3AX-MX2-ECT<br>3G3AX-RX-ECT | Leaning how to connect a 3G3AX-MX2-ECT or 3G3AX-RX-ECT EtherCAT Communications Unit for MX2/RX-series Inverters. | Describes the following information for the 3G3AX-MX2-ECT and 3G3AX-RX-ECT EtherCAT Communications Unit for MX2/RX-series Inverters: installation, parameter settings required for operation, troubleshooting, and inspection methods. |
| G5-series AC Servomotors/Servo Drives with Built-in EtherCAT Communications User's Manual | I576 | R88D-KN□-ECT<br>R88M-K□ | Leaning how to connect G5-series AC Servomotors/Servo Drives with Built-in EtherCAT Communications. | Describes the following information for the G5-series AC Servomotors/Servo Drives with EtherCAT Communications: installation, wiring methods, parameter settings required for operation, troubleshooting, and inspection methods. |
| G5-series Linear Motors/Drives with Built-in EtherCAT Communications Linear Motor Type User's Manual | I577 | R88D-KN□-ECT-L<br>R88L-EC-□W-□<br>R88L-EC-□M-□ | Leaning how to connect G5-series Linear Motors/Drives with Built-in EtherCAT Communications Linear Motor Type. | Describes the following information for the G5-series Linear Motors/Drives with EtherCAT Communications Linear Motor Type: installation, wiring methods, parameter settings required for operation, troubleshooting, and inspection methods. |

| Manual name | Cat. No. | Model numbers | Application | Description |
|---|---|---|---|---|
| FQ-M-series Specialized Vision Sensor for Positioning User's Manual | Z314 | FQ-MS12□ | Leaning how to connect FQ-M-series Specialized Vision Sensor for Positioning. | Describes the following information for the FQ-M-series Specialized Vision Sensor for Positioning: installation, wiring methods, parameter settings required for operation, troubleshooting, and inspection methods. |
| EtherCAT Digital-type Sensor Communication Unit Operation Manual | E413 | E3X-ECT | Leaning how to connect E3X-series EtherCAT Slave Units. | Provides the specifications of and describes application methods for E3X-series EtherCAT Slave Units. |
| E3NW-ECT EtherCAT Digital Sensor Communications Unit Operation Manual | E429 | E3NW-ECT | Leaning how to connect E3NW EtherCAT Slave Units. | Provides the specifications of and describes application methods for E3NW EtherCAT Slave Units are provided. |
| ZW-CE1□T Confocal Fiber Type Displacement Sensor User's Manual | Z332 | ZW-CE1□T | Leaning how to connect ZW-CE1□T EtherCAT Slave Units. | Provides the specifications of and describes application methods for ZW-CE1□T EtherCAT Slave Units are provided. |

# Revision History

A manual revision code appears as a suffix to the catalog number on the front and back covers of the manual.




| Revision code | Date | Revised content |
|---|---|---|
| 01 | July 2011 | Original production |
| 02 | March 2012 | Added information related to the upgrade to unit version 1.01, made additions and changes to events related to the addition of devices that can be connected, and corrected mistakes. |
| 03 | May 2012 | Added information related to the upgrade to unit version 1.02, made additions and changes to events related to the addition of devices that can be connected, and corrected mistakes. |
| 04 | August 2012 | Made additions to events and changes to the contents related to the upgrade to unit version 1.03, and corrected mistakes. |
| 05 | February 2013 | Made additions to events and changes to the contents related to the upgrade to unit version 1.04, and corrected mistakes. |

# 1



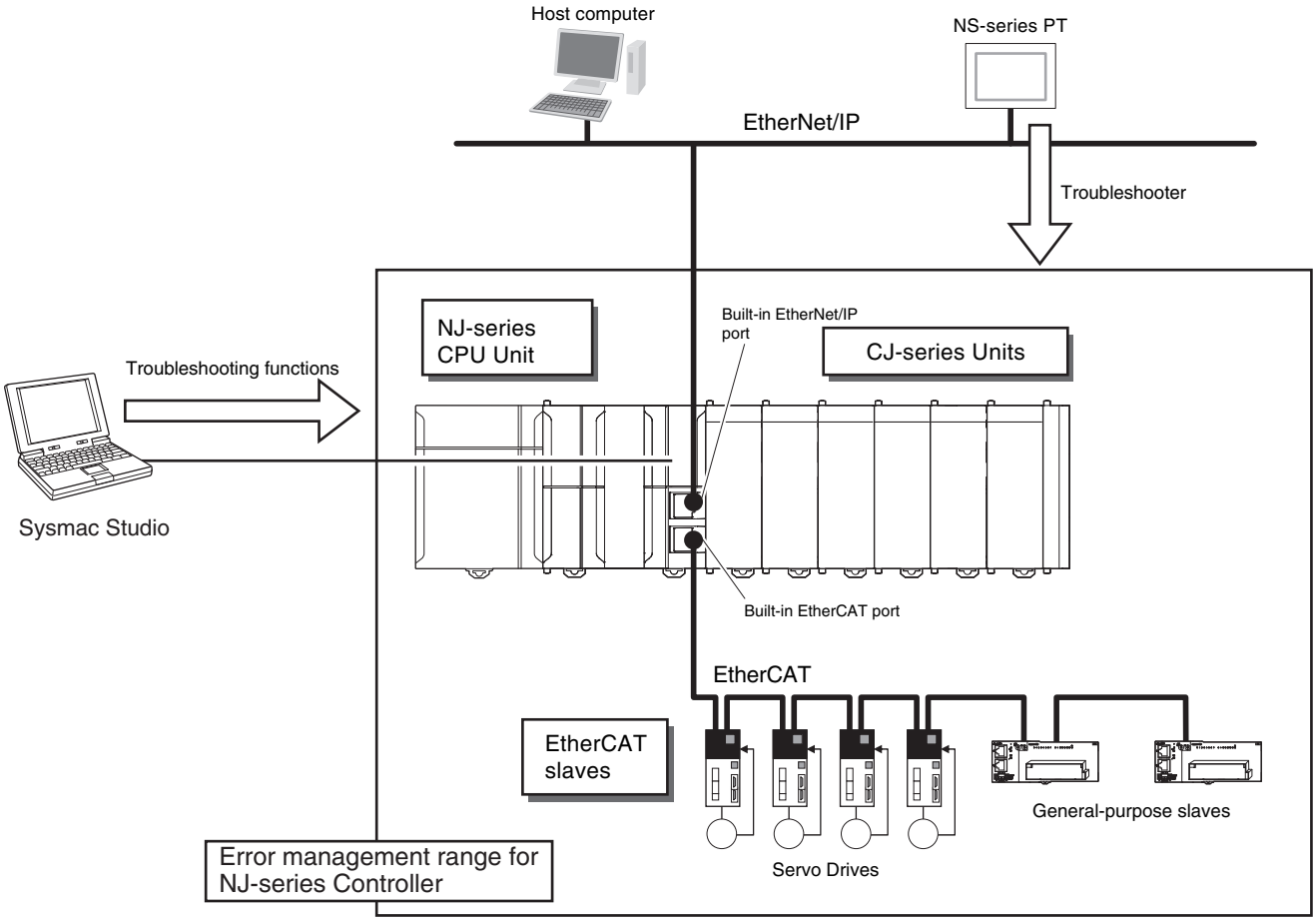
# Overview of Errors

This section provides information that is required to troubleshoot errors. It introduces the types of errors that can occur on an NJ-series Controller, the operation that occurs in response to errors, and the methods you can use to check for errors. Refer to *Section 2 Error Troubleshooting Methods* for information on troubleshooting errors.

# 1-1 Overview of NJ-series Errors

You manage all of the errors that occur on the NJ-series Controller as events. The same methods are used for all events. This allows you to see what errors have occurred and find corrections for them with the same methods for the entire range of errors that is managed (i.e., CPU Unit, EtherCAT slaves,* and CJ-series Units).

* Only Sysmac devices are supported. For information on EtherCAT slaves that are Sysmac devices, refer to the *NJ-series CPU Unit Built-in EtherCAT Port User's Manual* (Cat. No. W505).




You can use the troubleshooting functions of the Sysmac Studio or the Troubleshooter on an NS-series PT to quickly check for errors that have occurred and find corrections for them.

To perform troubleshooting from an NS-series PT, connect the PT to the built-in EtherNet/IP port on the CPU Unit.

## 1-1-1 Types of Errors

There are two main types of errors (events) depending on whether the NJ-series Controller can manage them or not.

### ● Fatal Errors

These errors are not detected by the event management function of the NJ-series Controller because the CPU Unit stops operation. You cannot identify or reset these errors with the Sysmac Studio or an NS-series PT.

Refer to *1-2 Fatal Errors* for error types and confirmation methods for fatal errors.

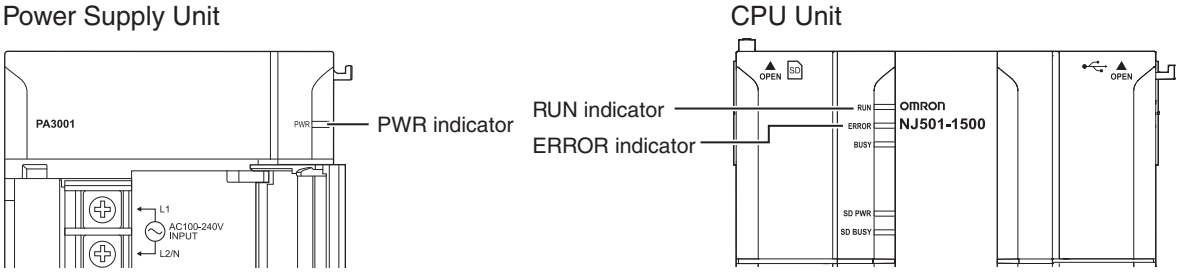
### ● Non-fatal Errors

These errors are detected and managed with the event management function of the NJ-series Controller. You can confirm these errors with the Sysmac Studio or an NS-series PT.

Refer to *1-3 Non-fatal Errors* for error types and confirmation methods for non-fatal errors.

## 1-1-2 CPU Unit Status

You can check the operating status of the CPU Unit with the PWR, RUN, and ERROR indicators on the front panels of the Power Supply Unit and CPU Unit.




The following table shows the status of the front-panel indicators, the status of user program execution, and the ability to make a software connection to the Sysmac Studio or an NS-series PT during startup, during normal operation, and when there are errors in the Controller.

| CPU Unit operating status | | Power Supply Unit | CPU Unit | | User program execution status | Software connection to Sysmac Studio or NS-series PT |
|---|---|---|---|---|---|---|
| | | PWR (green) | RUN (green) | ERROR (red) | | |
| During startup | | Lit | Flashing (1-s intervals). | Not lit | Stops. | Not possible. |
| During normal operation | RUN mode | Lit | Lit | Not lit | Continues. | Possible. |
| | PROGRAM mode | Lit | Not lit | Not lit | Stops. | |
| Fatal errors | Power Supply Error*1 | Not lit | Not lit | Not lit | Stops. | Not possible. |
| | CPU Unit Reset*1 | Lit | Not lit | Not lit | Stops. | |
| | Incorrect Power Supply Unit Connected*1 | Lit | Flashing (3-s intervals). | Lit | Stops. | |
| | CPU Unit Watchdog Timer Error*1 | Lit | Not lit | Lit | Stops. | |
| Non-fatal errors | Major fault*2 | Lit | Not lit | Lit | Stops. | Possible. (Communications can be connected from an NS-series PT if EtherNet/IP is operating normally.) |
| | Partial fault*2 | Lit | Lit | Flashing (1-s intervals). | Continues.*3 | |
| | Minor fault*2 | Lit | Lit | Flashing (1-s intervals). | Continues. | |
| | Observation*2 | Lit | Lit | Not lit | Continues. | |

*1 Refer to *1-2 Fatal Errors* for information on individual errors.

*2 Refer to *1-3 Non-fatal Errors* for information on individual errors.

*3 The function module where the error occurred stops.

# 1-2 Fatal Errors

## 1-2-1 Types of Fatal Errors

This section describes the errors that cause the operation of the NJ-series CPU Unit to stop.
Software connections to the Sysmac Studio or an NS-series PT cannot be made if there is a fatal error in the Controller.

### ● Power Supply Error

Power is not supplied, the voltage is outside of the allowed range, or the Power Supply Unit is faulty.

### ● CPU Unit Reset

The CPU Unit stopped operation because of a hardware error. Other than hardware failures, this error also occurs at the following times.

- The power supply to an Expansion Rack is OFF.
- The I/O Connecting Cable is incorrectly installed.
  - The IN and OUT connectors are reversed.
  - The connectors are not mated properly.
- There is more than one I/O Control Unit on the CPU Rack or there is an I/O Control Unit on an Expansion Rack.

### ● Incorrect Power Supply Unit Connected

There is a CJ-series Power Supply Unit connected to the CPU Rack. The operation of the Controller is stopped.

### ● CPU Unit Watchdog Timer Error

This error occurs in the CPU Unit. This error occurs when the watchdog timer times out because a hardware failure or when temporary data corruption causes the CPU Unit to hang.

## 1-2-2 Checking for Fatal Errors

You can identify fatal errors based on the status of the PWR indicator on the Power Supply Unit and the RUN and ERROR indicators on the CPU Unit, as well as by the ability to go online with the CPU Unit from the Sysmac Studio. Refer to *Section 2 Error Troubleshooting Methods* for information on identifying errors and corrections.

| Indicators | | | Going online from the Sysmac Studio | CPU Unit operating status |
|---|---|---|---|---|
| PWR (green) | RUN (green) | ERROR (red) | | |
| Not lit | Not lit | Not lit | Not possible.* | Power Supply Error |
| Lit | Not lit | Not lit | | CPU Unit Reset |
| Lit | Flashing (3-s intervals). | Lit | | Incorrect Power Supply Unit Connected |
| Lit | Not lit | Lit | | CPU Unit Watchdog Timer Error |

* Power Supply Errors and Incorrect Power Supply Unit Connected errors can be differentiated with the indicators. There is no need to see if you can go online with the CPU Unit from the Sysmac Studio.

# 1-3 Non-fatal Errors

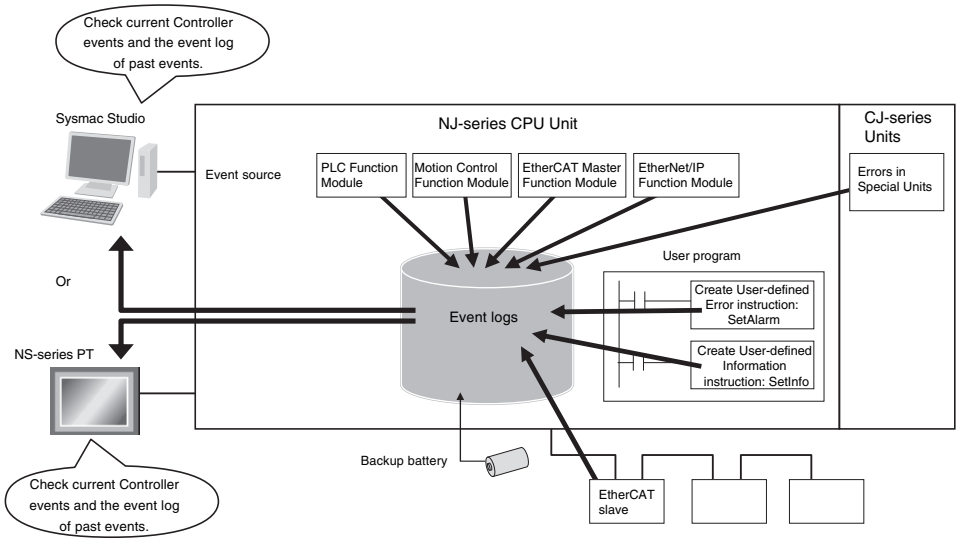
Non-fatal errors that occur are managed as events in the NJ-series Controller. You can check the event to find out what type of error occurred.

## 1-3-1 Types of Non-fatal Errors

### Overview of Controller Events (Errors and Information)

You use the same methods to manage all of the events that occur on the NJ-series Controller. The events that occur are saved in battery-backup memory in the CPU Unit. You can use the Sysmac Studio or an NS-series PT to confirm current Controller events and the log of events that occurred before. This log is called an event log.

To use an NS-series PT to check events, connect the PT to the built-in EtherNet/IP port on the CPU Unit.




The following events can occur.

- **Controller Events**

  The Controller automatically detects these events. Controller events include events for the function modules in the CPU Unit, EtherCAT slaves, and CJ-series Units.

  The error logs from within the EtherCAT slaves and the CJ-series Special Units are not included. Refer to the manuals for the slaves or Special Units for the procedures to read their error logs. You can check the error logs from CJ-series Special Units on the Controller Event Log Tab Page of the Sysmac Studio.

- **User-defined Events**

  These are events that occur in applications that the user developed.

  Refer to the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for information on user-defined events.

Non-fatal errors are managed as Controller events. This section describes mainly the Controller events.

## Details on Controller Events (Errors and Information)

### Sources of Controller Events

The *Event* source information indicates the location where an event occurred. The event source identifies the particular function module in the CPU Unit in which the event occurred. For some function modules, there is more detailed information about the event source. This information is called the *Source details*. The following information is provided as the event source details.

| Event source | Source details |
|---|---|
| PLC Function Module | Instructions, I/O bus master, or CJ-series Unit |
| Motion Control Function Module | Common, axis, or axes group |
| EtherCAT Master Function Module | Communications port, EtherCAT master, or EtherCAT slave |
| EtherNet/IP Function Module | Communications port, CIP, FTP, NTP, or SNMP |

The event source is displayed on the Sysmac Studio or NS-series PT.

### Levels of Controller Events (Errors and Information)

The following table classifies the levels of Controller events according to the effect that the errors have on control.

| No. | Level | Classification | Level name |
|---|---|---|---|
| 1 | High | Controller errors | Major fault level |
| 2 | ↑ | | Partial fault level |
| 3 | ↕ | | Minor fault level |
| 4 | ↓ | | Observation |
| 5 | Low | Controller information | Information |

Errors with a higher level have a greater impact on the functions that the NJ-series Controller provides, and are more difficult to recover from. When an event occurs, the Sysmac Studio or PT will display the level.

#### Event Levels

- Major Fault Level
  These errors prevent control operations for the entire Controller. When the CPU Unit detects a major fault, it immediately stops the execution of the user program and turns OFF the loads of all slave, including remote I/O. With EtherCAT slaves and some CJ-series Special Units, you can set the slave settings or Unit settings to select whether outputs will go OFF or retain their previous status. You cannot reset major fault level errors from the user program, the Sysmac Studio or an NS-series PT. To recover from a major fault level error, remove the cause of the error, and either cycle the power supply to the Controller, or reset the Controller from the Sysmac Studio.
- Partial Fault Level
  These errors prevent control operations in a certain function module in the Controller. The NJ-series CPU Unit continues to execute the user program even after a partial fault level error occurs. You can include error processing in the user program in order to stop equipment safely. After you remove the cause of the error, execute one of the following to return to normal status.
  - Reset the error from the user program, the Sysmac Studio, or an NS-series PT.
  - Cycle the power supply.
  - Reset the Controller from the Sysmac Studio.
- Minor Fault Level
  These errors prevent part of the control operations in a certain function module in the Controller. The troubleshooting for minor fault level errors is the same as the processing for partial fault level errors.
- Observations
  These errors do not affect the control operations of the Controller. The observation notifies you of potential problems before they develop into a minor fault level error or worse.

- Information
  Events that are classified as information provide information that do not indicate errors.

You can change the event level for some events. Refer to the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for details on changing event levels. Refer to *3-1 Errors by Source* in this manual to see the events for which you can change the event level.

## Operation for Each Level

The way that the Controller operates when an event occurs depends on the level of the Controller event.

| Item \ Event level | | Controller errors | | | | Controller information |
|---|---|---|---|---|---|---|
| | | **Major fault level** | **Partial fault level** | **Minor fault level** | **Observation** | **Information** |
| **Definition** | | These errors are serious errors that prevent control operations for the entire Controller. | These errors prevent all of the control in a function module other than PLC Function Module. | These errors prevent part of the control operations in a certain function module. | These errors do not affect system control operations. | These are not errors, but appear in the event log to notify the user of specific information. |
| **Event examples (Only a few examples are provided here. Refer to *Section 3 Error Tables* for a list of all of the errors.** | | • I/O Bus Check Error (PLC Function Module) | • Motion Control Period Exceeded (Motion Control Function Module)<br>• Communications Controller Failure (EtherCAT Master Function Module) | • Positive Limit Input Detected (Motion Control Function Module)<br>• Analog Input Disconnection Detected (CJ-series Unit)<br>• Low Battery Voltage (PLC Function Module) | • Packet Discarded Due to Full Reception Buffer (EtherNet/IP Function Module) | • Power Turned ON<br>• Power Interrupted<br>• Memory All Cleared |
| **Front-panel indicators*1** | **PWR (green)** | Lit | Lit | Lit | Lit | Lit |
| | **RUN (green)** | Not lit | Lit | Lit | Lit | Lit |
| | **ERROR (red)** | Lit | Flashes at 1-s intervals. | Flashes at 1-s intervals. | Not lit | Not lit |

| Item \ Event level | | Controller errors | | | | Controller information |
|---|---|---|---|---|---|---|
| | | Major fault level | Partial fault level | Minor fault level | Observation | Information |
| NJ-series CPU Unit operation | RUN output on Power Supply Unit | OFF | ON | ON | ON | ON |
| | User program execution status | Stops. | Continues.*2 | Continues. | Continues. | Continues. |
| | Outputs turned OFF | Yes | No | No | No | No |
| | Error reset | Not possible. | Depends on the nature of the error. | Depends on the nature of the error. | --- | --- |
| | Event logs | Recorded. (Some errors are not recorded.) | Recorded. | Recorded. | Recorded. | Recorded. |
| Outputs from EtherCAT slaves and Basic Output Units | | Refer to *I/O Operation for Major Fault Level Controller Errors* on page 1-9. | • Errors in EtherCAT Master Function Module: Depends on settings in the slave.<br>• Errors in other function modules: According to user program. | According to user program. | According to user program. | According to user program. |
| Sysmac Studio display (when online) | | Error messages are automatically displayed in the Controller Status Pane.<br>The user can display detailed information in the Troubleshooting Dialog Box. | | | These errors and events are not shown on the display of Controller errors. | |

*1 If multiple Controller errors have occurred, the indicators show the error with the highest event level.

*2 Operation stops in the function module (Motion Control Function Module, EtherCAT Master Function Module, or EtherNet/IP Function Module) in which the error occurred.

## Operation in the Function Module Where an Error Event Occurred

| Event level / Function module | Major fault level | Partial fault level | Minor fault level | Observation |
|---|---|---|---|---|
| **PLC Function Module** | User program execution stops. | --- | Operation continues. | |
| **Motion Control Function Module** | All axes stop. (The stop method depends on the error.) | All axes stop. (The stop method depends on the error.) | • The affected axes/axes group stops. (The stop method depends on the settings.)<br>• The motion control instruction is not executed (for instructions related to axis operation.) | • Axis operation continues.<br>• The motion control instruction is not executed (for instructions not related to axis operation). |
| **EtherCAT Master Function Module** | I/O refreshing for EtherCAT communications stops. (The slaves operate according to the settings in the slaves.) | EtherCAT communications stop. (The slaves operate according to the settings in the slaves.) | I/O refreshing for EtherCAT communications stops or continues according to the fail-soft operation settings in the master. (If I/O refreshing stops, the slaves operate according to the settings in the slaves.) | I/O refreshing for EtherCAT communications continues. |
| **EtherNet/IP Function Module** | Part of the EtherNet/IP communications stop. (Online connections to the Sysmac Studio and communications connections with NS-series PTs are possible. (Output (produce) tags in the tag data links operate according to the tag set settings.) | EtherNet/IP communications stop. (A software connection from the Sysmac Studio or an NS-series PT is not possible.) | Part of the EtherNet/IP communications stop. (A software connection from the Sysmac Studio or an NS-series PT is possible if the communications connection is not the cause of the error.) | EtherNet/IP communications continue. |

## I/O Operation for Major Fault Level Controller Errors

The following table gives the operation of the CPU Unit and the I/O devices for the following errors.

- Unsupported Unit Detected
- I/O Bus Check Error
- End Cover Missing
- Incorrect Unit/Expansion Rack Connection
- Duplicate Unit Number
- Too Many I/O Points
- I/O Setting Check Error

| Unit | CPU Unit operation | Unit or slave operation |
|---|---|---|
| EtherCAT slave *1 | The slave is placed in the Safe-Operational state. | Depends on the slave settings. *2 |
| Servo Drives assigned to an axis | Updating the command values is stopped. | All axes stop immediately. |

| Unit | CPU Unit operation | Unit or slave operation |
|---|---|---|
| CJ-series Basic I/O Unit | Refreshing is stopped. | • All outputs are turned OFF.<br>• All inputs are turned OFF. |
| CJ-series Special Unit | Refreshing is stopped. | Depends on the Unit operating specifications (the ERH indicator lights). |
| Devices connected with EtherNet/IP | • For the originators of tag data links, the variables and I/O memory addresses for input (consume) tags are not refreshed.<br>• For the targets of tag data links, operation depends on the settings of the tags sets for the output (produce) tags. *3 | Depends on the specifications of the connected devices. |

*1 Excluding Servo Drives assigned to an axis.

*2 Settings and setting methods depend on the slave. Refer to the manual for the slave. For a Servo Drive, operation depends on the setting of object 605E hex (Fault Reaction Option Code).

*3 You can set whether to clear output or maintain the data from before the error occurred. Refer to the *NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual* (Cat. No. W506) for details.

The following table gives the operation of the CPU Unit and the I/O devices for the errors that are not listed above.

| Unit | CPU Unit operation | Unit or slave operation |
|---|---|---|
| EtherCAT slave *1 | The slave is placed in the Safe-Operational state. | Depends on the slave settings. *2 |
| Servo Drives assigned to an axis | Updating the command values is stopped. | All axes stop immediately. |
| CJ-series Basic I/O Unit | • The values of all outputs are cleared to zero.<br>• Input refreshing continues. | • All outputs are turned OFF.<br>• External inputs are refreshed. |
| CJ-series Special Unit | Refreshing continues. | Depends on the Unit operating specifications. |
| Devices connected with EtherNet/IP | • For the originators of tag data links, the variables and I/O memory addresses for input (consume) tags are not refreshed.<br>• For the targets of tag data links, operation depends on the settings of the tags sets for the output (produce) tags. *3 | Depends on the specifications of the connected devices. |

*1 Excluding Servo Drives assigned to an axis.

*2 Settings and setting methods depend on the slave. Refer to the manual for the slave. For a Servo Drive, operation depends on the setting of object 605E hex (Fault Reaction Option Code).

*3 You can set whether to clear output or maintain the data from before the error occurred. Refer to the *NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual* (Cat. No. W506) for details.

## ● Event Code

Events that occur in a Controller have an event code. When an event occurs, the Sysmac Studio or PT will display the event code. You can use the instructions that get error status to read the error codes of current errors from the user program.

The event codes are 8-digit hexadecimal values. The first digit of a Controller event represents its category. These categories are listed in the table below.

| First digit of the code (hex) | Classification | Meaning |
|---|---|---|
| 0 | Hardware errors | An error caused by a hardware problem such as an internal part malfunction, contact failure, temperature error, undervoltage, overvoltage, or overcurrent. |
| 1 | Data errors | An error caused by incorrectly saved data or data corruption in the Controller. |
| 2 | Hardware setting errors | An error caused by incorrect handling of hardware settings (e.g., hardware switches) or restrictions (e.g., Unit assignment locations). |
| 3 | Configuration errors | An error caused by incorrect parameter values, parameters and hardware configurations that do not match, or configurations set by the user. |
| 4 | Software errors | An error caused by Controller software. |
| 5 | User software errors | An error that is caused by the user program. (For example, an input value to an instruction that is out of range.) |
| 6 | Observation errors | An error that was detected in monitoring operation that occurs due to user settings in the Controller. (For example, if the task period is exceeded or if a position outside of the motion range is detected.) |
| 7 | Control errors | An error caused by a control process. (For example, if the operating status does not meet the required conditions or if the timing is incorrect.) |
| 8 | Communications errors | An error caused by communications with an external device or host system. |
| 9 | Information | Events that are classified as information and provide information that do not indicate errors. |

## Relationship between Event Codes and Error Codes

In addition to the event codes that indicate errors, the function modules and Units have their own error codes. If there are corresponding event and error codes, you can tell what the other code is if you know either one of them. This allows you to know when the same error is being given when you check errors with more than one method.

The following table shows the relationship between the error codes and event codes.

| Error code (4-digit hexadecimal) | | Corresponding event code (8-digit hexadecimal) | | Example: Event code for an error code of A123 hex |
|---|---|---|---|---|
| Classification | Used in | Upper 4 digits | Lower 4 digits | |
| Error codes in the Motion Control Function Module | • *ErrorID* output variable for motion control instructions<br>• System-defined variables for motion control* | Error code | 0000 hex | A123 0000 hex |
| Error codes for basic instructions | *ErrorID* output variable for basic instructions | 5401 hex | Error code | 5401 A123 hex |
| Error codes in CJ-series Special Units | Error logs from CJ-series Special Units | 0000 hex | Error code | 0000 A123 hex |

* The following are system-defined variables for motion control:

| Variable | Name |
|---|---|
| _MC_COM.PFaultLvl.Code | MC Common Partial Fault Code |
| _MC_COM.MFaultLvl.Code | MC Common Minor Fault Code |
| _MC_COM.Obsr.Code | MC Common Observation Code |
| _MC_AX[0..63].MFaultLvl.Code | Axis Minor Fault Code |

| Variable | Name |
|---|---|
| _MC_AX[0..63].Obsr.Code | Axis Observation Code |
| _MC_GRP[0..31].MFaultLvl.Code | Axes Group Minor Fault Code |
| _MC_GRP[0..31].Obsr.Code | Axes Group Observation Code |

For descriptions of the error codes for the Motion Control Function Module or basic instructions, refer to the descriptions of the corresponding event codes. Refer to the *NJ-series CPU Unit Motion Control User's Manual* (Cat. No. W507) and *NJ-series Motion Control Instructions Reference Manual* (Cat. No. W508) for error information on the Motion Control Function Module, and to the *NJ-series Instructions Reference Manual* (Cat. No. W502) for error information on basic instructions. For error information on a CJ-series Special Unit, refer to the manual for the relevant Unit. For the corresponding event codes, refer to the descriptions of the error codes.

### ● Exporting the Error Log

You can use the Sysmac Studio or an NS-series PT to export the displayed event log to a CSV file. Refer to the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for information on exporting event logs

## 1-3-2 Checking for Non-fatal Errors

### Checking Methods

Use the following methods to check for non-fatal errors.

| Checking method | What you can check |
|---|---|
| Checking the indicators | You can use the indicators to confirm the Controller error level, the error status of the EtherCAT Master Function Module, and the error status of the EtherNet/IP Function Module. |
| Checking with the Troubleshooting Function of Sysmac Studio | You can check for current Controller errors, a log of past Controller errors, error sources, error causes, and corrections. You can also check error logs from CJ-series Special Units.*1 |
| Checking with the Troubleshooter of an NS-series PT*2 | You can check for current Controller errors, a log of past Controller errors, error sources, error causes, and corrections. |
| Instructions that read function module error status | You can check the highest-level status and highest-level event code in the current Controller errors. |
| Checking with system-defined variables | You can check the current Controller error status for each function module. |

*1 Detailed information, such as error causes and corrections, is not displayed.

*2 To perform troubleshooting from an NS-series PT, connect the PT to the built-in EtherNet/IP port on the CPU Unit.

This section describes the above checking methods.

### Checking the Indicators

#### ● Checking the Level of a Controller Error

You can use the PWR indicator on the Power Supply Unit and the RUN and ERROR indicators on the CPU Unit to determine the level of an error. The following table shows the relationship between the Controller's indicators and the event level.

| Indicators | | | Event level |
|---|---|---|---|
| PWR (green) | RUN (green) | ERROR (red) | |
| Lit | Not lit | Lit | Major fault level |
| Lit | Lit | Flashing (1-s intervals). | Partial fault level |
| | | | Minor fault level |

| Indicators | | | Event level |
|---|---|---|---|
| PWR (green) | RUN (green) | ERROR (red) | |
| Lit | Lit | Not lit | Observation |

### ● Checking Errors in the EtherCAT Master Function Module and EtherNet/IP Function Module

For the EtherCAT Master Function Module and EtherNet/IP Function Module, use the EtherCAT and EtherNet/IP NET ERR indicators to determine whether an error that affects process data communications has occurred and whether a minor fault level error or higher-level error has occurred. The indicators let you check the status given in the following table.

| Indicators | Indicated status |
|---|---|
| EtherCAT | EtherCAT Master Function Module Status |
| NET ERR | • Lit: Errors for which normal status cannot be recovered through user actions (i.e., errors for which you must replace the CPU Unit or contact your OMRON representative).<br>• Flashing: Errors for which normal status can be recovered through user actions.<br>• Not lit: An error that affects process data communications has not occurred. |
| EtherNet/IP | EtherNet/IP Function Module Status |
| NET ERR | • Lit: Errors for which normal status cannot be recovered through user actions (i.e., errors for which you must replace the CPU Unit or contact your OMRON representative).<br>• Flashing: Errors for which normal status can be recovered through user actions.<br>• No lit: There are no minor fault level or higher-level errors. |

## Checking with the Troubleshooting Function of Sysmac Studio

When an error occurs, you can connect the Sysmac Studio online to the Controller to check current Controller errors and the log of past Controller errors.

### ● Current Errors

Open the Sysmac Studio's Controller Error Tab Page to check the current error's level, source, source details, event name, event code, details, attached information 1 to 4, actions, and corrections. Errors are not displayed for observations.

### ● Log of Past Errors

Open the Sysmac Studio's Controller Event Log Tab Page to check the times, levels, sources, source details, event names, event codes, details, attached information 1 to 4, actions, and corrections for previous errors.

Error logs from CJ-series Special Units are displayed on the Controller Event Log Tab Page. Detailed information is not displayed. To check detailed information, use the event codes that are displayed and refer to the error codes that are given in the manual for the relevant Unit. The relationship between error codes and event codes is described in *Details on Controller Events (Errors and Information)* under *1-3-1 Types of Non-fatal Errors*.

Refer to the *NJ-Series Sysmac Studio Version 1 Operation Manual* (Cat. No. W504) for details on troubleshooting with the Sysmac Studio.

## Checking with the Troubleshooter of an NS-series PT

When an error occurs, if you can connect communications between an NS-series PT and the Controller, you can check current Controller errors and the log of past Controller errors.

To perform troubleshooting from an NS-series PT, connect the PT to the built-in EtherNet/IP port on the CPU Unit.

### ● Current Errors

Open the Controller Error Tab Page on the NS-series PT's Troubleshooter to check the current error's event name, event code, level, source, source details, time, details, and attached information 1 to 4. Observations are not displayed on this tab page.

### ● Log of Past Errors

Open the Controller Event Log Tab Page on the NS-series PT's Troubleshooter to check the time, level, source, event name, event code, details, and attached information 1 to 4 for previous errors.

Refer to the *NS-series Programmable Terminals Programming Manual* (Cat. No. V073) for details on the NS-series PT's Troubleshooter.

## Instructions That Read Function Module Error Status

You can determine the error status with the instructions that get error status provided for each function module from the user program. These instructions get the status and the event code of the error with the highest level.

| Applicable function module | Instruction name | Instruction |
|---|---|---|
| PLC Function Module | Get PLC Controller Error Status | GetPLCError |
| | Get I/O Bus Error Status | GetCJBError |
| Motion Control Function Module | Get Motion Control Error Status | GetMCError |
| EtherCAT Master Function Module | Get EtherCAT Error Status | GetECError |
| EtherNet/IP Function Module | Get EtherNet/IP Error Status | GetEIPError |

For details on the instructions that get error status, refer to the *NJ-series Instructions Reference Manual* (Cat. No. W502).

## Checking with System-defined Variables

You can check the Error Status variable in the system-defined variables to determine the status of errors in a Controller. You can read the Error Status variable from an external device by using communications. Refer to the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for information on system-defined variables.

# 1-3-3 Resetting Non-fatal Errors

Unless you reset an error, the CPU Unit will retain the error status until you turn OFF the power supply to the Controller or reset the Controller.

To reset a Controller error, it is necessary to eliminate the cause of the error. The same error will occur again if you reset the error, but do not eliminate the cause of the error.

**Precautions for Safe Use**

Always confirm safety at the connected equipment before you reset Controller errors with an event level of partial fault or higher for the EtherCAT Master Function Module. When the error is reset, all slaves that were in any state other than Operational state (in which outputs are disabled) due to the Controller error with an event level of partial fault or higher will go to Operational state and the outputs will be enabled. Before you reset all errors, confirm that no Controller errors with an event level of partial fault have occurred for the EtherCAT Master Function Module.

Always confirm safety at the connected equipment before you reset Controller errors for a CJ-series Special Unit. When the Controller error is reset, the Unit where the Controller error with an event level of observation or higher will be restarted. Before you reset all errors, confirm that no Controller errors with an event level of observation or higher have occurred for the CJ-series Special Unit. Observation level events do not appear on the Controller Error Tab Page, so it is possible that you may restart the CJ-series Special Unit without intending to do so. You can check the status of the *_CJB_UnitErrSta[0,0]* to *_CJB_UnitErrSta[3,9]* Error Status variables on a Watch Tab Page to see if an observation level Controller error has occurred.

**Precautions for Correct Use**

Resetting an error is not the same as eliminating the cause of the error. Always eliminate the cause of an error before you perform the procedure to reset the error.

## Error Resetting Methods

| Method | Operation | Errors that are reset | Description |
|---|---|---|---|
| Commands from Sysmac Studio | Resetting Controller errors | Resetting all errors for all function modules | Reset the Controller errors from the Sysmac Studio's Troubleshooting Dialog Box. |
| | Downloading | Resetting all errors for a specific function module | After the causes of the Controller errors are removed, all Controller errors in the relevant function module are reset as a result. Errors are not reset when you download the Controller Configurations and Setup. |
| | Memory All Clear | Resetting all errors for all function modules | After the causes of the Controller errors are removed, all Controller errors in all function modules are reset as a result. |
| | Controller reset | | After the causes of the Controller errors are removed, all Controller errors in all function modules are reset as a result. |
| Commands from an NS-series PT* | Resetting Controller errors | | Reset Controller errors from the Troubleshooter of an NS-series PT that is compatible with NJ-series Controllers.<br>You can reset errors from a PT that is not directly compatible with the NJ-series Controller or another company's HMI if you use the PT/HMI in combination with the reset error instruction for the function module in the user program. |
| Commands from the user program | Resetting Controller errors | Resetting errors for individual function modules | Execute the reset error instruction for the function module in the user program.<br>• For the Motion Control Function Module, you can reset all errors, errors for a particular axis, or errors for a particular axes group.<br>• For the I/O bus, you can reset all errors or just the errors for a particular Unit. |
| Commands from a host computer | Resetting Controller errors with CIP messages | Resetting all errors for all function modules | Use a CIP message from a host computer to reset errors. |
| Cycling the Controller's power supply | --- | Resets all errors. | After the causes of the Controller errors are removed, all Controller errors in all function modules are reset as a result. |

* To reset errors from an NS-series PT, connect the PT to the built-in EtherNet/IP port on the CPU Unit.

# 2



# Error Troubleshooting Methods

This section describes troubleshooting methods for specific errors.

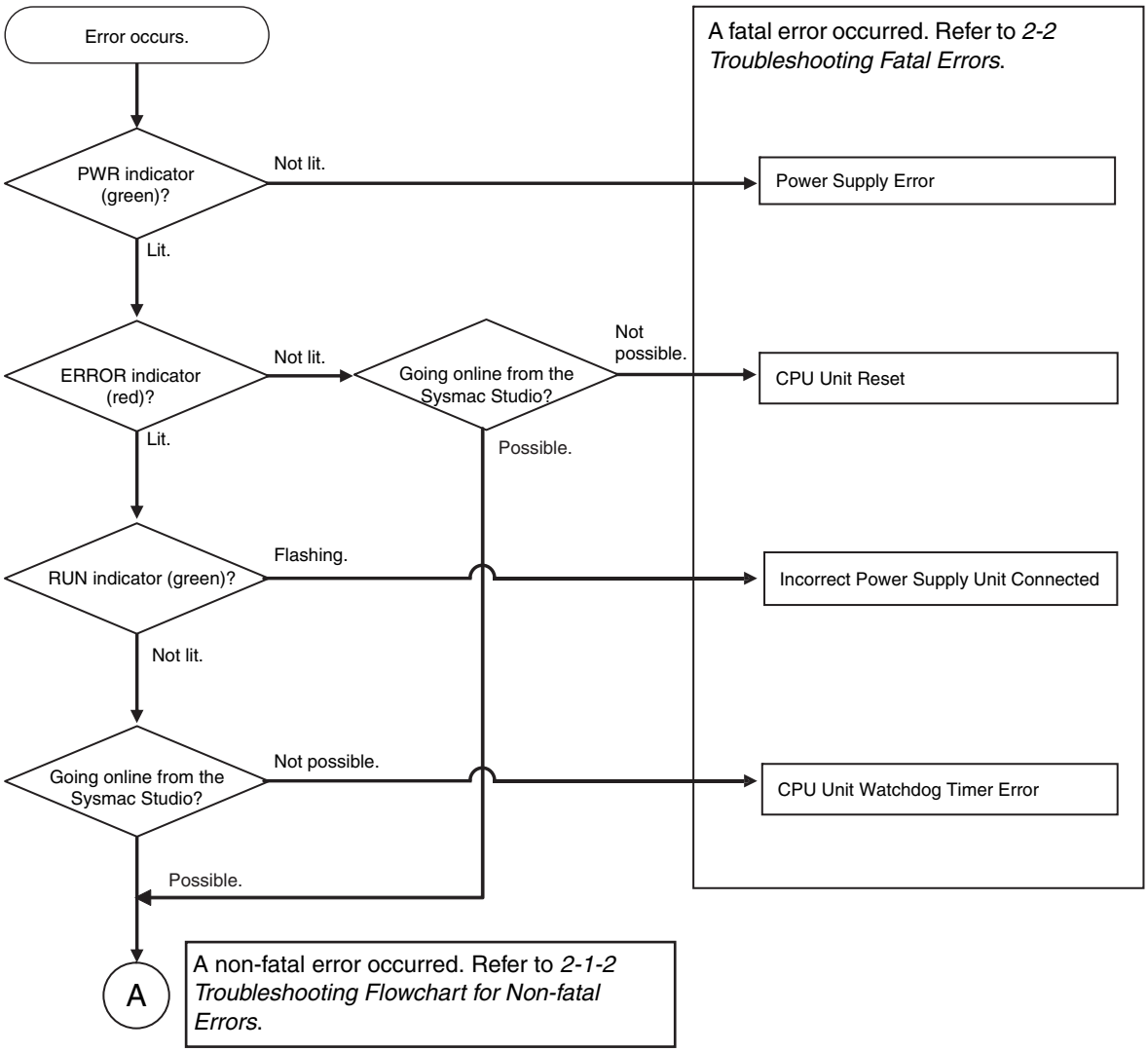
# 2-1 Troubleshooting Flowcharts

This section provides basic error identification and troubleshooting flowcharts. Use them when an error occurs in the NJ-series Controller.

## 2-1-1 Checking to See If the CPU Unit Is Operating

When an error occurs in the NJ-series Controller, use the following flowchart to determine whether the error is a fatal error or a non-fatal error.

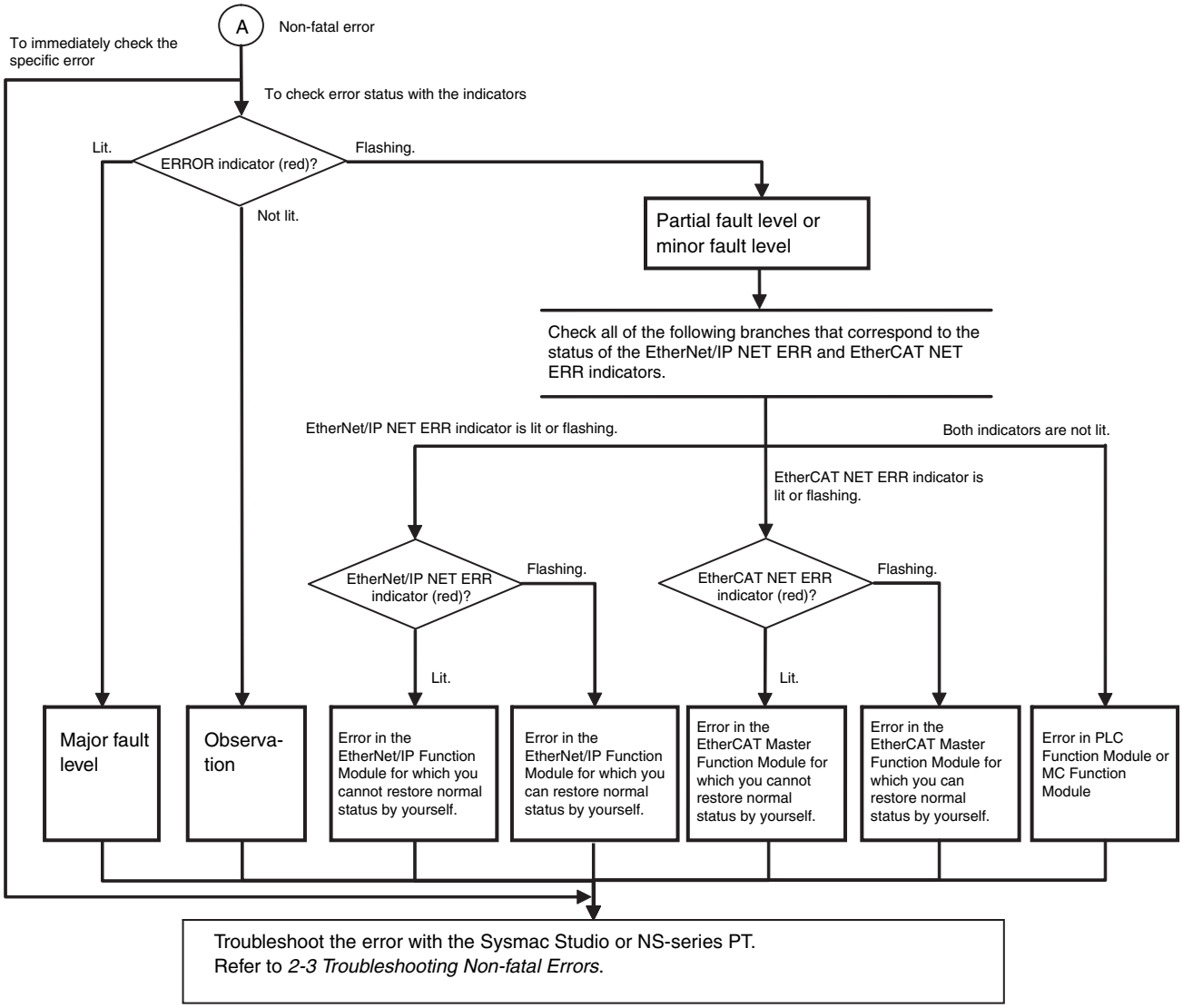
Whenever possible, set the Sysmac Studio's software connection method in the flowchart to a direct USB connection. If you use Ethernet, there are many reasons that prevent a software connection from the Sysmac Studio, so time is required to determine if a fatal or non-fatal error has occurred. If you cannot go online from the Sysmac Studio, perform *2-4 Troubleshooting When You Cannot Go Online from the Sysmac Studio* before you assume that the error is a fatal error.



## 2-1-2 Troubleshooting Flowchart for Non-fatal Errors

For a non-fatal error, use the Sysmac Studio or an NS-series PT to troubleshoot the error with the following flowchart. You can use the indicators to check the following:

- Level
- Whether the error is in the EtherNet/IP Function Module or the EtherCAT Master Function Module
- If the sources of the error is the EtherNet/IP Function Module or the EtherCAT Master Function Module, whether you can restore normal status yourself



# 2-2 Troubleshooting Fatal Errors

The section describes the procedure to troubleshoot fatal errors.

## ● Power Supply Error

| Cause | Correction |
|---|---|
| Power is not being input. | Turn ON the power. |
| The voltage is outside of the allowable range for the power supply. | Check the Controller's power supply system, and correct it so that the voltage is within the allowable range. |
| Power supply system error caused by mounted Unit | Remove the Units from the CPU Rack one by one. If the error is eliminated, replace that Unit. |
| Power Supply Unit failure | If the error persists even after you make the above corrections, replace the Power Supply Unit. |

## ● CPU Unit Reset

| Cause | Correction |
|---|---|
| A conductive object has gotten inside. | If there is conductive material nearby, blow out the CPU Unit with air. |
| The power supply to an Expansion Rack is OFF. | Supply the correct voltage to the Power Supply Unit on the Expansion Rack. |
| The I/O Connecting Cable is incorrectly installed. | Correct the connection of the I/O Connecting Cable. |
| Noise | If the error did not result from the above causes, cycle the power to the Controller and see if that resets the error. If the error occurs frequently, check the FG and power supply lines to see if noise is entering on them. Implement noise countermeasures as required. |
| CPU Unit failure | If the error persists even after you make the above corrections, replace the CPU Unit. |

## ● Incorrect Power Supply Unit Connected

| Cause | Correction |
|---|---|
| A CJ-series Power Supply Unit is connected to the CPU Rack. | Connect an NJ-series Power Supply Unit to the CPU Rack. |

## ● CPU Unit Watchdog Timer Error

| Cause | Correction |
|---|---|
| A conductive object has gotten inside. | If there is conductive material nearby, blow out the CPU Unit with air. |
| Noise | If the error did not result from the above causes, cycle the power to the Controller and see if that resets the error. If the error occurs frequently, check the FG and power supply lines to see if noise is entering on them. Implement noise countermeasures as required. |
| CPU Unit failure | If the error persists even after you make the above corrections, replace the CPU Unit. |

# 2-3 Troubleshooting Non-fatal Errors

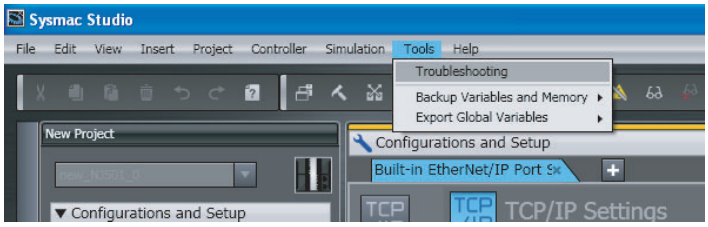
## 2-3-1 Identifying and Resetting Errors with the Sysmac Studio

Troubleshooting functions are provided by the Sysmac Studio. You can use the troubleshooting functions to identify errors that occur in a Controller, and reset the errors.

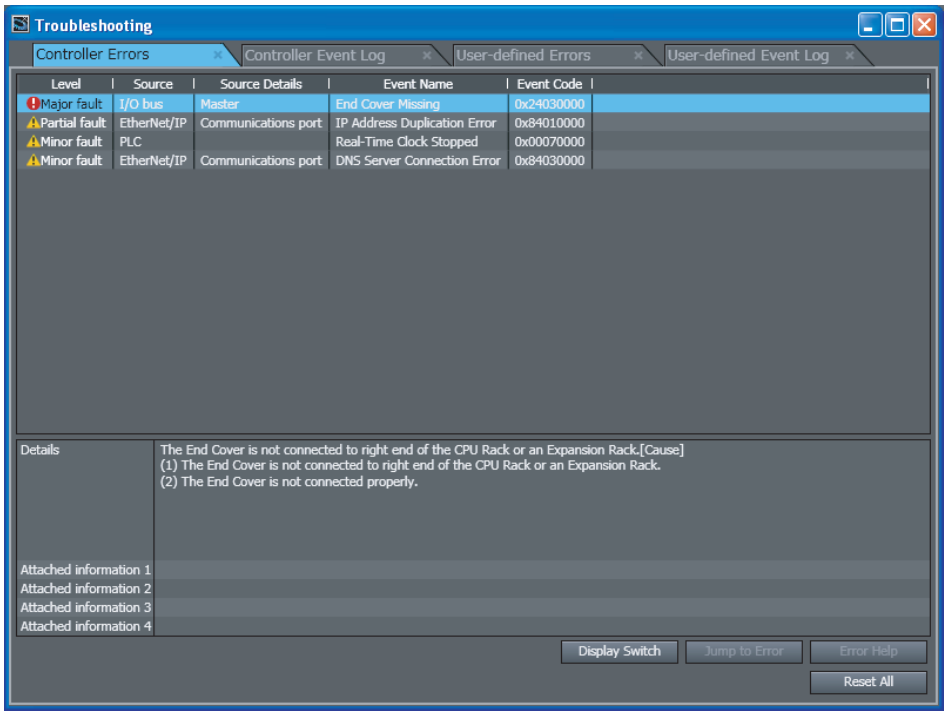
### Displaying Errors on the Sysmac Studio

If an error occurs while the Sysmac Studio is online with the CPU Unit, the Sysmac Studio notifies the user of the error in the Controller Status Pane. From there, you can open the Troubleshooting and Event Logs Window to read detailed error information and troubleshooting methods.

Click the **Troubleshooting** Button in the toolbar, or select ***Troubleshooting*** from the Tools Menu.




The Sysmac Studio automatically collects the Controller's error information, and opens the Troubleshooting Window.

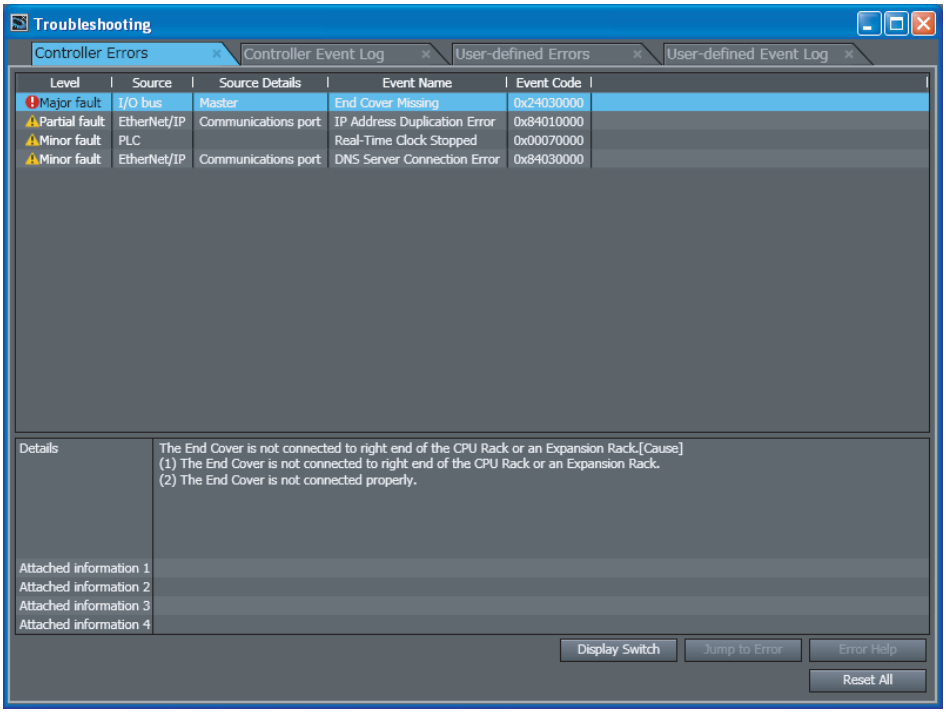


# Checking Current Errors and the Event Logs with the Sysmac Studio

## Checking Current Errors with the Sysmac Studio

You can click the **Controller Errors** Tab in the Troubleshooting Window to read information on current errors in the Controller.

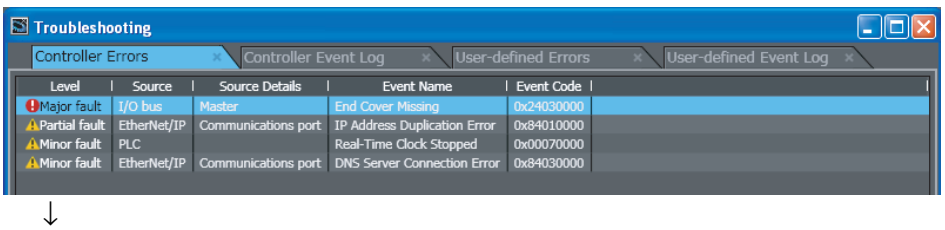
The Controller Errors Tab Page lists the current errors in order of their levels.




| Display item | Description |
|---|---|
| Level | This is the event level of the error. |
| Source and Source Details | This is the physical location and functional location of the error. |
| Event Name | Error name |
| Event Code | This is the code of the error. |

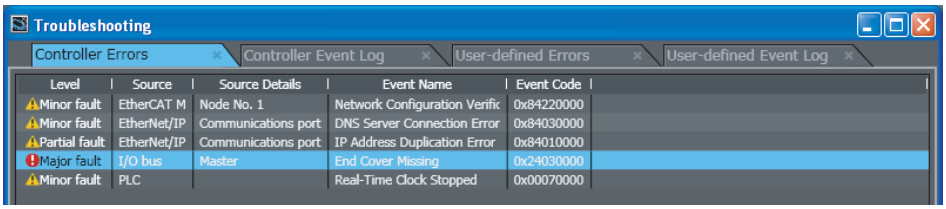
You can click the column headings in the Controller error list, such as the *Level* or *Source*, to reorder the table rows according to that heading. For example, the following change occurs when you click the Source heading.

Before *Source* heading is clicked.




↓

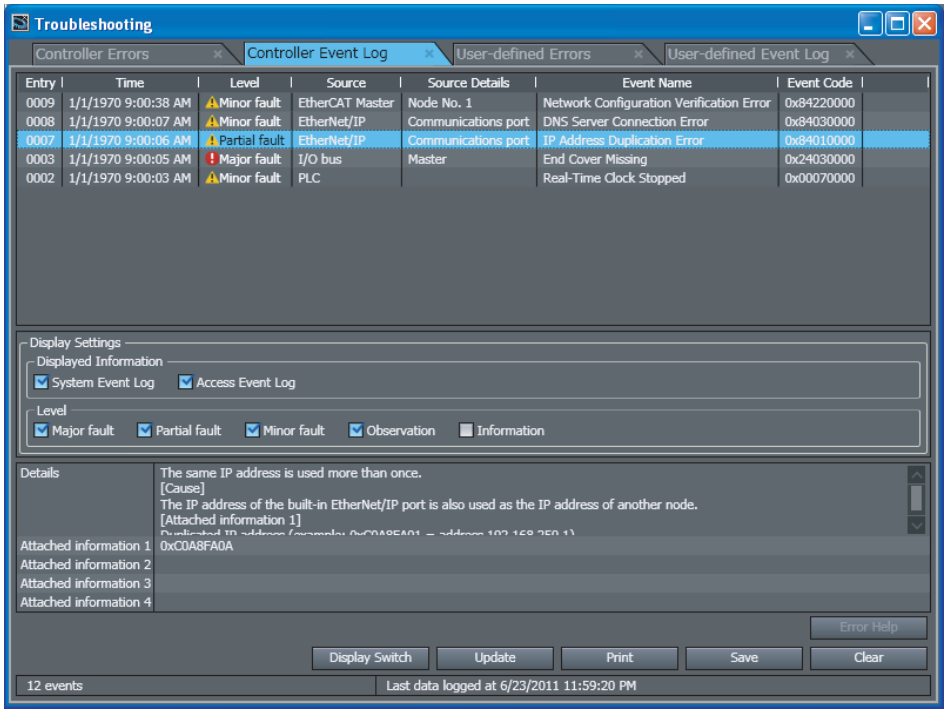
After *Source* heading is clicked.



### ● Displaying Event Logs with the Sysmac Studio

With Sysmac Studio, you can check a log of the Controller events that previously occurred on the Controller Event Log Tab Page.

You can select the event logs and levels to display in the Display Settings Area. Information on the events that you specify are displayed in the detailed information area.




Error logs from CJ-series Special Units are displayed on the Controller Event Log Tab Page. Detailed information is not displayed. To check detailed information, use the event codes that are displayed and refer to the error codes that are given in the manual for the relevant Unit. The relationship between error codes and event codes is described in *Details on Controller Events (Errors and Information)* under *1-3-1 Types of Non-fatal Errors*.

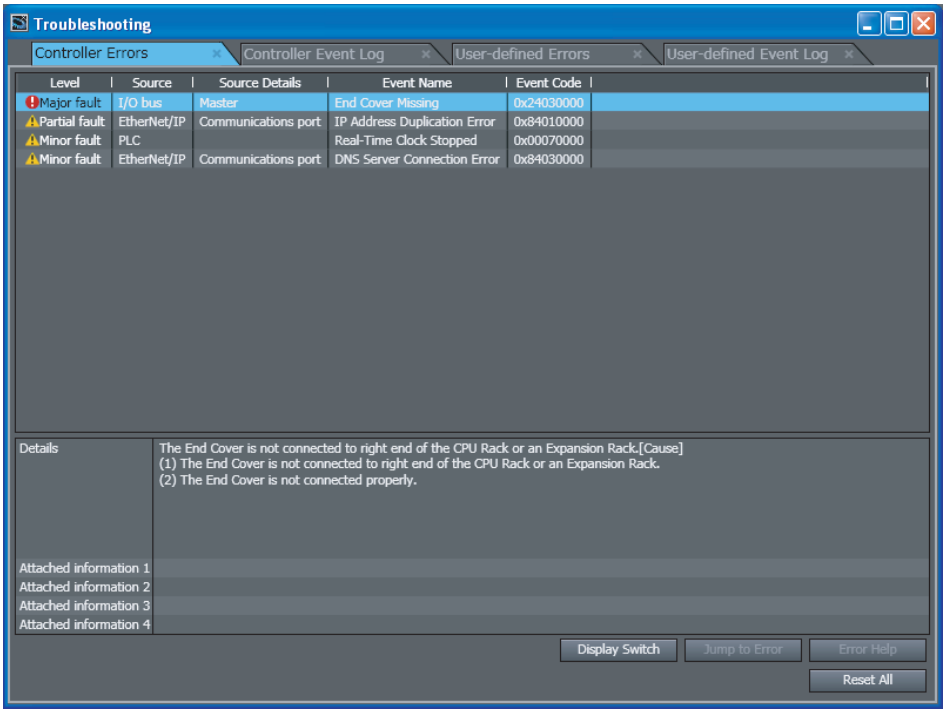
## Resetting Errors with the Sysmac Studio

You can use the Sysmac Studio to reset errors that occur in a Controller. Before you attempt to reset a Controller error, isolate and remove the cause of the error.

The Troubleshooting Dialog Box displays the cause, source, and corrections for the error. You can select any of the items from the error list to display the following information about that error. Click the **Display Switch** Button to switch between displaying details and attached information and displaying actions and corrections.

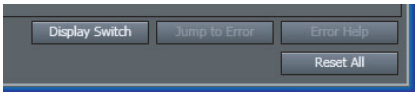
| Display item | Description |
|---|---|
| Details | Detailed information on the error is displayed, such as the probable causes. |
| Attached information 1 through 4 | Detailed information about the source of the error is displayed. |
| Action and Correction | Methods to correct the probable causes of the error are displayed. |

After confirming the cause of the displayed error and the conditions in which it occurred, perform the displayed error corrections to eliminate the cause of the error.




To eliminate the cause of the error, first select the item to perform from the *Action and Correction* list. When you select the appropriate step in the *Action and Correction* list, either the **Jump to Error** or **Error Help** Button is enabled, depending on the contents. In some cases, neither button will operate. Click the enabled button, and proceed with the displayed troubleshooting steps.

After you complete all of the troubleshooting steps for the current errors, click the **Reset All** Button to reset all of the current errors. If the cause of the error is not removed, or if the power supply is not cycled or the Controller is not reset as required after resetting the error, the error will occur again.




| Button | Description |
|---|---|
| Jump to Error | This button is enabled when the error correction involves a change in the Sysmac Studio settings. When you click the button, the Sysmac Studio will automatically switch to the Editing Pane. |
| Error Help | The correction methods or the attached information is displayed if it is not possible to jump to the settings display. |
| Reset All | This button resets all of the current errors, and reads errors again. |

It is necessary to synchronize the data between the Sysmac Studio and the connected CPU Unit before you use the **Jump to Error** Button.

For details on synchronization, refer to the *Sysmac Studio Version 1 Operation Manual* (Cat. No. W504)

If you have enabled the verification of operation authority, it is necessary to confirm your authority before you can reset Controller errors.
The Operator, Maintainer, Planning Engineer, and Administrator have the authority to reset errors. For an Operator, however, verification is required each time.
Refer to the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for information on operation authority.

All Controller errors are reset when you reset the Controller from the Sysmac Studio. If the cause of the error is not removed, the error will occur again.

## 2-3-2 Identifying and Resetting Errors with an NS-series PT

You can connect one of the following OMRON NS-series PTs to an NJ-series CPU Unit through an EtherNet/IP network, and use it to read and reset errors that occurred in the Controller. (The Troubleshooter of the PT is used.)

To perform troubleshooting from an NS-series PT, connect the PT to the built-in EtherNet/IP port on the CPU Unit.

- NS8, NS10, NS12, and NS15
  NS□-T□01-V2 (The V2 versions have an Ethernet port.)
- NS5
  NS5-□Q11-V2 (These models have expanded memory and an Ethernet port.)
- NSJ8, NSJ10, and NSJ12
  All models
- NSJ5
  NSJ5-□Q11-□ (These models have expanded memory and an Ethernet port.)

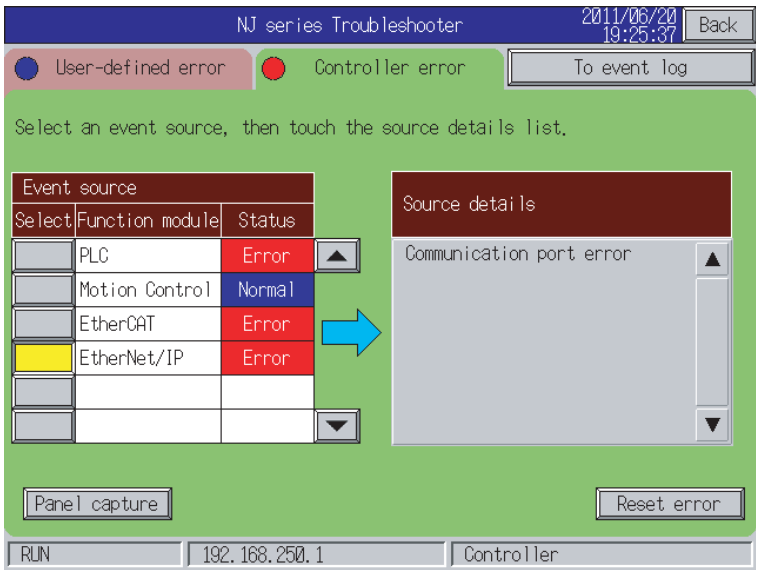
The above models of NS-series PTs with system version 8.5 or higher are compatible with the NJ-series Controllers.

### Checking for Current Errors with an NS-series PT

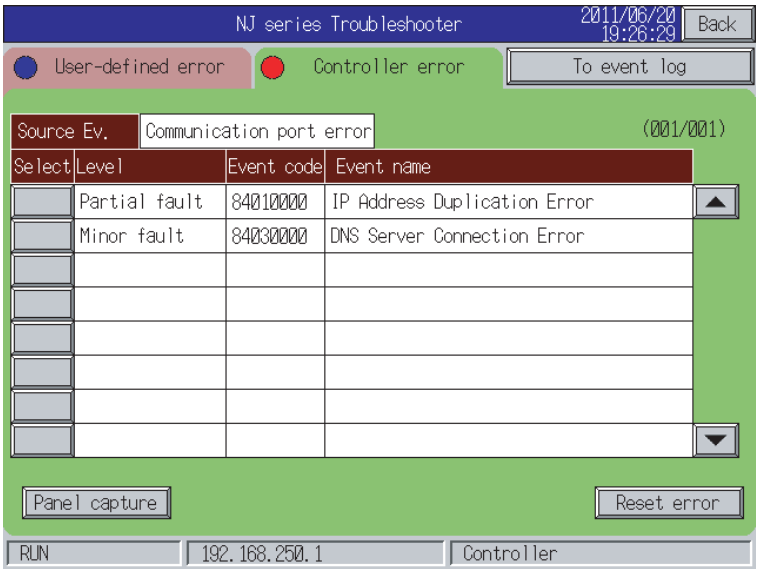
You can check for errors in the Controller using the Troubleshooter of an NS-series PT that is compatible with NJ-series Controllers. You can also use the Troubleshooter to read detailed error information and corrections for current errors. Refer to the *NS-series Programmable Terminals Programming Manual* (Cat. No. V073) for details on the NS-series PT's Troubleshooter.

The following example demonstrates the procedure used to check for errors with an NS8, NS10, NS12, or NS15 PT.

You can check the event source in the Function Module View of the Troubleshooter. If you click the **Select** Button for a function module in the *Event source* Table, you can display the *Source details* for events for that function module. You can select the list in the *Source details* Table to display the List View.



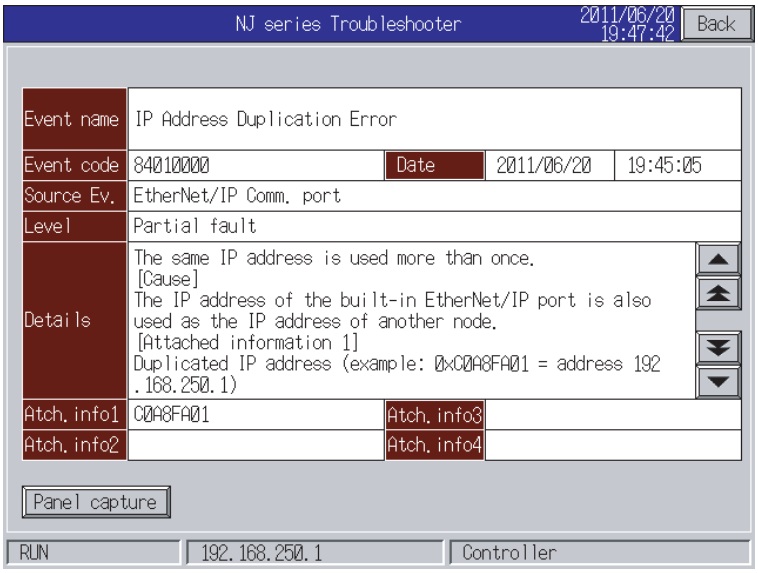

The List View displays a list of the errors produced by the event source that you selected in the Function Module View.



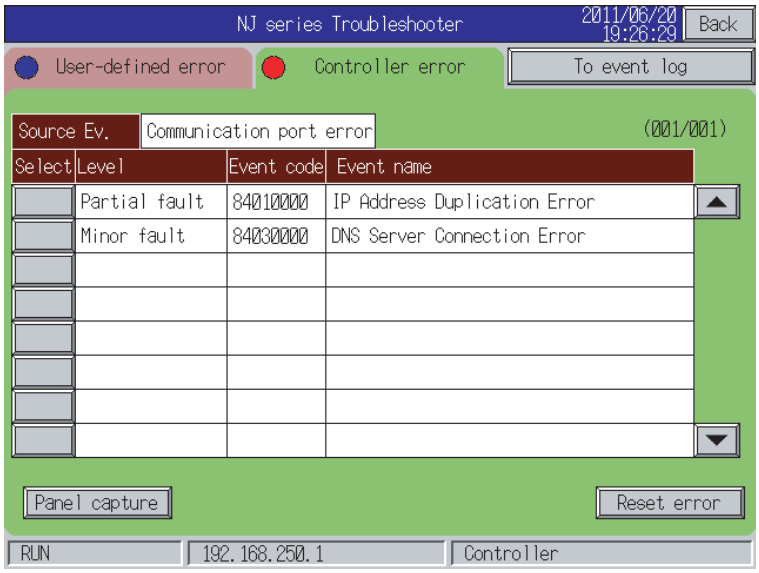

## Resetting Errors with an NS-series PT

You can use the Troubleshooter in an NS-series PT to reset errors that occur in the Controller. Before you attempt to reset a Controller error, isolate and remove the cause of the error.

Click the **Select** Button in the List View to display information such as the error's causes and corrections. If you selected the Detail View for the error, the display shows the error's cause and corrections. After you confirm the cause of the displayed error and the conditions in which it occurred, perform the steps in the displayed correction.




After you complete all of the correction steps for the current errors, click the **Reset error** Button to reset all of the current errors. If the cause of the error is not removed, or if the power supply is not cycled or the Controller is not reset as required after resetting the error, the error will occur again.




In order to reset the Controller errors, it is necessary to confirm your rights according to the operation authority settings for the Troubleshooter. Refer to the *NS-series Programmable Terminals Programming Manual* (Cat. No. V073) for details on the operation authority.

## 2-3-3 Identifying and Resetting Errors from the User Program

In an NJ-series Controller, you can check for errors that have occurred from the user program. This feature allows you to program operations in the user program according to the error status. Special instructions are provided for this purpose. These include instructions to get Controller error information and instructions to reset Controller errors.

### Instructions That Get Controller Error Information

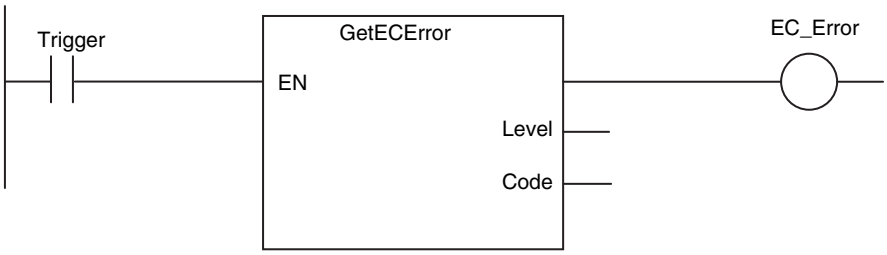
Determine the error status with the instruction to get error information that is provided for each function module. The following table lists the instruction that are used to get error information for each function module.

| Instruction name | Instruction | Function |
|---|---|---|
| Get PLC Controller Error Status | GetPLCError | Gets the status and the event code of the error with the highest level of the Controller errors in the PLC Function Module. |
| Get I/O Bus Error Status | GetCJBError | Gets the status and the event code of the error with the highest level of the Controller errors in the I/O bus. |
| Get Motion Control Error Status | GetMCError | Gets the status and the event code of the error with the highest level of the Controller errors in the Motion Control Function Module. |
| Get EtherCAT Error Status | GetECError | Gets the status and the event code of the error with the highest level of the communications port errors and master errors detected by the EtherCAT Master Function Module. |
| Get EtherNet/IP Error Status | GetEIPError | Gets the status and the event code of the error with the highest level of the Controller errors in the EtherNet/IP Function Module. |

Refer to the *NJ-series Instructions Reference Manual* (Cat. No. W502) for details on these instructions.

Example of Error Detection for the EtherCAT Master Function Module

| Name | Data type | Initial value | Comment |
|---|---|---|---|
| Trigger | BOOL | FALSE | Get Condition |
| EC_Error | BOOL | FALSE | EtherCAT Master Error Flag |




## Resetting Controller Errors with Instructions

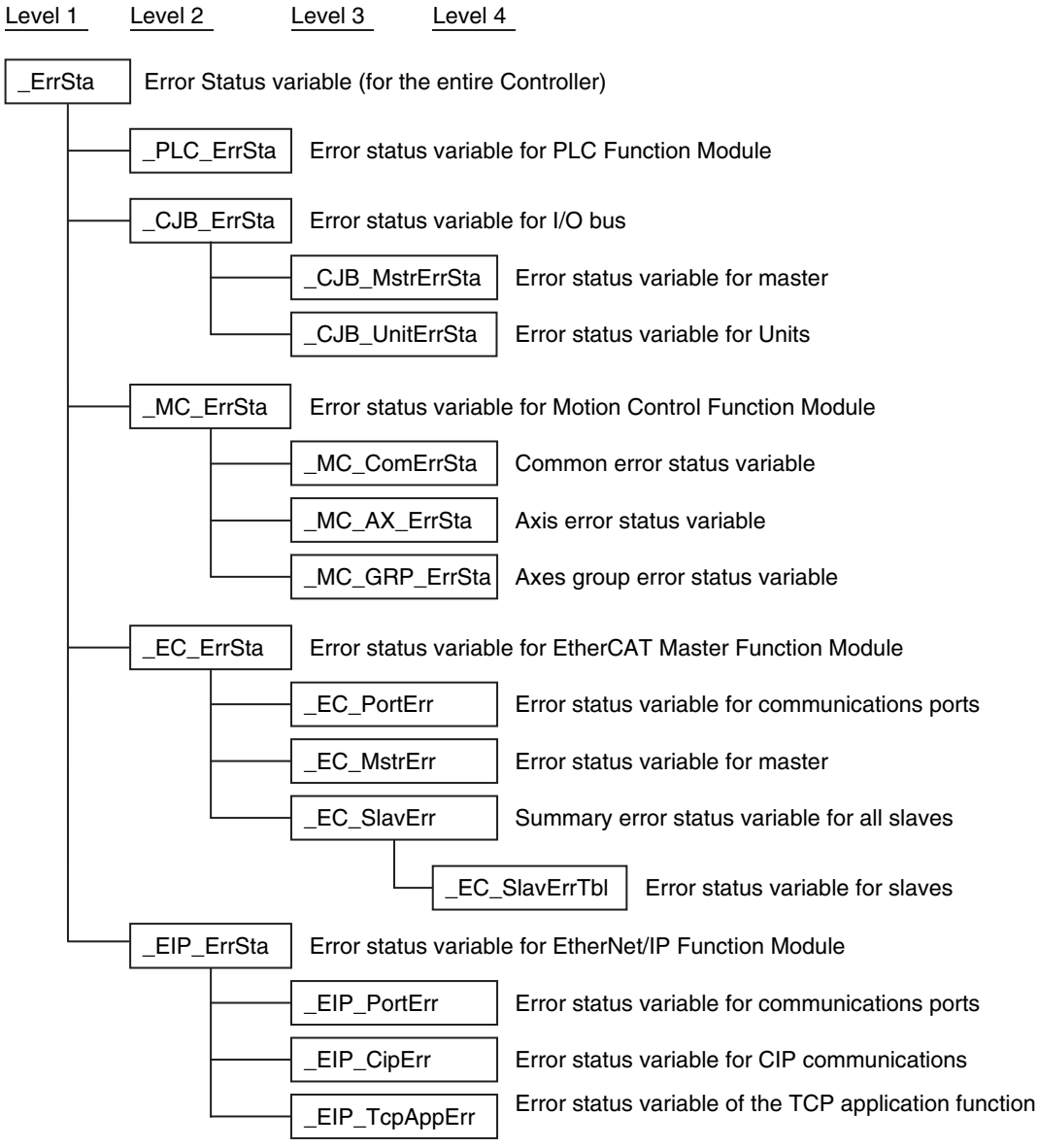
You can use the instructions that are provided to reset errors in the user program to reset errors that occur in the Controller. Before you attempt to reset a Controller error, isolate and remove the cause of the error. Reset the errors with the instruction provided to reset errors for each function module.

| Instruction name | Instruction | Function |
|---|---|---|
| Reset PLC Controller Error | ResetPLCError | Resets current Controller errors from the PLC Function Module. |
| Reset I/O Bus Controller Error | ResetCJBError | Resets current Controller errors from the I/O bus. |
| Reset Motion Control Error | ResetMCError | Resets current Controller errors from the Motion Control Function Module. |
| Reset EtherCAT Error | ResetECError | Resets current Controller errors from the EtherCAT Master Function Module. |

Refer to the *NJ-series Instructions Reference Manual* (Cat. No. W502) for details on these instructions.

## 2-3-4 Checking for Errors with System-defined Variables

The system-defined variables include an Error Status variable, which shows the error status. The following diagram shows the structure of this variable. The system determines the error status of each level by logically ORing the error status information of the next lower level. You can read the Error Status variable from an external device through communications. Refer to the *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for information on system-defined variables.



# 2-4 Troubleshooting When You Cannot Go Online from the Sysmac Studio

The section describes the procedure to troubleshoot when you cannot go online with the CPU Unit from the Sysmac Studio.

## 2-4-1 Causes and Correction When You Cannot Go Online from the Sysmac Studio

The following table lists the possible causes when you cannot go online with the NJ-series CPU Unit from the Sysmac Studio.

| Cause | Description | Correction |
|---|---|---|
| Incorrect settings or faulty communications path | There is a mistake in the settings that the Sysmac Studio uses to go online with the CPU Unit. Or, the communications path is faulty. | Refer to *Troubleshooting Incorrect Settings and Faulty Communications Path* on page 2-15. |
| Fatal error in the CPU Unit | A fatal error occurred in the CPU Unit. | Refer to *2-1-1 Checking to See If the CPU Unit Is Operating*. |
| High system service load | The system service load on the CPU Unit is too high and time cannot be obtained to connect with the Sysmac Studio. | Start in Safe Mode. Refer to *Troubleshooting a High System Service Load* on page 2-19. |

**Note** If the EtherNet/IP NET ERR indicator on the CPU Unit is lit or flashing, it is possible that you cannot go online through an EtherNet/IP route because of an error in the EtherNet/IP Function Module. See if you can go online with a direct USB connection.

You can use the status of the RUN indicator on the CPU Unit to isolate the cause. Implement the troubleshooting for the applicable cause.

| RUN indicator | Causes | | |
|---|---|---|---|
| | Incorrect settings or faulty communications path | Fatal error in the CPU Unit | High system service load |
| No lit. | Cause | Cause | --- |
| Flashing at 3-s intervals. | --- | Cause (Incorrect Power Supply Unit connected.) | --- |
| Lit. | Cause | --- | Cause |

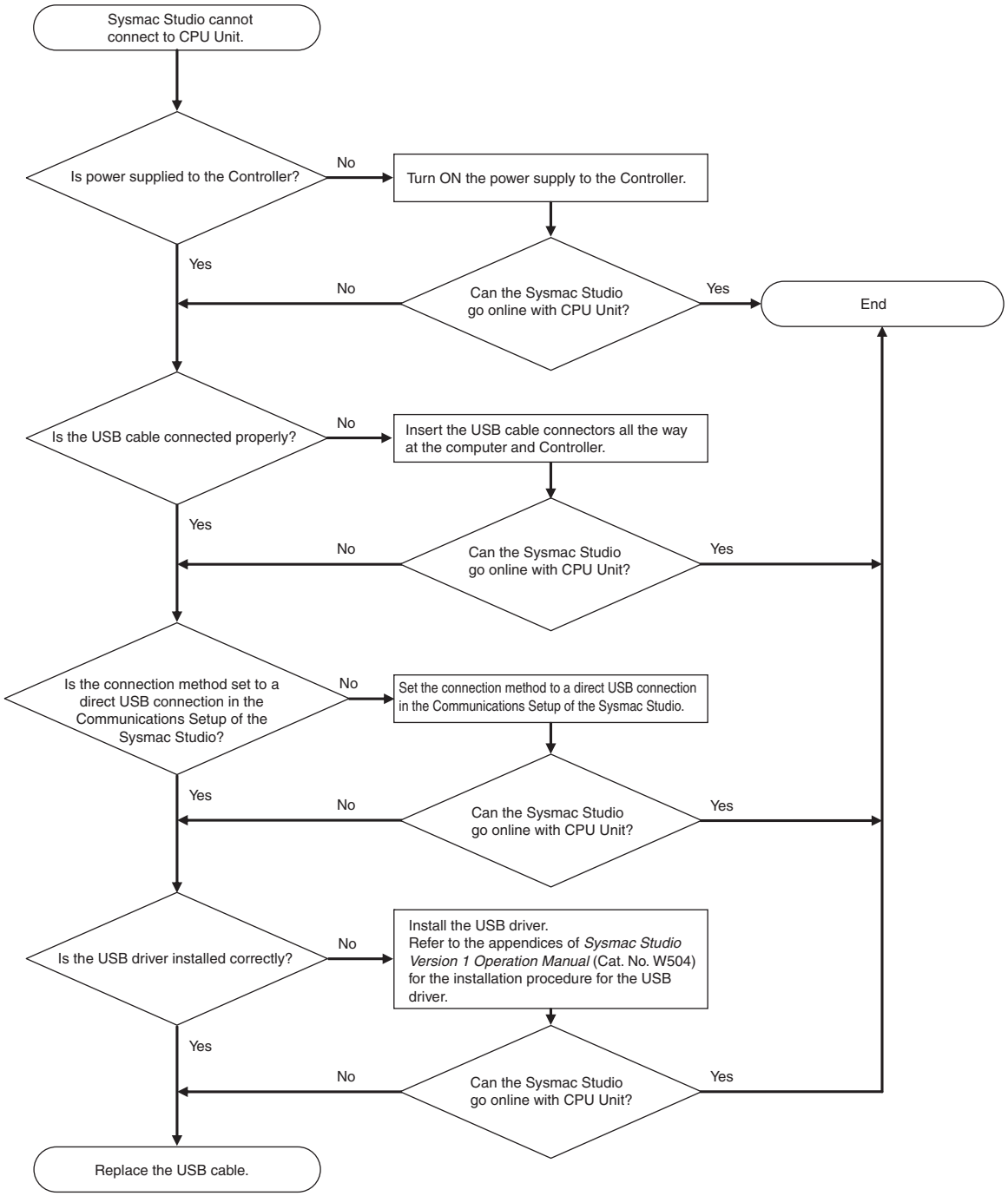
## 2-4-2 Troubleshooting for Each Cause

This section provides troubleshooting methods for incorrect settings, fault communications paths, and high system service loads.

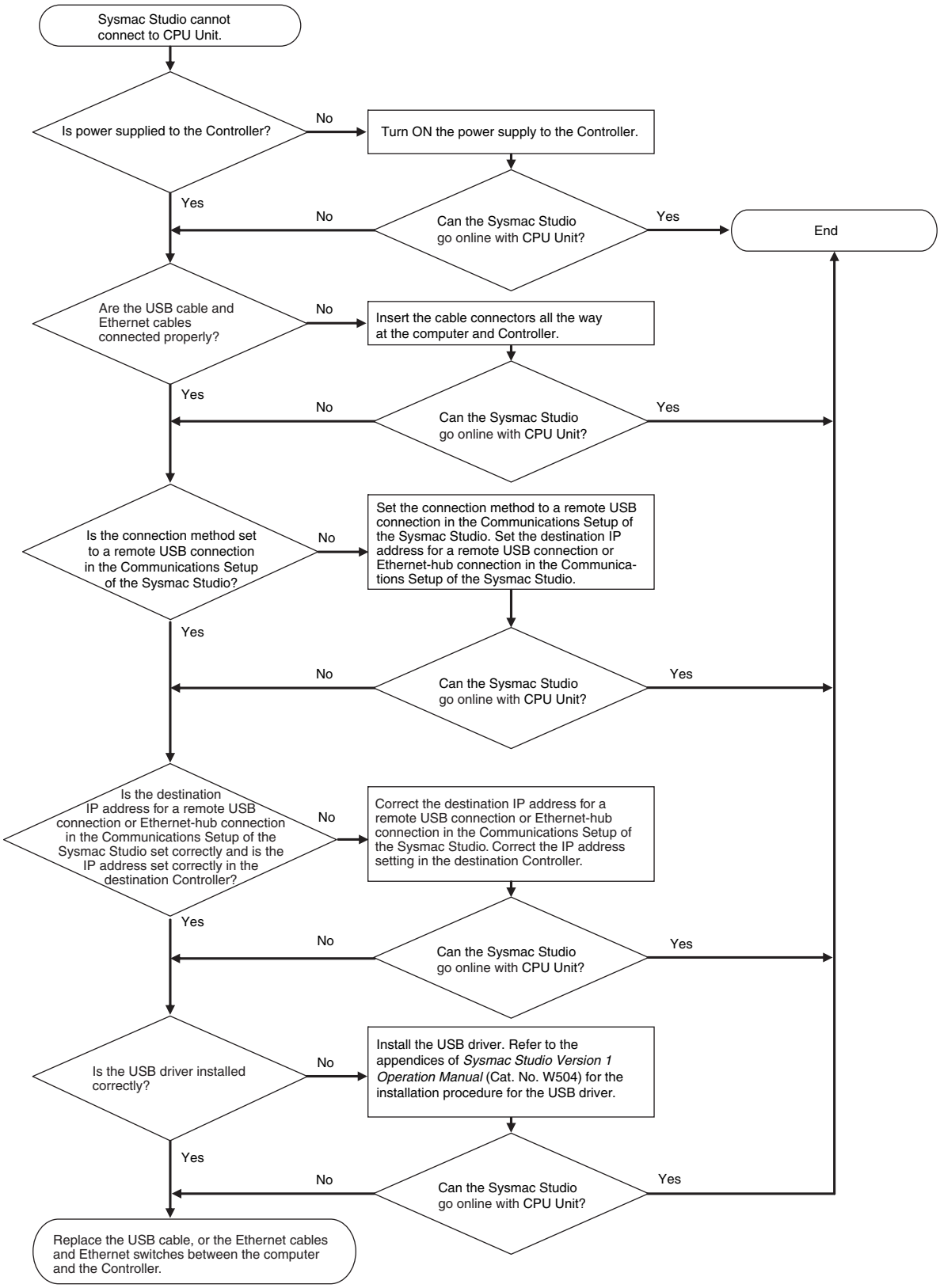
### Troubleshooting Incorrect Settings and Faulty Communications Path

If the Sysmac Studio cannot go online with the CPU Unit, troubleshoot the problem with the following flowchart.

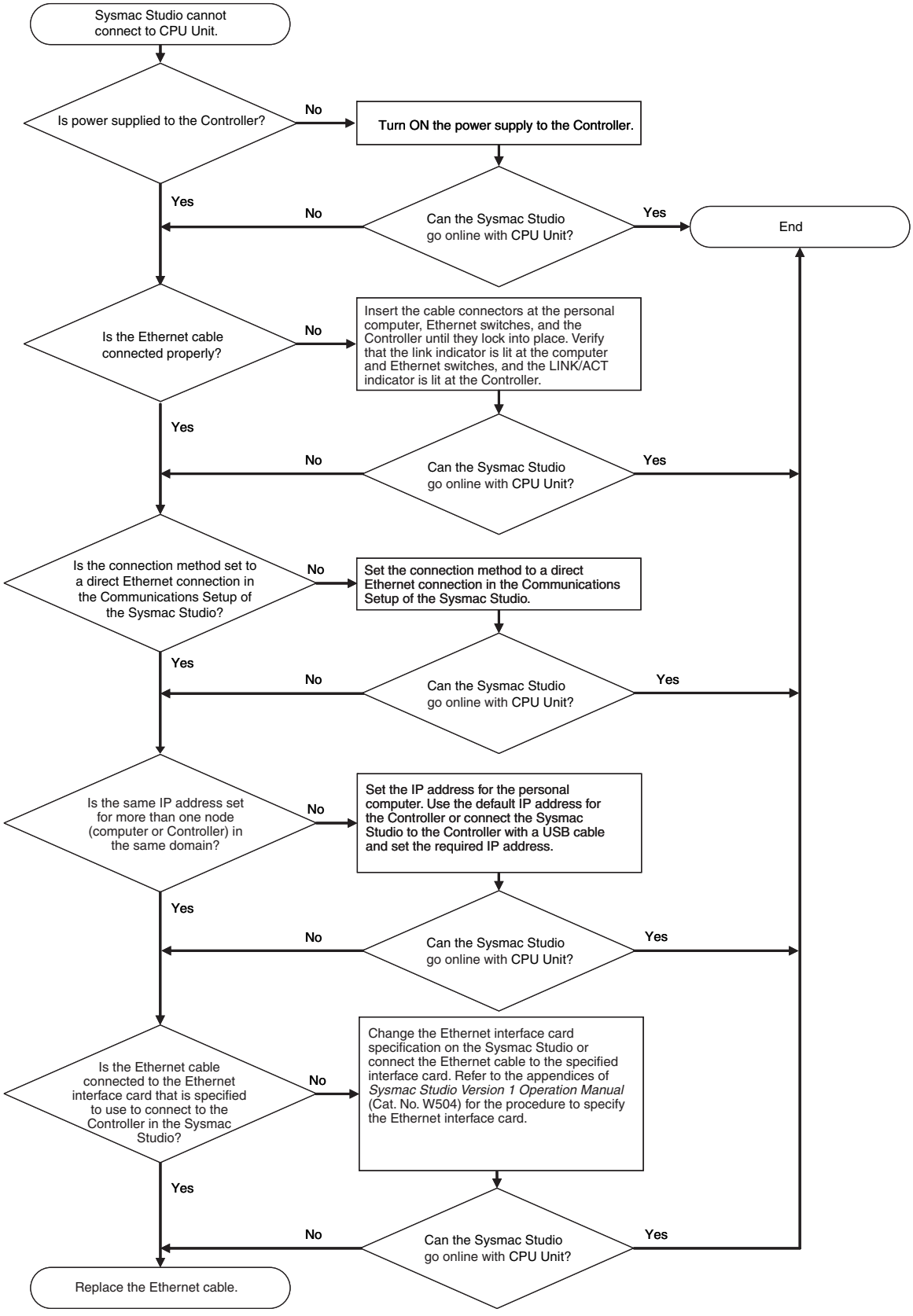
#### ● Direct Connection to Peripheral USB Port



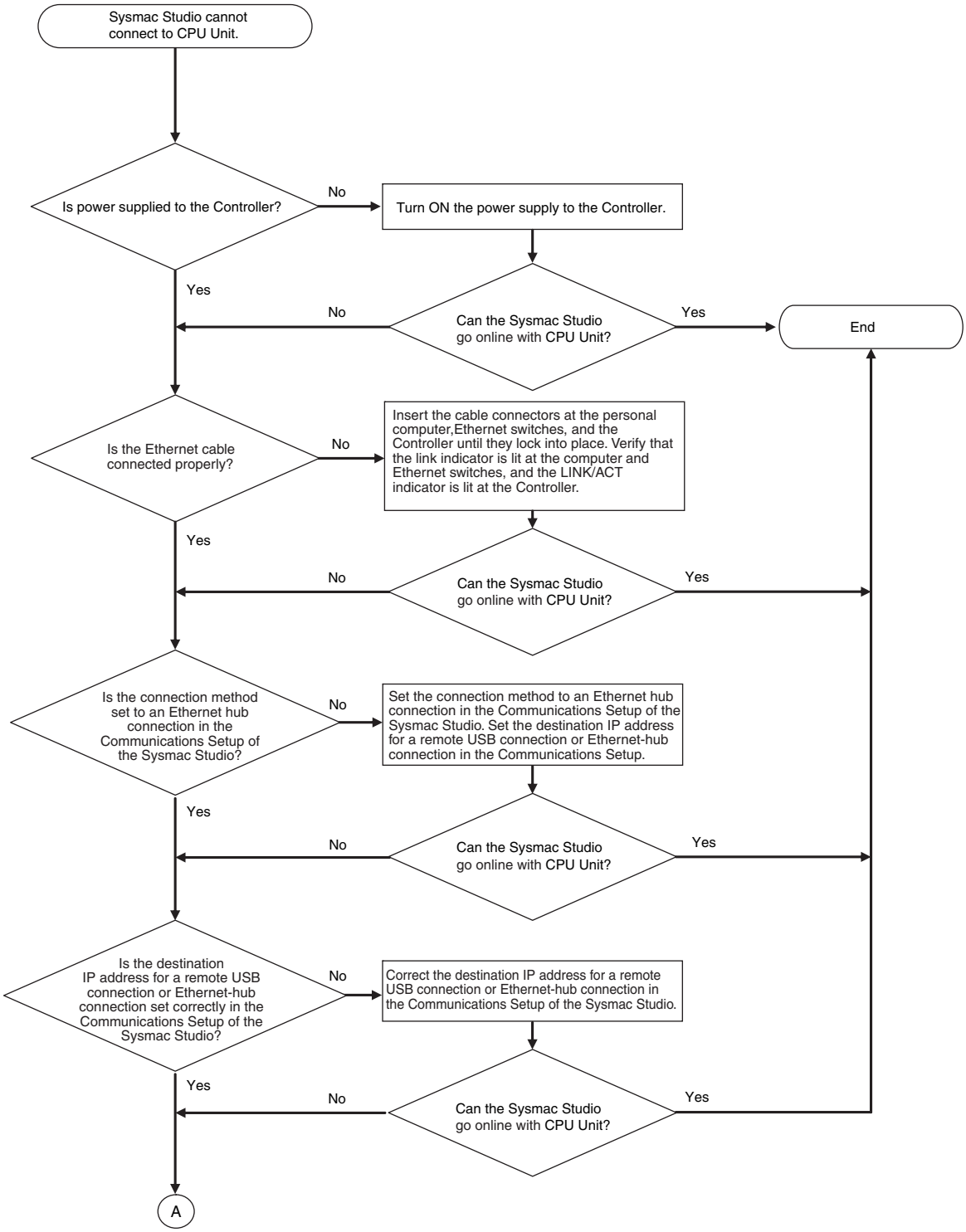
## ● Remote Connection to Peripheral USB Port

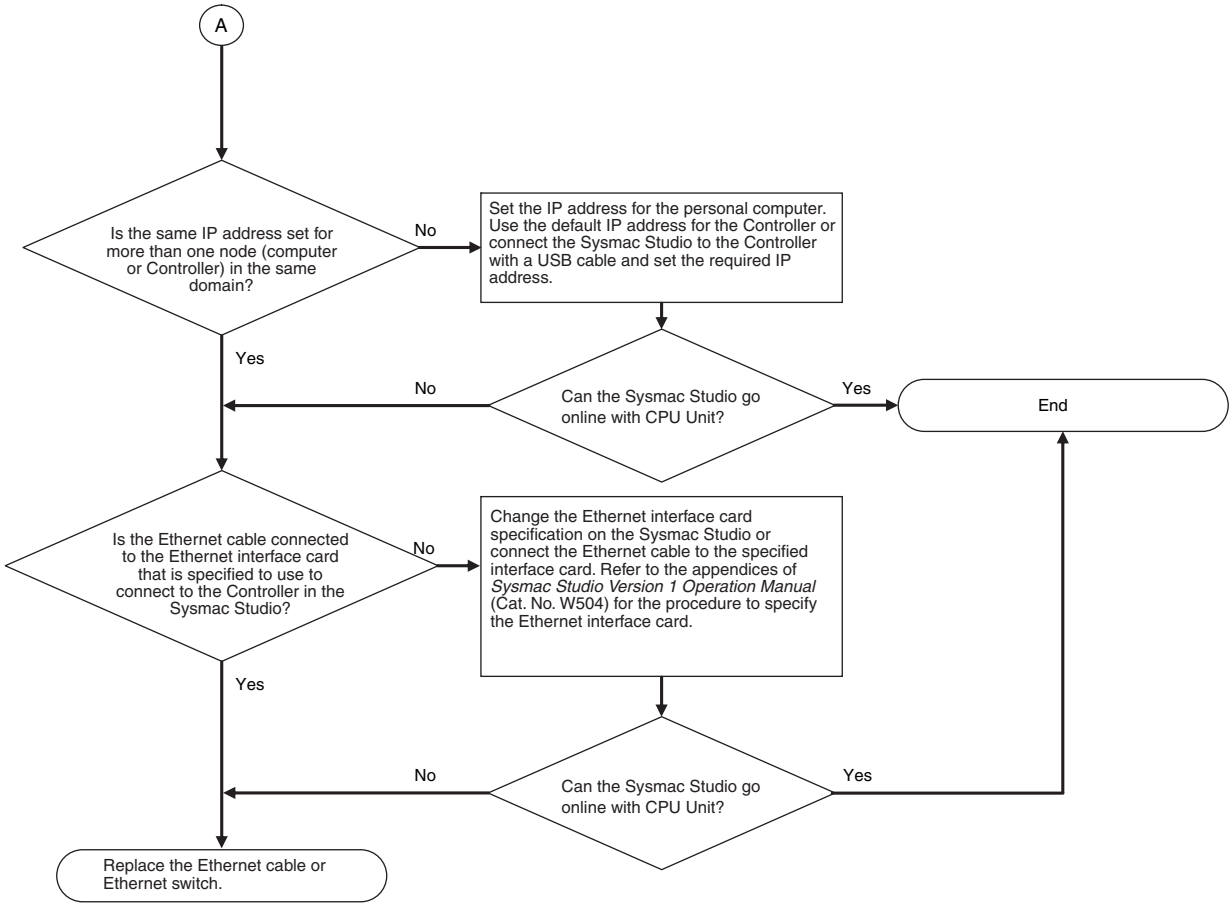


## Direct Connection with EtherNet/IP Port



## ● Ethernet Hub Connection



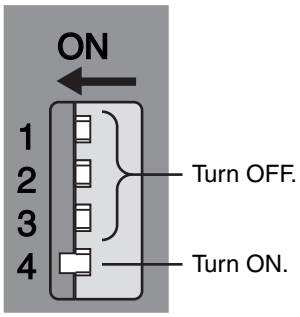



## Troubleshooting a High System Service Load

If a high system service load is the problem, you will be able to go online with the CPU Unit from the Sysmac Studio if you start in Safe Mode. Use the following procedure.

***1*** Set on the DIP switch on the CPU Unit as shown below and then cycle the power supply to the Controller.

The CPU Unit will start in Safe Mode.




***2*** Go online with the CPU Unit from the Sysmac Studio and perform the required operation.

Ensure that there is sufficient system service time to enable the Sysmac Studio to go online with the CPU Unit. To do so, either increase the period of the primary periodic task or decrease the sizes of the programs in the primary periodic task. Refer to *NJ-series CPU Unit Software User's Manual* (Cat. No. W501) for information on setting the primary periodic task.

***3*** Turn OFF all DIP switch pins and then cycle the power supply to the Controller to restore normal CPU Unit operation.

## Safe Mode Operation

If the Controller is started when the CPU Unit is in Safe Mode, the CPU Unit will start in PROGRAM mode even if the startup mode is set to RUN mode. This increases the ratio of system service processing that is performed by the CPU Unit, which makes it easier for the Sysmac Studio to go online with the CPU Unit. You can also use Safe Mode when you do not want to execute the user program. The CPU Unit will generate an observation level Controller event and record a Safe Mode event in the event log.

**Additional Information**

Operation in Safe Mode depends on the unit version of the CPU Unit.

| Item | Unit version of CPU Unit | |
|---|---|---|
| | 1.02 or lower | 1.03 or later |
| Operating mode | The CPU Unit operates according to the setting of the startup mode. | The CPU Unit ignores the setting of the startup mode and operates in PROGRAM mode. |
| Changing the operating mode | Not possible. | Possible. |
| Controller event level | Major fault level | Observation level |

# 3

# Error Tables



This section lists all of the errors (events) that can occur on NJ-series Controllers.

# 3-1 Errors by Source

This section provides tables of errors (events) by source. Within each source, errors are given by functional classifications. Events that are not errors are also given in the tables.

## 3-1-1 Interpreting Error Descriptions

The contents of the error tables are described below.

| Item | Description |
|---|---|
| Event code | The event code of the error in the NJ-series Controller is given. The codes are given in eight hexadecimal digits. |
| Event name | The name of the error is given |
| Meaning | A short description of the error is given. |
| Assumed cause | The assumed cause of the error is given |
| Level | The level of influence on control is given. The abbreviations have the following meanings.<br>Maj: Major fault level<br>Prt: Partial fault level<br>Min: Minor fault level<br>Obs: Observation<br>Info: Information<br>The symbols have the following meanings.<br>S: Event levels that are defined by the system.<br>U: Event levels that can be changed by the user. (See note.) |
| Reference | The name and catalog number of the manual that provides details on the event are given. |

**Note** This symbol appears only for events for which the user can change the event level.

## 3-1-2 Errors in the PLC Function Module

The section provides tables of the events that can occur in the PLC Function Module. They are divided into the following functional classifications.

- Self-diagnosis
- Unit configuration
- Tasks
- Controller operation
- FINS communications
- Instructions

**Additional Information**

- Instruction events are supported by CPU Units with unit version 1.02 or later.
- To create instruction events, you must select *Use* for *Event Log Settings – Instruction Error Output* on the Controller Setup. With the default setting, instructions events are not output. Sysmac Studio version 1.03 or higher is required to use the Event Log Settings.

## Errors for Self Diagnosis

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 00090000 hex | DIP Switch Setting Error | An error was detected in the DIP switch setting. | • There is an error in the DIP switch setting. | S | | | | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500) |
| 000D0000 hex | Internal NJ-series Bus Check Error | A fatal error was detected on the internal bus. | • Conductive material has gotten inside.<br>• Noise<br>• The CPU Unit has failed. | S | | | | | Same as above. |
| 000E0000 hex | Non-volatile Memory Life Exceeded | The specified number of deletions for non-volatile memory was exceeded. Or, the number of bad blocks in memory exceeded the specified value. | • Non-volatile memory life expired. | S | | | | | Same as above. |
| 10010000 hex | Non-volatile Memory Restored or Formatted | An error was detected in the non-volatile memory check and file system recovery or formatting was executed. Previous files may have been deleted. | • The Controller power supply was turned OFF while the BUSY indicator was lit.<br>• The power supply to the Controller was interrupted momentarily while the BUSY indicator was lit. | S | | | | | Same as above. |
| 10020000 hex | Non-volatile Memory Data Corrupted | A file that must be in non-volatile memory is missing or corrupted. | • The Controller power supply was turned OFF while the BUSY indicator was lit.<br>• The power supply to the Controller was interrupted momentarily while the BUSY indicator was lit.<br>• The CPU Unit has failed. | S | | | | | Same as above. |
| 10080000 hex | Main Memory Check Error | An error was detected in the memory check of the main memory in the CPU Unit. | • Conductive material has gotten inside.<br>• Noise<br>• There is a software error.<br>• The CPU Unit has failed. | S | | | | | Same as above. |
| 100C0000 hex (Ver. 1.03) | Event Level Setting Error | The settings in the event level setting file are not correct. | • The event level settings are not correct because the power supply to the Controller was interrupted or communications with the Sysmac Studio were disconnected during a download of the event level settings.<br>• The event level settings are not correct because the power supply to the Controller was interrupted during a Clear All Memory operation.<br>• Non-volatile memory failed. | S | | | | | Same as above. |
| 00070000 hex | Real-Time Clock Stopped | The oscillation of the real-time clock stopped. The real-time clock is set to an illegal time. | • The battery voltage is low.<br>• The battery connector has come loose.<br>• The Battery is missing. | | | S | U | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 00080000 hex | Real-Time Clock Failed | The real-time clock in the CPU Unit failed. | • The CPU Unit clock has failed. | | | S | | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500) |
| 000B0000 hex | Low Battery Voltage | The voltage of the Battery has dropped. | • The battery voltage is low.<br>• The battery connector has come loose.<br>• The Battery is missing. | | | S | U | | Same as above. |
| 000C0000 hex | CPU Unit Overheat | The temperature inside the CPU Unit exceeded the specified value. | • The ambient operating temperature is too high. | | | S | | | Same as above. |
| 10090000 hex | Battery-backup Memory Check Error | An error was detected in the memory check of the battery-backup memory in the CPU Unit. | • The battery voltage is low.<br>• The battery connector has come loose.<br>• The Battery is missing. | | | S | U | | Same as above. |
| 000F0000 hex | SD Memory Card Invalid Type | The current SD Memory Card is not supported. | • An SD Memory Card that is not supported was inserted into the CPU Unit. | | | | S | | Same as above. |
| 00100000 hex | SD Memory Card Life Exceeded | The specified number of deletions for the SD Memory Card was exceeded. Or, the number of bad blocks exceeded the specified value. | • The service life of the SD Memory Card was exceeded. | | | U | S | | Same as above. |
| 10030000 hex | SD Memory Card Invalid Format | The file format of the SD Memory Card is not FAT16 or FAT32. | • The file format of the SD Memory Card inserted in the CPU Unit is not FAT16 or FAT32. | | | | S | | Same as above. |
| 10040000 hex | SD Memory Card Restored or Formatted | An error was detected during the file system check and the file system was restored. Files may have been deleted. | • The Controller power supply was turned OFF while the SD BUSY indicator was lit.<br>• The power supply to the Controller was interrupted momentarily while the SD BUSY indicator was lit.<br>• The SD Memory Card was removed while the SD PWR indicator was lit.<br>• The SD Memory Card is damaged. | | | U | S | | Same as above. |
| 10060000 hex | SD Memory Card Data Corrupted | A file that must be in the SD Memory Card is missing or corrupted. | • The Controller power supply was turned OFF while the SD BUSY indicator was lit.<br>• The power supply to the Controller was interrupted momentarily while the SD BUSY indicator was lit.<br>• The SD Memory Card was removed while the SD PWR indicator was lit.<br>• The SD Memory Card is damaged. | | | U | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 10070000 hex | SD Memory Card Access Power OFF Error | The power supply to the Controller was interrupted during access to the SD Memory Card. | • The Controller power supply was turned OFF while the SD BUSY indicator was lit.<br>• The power supply to the Controller was interrupted momentarily while the SD BUSY indicator was lit. | | | | S | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500) |
| 10310000 hex (Ver. 1.02) | Incorrect SD Memory Card Removal | SD Memory Card removal processing failed. | • The SD Memory Card was removed while the SD PWR indicator was lit. | | | | S | | Same as above. |

## Errors Related to Unit Configuration

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04010000 hex | I/O Bus Check Error | An error occurred in a bus line transmission between the CPU Unit and the Units in the rack slots. Or, detection of all Special I/O Units and CPU Bus Units was not completed when the power supply to the Controller was turned ON. | • The I/O Connecting Cable is disconnected or wires inside it are broken.<br>• Conductive material has gotten inside.<br>• The connector contact is faulty due to foreign material in the connector.<br>• Noise<br>• A Unit has failed. | S | | | | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500) |
| 24010000 hex | Unsupported Unit Detected | An unsupported CJ-series Unit or Power Supply Unit is mounted. | • An unsupported CJ-series Unit or Power Supply Unit was detected. | S | | | | | Same as above. |
| 24020000 hex | Too Many I/O Points | The total number of I/O points in the connected CJ-series Units exceeds the maximum specified value of the CPU Unit. | • The total number of I/O points in the connected CJ-series Basic I/O Units exceeds 2,560. | S | | | | | Same as above. |
| 24030000 hex | End Cover Missing | The End Cover is not connected to right end of the CPU Rack or an Expansion Rack. | • The End Cover is not connected to right end of the CPU Rack or an Expansion Rack.<br>• The End Cover is not connected properly. | S | | | | | Same as above. |
| 24040000 hex | Incorrect Unit/Expansion Rack Connection | The number of Units or Expansion Racks exceeds the maximum value specified for the CPU Unit. Or, an Interrupt Input Unit was mounted to a unsupported slot or to an Expansion Rack. | • More than 10 Units are connected to one Rack.<br>• More than three Expansion Racks are connected.<br>• More than two Interrupt Input Units are mounted.<br>• An Interrupt Input Unit was mounted to a unsupported slot or to an Expansion Rack. | S | | | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 24050000 hex | Duplicate Unit Number | The same unit number is set for more than one Special I/O Unit or more than one CPU Bus Unit. | • The same unit number is set for more than one Special I/O Unit or more than one CPU Bus Unit.<br>• The same unit number is assigned to a Special I/O Unit that uses more than one unit number and another Special I/O Unit. | S | | | | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500) |
| 34010000 hex | I/O Setting Check Error | There is an inconsistency between a Unit model in the Unit Configuration in the CPU Unit and the Unit model that is mounted in the Controller. | • A Unit model or Special Unit unit number in the Unit Configuration in the CPU Unit is different from the Unit model or the Special Unit unit number of the Unit that is mounted in the Controller. | S | | | | | Same as above. |
| 64010000 hex | Impossible to Access Special Unit | An error occurred in data exchange between the CPU Unit and a Special Unit. | • The setting of the rotary switches or a DIP switch pin on a Special Unit is not correct.<br>• An error occurred in the Special Unit.<br>• The Unit connection is faulty.<br>• Noise<br>• A Unit has failed. | | | S | | | Same as above. |
| 102D0000 hex (Ver. 1.03) | CJ-series Unit Backup Failed | The backup operation for a CJ-series Unit ended in an error. | • An error occurred in the Unit Configuration.<br>• An error occurred for a Special Unit.<br>• A restart is in progress for the Special Unit.<br>• A Unit model or Special Unit unit number in the Unit Configuration in the CPU Unit is different from the Unit model or the Special Unit unit number of the Unit that is mounted in the Controller.<br>• The CPU Unit or CJ-series Unit has failed. | | | | S | | Same as above. |
| 102E0000 hex (Ver. 1.03) | CJ-series Unit Restore Operation Failed | The restore operation for a CJ-series Unit ended in an error. | • An error occurred in the Unit Configuration.<br>• An error occurred for a Special Unit.<br>• The Unit Configuration in the backup file does not agree with the physical Unit configuration.<br>• A restart is in progress for the Special Unit.<br>• The restore conditions that are required by the Special Unit are not met.<br>• The backup files are corrupted.<br>• The CPU Unit or CJ-series Unit has failed. | | | | S | | Same as above. |
| 30200000 hex (Ver. 1.02) | Unsupported Unit Setting | A setting in the Special Unit is not supported. | • A setting in the Special Unit is not supported by the CPU Unit. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 80010000 hex | Illegal Packet Discarded | An illegal packet was received during message communications. The illegal packet was discarded. | • Noise | | | | S | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500) |

## Errors Related to Tasks

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 60020000 hex | Task Execution Timeout | Task execution exceeded the timeout detection time. | • The timeout detection time setting is too short.<br>• The task period setting is too short.<br>• A user program is too large.<br>• The number of times that processing is repeated is larger than expected.<br>• Task Priority Error<br>• Frequent Event Task Execution | S | | | | | NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 60030000 hex | I/O Refreshing Timeout Error | Consecutive I/O refresh failures occurred during the primary periodic task or periodic task period. | • The task period setting is too short.<br>• Task Priority Error for Periodic Tasks and Event Tasks<br>• There are too many Units and slaves that perform I/O refresh in the task period.<br>• Frequent Event Task Execution | S | | | | | Same as above. |
| 60040000 hex | Insufficient System Service Time Error | The specified system service execution time could not be obtained. | • There was not sufficient time to execute the tasks and tag data link service.<br>• The system service execution interval is too short or the system service execution time ratio is too long in the System Service Monitoring Settings. | S | | | | | Same as above. |
| 60010000 hex | Task Period Exceeded | Task execution was not completed during the set task period for the primary periodic task or a periodic task. | • The task period setting is too short.<br>• A user program is too large.<br>• The number of times that processing is repeated is larger than expected.<br>• Task Priority Error for Periodic Tasks and Event Tasks<br>• Frequent Event Task Execution | | | S | | | Same as above. |
| 60050000 hex | Task Period Exceeded | Task execution was not completed during the set task period for the primary periodic task or fixed periodic task. | • The task period setting is too short.<br>• A user program is too large.<br>• The number of times that processing is repeated is larger than expected.<br>• Task Priority Error for Periodic Tasks and Event Tasks<br>• Frequent Event Task Execution | | | | S | | Same as above. |

## Errors Related to Controller Operation

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 10200000 hex | User Program/Controller Configurations and Setup Transfer Error | The user program or Controller Configurations and Setup were not transferred correctly. | • The user program or Controller Configurations and Setup are not correct because the power supply to the Controller was interrupted during a download of the user program or the Controller Configurations and Setup.<br>• The user program or Controller Configurations and Setup are not correct because the power supply to the Controller was interrupted during online editing.<br>• The user program or Controller Configurations and Setup are not correct because the power supply to the Controller was interrupted during a Clear All Memory operation.<br>• The user program or Controller Configurations and Setup are not correct because the power supply to the Controller was interrupted during a restore operation.<br>• Non-volatile memory failed. | S | | | | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500)<br>NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 10210000 hex | Illegal User Program Execution ID | The user program execution IDs set in the user program and in the CPU Unit do not match. | • The user program execution IDs set in the user program and in the CPU Unit do not match.<br>• A user program execution ID is set in the CPU Unit but not in the user program. | S | | | | | Same as above. |
| 10240000 hex | Illegal User Program | The user program is not correct. | • There are more than 8 nesting levels for functions or function blocks. | S | | | | | Same as above. |
| 10250000 hex | Illegal User Program/Controller Configurations and Setup | The upper limit of the usable memory was exceeded or the user program or Controller Configurations and Setup is corrupted. | • The upper limit of the data size was exceeded.<br>• The main memory capacity was exceeded.<br>• Non-volatile memory is deteriorating or has failed. | S | | | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 10270000 hex (Ver. 1.03) | Error in Starting Automatic Transfer | An error was detected in pre-execution checks for automatic transfer. | • An SD Memory Card is not inserted.<br>• The SD Memory Card type is not correct.<br>• The format of the SD Memory Card is not correct.<br>• There is no autoload folder on the SD Memory Card.<br>• There are no backup files in the autoload folder on the SD Memory Card.<br>• Either the backup files in the autoload folder on the SD Memory Card are corrupted or required data is not in the backup files on the SD Memory Card.<br>• The unit version of the CPU Unit to which to transfer the files is older than the unit version of the backup files on the SD Memory Card.<br>• The model of the CPU Unit to which to transfer the files is not the same as the model of the CPU Unit of the backup files on the SD Memory Card.<br>• Recovery was executed for the SD Memory Card.<br>• The CPU Unit is write-protected.<br>• The settings in the automatic transfer command file (AutoloadCommand.ini) are not correct.<br>• Reading the data for automatic transfer failed because the SD Memory Card is faulty or not formatted correctly.<br>• The SD Memory Card is damaged. | S | | | | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500)<br>NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 10280000 hex (Ver. 1.03) | Error in Executing Automatic Transfer | The automatic transfer ended in an error. | • It was not possible to read the data for automatic transfer.<br>• The SD Memory Card was removed during an automatic transfer.<br>• There are no backup files in the autoload folder on the SD Memory Card.<br>• The backup files in the autoload folder on the SD Memory Card are corrupted.<br>• The SD Memory Card is damaged. | S | | | | | Same as above. |
| 40160000 hex | Safe Mode | The Controller started in Safe Mode. | • The power supply was turned ON to the Controller when Safe Mode was set on the DIP switch on the CPU Unit. | S | | | | | Same as above. |
| 10230000 hex | Event Log Restoration Error | Restoring the event log failed. | • A low battery voltage prevented retention of memory during a power interruption. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 10260000 hex | Trace Setting Transfer Failure | The power supply was interrupted while transferring the trace settings. | • The power supply was interrupted while transferring the trace settings. | | | | S | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500)<br>NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 10290000 hex (Ver. 1.03) | Backup Failed to Start | An error was detected in pre-execution checks for a backup operation. | • An SD Memory Card is not inserted.<br>• The SD Memory Card type is not correct.<br>• The format of the SD Memory Card is not correct.<br>• The SD Memory Card is write protected.<br>• The *Prohibiting backing up data to the SD Memory Card* parameter is set to prohibit backing up data to an SD Memory Card.<br>• Another backup operation is in progress.<br>• Synchronization, online editing, or the Clear All Memory operation is in progress.<br>• The backup was canceled by the user.<br>• The online connection with the Sysmac Studio was disconnected.<br>• The SD Memory Card is damaged. | | | | S | | Same as above. |
| 102A0000 hex (Ver. 1.03) | Backup Failed | The backup operation ended in an error. | • The capacity of the SD Memory Card is insufficient.<br>• It was not possible to save the data that was specified for backup.<br>• The SD Memory Card was removed during a backup operation.<br>• Failed to back up Unit or slave.<br>• The backup was canceled by the user.<br>• Execution of the Save Cam Table instruction or changing the CPU Unit name is in progress.<br>• The online connection with the Sysmac Studio was disconnected.<br>• It was not possible to save the data that was specified for backup to the computer.<br>• The SD Memory Card is damaged. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 102B0000 hex (Ver. 1.03) | Restore Operation Failed to Start | An error was detected in pre-execution checks for a restore operation. | • An SD Memory Card is not inserted.<br>• The SD Memory Card type is not correct.<br>• The format of the SD Memory Card is not correct.<br>• There are no backup files on the SD Memory Card.<br>• Either the backup files on the SD Memory Card are corrupted or required data is not in the backup files on the SD Memory Card.<br>• The unit version of the CPU Unit to which to restore the files is older than the unit version of the backup files on the SD Memory Card.<br>• The model of the CPU Unit to which to restore the files is not the same as the model of the CPU Unit of the backup files on the SD Memory Card.<br>• Recovery was executed for the SD Memory Card.<br>• The CPU Unit is write-protected.<br>• The settings in the restore command file (RestoreCommand.ini) are not correct.<br>• A backup operation is in progress.<br>• Synchronization, online editing, or the Clear All Memory operation is in progress.<br>• The online connection with the Sysmac Studio was disconnected.<br>• Reading the data for restoration failed because the SD Memory Card is faulty or not formatted correctly.<br>• The SD Memory Card is damaged. | | | | S | | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500)<br>NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 102C0000 hex (Ver. 1.03) | Restore Operation Failed | The restore operation ended in an error. | • It was not possible to read the data to restore.<br>• The SD Memory Card was removed during a restore operation.<br>• Failed to restore Unit or slave.<br>• The SD Memory Card is damaged. | | | | S | | Same as above. |
| 40170000 hex (Ver. 1.03) | Safe Mode | The Controller started in Safe Mode. | • The power supply was turned ON to the Controller when Safe Mode was set on the DIP switch on the CPU Unit. | | | | S | | Same as above. |
| 90010000 hex | Clock Changed | The clock time was changed. | • The clock time was changed. | | | | | S | Same as above. |
| 90020000 hex | Time Zone Changed | The time zone was changed. | • The time zone was changed. | | | | | S | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 90080000 hex | Variable Changed to TRUE with Forced Refreshing | Changing a variable to TRUE with forced refreshing was specified. | • Changing a variable to TRUE with forced refreshing was specified by the user. | | | | | S | NJ-series CPU Unit Hardware User's Manual (Cat. No. W500)<br>NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 90090000 hex | Variable Changed to FALSE with Forced Refreshing | Changing a variable to FALSE with forced refreshing was specified. | • Changing a variable to FALSE with forced refreshing was specified by the user. | | | | | S | Same as above. |
| 900A0000 hex | All Forced Refreshing Cleared | Clearing all forced refreshing values was specified. | • Clearing all forced refreshing values was specified by the user. | | | | | S | Same as above. |
| 900B0000 hex | Memory All Cleared | All of memory was cleared. | • A user with Administrator rights cleared all of the memory. | | | | | S | Same as above. |
| 900C0000 hex | Event Log Cleared | The event log was cleared. | • The event log was cleared by the user. | | | | | S | Same as above. |
| 900F0000 hex (Ver. 1.03) | Automatic Transfer Completed | The automatic transfer was completed. | • The automatic transfer was completed. | | | | | S | Same as above. |
| 90110000 hex | Power Turned ON | The power supply was turned ON. | • The power supply was turned ON. | | | | | S | Same as above. |
| 90120000 hex | Power Interrupted | The power supply was interrupted. | • The power supply was interrupted. | | | | | S | Same as above. |
| 90130000 hex | Operation Started | Operation was started. | • A command to start operation was received. | | | | | S | Same as above. |
| 90140000 hex | Operation Stopped | Operation was stopped. | • A command to stop operation was received. | | | | | S | Same as above. |
| 90150000 hex | Reset Executed | A reset was executed. | • A reset command was received. | | | | | S | Same as above. |
| 90160000 hex | User Program Execution ID Write | The user program execution ID was set or changed in the CPU Unit. | • A user with Administrator rights changed the user program execution ID that is set in the CPU Unit. | | | | | S | Same as above. |
| 90180000 hex | All Controller Errors Cleared | All current errors were cleared. | • The user cleared all current errors. | | | | | S | Same as above. |
| 90190000 hex | Forced Refreshing Cleared | Clearing a forced refreshing value was specified. | • Clearing a forced refreshing value was specified by the user. | | | | | S | Same as above. |
| 901A0000 hex (Ver. 1.03) | Backup Started | A backup operation was started. | • A backup operation was started. | | | | | S | Same as above. |
| 901B0000 hex (Ver. 1.03) | Backup Completed | The backup operation ended normally. | • The backup operation ended normally. | | | | | S | Same as above. |
| 901C0000 hex (Ver. 1.03) | Restore Operation Started | A restore operation started. | • A restore operation started. | | | | | S | Same as above. |
| 901D0000 hex (Ver. 1.03) | Restore Operation Completed | The restore operation ended normally. | • The restore operation ended normally. | | | | | S | Same as above. |

## Errors Related to FINS Communications

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 14010000 hex | CPU Bus Unit Setup Area Error | An error was detected in the memory check of the Setup Area for CPU Bus Units. | • The power supply to the Controller was interrupted or communications with the Sysmac Studio were disconnected while downloading the CPU Bus Unit Settings. | | | S | | | NJ-series CPU Unit Software User's Manual (Cat. No. W501) |
| 34100000 hex | IP Address Table Setting Error | The IP address table settings are incorrect. | • The IP address conversion method is set to the combined method or the IP address table method, but the IP address table settings are incorrect. | | | S | | | Same as above. |
| 34130000 hex | FINS/TCP Connection Table Setting Error | The FINS/TCP connection table is incorrect. | • The power supply to the Controller was interrupted or communications with the Sysmac Studio were disconnected while downloading the FINS/TCP connection table. | | | S | | | Same as above. |
| 34110000 hex | Unknown Destination Node | The send destination node is not known. | • The send destination node was not found when a FINS message was sent. | | | | S | | Same as above. |
| 80100000 hex | Packet Discarded | One or more packets were discarded. | • A FINS response addressed to the CPU Unit was received.<br>• The send designation Unit for the FINS response does not exist. | | | | S | | Same as above. |
| 80110000 hex | Packet Discarded | One or more packets were discarded. | • An attempt was made to send a FINS response with over 2002 bytes.<br>• An attempt was made to route a FINS response with over 2002 bytes.<br>• Packet was received with a No Such Unit routing error.<br>• Packet was received with a Routing Error routing error.<br>• Packet was received with a No Routing Table routing error.<br>• Packet was received with an Event Area Size Over Limit routing error.<br>• There is insufficient space in the internal buffer.<br>• FINS message routing failed because the communications load is too high. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 80120000 hex | Packet Discarded | One or more packets were discarded. | • A FINS response was received with the destination network address (DNA) set to the local network and the destination node address (DA1) not set to the local node.<br>• A FINS command or response was received with a hub network address specification for which the destination network address (DNA) was greater than or equal to 80 hex.<br>• There is insufficient space in the internal buffer.<br>• A FINS command that does not have the minimum command length was received.<br>• A FINS command that exceeded the maximum command length was received.<br>• Sending packets failed.<br>• FINS message routing failed because the communications load is too high. Or a command that was addressed to the built-in EtherNet/IP port was received with the source network address (SNA) set to 0.<br>• A FINS response that was addressed to the built-in EtherNet/IP port was received.<br>• A FINS response or a command for which a response is not required was received when the routing tables were not registered.<br>• A FINS response or a command for which a response is not required was received when there was an error in the routing tables.<br>• A FINS response or a command for which a response is not required was received that exceeded the number of relay points.<br>• Transmission is not possible because the destination address is not set in the routing tables.<br>• Routing is not possible because the FINS node address setting in the Built-in EtherNet/IP Port Settings is set to 0 or 255. | | | | S | | NJ-series CPU Unit Software User's Manual (Cat. No. W501) |

## Instructions

A version in parentheses in the *Event code* column is the unit version of the CPU Unit when the event code was added.

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54010400 hex | Input Value Out of Range | An input parameter for an instruction exceeded the valid range for an input variable. Or, division by an integer of 0 occurred in division or remainder calculations. | • An input parameter for an instruction exceeded the valid range for an input variable. Or, division by an integer of 0 occurred in division or remainder calculations. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54010401 hex | Input Mismatch | The relationship for the instruction input parameters did not meet required conditions. Or, a numeric value during or after instruction execution did not meet conditions. | • The relationship for an input parameter did not meet required conditions.<br>• A value when processing an instruction or in the result does not meet the conditions. | | | | S | | Same as above. |
| 54010402 hex | Floating-point Error | Non-numeric data was input for a floating-point number input parameter to an instruction. | • Non-numeric data was input for a floating-point number input parameter to an instruction. | | | | S | | Same as above. |
| 54010403 hex | BCD Error | A value that was not BCD was input for a BCD input parameter to an instruction. | • A hexadecimal digit of A, B, C, D, E, or F was input for a BCD input parameter to an instruction. | | | | S | | Same as above. |
| 54010404 hex | Signed BCD Error | An illegal value was input for the most significant digit for a signed BCD input parameter to an instruction. | • An illegal value was input for the most significant digit for a signed BCD input parameter to an instruction.<br>  • The most-significant digit was 2 to F when *_BCD0* was specified as the BCD format.<br>  • The most-significant digit was A, B, C, D, or E when *_BCD2* was specified as the BCD format.<br>  • The most-significant digit was B, C, D, or E when *_BCD3* was specified as the BCD format. | | | | S | | Same as above. |
| 54010405 hex | Illegal Bit Position Specified | The bit position specified for an instruction was illegal. | • The bit position specified for an instruction exceeds the data range. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54010406 hex | Illegal Data Position Specified | A memory address or data size that was specified for the instruction is not suitable. | • A memory address that was specified for an instruction was outside the valid range. The data size that was specified for an instruction exceeded the valid range. For example, the data type of a variable and the data size may not agree. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54010407 hex | Data Range Exceeded | The results of instruction processing exceeded the data area range of the output parameter. | • The results of instruction processing, such as the number of array elements, exceeded the data area range of the output parameter. | | | | S | | Same as above. |
| 54010409 hex | No Errors to Clear | An instruction to clear a Controller error was executed when there was no error in the Controller. | • An instruction to clear a Controller error was executed when there was no error in the Controller. | | | | S | | Same as above. |
| 5401040B hex | No User Errors to Clear | An instruction to clear user-defined errors was executed when there was no user-defined error. | • An instruction to clear user-defined errors was executed when there was no user-defined error. | | | | S | | Same as above. |
| 5401040C hex | Limit Exceeded for User-defined Errors | An attempt was made to use the Create User-defined Error instruction to create more than the maximum number of user-defined errors. | • An attempt was made to use the Create User-defined Error instruction to create more than the maximum number of user-defined errors. | | | | S | | Same as above. |
| 5401040D hex | Illegal Unit Specified | The Unit specified for an instruction does not exist. | • A Unit that does not exist in the Unit configuration information was specified.<br>• A Unit that is in the Unit configuration information was specified, but the Units does not actually exist in the Controller. | | | | S | | Same as above. |
| 5401040F hex | Unit Restart Failed | Restarting a Special I/O Unit or CPU Bus Unit failed. | • The Special I/O Unit or CPU Bus Unit is processing data. | | | | S | | Same as above. |
| 54010410 hex | Text String Format Error | The text string input to an instruction is not correct. | • The text string that is input to the instruction for conversion to a number does not represent a number or it does not represent a positive number.<br>• The input text string does not end in NULL. | | | | S | | Same as above. |
| 54010411 hex | Illegal Program Specified | The program specified for an instruction does not exist. | • The program specified by the function does not exist (e.g., it was deleted). | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54010413 hex | Undefined CJ-series Memory Address | The required specification is missing for a variable for which CJ-series Unit memory must be specified. | • The required AT specification is missing for a variable for which CJ-series Unit memory must be specified. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54010414 hex | Stack Underflow | There is no data in a stack. | • An attempt was made to read data from a stack that contains no data. | | | | S | | Same as above. |
| 54010416 hex | Illegal Number of Array Elements or Dimensions | The valid range was exceeded for the number of array elements or dimensions in an array I/O parameter for an instruction. | • The valid range was exceeded for the number of array elements or dimensions in an array I/O parameter for an instruction. | | | | S | | Same as above. |
| 54010417 hex | Specified Task Does Not Exist | The task specified for the instruction does not exist. | • The specified task does not exist. | | | | S | | Same as above. |
| 54010418 hex | Unallowed Task Specification | An unallowed task was specified for an instruction. | • The local task, the primary periodic task, or a periodic task was specified. | | | | S | | Same as above. |
| 54010419 hex | Incorrect Data Type | A data type that cannot be used for an instruction is specified for an input or in-out variable. | • A data type that cannot be used for an instruction is specified for an input or in-out variable. | | | | S | | Same as above. |
| 5401041A hex | Multi-execution of Instructions | Multi-execution was specified for an instruction that does not support it. | • Execution of an instruction that does not support multi-execution of instructions was specified more than once. | | | | S | | Same as above. |
| 5401041B hex (Ver. 1.02) | Data Capacity Exceeded | Processing was not possible because the data that was passed to the instruction was too large. | • Data that exceeded the size that can be processed was passed to an instruction. | | | | S | | Same as above. |
| 5401041C hex (Ver. 1.04) | Different Data Sizes | The size of the data specified for instruction input or in-out data is different from the size of the target parameter. | • Data of a size that is different from the size of the target parameter was specified for the input or in-out data of an instruction. | | | | S | | Same as above. |
| 54010800 hex | FINS Error | An error occurred when a FINS command was sent or received. | • An error occurred when a FINS command was sent or received. | | | | S | | Same as above. |
| 54010801 hex | FINS Port Already in Use | The FINS port is being used. | • The FINS port is being used. | | | | S | | Same as above. |
| 54010C00 hex | Illegal Serial Communications Mode | The Serial Communications Unit is not in the serial communications mode required to execute an instruction. | • The serial communications port for the Serial Communications Unit is not set to the mode expected by the instruction. | | | | S | | Same as above. |
| 54010C02 hex | Port Setup Already Busy | A Change Port Setup instruction was executed during execution of another Change Port Setup instruction. | • A Change Port Setup instruction was executed during execution of another Change Port Setup instruction. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54011400 hex | SD Memory Card Access Failure | SD Memory Card access failed when an instruction was executed. | • An SD Memory Card is either not inserted or is not inserted properly.<br>• The SD Memory Card is broken.<br>• The SD Memory Card slot is broken. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54011401 hex | SD Memory Card Write-protected | An attempt was made to write to a write-protected SD Memory Card when an instruction was executed. | • An attempt was made to write to a write-protected SD Memory Card. | | | | S | | Same as above. |
| 54011402 hex | SD Memory Card Insufficient Capacity | The capacity of the SD Memory Card was insufficient when writing to the SD Memory Card for an instruction. | • The SD Memory Card has run out of free space. | | | | S | | Same as above. |
| 54011403 hex | File Does Not Exist | The file specified for an instruction does not exist. | • The specified file does not exist. | | | | S | | Same as above. |
| 54011404 hex | Too Many Files/ Directories | The maximum number of files/directories was exceeded when creating a file/directory for an instruction. | • The number of files or directories exceeded the maximum number. | | | | S | | Same as above. |
| 54011405 hex | File Already in Use | A file specified for an instruction cannot be accessed because it is already being used. | • An instruction attempted to read or write a file already being accessed by another instruction. | | | | S | | Same as above. |
| 54011406 hex | Open Mode Mismatch | A file operation for an instruction was inconsistent with the open mode of the file. | • The file open mode specified by the Open File instruction does not match the file operation attempted by a subsequent SD Memory Card instruction. | | | | S | | Same as above. |
| 54011407 hex | Offset Out of Range | Access to the address is not possible for the offset specified for an instruction. | • An attempt was made to access beyond the size of the file. | | | | S | | Same as above. |
| 54011408 hex | Directory Not Empty | A directory was not empty when the Delete Directory instruction was executed or when an attempt was made to change the directory name. | • A directory was not empty when the Delete Directory instruction was executed.<br>• A directory contained another directory when an attempt was made to change the directory name. | | | | S | | Same as above. |
| 54011409 hex | That File Name Already Exists | An instruction could not be executed because the file name specified for the instruction already exists. | • A file already exists with the same name as the name specified for the instruction to create. | | | | S | | Same as above. |
| 5401140A hex | Write Access Denied | An attempt was made to write to a write-protected file or directory when an instruction was executed. | • The file or directory specified for the instruction to write is write-protected. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 5401140B hex | Too Many Files Open | The maximum number of open files was exceeded when opening a file for an instruction. | • The maximum number of open files was exceeded when opening a file for an instruction. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401140C hex | Directory Does Not Exist | The directory specified for an instruction does not exist. | • The directory specified for an instruction does not exist. | | | | S | | Same as above. |
| 5401140D hex | File or Directory Name Is Too Long | The file name or directory name that was specified for an instruction is too long. | • The file name or directory name that was specified for the instruction to create is too long. | | | | S | | Same as above. |
| 5401140E hex | SD Memory Card Access Failed | SD Memory Card access failed. | • The SD Memory Card is broken.<br>• The SD Memory Card slot is broken. | | | | S | | Same as above. |
| 54011800 hex | EtherCAT Communications Error | Accessing the EtherCAT network failed when an instruction was executed. | • The EtherCAT network is not in a usable status. | | | | S | | Same as above. |
| 54011801 hex | EtherCAT Slave Does Not Respond | Accessing the target slave failed when an instruction was executed. | • The target slave does not exist.<br>• The target slave is not in an operating condition. | | | | S | | Same as above. |
| 54011802 hex | EtherCAT Timeout | A timeout occurred while trying to access an EtherCAT slave when an instruction was executed. | • Communications with the target slave timed out. | | | | S | | Same as above. |
| 54011803 hex | Reception Buffer Overflow | The receive data from an EtherCAT slave overflowed the receive buffer when an instruction was executed. | • The receive data from the slave overflowed the receive buffer. | | | | S | | Same as above. |
| 54011804 hex | SDO Abort Error | An SDO abort error was received from an EtherCAT slave when an instruction was executed. | • Depends on the specifications of the slave. | | | | S | | Same as above. |
| 54011805 hex | Saving Packet Monitor File | An instruction for packet monitoring was executed while saving an EtherCAT packet monitor file. | • An instruction for packet monitoring was executed while saving an EtherCAT packet monitor file. | | | | S | | Same as above. |
| 54011806 hex | Packet Monitoring Function Not Started | A Stop EtherCAT Packet Monitor instruction was executed when EtherCAT packet monitoring was stopped. | • A Stop EtherCAT Packet Monitor instruction was executed when EtherCAT packet monitoring was stopped. | | | | S | | Same as above. |
| 54011807 hex | Packet Monitoring Function in Operation | A Start EtherCAT Packet Monitor instruction was executed when EtherCAT packet monitoring was already being executed. | • The Start EtherCAT Packet Monitor instruction was executed again while the EtherCAT packet monitoring function was already in operation. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54011808 hex | Communications Resource Overflow | More than 32 EtherCAT communications instructions were executed at the same time. | • More than 32 EtherCAT communications instructions were executed at the same time. The EtherCAT communications instructions are listed below.<br>• EC_CoESDOWrite instruction<br>• EC_CoESDORead instruction<br>• EC_ConnectSlave instruction<br>• EC_DisconnectSlave instruction<br>• EC_StartMon instruction<br>• EC_SaveMon instruction<br>• EC_StopMon instruction<br>• EC_CopyMon instruction | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54011809 hex (Ver. 1.01) | Packet Monitoring Function Not Supported | Packets cannot be monitored. | • An instruction for packet monitoring was executed for a CPU Unit that does not support packet monitoring. | | | | S | | Same as above. |
| 54011C00 hex | Explicit Message Error | An error response code was returned for an explicit message that was sent with a CIP communications instruction. | • Depends on the nature of the error. | | | | S | | Same as above. |
| 54011C01 hex | Incorrect Route Path | The format of the route path that is specified for a CIP communications instruction is not correct. | • The format of the route path that is specified for a CIP communications instruction is not correct. | | | | S | | Same as above. |
| 54011C02 hex | CIP Handle Out of Range | The handle that is specified for the CIP communications instruction is not correct. | • The handle that is specified for the CIP communications instruction is not correct. | | | | S | | Same as above. |
| 54011C03 hex | CIP Communications Resource Overflow | The maximum resources that you can use for CIP communications instructions at the same time was exceeded. | • More than 32 CIP communications instructions were executed at the same time.<br>• An attempt was made to use more than 32 handles at the same time. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 54011C04 hex | CIP Timeout | A CIP timeout occurred during execution of a CIP communications instruction. | • A device does not exist for the specified IP address.<br>• The CIP connection for the specified handle timed out and was closed.<br>• Power to the remote device is OFF.<br>• Communications are stopped at the remote device.<br>• The Ethernet cable connector for EtherNet/IP is disconnected.<br>• The Ethernet cable for EtherNet/IP is disconnected.<br>• Noise | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54012000 hex | Local IP Address Setting Error | An instruction was executed when there was a setting error in the local IP address. | • An instruction was executed when there was a setting error in the local IP address. | | | | S | | Same as above. |
| 54012001 hex | TCP/UDP Port Already in Use | The UDP or TCP port was already in use when the instruction was executed. | • The UDP or TCP port is already in use. | | | | S | | Same as above. |
| 54012002 hex | Address Resolution Failed | Address resolution failed for a remote node with the domain name that was specified in the instruction. | • The domain name specified for the instruction is not correct.<br>• The hosts and DNS settings in the Controller are incorrect.<br>• The DNS server settings are incorrect. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 54012003 hex | Status Error | The status was not suitable for execution of the instruction. | • SktUDPRcv Instruction<br>  • The socket is receiving data.<br>  • The socket is not open.<br>• SktUDPSend Instruction<br>  • The socket is sending data.<br>  • The socket is not open.<br>• SktTCPAccept Instruction<br>The specified TCP port is in one of the following states.<br>  • The port is being opened.<br>  • The port is being closed.<br>  • A connection is already established for this instruction for the same IP address and TCP port.<br>• SktTCPConnect Instruction<br>  • The TCP port that is specified with the *SrcTcpPort* input variable is already open.<br>  • The remote node that is specified with *DstAdr* input variable does not exist.<br>  • The remote node that is specified with *DstAdr* and *DstTcpPort* input variables is not waiting for a connection.<br>• SktTCPRcv Instruction<br>  • The specified socket is receiving data.<br>  • The specified socket is not connected.<br>• SktTCPSend Instruction<br>  • The specified socket is sending data.<br>  • The specified socket is not connected. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54012004 hex | Local IP Address Not Set | The local IP address was not set when a socket service instruction was executed. | • There is a BOOTP server setting error.<br>• The BOOTP server does not exist.<br>• The local IP address is not set because operation just started. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 5401 2006 hex | Socket Timeout | A timeout occurred for a socket service instruction. | • SktTCPAccept instruction: There was no request for a connection from the remote node during the user-set timeout time.<br>• SktTCPRcv or SktUDPRcv instruction: Data was not received from the remote node during the user-set timeout time. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401 2007 hex | Socket Handle Out of Range | The handle that is specified for the socket service instruction is not correct. | • The handle that is specified for the socket service instruction is not correct. | | | | S | | Same as above. |
| 5401 2008 hex | Socket Communications Resource Overflow | The maximum resources that you can use for socket service instructions at the same time was exceeded. | • More than 32 socket service instructions were executed at the same time.<br>• More than 30 socket handles were used at the same time. (For CPU Units with unit version 1.02 or earlier, more than 16 socket handles were used at the same time.) | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 54012400 hex (Ver. 1.02) | No Execution Right | An instruction to change the settings of an EtherNet/IP port was executed when execution was not possible. | • An instruction to change the settings of the built-in EtherNet/IP port or a CJ-series EtherNet/IP Unit was executed when restart processing was in progress for the built-in EtherNet/IP port.<br>• An instruction to change the settings of a CJ-series EtherNet/IP Unit was executed when restart processing was in progress for the Unit.<br>• An instruction to change the settings of the built-in EtherNet/IP port or a CJ-series EtherNet/IP Unit was executed when changing settings was in progress for an instruction or CIP message for the built-in EtherNet/IP port.<br>• An instruction to change the settings of a CJ-series EtherNet/IP Unit was executed when changing settings was in progress for an instruction or CIP message for the Unit.<br>• The unit number that was specified for the instruction is not for a built-in EtherNet/IP port or a CJ-series EtherNet/IP Unit. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54012401 hex (Ver. 1.02) | Settings Update Failed | It was not possible to update the settings of the CJ-series EtherNet/IP Unit that were changed. | • Restart processing for a Unit or built-in EtherNet/IP port was started during execution of an instruction to change the settings of a CJ-series EtherNet/IP Unit. | | | | S | | Same as above. |
| 54012402 hex (Ver. 1.02) | Too Many Simultaneous Instruction Executions | Too many instructions to change the communications setup of the Controller were executed at the same time. | • Two or more instructions to change the communications setup of the Controller were executed at the same time. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54013461 hex | Process Data Object Setting Missing | The PDO mapping is not correct. | • The PDOs that are required for the motion control instruction are not mapped.<br>• A motion control instruction that specifies phase Z (_mcEncoderMark) as the trigger conditions was executed for an axis that is mapped to an OMRON GX-EC02□□ EtherCAT Encoder slave. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015420 hex | Electronic Gear Ratio Numerator Setting Out of Range | The parameter specified for the *RatioNumerator* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015421 hex | Electronic Gear Ratio Denominator Setting Out of Range | The parameter specified for the *RatioDenominator* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015422 hex | Target Velocity Setting Out of Range | The parameter specified for the *Velocity* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015423 hex | Acceleration Setting Out of Range | The parameter specified for the *Acceleration* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015424 hex | Deceleration Setting Out of Range | The parameter specified for the *Deceleration* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015425 hex | Jerk Setting Out of Range | The parameter specified for the *Jerk* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015427 hex | Torque Ramp Setting Out of Range | The parameter specified for the *TorqueRamp* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015428 hex | Master Coefficient Scaling Out of Range | The parameter specified for the *MasterScaling* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015429 hex | Slave Coefficient Scaling Out of Range | The parameter specified for the *SlaveScaling* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401542A hex | Feeding Velocity Setting Out of Range | The parameter specified for the *FeedVelocity* input variable to a motion control instruction is out of range. | • The Feed Velocity (input variable *FeedVelocity*) is still at the default (0). | | | | S | | Same as above. |
| 5401542B hex | Buffer Mode Selection Out of Range | The parameter specified for the *BufferMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 5401 542C hex | Coordinate System Selection Out of Range | The parameter specified for the *CoordSystem* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401 542D hex | Circular Interpolation Mode Selection Out of Range | The parameter specified for the *CircMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 542E hex | Direction Selection Out of Range | The parameter specified for the *Direction* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 542F hex | Path Selection Out of Range | The parameter specified for the *PathChoice* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 5430 hex | Position Type Selection Out of Range | The parameter specified for the *ReferenceType* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 5431 hex | Travel Mode Selection Out of Range | The parameter specified for the *MoveMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 5432 hex | Transition Mode Selection Out of Range | The parameter specified for the *TransitionMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• *_mcAborting* or *_mcBuffered* was specified for *BufferMode* and *_mcTMCornerSuperimpose* was specified for *TransitionMode.* | | | | S | | Same as above. |
| 5401 5433 hex | Continue Method Selection Out of Range | The value of the reserved input variable *Continuous* to a motion control instruction changed. | • The value of the reserved input variable *Continuous* changed. | | | | S | | Same as above. |
| 5401 5434 hex | Combine Mode Selection Out of Range | The parameter specified for the *CombineMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 5435 hex | Synchronization Start Condition Selection Out of Range | The parameter specified for the *LinkOption* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401 5436 hex | Master and Slave Defined as Same Axis | The same axis is specified for the *Master* and *Slave* input variables to a motion control instruction. | • The parameter is the same for the *Master* and *Slave* input variables to the instruction. | | | | S | | Same as above. |
| 5401 5437 hex | Master and Auxiliary Defined as Same Axis | The same axis is specified for the *Master* and *Auxiliary* input variables to a motion control instruction. | • The parameter is the same for the *Master* and *Auxiliary* input variables to the instruction. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015438 hex | Master/Slave Axis Numbers Not in Ascending Order | The axis numbers specified for the *Master* and *Slave* input variables to a motion control instruction are not in ascending order. | • The parameters for the *Master* and *Slave* input variables to the instruction were not in ascending order when *_mcLatestCommand* was specified for the *ReferenceType* input variable to the instruction. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015439 hex | Incorrect Cam Table Specification | The parameter specified for the *CamTable* input variable to a motion control instruction is out of range. | • Something other than a cam data variable was specified for the *CamTable* input variable to the instruction. | | | | S | | Same as above. |
| 5401543A hex | Synchronization Stopped | A synchronized control motion control instruction was executed, but conditions required for execution were not met. | • The MC_CamOut (End Cam Operation) instruction was executed even though the MC_CamIn (Start Cam Operation) instruction is not being executed.<br>• The MC_GearOut (End Gear Operation) instruction was executed even though the MC_GearIn (Start Gear Operation) or the MC_GearInPos (Positioning Gear Operation) instruction is not being executed.<br>• The MC_Phasing (Shift Master Axis Phase) instruction was executed even though the MC_CamIn (Start Cam Operation), MC_GearIn (Start Gear Operation), MC_GearInPos (Start Gear Operation), or MC_MoveLink (Synchronous Positioning) instruction is not being executed. | | | | S | | Same as above. |
| 5401543B hex | Motion Control Instruction Re-execution Disabled | An attempt was made to re-execute a motion control instruction that cannot be re-executed. | • A motion control instruction that cannot be re-executed was re-executed. | | | | S | | Same as above. |
| 5401543C hex | Motion Control Instruction Multi-execution Disabled | Multiple functions that cannot be executed simultaneously were executed for the same target (MC common or axis). | • Multiple functions that cannot be executed simultaneously were executed for the same target (MC common or axis). | | | | S | | Same as above. |
| 5401543D hex | Instruction Not Allowed for Encoder Axis Type | An operation instruction was executed for an encoder axis. | • An operation instruction was executed for an encoder axis. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 5401 543E hex | Instruction Cannot Be Executed during Multi-axes Coordinated Control | An operation instruction was executed for an axis or an axes group that was in a coordinated multi-axes motion. | • An operation instruction was executed for an axis or an axes group that was in a coordinated multi-axes motion. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401 543F hex | Multi-axes Coordinated Control Instruction Executed for Disabled Axes Group | A multi-axes coordinated control instruction was executed for an axes group that was in the Axes Group Disabled state. | • A multi-axes coordinated control instruction was executed for an axes group that was in the Axes Group Disabled state. | | | | S | | Same as above. |
| 5401 5440 hex | Axes Group Cannot Be Enabled | Execution of the MC_GroupEnable (Enable Axes Group) instruction failed. | • When the MC_GroupEnable (Enable Axes Group) instruction was executed, there was a composition axis that was not stopped.<br>• When the MC_GroupEnable (Enable Axes Group) instruction was executed, there was a composition axis for which the MC_TouchProbe (Enable External Latch) instruction was being executed. | | | | S | | Same as above. |
| 5401 5441 hex | Impossible Axis Operation Specified when the Servo is OFF | An operation instruction was executed for an axis for which the Servo is OFF. | • An operation instruction was executed for an axis for which the Servo is OFF.<br>• Home was preset with the MC_Home or MC_HomeWithParameter instruction for an axis for which EtherCAT process data communications are not established. | | | | S | | Same as above. |
| 5401 5442 hex | Composition Axis Stopped Error | A motion instruction was executed for an axes group while the MC_Stop instruction was being executed for a composition axis. | • A motion instruction was executed for an axes group while the MC_Stop instruction was being executed for a composition axis. | | | | S | | Same as above. |
| 5401 5443 hex | Motion Control Instruction Multi-execution Buffer Limit Exceeded | The number of motion control instructions that is buffered for Buffered or Blending Buffer Modes exceeded the buffer limit. | • An axis instruction was executed when there was already a current instruction and a buffered instruction for the same axis.<br>• An axes group instruction was executed when there was already eight current instructions and buffered instructions for the same axis. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015444 hex | Insufficient Travel Distance | The specified motion cannot be executed for the deceleration rate or acceleration rate that was specified for multi-execution or re-execution of a positioning instruction. | • Stopping at the target position was not possible for the specified acceleration/deceleration rate for multi-execution or re-execution of a positioning instruction when the Acceleration/Deceleration Over parameter was set to generate a minor fault and stop. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015445 hex | Insufficient Travel Distance to Achieve Blending Transit Velocity | There is not sufficient travel distance to accelerate or decelerate to the transit velocity. | • There was not sufficient travel distance to accelerate the current command to the transit velocity when the Acceleration/Deceleration Over parameter was set to generate a minor fault and stop. | | | | S | | Same as above. |
| 54015446 hex | Move Link Constant Velocity Insufficient Travel Distance | The constant-velocity travel distance of the master axis is less than zero. | • The constant velocity travel distance of the master axis is below 0 for the MC_MoveLink (Synchronous Positioning) instruction. | | | | S | | Same as above. |
| 54015447 hex | Positioning Gear Operation Insufficient Target Velocity | For the MC_GearInPos (Positioning Gear Operation) instruction, the target velocity of the slave axis is too small to achieve the required velocity. | • For the MC_GearInPos (Positioning Gear Operation) instruction, the value of the *Velocity* (Target Velocity) input variable is smaller than the master axis velocity multiplied by the gear ratio when the instruction was executed. | | | | S | | Same as above. |
| 54015448 hex | Same Start Point and End Point for Circular Interpolation | The start point and end point were the same when the radius method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. Or, the start point, end point, and border point were the same when the border point method was specified. | • The start point and end point were the same when the radius method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction.<br>• The start point, end point, and border point were the same when the border point method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 54015449 hex | Circular Interpolation Center Specification Position Out of Range | The position specified for the center point exceeded the allowed range when the center method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | • The difference between the distance from the start point to the center point and the distance between the end point to the center point exceeded the permitted value specified for the correction allowance ratio in the axes group settings when the center designation method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401544A hex | Instruction Execution Error Caused by Count Mode Setting | An instruction that cannot be used when the Count Mode is set to Rotary Mode was executed for an axis that was set to Rotary Mode. | • An instruction that cannot be used when the Count Mode is set to Rotary Mode was executed for an axis that was set to Rotary Mode. | | | | S | | Same as above. |
| 5401544C hex | Parameter Selection Out of Range | The parameter specified for the *ParameterNumber* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401544D hex | Stop Method Selection Out of Range | The parameter specified for the *StopMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401544E hex | Latch ID Selection Out of Range for Trigger Input Condition | The parameter specified for the *TriggerInput::LatchID* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401544F hex | Setting Out of Range for Writing MC Setting | The parameter specified for the *SettingValue* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• The parameter specification and the data type of the setting value do not agree. | | | | S | | Same as above. |
| 54015450 hex | Trigger Input Condition Mode Selection Out of Range | The parameter specified for the *TriggerInput:: Mode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015451 hex | Drive Trigger Signal Selection Out of Range for Trigger Input Condition | The parameter specified for the *TriggerInput::InputDrive* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015453 hex | Motion Control Instruction Re-execution Disabled (Axis Specification) | An attempt was made to change the parameter for the *Axis* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015454 hex | Motion Control Instruction Re-execution Disabled (Buffer Mode Selection) | An attempt was made to change the parameter for the *BufferMode* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015455 hex | Motion Control Instruction Re-execution Disabled (Direction Selection) | An attempt was made to change the parameter for the *Direction* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • An input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015456 hex | Motion Control Instruction Re-execution Disabled (Execution Mode) | An attempt was made to change the parameter for the *Periodic* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015457 hex | Motion Control Instruction Re-execution Disabled (Axes Group Specification) | An attempt was made to change the parameter for the *AxesGroup* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015458 hex | Motion Control Instruction Re-execution Disabled (Jerk Setting) | An attempt was made to change the parameter for the *Jerk* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015459 hex | Motion Control Instruction Re-execution Disabled (Master Axis) | An attempt was made to change the parameter for the *Master* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 5401545A hex | Motion Control Instruction Re-execution Disabled (MasterOffset) | An attempt was made to change the parameter for the *MasterOffset* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 5401545B hex | Motion Control Instruction Re-execution Disabled (MasterScaling) | An attempt was made to change the parameter for the *MasterScaling* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 5401545C hex | Motion Control Instruction Re-execution Disabled (MasterStartDistance) | An attempt was made to change the parameter for the *MasterStartDistance* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401545D hex | Motion Control Instruction Re-execution Disabled (Continuous) | An attempt was made to change the parameter for the *Continuous* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 5401545E hex | Motion Control Instruction Re-execution Disabled (MoveMode) | An attempt was made to change the parameter for the *MoveMode* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 5401545F hex | Illegal Auxiliary Axis Specification | The axis specified for the *Auxiliary* input variable to a motion control instruction does not exist. | • An axis does not exist for the variable specified for the *Auxiliary* input variable to the instruction. | | | | S | | Same as above. |
| 54015460 hex | Illegal Axis Specification | The axis specified for the *Axis* input variable to a motion control instruction does not exist. | • An axis does not exist for the variable specified for the *Axis* input variable to the instruction. | | | | S | | Same as above. |
| 54015461 hex | Illegal Axes Group Specification | The axes group specified for the *AxesGroup* input variable to a motion control instruction does not exist or is not a used group. | • An axes group does not exist for the variable specified for the *AxesGroup* input variable to the instruction.<br>• The axes group specified for the *AxesGroup* input variable to the instruction is not specified as a used group. | | | | S | | Same as above. |
| 54015462 hex | Illegal Master Axis Specification | The axis specified for the *Master* input variable to a motion control instruction does not exist or is not a sync master axis. | • An axis does not exist for the variable specified for the *Master* input variable to the instruction.<br>• The axis that was specified for the *Master* input variable to the *MC_Phasing* (Shift Master Axis Phase) instruction is not the master axis for syncing. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015463 hex | Motion Control Instruction Re-execution Disabled (SlaveOffset) | An attempt was made to change the *SlaveOffset* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015464 hex | Motion Control Instruction Re-execution Disabled (SlaveScaling) | An attempt was made to change the *SlaveScaling* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015465 hex | Motion Control Instruction Re-execution Disabled (StartPosition) | An attempt was made to change the *StartPosition* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015466 hex | Instruction Execution Error with Undefined Home | High-speed homing or an interpolation instruction was executed when home was undefined. | • High-speed homing was executed when home was undefined.<br>• An interpolation instruction was executed for an axes group that includes an axis with no defined home. | | | | S | | Same as above. |
| 54015467 hex | Motion Control Instruction Re-execution Disabled (Position Type) | An attempt was made to change the *ReferenceType* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015468 hex | Unused Axis Specification for Master Axis | The master axis specified for a motion control instruction is an unused axis. | • The master axis specified for a motion control instruction is an unused axis. | | | | S | | Same as above. |
| 54015469 hex | First Position Setting Out of Range | The parameter specified for the *FirstPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401546A hex | Last Position Setting Out of Range | The parameter specified for the *LastPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401546B hex | Illegal First/Last Position Size Relationship (Linear Mode) | The parameter specified for the *LastPosition* input variable to a motion control instruction is smaller than the parameter specified for the *FirstPosition* input variable. | • The value of the *LastPosition* input parameter is less than the value of the *FirstPosition* input variable for the instruction when the Count Mode is set to Linear Mode. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 5401546C hex | Master Sync Start Position Setting Out of Range | The parameter specified for the *MasterSyncPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401546D hex | Slave Sync Start Position Setting Out of Range | The parameter specified for the *SlaveSyncPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401546E hex | Duplicate Latch ID for Trigger Input Condition | The same latch ID was specified for more than one motion control instruction. | • The same latch ID is used simultaneously for more than one of the following instructions: MC_TouchProbe (Enable External Latch) instruction, MC_MoveLink (Synchronous Positioning) instruction, and MC_MoveFeed (Interrupt Feeding) instruction.<br>• The MC_AbortTrigger (Disable External Latch) instruction was executed to cancel a latch that was used by an instruction other than the MC_TouchProbe (Enable External Latch) instruction. | | | | S | | Same as above. |
| 5401546F hex | Jerk Override Factor Out of Range | The parameter specified for the *JerkFactor* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015470 hex | Acceleration/Deceleration Override Factor Out of Range | The parameter specified for the *AccFactor* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015471 hex | First Position Method Specification Out of Range | The parameter specified for the *StartMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015472 hex | Motion Control Instruction Re-execution Disabled (First Position Method) | An attempt was made to change the *StartMode* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | | S | | Same as above. |
| 54015474 hex | Unused Axis Specification for Auxiliary Axis | The axis specified for the *Auxiliary* input variable to a motion control instruction is an unused axis. | • The axis specified for the *Auxiliary* input variable to the instruction is an unused axis. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015475 hex | Position Gear Value Error | Synchronized motion is not possible for the velocity, acceleration rate, and deceleration rate that were input to a motion control instruction. | • The specified synchronized motion cannot be performed at the velocity, acceleration rate, or deceleration rate that is input to the instruction. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015476 hex | Position Gear Master Axis Zero Velocity | The velocity of the master axis was zero when a motion control instruction was started. | • The velocity of the master axis was 0 when the instruction was started. | | | | S | | Same as above. |
| 54015478 hex | Target Position Setting Out of Range | The parameter specified for the *Position* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• The target position of a Rotary Mode axis is not within the ring setting range. | | | | S | | Same as above. |
| 54015479 hex | Travel Distance Out of Range | The parameter that was specified for the *Distance* input variable to a motion control instruction is out of range or the target position with the value of *Distance* added is out of range. | • The absolute value of the instruction input parameter exceeded the range of 40-bit data when it is converted to pulses.<br>• For a Linear Mode axis, the target position with the travel distance added exceeded signed 40-bit data when the absolute value is converted to pulses. | | | | S | | Same as above. |
| 5401547A hex | Cam Table Start Point Setting Out of Range | The parameter specified for the *StartPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401547B hex | Cam Master Axis Following First Position Setting Out of Range | The parameter specified for the *MasterStartDistance* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401547C hex | Circular Interpolation Radius Setting Error | It was not possible to create a circular path for the specified radius when the radius method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | • For the MC_MoveCircular2D (Circular 2D Interpolation) instruction, it was not possible to create a circular path for the specified radius when the radius method was specified for circular interpolation. | | | | S | | Same as above. |
| 5401547D hex | Circular Interpolation Radius Overflow | For the MC_MoveCircular2D (Circular 2D Interpolation) instruction, the radius of the circle exceeded the maximum value for the border point or center specification method. | • For the MC_MoveCircular2D (Circular 2D Interpolation) instruction, the radius of the circle exceeded 40-bit data when converted to pulses for the border point or center specification method. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
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| | | | | Maj | Prt | Min | Obs | Info | |
| 5401547E hex | Circular Interpolation Setting Out of Range | The parameter specified for the *CircAxes* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• The axes that were specified in *CircAxes* are not included in the composition axes in the Axes Group Settings.<br>• The same axis was specified for both axes of *CircAxes*. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401547F hex | Auxiliary/Slave Axis Numbers Not in Ascending Order | The values of the parameters for the *Auxiliary* and *Slave* input variables to a motion control instruction are not in ascending order. | • The parameters for the *Auxiliary* and *Slave* input variables to the instruction are not in ascending order. | | | | S | | Same as above. |
| 54015480 hex | Cam Table Property Ascending Data Error at Update | A phase that was not in ascending order was found during calculating the number of valid data. Or, after calculations, the number of valid data is 0. | • A phase that was not in ascending order was found when calculating the number of valid data.<br>• After calculations, the number of valid data is 0. | | | | S | | Same as above. |
| 54015481 hex | MC_Write Target Out of Range | The parameter specified for the *Target* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015482 hex | Master Travel Distance Specification Out of Range | The parameter specified for the *MasterDistance* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015483 hex | Master Distance in Acceleration Specification Out of Range | The parameter specified for the *MasterDistanceACC* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015484 hex | Master Distance in Deceleration Specification Out of Range | The parameter specified for the *MasterDistanceDEC* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015487 hex | Execution Mode Selection Out of Range | The parameter specified for the *ExecutionMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015488 hex | Permitted Following Error Out of Range | The parameter specified for the *PermittedDeviation* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015489 hex | Border Point/Center Position/Radius Specification Out of Range | The parameter specified for the *AuxPoint* input variable to a motion control instruction is out of range. | • The value of *AutPoint* exceeded signed 40-bit data when converted to pulses for the border point or center specification method.<br>• For a radius specifications, the absolute value of *AuxPoint[0]* exceeded 40-bit data when converted to pulses. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 5401548A hex | End Point Specification Out of Range | The parameter specified for the *EndPoint* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of signed 40-bit data when it is converted to pulses. | | | | S | | Same as above. |
| 5401548B hex | Slave Travel Distance Specification Out of Range | The parameter specified for the *SlaveDistance* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of 40-bit data when it is converted to pulses. | | | | S | | Same as above. |
| 5401548C hex | Phase Shift Amount Out of Range | The parameter specified for the *PhaseShift* input variable to a motion control instruction is out of range. | • The absolute value of the instruction input parameter exceeded the range of 40-bit data when it is converted to pulses. | | | | S | | Same as above. |
| 5401548D hex | Feeding Distance Out of Range | The parameter specified for the *FeedDistance* input variable to a motion control instruction is out of range. | • The absolute value of the instruction input parameter exceeded the range of 40-bit data when it is converted to pulses. | | | | S | | Same as above. |
| 5401548E hex | Auxiliary and Slave Defined as Same Axis | The same axis was specified for the *Auxiliary* and *Slave* input variables to a motion control instruction. | • The parameter is the same for the *Auxiliary* and *Slave* input variables to the instruction. | | | | S | | Same as above. |
| 5401548F hex | Relative Position Selection Out of Range | The parameter specified for the *Relative* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015490 hex | Cam Transition Specification Out of Range | The parameter specified for the *CamTransition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015491 hex | Synchronized Control End Mode Selection Out of Range | The parameter specified for the *OutMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015492 hex | Enable External Latch Instruction Execution Disabled | *_mcImmediateStop* was specified for the *StopMode* input variable when the MC_TouchProbe (Enable External Latch) instruction was executed in Drive Mode, but the Control Mode was not CSP Mode. | • *_mcImmediateStop* was specified for the *StopMode* input variable when the MC_TouchProbe (Enable External Latch) instruction was executed in Drive Mode, but the Control Mode was not CSP Mode or the Servo was OFF. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015493 hex | Master Axis Offset Out of Range | The parameter specified for the *MasterOffset* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of signed 40-bit data when it is converted to pulses. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015494 hex | Slave Axis Offset Out of Range | The parameter specified for the *SlaveOffset* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of signed 40-bit data when it is converted to pulses. | | | | S | | Same as above. |
| 54015495 hex | Command Current Position Count Selection Out of Range | The parameter specified for the *CmdPosMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015496 hex | Master Axis Gear Ratio Numerator Out of Range | The parameter specified for the *RatioNumeratorMaster* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015497 hex | Master Axis Gear Ratio Denominator Out of Range | The parameter specified for the *RatioDenominatorMaster* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015498 hex | Auxiliary Axis Gear Ratio Numerator Out of Range | The parameter specified for the *RatioNumeratorAuxiliary* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015499 hex | Auxiliary Axis Gear Ratio Denominator Out of Range | The parameter specified for the *RatioDenominatorAuxiliary* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401549A hex | Master Axis Position Type Selection Out of Range | The parameter specified for the *ReferenceTypeMaster* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401549B hex | Auxiliary Axis Position Type Selection Out of Range | The parameter specified for the *ReferenceTypeAuxiliary* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401549C hex | Target Position Ring Counter Out of Range | Operation is not possible because the target position is out of range for the ring counter of the executed instruction. | • High-speed homing was executed when 0 was not included in the ring counter. | | | | S | | Same as above. |
| 5401549D hex (Ver. 1.01) | Axes Group Composition Axis Setting Out of Range | The parameter specified for the *Axes* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 5401549E hex (Ver. 1.04) | Axis Use Setting Out of Range | The parameter specified for the *AxisUse* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |
| 54015700 hex (Ver. 1.03) | Homing Parameter Setting Out of Range | The parameter specified for the *HomingParameter* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54015702 hex (Ver. 1.04) | Axis Use Change Error | The MC_ChangeAxisUse (Change Axis Use) instruction was executed when the axis was not stopped or when the command velocity of the axis was saturated. | • The MC_ChangeAxisUse (Change Axis Use) instruction was executed when the axis was not stopped or when the command velocity of the axis was saturated. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54015720 hex (Ver. 1.04) | Motion Control Parameter Setting Error When Changing Axis Use | The motion control parameter settings for the axis that was changed to a used axis are incorrect. | • The MC_ChangeAxisUse (Change Axis Use) instruction was used to change an unused axis to a used axis, but the motion control parameter settings of the axis are not correct.<br>• The power supply was interrupted while a download of the motion control parameter settings was in progress.<br>• The non-volatile memory is faulty or the life of the non-volatile memory has been exceeded. | | | | S | | Same as above. |
| 54015721 hex (Ver. 1.04) | Required Process Data Object Not Set When Changing Axis Use | The objects that are required for the axis type of the axis that was changed to a used axis are not set. | • The objects that are required for the axis type of the axis that was changed to a used axis are not set in the PDO map settings.<br>• The power supply was interrupted while a download of the motion control parameter settings was in progress.<br>• The non-volatile memory is faulty or the life of the non-volatile memory has been exceeded. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54016440 hex | Target Position Positive Software Limit Exceeded | The specified position exceeds the positive software limit. | • The parameter specified for the *Position* input variable to the instruction is beyond the positive software limit.<br>• The first position is beyond the positive software limit and an instruction that specifies motion in the opposite direction of the software limit was executed.<br>• The parameter that was specified for the *AuxPoint* input variable to a border point MC_MoveCircular2D (Circular 2D Interpolation) instruction is beyond the positive software limit. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54016441 hex | Target Position Negative Software Limit Exceeded | The specified position exceeds the negative software limit. | • The parameter specified for the *Position* input variable to the instruction is beyond the negative software limit.<br>• The first position is beyond the negative software limit and an instruction that specifies motion in the opposite direction of the software limit was executed.<br>• The parameter that was specified for the *AuxPoint* input variable to a border point MC_MoveCircular2D (Circular 2D Interpolation) instruction is beyond the negative software limit. | | | | S | | Same as above. |
| 54016442 hex | Command Position Overflow/Underflow | Positioning, an instruction in the underflow/overflow direction, or an instruction for which the direction is not specified was executed when there was an underflow/overflow in the command position. | • One of the following was executed when there was a command position overflow/underflow.<br>  • A positioning instruction<br>  • A continuous control instruction in the underflow/overflow direction<br>  • An instruction for which the direction is not specified (syncing or torque control) | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54016443 hex | Positive Limit Input | An instruction was executed for a motion in the positive direction when the positive limit input was ON. | • An instruction for a motion in the positive direction was executed when the positive limit input was ON, or an instruction for a motion with no direction specification was executed when the positive limit input was ON. An axes group motion control instruction was executed when the positive limit input was ON. | | | | S | | NJ-series Instructions Reference Manual (Cat. No. W502) |
| 54016444 hex | Negative Limit Input | An instruction for a motion in the negative direction was executed when the negative limit input was ON. | • An instruction for a motion in the negative direction was executed when the negative limit input was ON, or an instruction for a motion with no direction specification was executed when the negative limit input was ON. An axes group motion control instruction was executed when the negative limit input was ON. | | | | S | | Same as above. |
| 54017422 hex | Servo Main Circuits OFF | An attempt was made to turn ON the Servo when the main circuit power supply to the Servo Drive was OFF. | • An attempt was made to turn ON the Servo when the main circuit power supply to the Servo Drive was OFF. | | | | S | | Same as above. |

## 3-1-3 Errors in the Motion Control Function Module

The section provides tables of the errors (events) that can occur in the Motion Control Function Module. They are divided into the following functional classifications.

- General motion control
- Motion control instructions

Motion control instruction errors occur when a motion control instruction is executed. Notification of these errors is provided as events, but also the upper four digits of the event code is output to the *ErrorID* output variable of the motion control instruction and to the **.Lvl.Code* system-defined variable for motion control.

### General Motion Control

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 14600000 hex | Absolute Encoder Home Offset Read Error | The absolute encoder current position that is retained during power interruptions was lost. | • The life of the Battery in the CPU Unit has expired.<br>• Backup memory failure | | S | | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 14610000 hex | Motion Control Parameter Setting Error | The MC parameters that were saved in non-volatile memory are missing. | • The power supply to the Controller was interrupted or communications with the Sysmac Studio were disconnected while downloading the motion control parameter settings or clearing memory.<br>• Non-volatile memory failure | | S | | | | Same as above. |
| 14620000 hex | Cam Data Read Error | The cam data that was saved in non-volatile memory is missing. | • Power was interrupted during save processing for cam data<br>• Non-volatile memory failure | | S | | | | Same as above. |
| 34600000 hex | Required Process Data Object Not Set | The object that is required for the axis type is not allocated to PDO. | • The required PDOs are not mapped when the axis type is set to a servo axis or encoder axis.<br>• Non-volatile memory failure | | S | | | | Same as above. |
| 34630000 hex | Axis Slave Disabled | The slave to which the axis is assigned is disabled. | • The slave to which the axis is assigned is disabled. | | S | | | | Same as above. |
| 34640000 hex | Network Configuration Information Missing for Axis Slave | The network configuration information is not registered for the slave to which the axis is assigned. | • The EtherCAT network configuration information is not registered for the slave to which the axis is assigned. | | S | | | | Same as above. |
| 44200000 hex | Motion Control Initialization Error | A fatal error occurred in the system and prevented initialization of the Motion Control Function Module. | • Hardware has failed. | | S | | | | Same as above. |
| 74200000 hex | Motion Control Period Exceeded | Processing for the primary periodic task was not finished within two control periods. | • The processing load in the primary periodic task is too heavy. | | S | | | | Same as above. |
| 14630000 hex | Cam Table Save Error | Saving a cam table to a file failed. | • Saving a cam table to a file failed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54770000 hex | Cam Table Data Error during Cam Motion | The phases are not in ascending order in the cam table. | • Data containing cam table phases that are not in ascending order was detected during cam motion.<br>• The phase and displacement of the start point in the cam table were not 0 during cam operation.<br>• The phase of the end point in the cam table when converted to pulses was not 1 pulse or greater during cam operation. | | | S | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 54850000 hex | Immediate Stop Instruction Executed | An Immediate Stop (MC_ImmediateStop) instruction was executed. | • An Immediate Stop instruction was executed. | | | S | | | Same as above. |
| 54860000 hex | Axes Group Immediate Stop Instruction Executed | An Axes Group Immediate Stop (MC_GroupImmediateStop) instruction was executed. | • A Group Immediate Stop instruction was executed. | | | S | | | Same as above. |
| 64450000 hex | Positive Software Limit Exceeded | The position exceeded the positive software limit while the axis is in motion. | • The position exceeded the positive software limit. | | | S | | | Same as above. |
| 64460000 hex | Negative Software Limit Exceeded | The position exceeded the negative software limit while the axis is in motion. | • The position exceeded the negative software limit. | | | S | | | Same as above. |
| 64470000 hex | In-position Check Time Exceeded | The in-position check was not completed within the monitoring time. | • Time is required to complete positioning. | | | S | | | Same as above. |
| 64480000 hex | Following Error Limit Exceeded | The error between the command current position and actual current value exceeded the Following Error Over Limit Value. | • The positioning operation has poor following performance and the actual motion is slower than the command. | | | S | | | Same as above. |
| 64490000 hex | Immediate Stop Input | The immediate stop input turned ON. | • An immediate stop input signal was detected.<br>• The immediate stop input signal is not connected correctly or the logic setting for the immediate stop input is wrong. | | | S | | | Same as above. |
| 644A0000 hex | Positive Limit Input Detected | The positive limit input turned ON. | • A positive limit input signal was detected.<br>• The positive limit input signal is not connected correctly or the logic setting for the positive limit input is wrong. | | | S | | | Same as above. |
| 644B0000 hex | Negative Limit Input Detected | The negative limit input turned ON. | • A negative limit input signal was detected.<br>• The negative limit input signal is not connected correctly or the logic setting for the negative limit input is wrong. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 64560000 hex | Illegal Following Error | The difference between the command position and the actual current position exceeds the range of 30-bit data when converted to pulses. | • The command current position was restricted so that the axis velocity of the slave axis would not exceed the axis maximum velocity for the specified travel distance.<br>• Performance of slave axis positioning operation is poor and the actual motion is slower than the command. | | | S | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 64570000 hex | Servo OFF Error | The Servo was turned OFF for an axis due to an axes group error. | • The Servo was turned OFF for an axis due to an axes group error. | | | S | | | Same as above. |
| 64580000 hex | Absolute Encoder Current Position Calculation Failed | It was not possible to correctly restore the current position from the absolute encoder information that was saved when power was interrupted. | • The ring counter setting in the Controller or the ring counter setting in the Servo Drive settings was changed.<br>• The position to restore when converted to pulses exceeded the range of signed 40-bit data. | | | S | | | Same as above. |
| 64590000 hex | Home Undefined during Coordinated Motion | Home of the logical axis became undefined during axes group motion or while decelerating to a stop. | • The command position or actual position overflowed or underflowed for a logical axis in an axes group motion or a logical axis that was decelerating to a stop and the home definition was lost.<br>• A slave communications error occurred for a logical axis and home became undefined during axes group motion or while decelerating to a stop.<br>• A slave for a logical axis left the network or was disabled and home became undefined during axes group motion or while decelerating to a stop. | | | S | | | Same as above. |
| 74210000 hex | Servo Main Circuit Power OFF | The main circuit power of the Servo Drive turned OFF while the Servo was ON. | • The main circuit power of the Servo Drive was interrupted while the Servo was ON. | | | S | | | Same as above. |
| 74230000 hex | Interrupt Feeding Interrupt Signal Missing | An interrupt input was not received during execution of an MC_MoveFeed (Interrupt Feeding) instruction. | • The latch enabled range specification is invalid.<br>• There is a problem with the wiring of the interrupt signal.<br>• The sensor that outputs the interrupt signal has failed. | | | S | | | Same as above. |
| 74240000 hex | Homing Opposite Direction Limit Input Detected | The limit signal in the direction opposite to the homing direction was detected during a homing operation. | • The Operation Selection at Negative Limit Input or Operation Selection at Positive Limit Input parameter is set to *No reverse turn*.<br>• The location of the homing input signal sensors, homing settings, and homing start position cause a limit input to be reached.<br>• The input signal sensor wiring is incorrect or the sensor is faulty. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 74250000 hex | Homing Direction Limit Input Detected | The limit signal in the homing direction was detected during a homing operation. | • The Operation Selection at Negative Limit Input or Operation Selection at Positive Limit Input parameter is set to *No reverse turn*.<br>• The location of the homing input signal sensors, homing settings, and homing start position cause a limit input to be reached.<br>• The input signal sensor wiring is incorrect or the sensor is faulty. | | | S | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 74260000 hex | Homing Limit Inputs Detected in Both Directions | The limit signals in both directions were detected during a homing operation. | • The wiring of the limit signal is incorrect.<br>• The limit sensor is installed in the wrong location.<br>• The contact logic of the limit signal is not correct.<br>• The limit sensor failed. | | | S | | | Same as above. |
| 74270000 hex | Home Proximity/Homing Opposite Direction Limit Input Detected | The home proximity input and the limit signal in the direction opposite to the homing direction were detected during a homing operation. | • The wiring of the home proximity signal or limit signal is incorrect.<br>• The home proximity sensor or limit sensor is installed in the wrong location.<br>• The contact logic of the home proximity signal or limit signal is not correct.<br>• The home proximity sensor or limit sensor failed. | | | S | | | Same as above. |
| 74280000 hex | Home Proximity/Homing Direction Limit Input Detected | The home proximity input and the limit signal in the homing direction were detected at the same time during a homing operation. | • The wiring of the home proximity signal or limit signal is incorrect.<br>• The home proximity sensor or limit sensor is installed in the wrong location.<br>• The contact logic of the home proximity signal or limit signal is not correct.<br>• The home proximity sensor or limit sensor failed. | | | S | | | Same as above. |
| 74290000 hex | Home Input/Homing Opposite Direction Limit Input Detected | The home input and the limit signal in the direction opposite to the homing direction were detected at the same time during a homing operation. | • The wiring of the home input signal or limit signal is incorrect.<br>• The home input sensor or limit sensor is installed in the wrong location.<br>• The contact logic of the home input signal or limit signal is not correct.<br>• The home input signal output device or limit sensor failed. | | | S | | | Same as above. |
| 742A0000 hex | Home Input/Homing Direction Limit Input Detected | The home input and the limit signal in the homing direction were detected at the same time during a homing operation. | • The wiring of the home input signal or limit signal is incorrect.<br>• The home input sensor or limit sensor is installed in the wrong location.<br>• The contact logic of the home input signal or limit signal is not correct.<br>• The home input signal output device or limit sensor failed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 742B0000 hex | Invalid Home Input Mask Distance | The setting of the home input mask distance is not suitable for the MC_Home or MC_HomeWithParameter instruction. | • The set value of the home input mask distance when the operating mode of the MC_Home instruction is set to *Proximity Reverse Turn/Home Input Mask Distance* is insufficient to decelerate from the homing velocity to the homing approach velocity. | | | S | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 742C0000 hex | No Home Input | There was no home signal input during the homing operation. Or, a limit signal was detected before there was a home input. | • There was no home signal input during the homing operation.<br>• A limit signal was detected before there was a home input. | | | S | | | Same as above. |
| 742D0000 hex | No Home Proximity Input | There was no home proximity signal input during the homing operation. | • There was no home proximity signal input during the homing operation when a home proximity input signal was specified. | | | S | | | Same as above. |
| 742F0000 hex | Slave Error Detected | An alarm was detected for the EtherCAT slave that is allocated to an axis. | • An error was detected for the EtherCAT slave that is allocated to the axis. | | | S | | | Same as above. |
| 74300000 hex | Axes Group Composition Axis Error | An error occurred for an axis in an axes group. | • An error occurred for an axis in an axes group that was in motion. | | | S | | | Same as above. |
| 74330000 hex | MC Common Error Occurrence | An MC common error occurred. | • Partial fault level MC common error occurred. | | | S | | | Same as above. |
| 74340000 hex | Latch Position Overflow | An overflow occurred for the latched position for the MC_TouchProbe (Enable External Latch) instruction. | • An overflow occurred for the latched position for the MC_TouchProbe (Enable External Latch) instruction. | | | S | | | Same as above. |
| 74350000 hex | Latch Position Underflow | An underflow occurred for the latched position for the MC_TouchProbe (Enable External Latch) instruction. | • An underflow occurred for the latched position for the MC_TouchProbe (Enable External Latch) instruction. | | | S | | | Same as above. |
| 74360000 hex | Master Sync Direction Error | The master axis continued to move in the direction opposite to the sync direction. | • The master axis continued to move in the direction opposite to the sync direction of the master and slave axes, resulting in an overflow. | | | S | | | Same as above. |
| 74370000 hex | Slave Disconnection during Servo ON | An EtherCAT slave that is allocated to an axis was disconnected, replaced, or disabled while the Servo was ON. | • An EtherCAT slave that is allocated to an axis was disconnected, replaced, or disabled while the Servo was ON. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 74380000 hex | Feed Distance Overflow | The target position after the interrupt input was received for the MC_MoveFeed (Interrupt Feeding) instruction overflowed or underflowed. | • The target position after the interrupt input was received for the MC_MoveFeed (Interrupt Feeding) instruction exceeded the range of signed 40-bit data when converted to pulses. | | | S | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 74390000 hex | Error in Changing Servo Drive Control Mode | Changing the Control Mode was not completed within the specified time. | • When the MC_SyncMoveVelocity instruction was stopped, the actual current velocity was not reduced to 10% or less of the maximum velocity within 10 seconds for three consecutive periods after a command velocity of 0 was output.<br>• For an OMRON G5-series Servo Drive, the actual current velocity was not reduced to 10% or less of the maximum velocity within 10 seconds for three consecutive periods when the MC_TorqueControl instruction was stopped.<br>• Changing the Control Mode of the Servo Drive between CSP, CSV, and CST was not completed within one second after the command was executed. | | | S | | | Same as above. |
| 743A0000 hex | Master Axis Position Read Error | The synchronized instruction was not executed because an error occurred in the position of the master axis of the synchronized instruction. | • EtherCAT process data communications are not established for the master axis of the synchronized instruction.<br>• The slave of the master axis for the synchronized instruction was disconnected or disabled.<br>• An Absolute Encoder Current Position Calculation Failed error (6458000 hex) was detected for the master axis of a synchronized instruction.<br>• The master axis for the synchronized instruction is an unused axis. | | | S | | | Same as above. |
| 743B0000 hex | Auxiliary Axis Position Read Error | The synchronized instruction was not executed because an error occurred in the position of the auxiliary axis of the synchronized instruction. | • EtherCAT process data communications are not established for the auxiliary axis of the synchronized instruction.<br>• The slave of the auxiliary axis for the synchronized instruction was disconnected or disabled.<br>• An Absolute Encoder Current Position Calculation Failed error (6458000 hex) was detected for the auxiliary axis of a synchronized instruction.<br>• The auxiliary axis for the synchronized instruction is an unused axis. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84400000 hex | EtherCAT Slave Communications Error | A communications error occurred for the EtherCAT slave that is allocated to an axis. | • A communications error occurred for the EtherCAT slave that is allocated to an axis. | | | S | | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 571D0000 hex (Ver. 1.02) | Too Many Reset Motion Control Error Instructions | There are more than 100 instances of the ResetMCError (Reset Motion Control Error) instruction. | • There are more than 100 instances of the ResetMCError (Reset Motion Control Error) instruction declared in the user program. Instances inside function blocks are included. | | | | S | | Same as above. |
| 644C0000 hex | Following Error Warning | The following error exceeded the Following Error Warning Value. | • Performance of positioning operation is poor and the actual motion is slower than the command. | | | | S | | Same as above. |
| 644D0000 hex | Velocity Warning | The command velocity exceeded the velocity warning value. | • The command velocity exceeded the velocity warning value. | | | U | S | | Same as above. |
| 644E0000 hex | Acceleration Warning | The command acceleration exceeded the acceleration warning value. | • The command acceleration rate exceeded the acceleration warning value. | | | U | S | | Same as above. |
| 644F0000 hex | Deceleration Warning | The command deceleration exceeded the deceleration warning value. | • The command deceleration rate exceeded the deceleration warning value. | | | U | S | | Same as above. |
| 64500000 hex | Positive Torque Warning | The torque command value exceeded the positive torque warning value. | • The torque command value exceeded the positive torque warning value. | | | U | S | | Same as above. |
| 64510000 hex | Negative Torque Warning | The torque command value exceeded the negative torque warning value. | • The torque command value exceeded the negative torque warning value. | | | U | S | | Same as above. |
| 64520000 hex | Command Position Overflow | The number of pulses for the command position overflowed. | • In Linear Mode, the command position when converted to pulses exceeded the upper limit of signed 40-bit data. | | | U | S | | Same as above. |
| 64530000 hex | Command Position Underflow | The number of pulses for the command position exceeded the valid range. (It underflowed.) | • In Linear Mode, the command position when converted to pulses exceeded the lower limit of signed 40-bit data. | | | U | S | | Same as above. |
| 64540000 hex | Actual Position Overflow | The number of pulses for the actual position overflowed. | • The actual position when converted to pulses exceeded the upper limit of signed 40-bit data. | | | U | S | | Same as above. |
| 64550000 hex | Actual Position Underflow | The number of pulses for the actual position underflowed. | • The actual position when converted to pulses exceeded the lower limit of signed 40-bit data. | | | U | S | | Same as above. |
| 74320000 hex | Slave Observation Detected | A warning has been detected for an EtherCAT slave. | • A warning was detected for the EtherCAT slave that is allocated to the axis. | | | U | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 743C0000 hex | Cannot Execute Save Cam Table Instruction | You cannot save a cam table to a file when non-volatile memory is being accessed by another operation. | • An attempt was made to execute the MC_SaveCamTable instruction when another operation was accessing the non-volatile memory (e.g., transfer or data trace operation from the Sysmac Studio). | | | | S | | NJ-series CPU Unit Motion Control User's Manual (Cat. No. W507) |
| 94200000 hex | Notice of Insufficient Travel Distance to Achieve Blending Transit Velocity | There is not sufficient travel distance to accelerate or decelerate to the transit velocity during blending operation. | • When the Acceleration/Deceleration Over parameter was set to *Use rapid acceleration/deceleration (Blending is changed to Buffered),* the results of profile creation caused the acceleration/deceleration rate to be exceeded when blending was specified, so buffered was used.<br>• Blending was specified, but the target position was already reached, so it was changed to Buffered because the profile could not be created.<br>• *Blending* was specified for an interpolation instruction, but based on the results of profile creation, this was changed to *Buffered* because the execution time of the instruction before the transition was four control periods or less. | | | U | S | | Same as above. |
| 94210000 hex | Error Clear from MC Test Run Tab Page | An error was cleared from the MC Test Run Pane of the Sysmac Studio. | • An error was cleared from the MC Test Run Pane of the Sysmac Studio. | | | | | S | Same as above. |
| 94220000 hex | Slave Error Code Report | The error code was reported by the slave when a Slave Error Detected error occurred. | • The error code was reported by the slave when a Slave Error Detected error (742F0000 hex) occurred. | | | | | S | Same as above. |

## Motion Control Instructions

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34610000 hex | Process Data Object Setting Missing | The PDO mapping is not correct. | • The PDOs that are required for the motion control instruction are not mapped.<br>• A motion control instruction that specifies phase Z (_mcEncoderMark) as the trigger conditions was executed for an axis that is mapped to an OMRON GX-EC02□□ EtherCAT Encoder slave. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54200000 hex | Electronic Gear Ratio Numerator Setting Out of Range | The parameter specified for the *RatioNumerator* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54210000 hex | Electronic Gear Ratio Denominator Setting Out of Range | The parameter specified for the *RatioDenominator* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54220000 hex | Target Velocity Setting Out of Range | The parameter specified for the *Velocity* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54230000 hex | Acceleration Setting Out of Range | The parameter specified for the *Acceleration* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54240000 hex | Deceleration Setting Out of Range | The parameter specified for the *Deceleration* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54250000 hex | Jerk Setting Out of Range | The parameter specified for the *Jerk* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54270000 hex | Torque Ramp Setting Out of Range | The parameter specified for the *TorqueRamp* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54280000 hex | Master Coefficient Scaling Out of Range | The parameter specified for the *MasterScaling* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54290000 hex | Slave Coefficient Scaling Out of Range | The parameter specified for the *SlaveScaling* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 542A0000 hex | Feeding Velocity Setting Out of Range | The parameter specified for the *FeedVelocity* input variable to a motion control instruction is out of range. | • The Feed Velocity (input variable *FeedVelocity*) is still at the default (0). | | | S | | | Same as above. |
| 542B0000 hex | Buffer Mode Selection Out of Range | The parameter specified for the *BufferMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 542C0000 hex | Coordinate System Selection Out of Range | The parameter specified for the *CoordSystem* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 542D0000 hex | Circular Interpolation Mode Selection Out of Range | The parameter specified for the *CircMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 542E0000 hex | Direction Selection Out of Range | The parameter specified for the *Direction* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 542F0000 hex | Path Selection Out of Range | The parameter specified for the *PathChoice* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54300000 hex | Position Type Selection Out of Range | The parameter specified for the *ReferenceType* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54310000 hex | Travel Mode Selection Out of Range | The parameter specified for the *MoveMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54320000 hex | Transition Mode Selection Out of Range | The parameter specified for the *TransitionMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• *_mcAborting* or *_mcBuffered* was specified for *BufferMode* and *_mcTMCornerSuperimpose* was specified for *TransitionMode.* | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54330000 hex | Continue Method Selection Out of Range | The value of the reserved input variable *Continuous* to a motion control instruction changed. | • The value of the reserved input variable *Continuous* changed. | | | S | | | Same as above. |
| 54340000 hex | Combine Mode Selection Out of Range | The parameter specified for the *CombineMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54350000 hex | Synchronization Start Condition Selection Out of Range | The parameter specified for the *LinkOption* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54360000 hex | Master and Slave Defined as Same Axis | The same axis is specified for the *Master* and *Slave* input variables to a motion control instruction. | • The parameter is the same for the *Master* and *Slave* input variables to the instruction. | | | S | | | Same as above. |
| 54370000 hex | Master and Auxiliary Defined as Same Axis | The same axis is specified for the *Master* and *Auxiliary* input variables to a motion control instruction. | • The parameter is the same for the *Master* and *Auxiliary* input variables to the instruction. | | | S | | | Same as above. |
| 54380000 hex | Master/Slave Axis Numbers Not in Ascending Order | The axis numbers specified for the *Master* and *Slave* input variables to a motion control instruction are not in ascending order. | • The parameters for the *Master* and *Slave* input variables to the instruction were not in ascending order when *_mcLatestCommand* was specified for the *ReferenceType* input variable to the instruction. | | | S | | | Same as above. |
| 54390000 hex | Incorrect Cam Table Specification | The parameter specified for the *CamTable* input variable to a motion control instruction is out of range. | • Something other than a cam data variable was specified for the *CamTable* input variable to the instruction. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 543A0000 hex | Synchronization Stopped | A synchronized control motion control instruction was executed, but conditions required for execution were not met. | • The MC_CamOut (End Cam Operation) instruction was executed even though the MC_CamIn (Start Cam Operation) instruction is not being executed.<br>• The MC_GearOut (End Gear Operation) instruction was executed even though the MC_GearIn (Start Gear Operation) or the MC_GearInPos (Positioning Gear Operation) instruction is not being executed.<br>• The MC_Phasing (Shift Master Axis Phase) instruction was executed even though the MC_CamIn (Start Cam Operation), MC_GearIn (Start Gear Operation), MC_GearInPos (Start Gear Operation), or MC_MoveLink (Synchronous Positioning) instruction is not being executed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 543B0000 hex | Motion Control Instruction Re-execution Disabled | An attempt was made to re-execute a motion control instruction that cannot be re-executed. | • A motion control instruction that cannot be re-executed was re-executed. | | | S | | | Same as above. |
| 543C0000 hex | Motion Control Instruction Multi-execution Disabled | Multiple functions that cannot be executed simultaneously were executed for the same target (MC common or axis). | • Multiple functions that cannot be executed simultaneously were executed for the same target (MC common or axis). | | | S | | | Same as above. |
| 543D0000 hex | Instruction Not Allowed for Encoder Axis Type | An operation instruction was executed for an encoder axis. | • An operation instruction was executed for an encoder axis. | | | S | | | Same as above. |
| 543E0000 hex | Instruction Cannot Be Executed during Multi-axes Coordinated Control | An operation instruction was executed for an axis or an axes group that was in a coordinated multi-axes motion. | • An operation instruction was executed for an axis or an axes group that was in a coordinated multi-axes motion. | | | S | | | Same as above. |
| 543F0000 hex | Multi-axes Coordinated Control Instruction Executed for Disabled Axes Group | A multi-axes coordinated control instruction was executed for an axes group that was in the Axes Group Disabled state. | • A multi-axes coordinated control instruction was executed for an axes group that was in the Axes Group Disabled state. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54400000 hex | Axes Group Cannot Be Enabled | Execution of the MC_GroupEnable (Enable Axes Group) instruction failed. | • When the MC_GroupEnable (Enable Axes Group) instruction was executed, there was a composition axis that was not stopped.<br>• When the MC_GroupEnable (Enable Axes Group) instruction was executed, there was a composition axis for which the MC_TouchProbe (Enable External Latch) instruction was being executed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54410000 hex | Impossible Axis Operation Specified when the Servo is OFF | An operation instruction was executed for an axis for which the Servo is OFF. | • An operation instruction was executed for an axis for which the Servo is OFF.<br>• Home was preset with the MC_Home or MC_HomeWithParameter instruction for an axis for which EtherCAT process data communications are not established. | | | S | | | Same as above. |
| 54420000 hex | Composition Axis Stopped Error | A motion instruction was executed for an axes group while the MC_Stop instruction was being executed for a composition axis. | • A motion instruction was executed for an axes group while the MC_Stop instruction was being executed for a composition axis. | | | S | | | Same as above. |
| 54430000 hex | Motion Control Instruction Multi-execution Buffer Limit Exceeded | The number of motion control instructions that is buffered for Buffered or Blending Buffer Modes exceeded the buffer limit. | • An axis instruction was executed when there was already a current instruction and a buffered instruction for the same axis.<br>• An axes group instruction was executed when there was already eight current instructions and buffered instructions for the same axis. | | | S | | | Same as above. |
| 54440000 hex | Insufficient Travel Distance | The specified motion cannot be executed for the deceleration rate or acceleration rate that was specified for multi-execution or re-execution of a positioning instruction. | • Stopping at the target position was not possible for the specified acceleration/deceleration rate for multi-execution or re-execution of a positioning instruction when the Acceleration/Deceleration Over parameter was set to generate a minor fault and stop. | | | S | | | Same as above. |
| 54450000 hex | Insufficient Travel Distance to Achieve Blending Transit Velocity | There is not sufficient travel distance to accelerate or decelerate to the transit velocity. | • There was not sufficient travel distance to accelerate the current command to the transit velocity when the Acceleration/Deceleration Over parameter was set to generate a minor fault and stop. | | | S | | | Same as above. |
| 54460000 hex | Move Link Constant Velocity Insufficient Travel Distance | The constant-velocity travel distance of the master axis is less than zero. | • The constant velocity travel distance of the master axis is below 0 for the MC_MoveLink (Synchronous Positioning) instruction. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54470000 hex | Positioning Gear Operation Insufficient Target Velocity | For the MC_GearInPos (Positioning Gear Operation) instruction, the target velocity of the slave axis is too small to achieve the required velocity. | • For the MC_GearInPos (Positioning Gear Operation) instruction, the value of the *Velocity* (Target Velocity) input variable is smaller than the master axis velocity multiplied by the gear ratio when the instruction was executed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54480000 hex | Same Start Point and End Point for Circular Interpolation | The start point and end point were the same when the radius method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. Or, the start point, end point, and border point were the same when the border point method was specified. | • The start point and end point were the same when the radius method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction.<br>• The start point, end point, and border point were the same when the border point method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | | | S | | | Same as above. |
| 54490000 hex | Circular Interpolation Center Specification Position Out of Range | The position specified for the center point exceeded the allowed range when the center method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | • The difference between the distance from the start point to the center point and the distance between the end point to the center point exceeded the permitted value specified for the correction allowance ratio in the axes group settings when the center designation method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | | | S | | | Same as above. |
| 544A0000 hex | Instruction Execution Error Caused by Count Mode Setting | An instruction that cannot be used when the Count Mode is set to Rotary Mode was executed for an axis that was set to Rotary Mode. | • An instruction that cannot be used when the Count Mode is set to Rotary Mode was executed for an axis that was set to Rotary Mode. | | | S | | | Same as above. |
| 544C0000 hex | Parameter Selection Out of Range | The parameter specified for the *ParameterNumber* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 544D0000 hex | Stop Method Selection Out of Range | The parameter specified for the *StopMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 544E0000 hex | Latch ID Selection Out of Range for Trigger Input Condition | The parameter specified for the *TriggerInput::LatchID* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 544F0000 hex | Setting Out of Range for Writing MC Setting | The parameter specified for the *SettingValue* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• The parameter specification and the data type of the setting value do not agree. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54500000 hex | Trigger Input Condition Mode Selection Out of Range | The parameter specified for the *TriggerInput:: Mode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54510000 hex | Drive Trigger Signal Selection Out of Range for Trigger Input Condition | The parameter specified for the *TriggerInput::InputDrive* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54530000 hex | Motion Control Instruction Re-execution Disabled (Axis Specification) | An attempt was made to change the parameter for the *Axis* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54540000 hex | Motion Control Instruction Re-execution Disabled (Buffer Mode Selection) | An attempt was made to change the parameter for the *BufferMode* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54550000 hex | Motion Control Instruction Re-execution Disabled (Direction Selection) | An attempt was made to change the parameter for the *Direction* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • An input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54560000 hex | Motion Control Instruction Re-execution Disabled (Execution Mode) | An attempt was made to change the parameter for the *Periodic* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54570000 hex | Motion Control Instruction Re-execution Disabled (Axes Group Specification) | An attempt was made to change the parameter for the *AxesGroup* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54580000 hex | Motion Control Instruction Re-execution Disabled (Jerk Setting) | An attempt was made to change the parameter for the *Jerk* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54590000 hex | Motion Control Instruction Re-execution Disabled (Master Axis) | An attempt was made to change the parameter for the *Master* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 545A0000 hex | Motion Control Instruction Re-execution Disabled (MasterOffset) | An attempt was made to change the parameter for the *MasterOffset* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 545B0000 hex | Motion Control Instruction Re-execution Disabled (MasterScaling) | An attempt was made to change the parameter for the *MasterScaling* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 545C 0000 hex | Motion Control Instruction Re-execution Disabled (MasterStart-Distance) | An attempt was made to change the parameter for the *MasterStartDistance* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 545D 0000 hex | Motion Control Instruction Re-execution Disabled (Continuous) | An attempt was made to change the parameter for the *Continuous* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 545E 0000 hex | Motion Control Instruction Re-execution Disabled (MoveMode) | An attempt was made to change the parameter for the *MoveMode* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 545F 0000 hex | Illegal Auxiliary Axis Specification | The axis specified for the *Auxiliary* input variable to a motion control instruction does not exist. | • An axis does not exist for the variable specified for the *Auxiliary* input variable to the instruction. | | | S | | | Same as above. |
| 5460 0000 hex | Illegal Axis Specification | The axis specified for the *Axis* input variable to a motion control instruction does not exist. | • An axis does not exist for the variable specified for the *Axis* input variable to the instruction. | | | S | | | Same as above. |
| 5461 0000 hex | Illegal Axes Group Specification | The axes group specified for the *AxesGroup* input variable to a motion control instruction does not exist or is not a used group. | • An axes group does not exist for the variable specified for the *AxesGroup* input variable to the instruction.<br>• The axes group specified for the *AxesGroup* input variable to the instruction is not specified as a used group. | | | S | | | Same as above. |
| 5462 0000 hex | Illegal Master Axis Specification | The axis specified for the *Master* input variable to a motion control instruction does not exist or is not a sync master axis. | • An axis does not exist for the variable specified for the *Master* input variable to the instruction.<br>• The axis that was specified for the *Master* input variable to the *MC_Phasing* (Shift Master Axis Phase) instruction is not the master axis for syncing. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54630000 hex | Motion Control Instruction Re-execution Disabled (SlaveOffset) | An attempt was made to change the *SlaveOffset* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54640000 hex | Motion Control Instruction Re-execution Disabled (SlaveScaling) | An attempt was made to change the *SlaveScaling* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54650000 hex | Motion Control Instruction Re-execution Disabled (StartPosition) | An attempt was made to change the *StartPosition* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54660000 hex | Instruction Execution Error with Undefined Home | High-speed homing or an interpolation instruction was executed when home was undefined. | • High-speed homing was executed when home was undefined.<br>• An interpolation instruction was executed for an axes group that includes an axis with no defined home. | | | S | | | Same as above. |
| 54670000 hex | Motion Control Instruction Re-execution Disabled (Position Type) | An attempt was made to change the *ReferenceType* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | Same as above. |
| 54680000 hex | Unused Axis Specification for Master Axis | The master axis specified for a motion control instruction is an unused axis. | • The master axis specified for a motion control instruction is an unused axis. | | | S | | | Same as above. |
| 54690000 hex | First Position Setting Out of Range | The parameter specified for the *FirstPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 546A0000 hex | Last Position Setting Out of Range | The parameter specified for the *LastPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 546B0000 hex | Illegal First/Last Position Size Relationship (Linear Mode) | The parameter specified for the *LastPosition* input variable to a motion control instruction is smaller than the parameter specified for the *FirstPosition* input variable. | • The value of the *LastPosition* input parameter is less than the value of the *FirstPosition* input variable for the instruction when the Count Mode is set to Linear Mode. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 546C0000 hex | Master Sync Start Position Setting Out of Range | The parameter specified for the *MasterSyncPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 546D0000 hex | Slave Sync Start Position Setting Out of Range | The parameter specified for the *SlaveSyncPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 546E0000 hex | Duplicate Latch ID for Trigger Input Condition | The same latch ID was specified for more than one motion control instruction. | • The same latch ID is used simultaneously for more than one of the following instructions: MC_TouchProbe (Enable External Latch) instruction, MC_MoveLink (Synchronous Positioning) instruction, and MC_MoveFeed (Interrupt Feeding) instruction.<br>• The MC_AbortTrigger (Disable External Latch) instruction was executed to cancel a latch that was used by an instruction other than the MC_TouchProbe (Enable External Latch) instruction. | | | S | | | Same as above. |
| 546F0000 hex | Jerk Override Factor Out of Range | The parameter specified for the *JerkFactor* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54700000 hex | Acceleration/Deceleration Override Factor Out of Range | The parameter specified for the *AccFactor* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54710000 hex | First Position Method Specification Out of Range | The parameter specified for the *StartMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54720000 hex | Motion Control Instruction Re-execution Disabled (First Position Method) | An attempt was made to change the *StartMode* input variable when re-executing a motion control instruction. (This input variable cannot be changed when re-executing an instruction.) | • A parameter for an input variable that cannot be changed for re-execution was changed. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54740000 hex | Unused Axis Specification for Auxiliary Axis | The axis specified for the *Auxiliary* input variable to a motion control instruction is an unused axis. | • The axis specified for the *Auxiliary* input variable to the instruction is an unused axis. | | | S | | | Same as above. |
| 54750000 hex | Position Gear Value Error | Synchronized motion is not possible for the velocity, acceleration rate, and deceleration rate that were input to a motion control instruction. | • The specified synchronized motion cannot be performed at the velocity, acceleration rate, or deceleration rate that is input to the instruction. | | | S | | | Same as above. |
| 54760000 hex | Position Gear Master Axis Zero Velocity | The velocity of the master axis was zero when a motion control instruction was started. | • The velocity of the master axis was 0 when the instruction was started. | | | S | | | Same as above. |
| 54780000 hex | Target Position Setting Out of Range | The parameter specified for the *Position* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• The target position of a Rotary Mode axis is not within the ring setting range. | | | S | | | Same as above. |
| 54790000 hex | Travel Distance Out of Range | The parameter that was specified for the *Distance* input variable to a motion control instruction is out of range or the target position with the value of *Distance* added is out of range. | • The absolute value of the instruction input parameter exceeded the range of 40-bit data when it is converted to pulses.<br>• For a Linear Mode axis, the target position with the travel distance added exceeded signed 40-bit data when the absolute value is converted to pulses. | | | S | | | Same as above. |
| 547A0000 hex | Cam Table Start Point Setting Out of Range | The parameter specified for the *StartPosition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 547B0000 hex | Cam Master Axis Following First Position Setting Out of Range | The parameter specified for the *MasterStartDistance* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 547C 0000 hex | Circular Interpolation Radius Setting Error | It was not possible to create a circular path for the specified radius when the radius method was specified for the MC_MoveCircular2D (Circular 2D Interpolation) instruction. | • For the MC_MoveCircular2D (Circular 2D Interpolation) instruction, it was not possible to create a circular path for the specified radius when the radius method was specified for circular interpolation. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 547D 0000 hex | Circular Interpolation Radius Overflow | For the MC_MoveCircular2D (Circular 2D Interpolation) instruction, the radius of the circle exceeded the maximum value for the border point or center specification method. | • For the MC_MoveCircular2D (Circular 2D Interpolation) instruction, the radius of the circle exceeded 40-bit data when converted to pulses for the border point or center specification method. | | | S | | | Same as above. |
| 547E 0000 hex | Circular Interpolation Setting Out of Range | The parameter specified for the *CircAxes* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable.<br>• The axes that were specified in *CircAxes* are not included in the composition axes in the Axes Group Settings.<br>• The same axis was specified for both axes of *CircAxes*. | | | S | | | Same as above. |
| 547F 0000 hex | Auxiliary/Slave Axis Numbers Not in Ascending Order | The values of the parameters for the *Auxiliary* and *Slave* input variables to a motion control instruction are not in ascending order. | • The parameters for the *Auxiliary* and *Slave* input variables to the instruction are not in ascending order. | | | S | | | Same as above. |
| 5480 0000 hex | Cam Table Property Ascending Data Error at Update | A phase that was not in ascending order was found during calculating the number of valid data. Or, after calculations, the number of valid data is 0. | • A phase that was not in ascending order was found when calculating the number of valid data.<br>• After calculations, the number of valid data is 0. | | | S | | | Same as above. |
| 5481 0000 hex | MC_Write Target Out of Range | The parameter specified for the *Target* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 5482 0000 hex | Master Travel Distance Specification Out of Range | The parameter specified for the *MasterDistance* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54830000 hex | Master Distance in Acceleration Specification Out of Range | The parameter specified for the *MasterDistanceACC* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54840000 hex | Master Distance in Deceleration Specification Out of Range | The parameter specified for the *MasterDistanceDEC* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54870000 hex | Execution Mode Selection Out of Range | The parameter specified for the *ExecutionMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54880000 hex | Permitted Following Error Out of Range | The parameter specified for the *PermittedDeviation* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54890000 hex | Border Point/Center Position/Radius Specification Out of Range | The parameter specified for the *AuxPoint* input variable to a motion control instruction is out of range. | • The value of *AutPoint* exceeded signed 40-bit data when converted to pulses for the border point or center specification method.<br>• For a radius specifications, the absolute value of *AuxPoint[0]* exceeded 40-bit data when converted to pulses. | | | S | | | Same as above. |
| 548A0000 hex | End Point Specification Out of Range | The parameter specified for the *EndPoint* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of signed 40-bit data when it is converted to pulses. | | | S | | | Same as above. |
| 548B0000 hex | Slave Travel Distance Specification Out of Range | The parameter specified for the *SlaveDistance* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of 40-bit data when it is converted to pulses. | | | S | | | Same as above. |
| 548C0000 hex | Phase Shift Amount Out of Range | The parameter specified for the *PhaseShift* input variable to a motion control instruction is out of range. | • The absolute value of the instruction input parameter exceeded the range of 40-bit data when it is converted to pulses. | | | S | | | Same as above. |
| 548D0000 hex | Feeding Distance Out of Range | The parameter specified for the *FeedDistance* input variable to a motion control instruction is out of range. | • The absolute value of the instruction input parameter exceeded the range of 40-bit data when it is converted to pulses. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 548E0000 hex | Auxiliary and Slave Defined as Same Axis | The same axis was specified for the *Auxiliary* and *Slave* input variables to a motion control instruction. | • The parameter is the same for the *Auxiliary* and *Slave* input variables to the instruction. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 548F0000 hex | Relative Position Selection Out of Range | The parameter specified for the *Relative* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54900000 hex | Cam Transition Specification Out of Range | The parameter specified for the *CamTransition* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54910000 hex | Synchronized Control End Mode Selection Out of Range | The parameter specified for the *OutMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54920000 hex | Enable External Latch Instruction Execution Disabled | *_mcImmediateStop* was specified for the *StopMode* input variable when the MC_TouchProbe (Enable External Latch) instruction was executed in Drive Mode, but the Control Mode was not CSP Mode. | • *_mcImmediateStop* was specified for the *StopMode* input variable when the MC_TouchProbe (Enable External Latch) instruction was executed in Drive Mode, but the Control Mode was not CSP Mode or the Servo was OFF. | | | S | | | Same as above. |
| 54930000 hex | Master Axis Offset Out of Range | The parameter specified for the *MasterOffset* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of signed 40-bit data when it is converted to pulses. | | | S | | | Same as above. |
| 54940000 hex | Slave Axis Offset Out of Range | The parameter specified for the *SlaveOffset* input variable to a motion control instruction is out of range. | • The instruction input parameter exceeded the range of signed 40-bit data when it is converted to pulses. | | | S | | | Same as above. |
| 54950000 hex | Command Current Position Count Selection Out of Range | The parameter specified for the *CmdPosMode* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54960000 hex | Master Axis Gear Ratio Numerator Out of Range | The parameter specified for the *RatioNumerator-Master* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54970000 hex | Master Axis Gear Ratio Denominator Out of Range | The parameter specified for the *RatioDenominatorMaster* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 54980000 hex | Auxiliary Axis Gear Ratio Numerator Out of Range | The parameter specified for the *RatioNumeratorAuxiliary* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 54990000 hex | Auxiliary Axis Gear Ratio Denominator Out of Range | The parameter specified for the *RatioDenominatorAuxiliary* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 549A0000 hex | Master Axis Position Type Selection Out of Range | The parameter specified for the *ReferenceTypeMaster* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 549B0000 hex | Auxiliary Axis Position Type Selection Out of Range | The parameter specified for the *ReferenceTypeAuxiliary* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 549C0000 hex | Target Position Ring Counter Out of Range | Operation is not possible because the target position is out of range for the ring counter of the executed instruction. | • High-speed homing was executed when 0 was not included in the ring counter. | | | S | | | Same as above. |
| 549D0000 hex (Ver. 1.01) | Axes Group Composition Axis Setting Out of Range | The parameter specified for the *Axes* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 549E0000 hex (Ver. 1.04) | Axis Use Setting Out of Range | The parameter specified for the *AxisUse* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |
| 57000000 hex (Ver. 1.03) | Homing Parameter Setting Out of Range | The parameter specified for the *HomingParameter* input variable to a motion control instruction is out of range. | • Instruction input parameter exceeded the valid range of the input variable. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 57020000 hex (Ver. 1.04) | Axis Use Change Error | The MC_ChangeAxisUse (Change Axis Use) instruction was executed when the axis was not stopped or when the command velocity of the axis was saturated. | • The MC_ChangeAxisUse (Change Axis Use) instruction was executed when the axis was not stopped or when the command velocity of the axis was saturated. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 57200000 hex (Ver. 1.04) | Motion Control Parameter Setting Error When Changing Axis Use | The motion control parameter settings for the axis that was changed to a used axis are incorrect. | • The MC_ChangeAxisUse (Change Axis Use) instruction was used to change an unused axis to a used axis, but the motion control parameter settings of the axis are not correct.<br>• The power supply was interrupted while a download of the motion control parameter settings was in progress.<br>• The non-volatile memory is faulty or the life of the non-volatile memory has been exceeded. | | | S | | | Same as above. |
| 57210000 hex (Ver. 1.04) | Required Process Data Object Not Set When Changing Axis Use | The objects that are required for the axis type of the axis that was changed to a used axis are not set. | • The objects that are required for the axis type of the axis that was changed to a used axis are not set in the PDO map settings.<br>• The power supply was interrupted while a download of the motion control parameter settings was in progress.<br>• The non-volatile memory is faulty or the life of the non-volatile memory has been exceeded. | | | S | | | Same as above. |
| 64400000 hex | Target Position Positive Software Limit Exceeded | The specified position exceeds the positive software limit. | • The parameter specified for the *Position* input variable to the instruction is beyond the positive software limit.<br>• The first position is beyond the positive software limit and an instruction that specifies motion in the opposite direction of the software limit was executed.<br>• The parameter that was specified for the *AuxPoint* input variable to a border point MC_MoveCircular2D (Circular 2D Interpolation) instruction is beyond the positive software limit. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 64410000 hex | Target Position Negative Software Limit Exceeded | The specified position exceeds the negative software limit. | • The parameter specified for the *Position* input variable to the instruction is beyond the negative software limit.<br>• The first position is beyond the negative software limit and an instruction that specifies motion in the opposite direction of the software limit was executed.<br>• The parameter that was specified for the *AuxPoint* input variable to a border point MC_MoveCircular2D (Circular 2D Interpolation) instruction is beyond the negative software limit. | | | S | | | NJ-series Motion Control Instructions Reference Manual (Cat. No. W508) |
| 64420000 hex | Command Position Overflow/Underflow | Positioning, an instruction in the underflow/overflow direction, or an instruction for which the direction is not specified was executed when there was an underflow/overflow in the command position. | • One of the following was executed when there was a command position overflow/underflow.<br>  • A positioning instruction<br>  • A continuous control instruction in the underflow/overflow direction<br>  • An instruction for which the direction is not specified (syncing or torque control) | | | S | | | Same as above. |
| 64430000 hex | Positive Limit Input | An instruction was executed for a motion in the positive direction when the positive limit input was ON. | • An instruction for a motion in the positive direction was executed when the positive limit input was ON, or an instruction for a motion with no direction specification was executed when the positive limit input was ON. An axes group motion control instruction was executed when the positive limit input was ON. | | | S | | | Same as above. |
| 64440000 hex | Negative Limit Input | An instruction for a motion in the negative direction was executed when the negative limit input was ON. | • An instruction for a motion in the negative direction was executed when the negative limit input was ON, or an instruction for a motion with no direction specification was executed when the negative limit input was ON. An axes group motion control instruction was executed when the negative limit input was ON. | | | S | | | Same as above. |
| 74220000 hex | Servo Main Circuits OFF | An attempt was made to turn ON the Servo when the main circuit power supply to the Servo Drive was OFF. | • An attempt was made to turn ON the Servo when the main circuit power supply to the Servo Drive was OFF. | | | S | | | Same as above. |

## 3-1-4 Errors in the EtherNet/IP Function Module

### Built-in EtherNet/IP Port on CPU Unit

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04200000 hex | Communications Controller Failure | A hardware error was detected in the communications controller of the built-in EtherNet/IP port. | • Communications Controller hardware error | | S | | | | NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual (Cat. No. W506) |
| 14200000 hex | MAC Address Error | The MAC address in non-volatile memory was not read correctly. | • Non-volatile memory failure | | S | | | | Same as above. |
| 14220000 hex | EtherNet/IP Processing Error | A fatal error was detected in the EtherNet/IP Function Module. | • Hardware has failed. | | S | | | | Same as above. |
| 34210000 hex | Basic Ethernet Setting Error | An error was detected in the Ethernet settings. | • Setting error<br>• Power was interrupted when a download was in progress for the Ethernet basic settings.<br>• Memory error | | S | | | | Same as above. |
| 34220000 hex | TCP/IP Basic Setting Error (Local Port IP Address) | An error was detected in the IP address settings. | • Setting error<br>• Power was interrupted when a download was in progress for the TCP/IP basic settings.<br>• Memory error<br>• The IP address acquired from BOOTP server is illegal. | | S | | | | Same as above. |
| 84010000 hex | IP Address Duplication Error | The same IP address is used more than once. | • The IP address of the built-in EtherNet/IP port is also used as the IP address of another node. | | S | | | | Same as above. |
| 84020000 hex | BOOTP Server Connection Error | Connection with the BOOTP server failed. | • Server setting error<br>• Server is down.<br>• An error occurred in the communications path. | | S | | | | Same as above. |
| 14210000 hex | Identity Error | The CIP identity information in non-volatile memory was not read correctly. | • Non-volatile memory failure | | | S | | | Same as above. |
| 34200000 hex | Tag Data Link Setting Error | An error was detected in the communications settings for tag data links. | • Power was interrupted when a download was in progress for the data link settings.<br>• Memory error | | | S | | | Same as above. |
| 34230000 hex | TCP/IP Advanced Setting Error (IP Router Table) | An error was detected in the hosts in the IP router table. | • Setting error<br>• Power was interrupted when a download was in progress for the TCP/IP advanced settings.<br>• Memory error<br>• There is a mistake in the IP router table settings or hosts settings. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34240000 hex | FTP Server Setting Error | An error was detected in the FTP server settings. | • Setting error<br>• Power was interrupted when a download was in progress for the FTP server settings.<br>• Memory error | | | S | | | NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual (Cat. No. W506) |
| 34250000 hex | NTP Client Setting Error | An error was detected in the NTP client settings. | • Setting error<br>• Power was interrupted when a download was in progress for the NTP client settings.<br>• Memory error | | | S | | | Same as above. |
| 34260000 hex | SNMP Setting Error | An error was detected in the SNMP agent/trap settings. | • Setting error<br>• Power was interrupted when a download was in progress for the SNMP agent/trap settings.<br>• Memory error | | | S | | | Same as above. |
| 34270000 hex | Tag Name Resolution Error | Resolution of a tag used in a tag data link failed. | • The size of the network-published variable is different from the tag settings.<br>• The I/O direction set for a tag data link and the I/O direction of the Controller variable do not match.<br>• There are no network-published variables for the Controller tag settings.<br>• A variable in the Controller that is set for a tag data link has the Network Publish attribute set to Input but also has the Constant attribute. | | | S | | | Same as above. |
| 50010000 hex (Ver. 1.02) | Controller Insufficient Memory Warning | The amount of data for the EtherCAT slave configuration, network-published information, or other data exceeds the value that is specified for the CPU Unit. You may not be able to perform online editing or other operations. | • The amount of data for the EtherCAT slave configuration, network-published information, or other data exceeds the value that is specified for the CPU Unit. | | | S | | | Same as above. |
| 84030000 hex | DNS Server Connection Error | Connection with the DNS server failed. | • Parameter error<br>• Server is down.<br>• An error occurred in the communications path. | | | S | | | Same as above. |
| 84040000 hex | NTP Server Connection Error | Connection with the NTP server failed. | • Parameter error<br>• Server is down.<br>• An error occurred in the communications path. | | | S | | | Same as above. |
| 84070000 hex | Tag Data Link Connection Failed | Establishing a tag data link connection failed. | • The tag data link connection information is not the same for the originator and target.<br>• Insufficient connections | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84080000 hex | Tag Data Link Timeout | A timeout occurred in a tag data link. | • The power supply to the target node is OFF.<br>• Communications with the target node stop.<br>• The Ethernet cable for EtherNet/IP is disconnected.<br>• The Ethernet cable for EtherNet/IP is broken.<br>• Noise | | | S | | | NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual (Cat. No. W506) |
| 84090000 hex (Ver. 1.04) | Tag Data Link Connection Timeout | A timeout occurred while trying to establish a tag data link connection. | • The power supply to the target node is OFF.<br>• Communications at the target node are stopped.<br>• The Ethernet cable connector for EtherNet/IP is disconnected.<br>• The Ethernet cable for EtherNet/IP is broken.<br>• An error occurred in the communications path. | | | S | U | | Same as above. |
| 54E00000 hex | Variable Access Error | Accessing a tag variable that is used in a tag data link failed. | • An out-of-range value was written by an EtherNet/IP tag data link for a variable that specifies SUBRANGE. | | | | S | | Same as above. |
| 84050000 hex | Packet Discarded Due to Full Reception Buffer | A packet was discarded. | • A network convergence occurred. | | | | S | | Same as above. |
| 84060000 hex | Link OFF Detected | An Ethernet Link OFF was detected. | • An Ethernet cable is broken, disconnected, or loose.<br>• The Ethernet switch's power supply is turned OFF.<br>• Baud rate mismatch.<br>• Noise<br>• One of the following operations was performed.<br>  • The Identify object was reset.<br>  • Settings were downloaded from the Network Configurator and EtherNet/IP was restarted.<br>  • Settings for EtherNet/IP were downloaded from the Sysmac Studio or the Memory All Clear operation was performed. | | | U | S | | Same as above. |
| 94010000 hex | Tag Data Link Download Started | Changing the tag data link settings started. | • Changing the tag data link settings started. | | | | | S | Same as above. |
| 94020000 hex | Tag Data Link Download Finished | Changing the tag data link settings finished. | • Changing the tag data link settings finished. | | | | | S | Same as above. |
| 94030000 hex | Tag Data Link Stopped | Tag data links were stopped by Network Configurator or manipulation of a system-defined variable. Or, the data link table was downloaded from the Network Configurator again. | • Tag data links were stopped by Network Configurator or manipulation of a system-defined variable. | | | | | S | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 94040000 hex | Tag Data Link Started | Tag data links were started by Network Configurator or manipulation of a system-defined variable. Or, the data link table was downloaded from the Network Configurator again. | • Tag data links were started by Network Configurator or manipulation of a system-defined variable. | | | | | S | NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual (Cat. No. W506) |
| 94050000 hex | Link Detected | Establishment of an Ethernet link was detected. | • Establishment of an Ethernet link was detected. | | | | | S | Same as above. |
| 94060000 hex | Restarting Ethernet Port | The built-in EtherNet/IP port was restarted. | • The built-in EtherNet/IP port was restarted. | | | | | S | Same as above. |
| 94070000 hex | Tag Data Link All Run | Tag data link connections to all nodes have been established. | • Tag data link connections to all target nodes have been established. | | | | | S | Same as above. |
| 94080000 hex | IP Address Fixed | The correct IP address has been determined and Ethernet communications can start. | • The correct IP address has been determined and Ethernet communications can start. | | | | | S | Same as above. |
| 94090000 hex | BOOTP Client Started | The BOOTP client started requesting an IP address. | • The BOOTP client started requesting an IP address. | | | | | S | Same as above. |
| 940A0000 hex | FTP Server Started | The FTP agent started normally. | • The FTP agent started normally. | | | | | S | Same as above. |
| 940B0000 hex | NTP Client Started | The NTP client started normally and a request for the NTP server to obtain the time started. | • The NTP client started normally and a request for the NTP server to obtain the time started. | | | | | S | Same as above. |
| 940C0000 hex | SNMP Started | The SNMP agent started normally. | • The SNMP agent started normally. | | | | | S | Same as above. |

## 3-1-5 Errors in the EtherCAT Master Function Module

### Built-in EtherCAT Master in CPU Unit

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04400000 hex | Communications Controller Failure | An error was detected in the hardware test at startup. | • The CPU Unit has failed. | | S | | | | NJ-series CPU Unit Built-in EtherCAT Port User's Manual (Cat. No. W505) |
| 14400000 hex | MAC Address Error | The MAC address is incorrect. | • The CPU Unit has failed. | | S | | | | Same as above. |
| 44010000 hex | EtherCAT Fault | A fatal error was detected in the EtherCAT Master Function Module. | • Software is corrupted. | | S | | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84200000 hex | Link OFF Error | A Link OFF state occurred. | • The Ethernet cable is broken between the master and slaves.<br>• The Ethernet cable connector is disconnected.<br>• The Ethernet cable is not connected. | | S | | | | NJ-series CPU Unit Built-in EtherCAT Port User's Manual (Cat. No. W505) |
| 24200000 hex | Slave Node Address Duplicated | The same slave address is used for two nodes. | • The same node address is set for more than one slave. | | | S | | | Same as above. |
| 34400000 hex | Network Configuration Information Error | There is an error in the network configuration information. | • The power supply to the Controller was interrupted or communications with the Sysmac Studio were disconnected while downloading the network configuration information. | | | S | | | Same as above. |
| 50010000 hex (Ver. 1.02) | Controller Insufficient Memory Warning | The amount of data for the EtherCAT slave configuration, network-published information, or other data exceeds the value that is specified for the CPU Unit. You may not be able to perform online editing or other operations. | • The amount of data for the EtherCAT slave configuration, network-published information, or other data exceeds the value that is specified for the CPU Unit. | | | S | | | Same as above. |
| 84210000 hex | Network Configuration Error | The EtherCAT network configuration is incorrect. | • Slave output ports are connected to each other.<br>• The master and slave are connected with the slave output port.<br>• The number of connected slaves exceeded the maximum number of slaves, 192 nodes, for the EtherCAT master. | | | S | | | Same as above. |
| 84220000 hex | Network Configuration Verification Error | A slave that is in the network configuration information is not connected. Or, a slave that is not in the network configuration information is connected. | • A slave that is in the network configuration information is not connected.<br>• There is a node address mismatch.<br>• A different slave from the one that is specified in the network configuration information is connected.<br>• A slave that is not in the network configuration information is connected.<br>• The Ethernet physical layer is broken between two slaves. | | | S | | | Same as above. |
| 84230000 hex | Slave Initialization Error | Slave initialization failed. | • An error occurred in EtherCAT master processing.<br>• An initialization error occurred in the EtherCAT slave. | | | S | | | Same as above. |
| 84280000 hex | Slave Application Error | An error occurred in the slave application. | • An error was detected in the slave's application layer status register. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84290000 hex | Process Data Transmission Error | Sending process data failed. | • It was not possible to send the EtherCAT frame during the EtherCAT communications period.<br>• The frame transmission jitter exceeded the limit. | | | S | | | NJ-series CPU Unit Built-in EtherCAT Port User's Manual (Cat. No. W505) |
| 842B0000 hex | Process Data Reception Timeout | Process data reception timed out. | • The Ethernet cable is broken.<br>• The Ethernet cable for EtherCAT is disconnected.<br>• A general-purpose Ethernet hub is connected.<br>• The master failed.<br>• The slave failed.<br>• The Ethernet cable is too long.<br>• The CPU Unit task period is too short.<br>• Noise | | | S | | | Same as above. |
| 842C0000 hex | Process Data Communications Error | An error occurred in process data communications. | • A slave left the network even though the disconnection operation was not performed.<br>• Noise<br>• The slave failed. | | | S | | | Same as above. |
| 102F0000 hex (Ver. 1.03) | EtherCAT Slave Backup Failed | The backup operation for an EtherCAT slave ended in an error. | • There is no connection between the EtherCAT master and the slave (Link OFF).<br>• An error caused an incorrect EtherCAT master status.<br>• The EtherCAT network configuration information does not agree with the physical network configuration.<br>• The request to the EtherCAT slave failed.<br>• The EtherCAT master was temporarily unable to perform the processing because it was executing other processing.<br>• Initialization of the EtherCAT slave failed.<br>• It was not possible to read the backup parameters from the EtherCAT slave. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 10300000 hex (Ver. 1.03) | EtherCAT Slave Restore Operation Failed | The restore operation for an EtherCAT slave ended in an error. | • There is no connection between the EtherCAT master and the slave (Link OFF).<br>• An error caused an incorrect EtherCAT master status.<br>• The EtherCAT network configuration information does not agree with the physical network configuration.<br>• The request to the EtherCAT slave failed.<br>• The EtherCAT master was temporarily unable to perform the processing because it was executing other processing.<br>• Initialization of the EtherCAT slave failed.<br>• It was not possible to write the backup parameters to the MX2/RX Series Inverter.<br>• It was not possible to write the backup parameters to the EtherCAT slave.<br>• Incorrect backup data was detected.<br>• The EtherCAT network configuration in the backup data does not agree with the physical network configuration. | | | | S | | NJ-series CPU Unit Built-in EtherCAT Port User's Manual (Cat. No. W505) |
| 64200000 hex | Emergency Message Detected | An emergency message was detected. | • An emergency message was received from a slave. | | | | S | | Same as above. |
| 842D0000 hex | EtherCAT Message Error | An error occurred in a message communications with the slave. | • Refer to the attached information to check the error. | | | | S | | Same as above. |
| 94400000 hex | Slave Disconnected | A slave was disconnected for a disconnection command. | • An operation to disconnect the slave was executed from the Sysmac Studio.<br>• The EC_DisconnectSlave instruction was executed. | | | | | S | Same as above. |
| 94410000 hex | Slave Connected | A slave was reconnected for a reconnection command. | • An operation to reconnect the slave was executed from the Sysmac Studio.<br>• The EC_ConnectSlave instruction was executed. | | | | | S | Same as above. |
| 94430000 hex | Errors Reset | A command was received to reset errors. | • An error reset operation was performed from the Sysmac Studio.<br>• The ResetECError instruction was executed. | | | | | S | Same as above. |
| 94440000 hex (Ver. 1.04) | Slave Disabled | The EtherCAT Slave was disabled. | • The EC_ChangeEnableSetting instruction was executed. | | | | | S | Same as above. |
| 94450000 hex (Ver. 1.04) | Slave Enabled | The EtherCAT Slave was enabled. | • The EC_ChangeEnableSetting instruction was executed. | | | | | S | Same as above. |

## 3-1-6 Errors in EtherCAT Slaves

This section provides tables of the events for which OMRON EtherCAT slaves provide notification to the NJ-series CPU Unit.

- Block I/O (GX-series EtherCAT Slave Units)
- Servo G5 (G5-series AC Servo Drives with Built-in EtherCAT Communications) and G5 Linear (G5-series Linear Motors/Drives with Built-in EtherCAT Communications Linear Motor Type)
- MX2/RX-series Inverters with EtherCAT Communications Units
- EtherCAT FQ-M-series Specialized Vision Sensors for Positioning
- E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors
- E3NW-ECT EtherCAT Digital Sensor Communications Unit
- ZW-CE1□T Confocal Fiber Type Displacement Sensor

### Block I/O (GX-series EtherCAT Slave Units)

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 14A0 0000 hex | Non-volatile Memory Checksum Error | An error occurred in the control parameters. | • Noise | | | S | | | GX-series EtherCAT Slave Units User's Manual (Cat. No. W488) |
| 2461 0000 hex | Switch Setting Error | The setting switch is set out of range. | • The analog range that is set on the switch is outside the setting range. | | | S | | | Same as above. |
| 64CC 0000 hex | I/O Disconnection Detected | An I/O signal line is disconnected. | • I/O signal wiring is disconnected or has a faulty connection.<br>• An I/O signal line is disconnected. | | | S | | | Same as above. |
| 04A1 0000 hex | Non-volatile Memory Hardware Error | An error occurred in non-volatile memory. | • Non-volatile memory failure | | | | S | | Same as above. |

### Servo G5 (G5-series AC Servo Drives with Built-in EtherCAT Communications) and G5 Linear (G5-series Linear Motors/Drives with Built-in EtherCAT Communications Linear Motor Type)

Event codes are given for both G5-series Cylinder-type (rotary) Servomotors and Linear Motor Type. The following abbreviations are used for the manual names.

| Manual name abbreviation | Manual name |
|---|---|
| Cylinder-type Motor Manual | G5-series AC Servomotors/Servo Drives with Built-in EtherCAT Communications User's Manual |
| Linear Motor Manual | G5-series Linear Motors/Drives with Built-in EtherCAT Communications Linear Motor Type User's Manual |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04A80000 hex | Control Power Supply Undervoltage | The voltage between the positive and negative terminals in the control power supply converter dropped below the specified value. | • Power supply undervoltage. Or, the power supply voltage dropped because there was inrush current when the main power supply was turned ON.<br>• A momentary power interruption occurred.<br>• The Servo Drive failed. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 04A90000 hex | Overvoltage | The power supply voltage exceeded the allowable input voltage range. | • The voltage between the positive and negative terminals in the control power supply converter exceeded the specified value.<br>• The voltage was suddenly increased by the phase advance capacitor or the uninterruptible power supply (UPS).<br>• The Regeneration Resistor wiring is broken.<br>• The External Regeneration Resistor is not suitable.<br>• The Servo Drive failed. | | | S | | | Same as above. |
| 04AA0000 hex | Main Circuit Power Supply Undervoltage (Undervoltage between positive and negative terminals) | If the Undervoltage Error Selection (3508 hex) is set to 1, a momentary power interruption occurred between L1 and L3 for longer than the value specified for the Momentary Hold Time. The voltage between the positive and negative terminals in the main power supply converter dropped below the specified value while the Servo was ON. | • Insufficient power supply capacity<br>• The electromagnetic contactor in the main circuit power supply was tripped.<br>• A momentary power interruption occurred.<br>• A Servo Drive with 3-phase input specifications was operated with a single-phase power supply.<br>• The Servo Drive failed. | | | S | | | Same as above. |
| 04AB0000 hex | Main Circuit Power Supply Undervoltage (AC Cutoff Detected) | If the Undervoltage Error Selection (3508 hex) is set to 1, a momentary power interruption occurred between L1 and L3 for longer than the value specified for the Momentary Hold Time. The voltage between the positive and negative terminals in the main power supply converter dropped below the specified value while the Servo was ON. | • Insufficient power supply capacity<br>• The electromagnetic contactor in the main circuit power supply was tripped.<br>• A momentary power interruption occurred.<br>• A Servo Drive with 3-phase input specifications was operated with a single-phase power supply.<br>• The Servo Drive failed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04AC0000 hex | Overcurrent | The current flowing through the converter exceeded the specified value. | • A short-circuit, line-to-ground fault, contact failure, or insulation failure occurred on the U, V, or W motor line.<br>• The Servo Drive failed.<br>• The relay for the dynamic brake has been welded due to frequent Servo ON/OFF operations.<br>• Motor windings are burned out.<br>• The Servomotor is not suitable for the Servo Drive.<br>• The command input timing is the same as or earlier than the Servo ON timing. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 04AD0000 hex | IPM Error | The current flowing through the converter exceeded the specified value. | • A short-circuit, line-to-ground fault, contact failure, or insulation failure occurred on the U, V, or W motor line.<br>• The Servo Drive failed.<br>• The relay for the dynamic brake has been welded due to frequent Servo ON/OFF operations.<br>• Motor windings are burned out.<br>• The Servomotor is not suitable for the Servo Drive.<br>• The pulse input timing is the same as or earlier than the Servo ON timing. | | | S | | | Same as above. |
| 04AE0000 hex | Regeneration Tr Error | The Servo Drive regeneration drive Tr is faulty. | • The Servo Drive regeneration drive Tr is faulty. | | | S | | | Same as above. |
| 04AF0000 hex | Encoder Phase-Z Error | A missing serial incremental encoder phase-Z pulse was detected. | • The encoder is faulty. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 04B00000 hex | Encoder CTS Signal Error | A missing serial incremental encoder CTS signal logic error was detected. | • The encoder is faulty. | | | S | | | Same as above. |
| 04B10000 hex | Node Address Setting Error | The node address that was read from the rotary switches was not between 00 and 99. | • The Servo Drive failed. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 04B20000 hex | Other Errors | The Servo Drive malfunctioned, or an error occurred in the Servo Drive. | • The control circuit malfunctioned temporarily due to excess noise.<br>• The Servo Drive's self-diagnosis function detected an error in the Servo Drive. | | | S | | | Linear Motor Manual (Cat. No. I577) |
| 08080000 hex | Encoder Communications Disconnection Error | A disconnection was detected because communications between the encoder and the Servo Drive were stopped more frequently than the specified value. | • The encoder is not wired correctly. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 08090000 hex | Encoder Communications Error | There is a communications error for the encoder. | • The power supply voltage of the encoder is low.<br>• Noise | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 080A0000 hex | Encoder Communications Data Error | There is an error in the communications data of the encoder. | • The power supply voltage of the encoder is low.<br>• Noise | | | S | | | Same as above. |
| 080B0000 hex | Safety Input Error | At least one of the input photocouplers for safety inputs 1 and 2 turned OFF. | • The cable is disconnected or broken. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 080C0000 hex | External Encoder Connection Error | A disconnection was detected because communications between the external encoder and the Servo Drive were stopped more frequently than the specified value. | • The wiring is incorrect. | | | S | | | Same as above. |
| 080D0000 hex | External Encoder Communications Data Error | There was a communications error in data from the external encoder. | • There is insufficient external encoder power supply voltage.<br>• Noise | | | S | | | Same as above. |
| 080E0000 hex | External Encoder Status Error 0 | Bit 00 of the external encoder error code (ALMC) was set to 1. | • Bit 00 of the external scale error code (ALMC) was set to 1. | | | S | | | Same as above. |
| 080F0000 hex | External Encoder Status Error 1 | Bit 01 of the external encoder error code (ALMC) was set to 1. | • Bit 01 of the external encoder error code (ALMC) was set to 1. | | | S | | | Same as above. |
| 08100000 hex | External Encoder Status Error 2 | Bit 02 of the external encoder error code (ALMC) was set to 1. | • Bit 02 of the external encoder error code (ALMC) was set to 1. | | | S | | | Same as above. |
| 08110000 hex | External Encoder Status Error 3 | Bit 03 of the external encoder error code (ALMC) was set to 1. | • Bit 03 of the external encoder error code (ALMC) was set to 1. | | | S | | | Same as above. |
| 08120000 hex | External Encoder Status Error 4 | Bit 04 of the external encoder error code (ALMC) was set to 1. | • Bit 04 of the external encoder error code (ALMC) was set to 1. | | | S | | | Same as above. |
| 08130000 hex | External Encoder Status Error 5 | Bit 05 of the external encoder error code (ALMC) was set to 1. | • Bit 05 of the external encoder error code (ALMC) was set to 1. | | | S | | | Same as above. |
| 08140000 hex | Phase-A Connection Error | An error such as broken wiring was detected in the external encoder phase-A connection. | • An error such as broken wiring was detected in the external encoder phase-A connection. | | | S | | | Same as above. |
| 08150000 hex | Phase-B Connection Error | An error such as broken wiring was detected in the external encoder phase-B connection. | • An error such as broken wiring was detected in the external encoder phase-B connection. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 08160000 hex | Phase-Z Connection Error | An error such as broken wiring was detected in the external encoder phase-Z connection. | • An error such as broken wiring was detected in the external encoder phase-Z connection. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 08170000 hex | Encoder Data Restoration Error | Initialization of internal position data was not processed correctly in Semi-closed Control Mode and Absolute Value Mode. | • There is insufficient power supply voltage for the encoder.<br>• Noise is entering on the encoder line. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 08180000 hex | External Encoder Data Restoration Error | Initialization of internal position data was not processed correctly in Fully-closed Control Mode and Absolute Value Mode. | • There is insufficient power supply voltage for the external encoder.<br>• Noise is entering on the external encoder line. | | | S | | | Same as above. |
| 14A80000 hex | Object Error | The object area data in non-volatile memory is corrupted. | • Noise<br>• Non-volatile memory failure | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 14A90000 hex | Object Error | The object area data in non-volatile memory is corrupted. | • Noise<br>• Non-volatile memory failure | | | S | | | Same as above. |
| 14AA0000 hex | Object Error | The object area data in non-volatile memory is corrupted. | • Noise<br>• Non-volatile memory failure | | | S | | | Same as above. |
| 14AB0000 hex | Object Corrupted | The checksum data in non-volatile memory is corrupted. | • Non-volatile memory failure | | | S | | | Same as above. |
| 14AC0000 hex | Object Corrupted | The checksum data in non-volatile memory is corrupted. | • Non-volatile memory failure | | | S | | | Same as above. |
| 14AD0000 hex | Object Corrupted | The checksum data in non-volatile memory is corrupted. | • Non-volatile memory failure | | | S | | | Same as above. |
| 18200000 hex | Absolute Encoder Overspeed Error | The Servomotor rotation speed exceeded the specified value when only the battery power supply was used during a power interruption. | • There is insufficient power supply voltage for the encoder.<br>• The wiring of the CN2 connector is wrong.<br>• An external force is rotating the motor when the Servo is OFF. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 18210000 hex | Encoder Initialization Error | An encoder initialization error was detected. | • Servomotor failed. | | | S | | | Same as above. |
| 18220000 hex | Absolute Encoder One-rotation Counter Error | The encoder detected a one-rotation counter error. | • Servomotor failed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 18230000 hex | Absolute Encoder Multi-rotation Counter Error | The encoder detected a multi-rotation counter error. | • Servomotor failed. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 24680000 hex | Motor Non-conformity | The Servo Drive and Servomotor combination is not correct. | • The Servo Drive and Servomotor combination is not correct. | | | S | | | Same as above. |
| 24690000 hex | Motor Non-conformity | The Servo Drive and Servomotor combination is not correct. | • The Servo Drive and Servomotor combination is not correct. | | | S | | | Same as above. |
| 246A0000 hex | Motor Non-conformity | The Servo Drive and Servomotor combination is not correct. | • The Servo Drive and Servomotor combination is not correct. | | | S | | | Same as above. |
| 246B0000 hex | Motor Non-conformity | The Servo Drive and Servomotor combination is not correct. | • The Servo Drive and Servomotor combination is not correct. | | | S | | | Same as above. |
| 246C0000 hex | Motor Non-conformity | The Servo Drive and Servomotor combination is not correct. | • The Servo Drive and Servomotor combination is not correct. | | | S | | | Same as above. |
| 28010000 hex | Motor Setting Error | Settings associated with the motor and external encoder are missing. | • Settings associated with the motor and external encoder are missing. | | | S | | | Linear Motor Manual (Cat. No. I577) |
| 28020000 hex | Motor Combination Error 1 | The value set for the motor current exceeds the maximum motor capacity allowed for the Servo Drive. | • The Motor Rated Rms Current/Motor Peak Absolute Current exceeds the maximum motor capacity allowed for the Servo Drive. | | | S | | | Same as above. |
| 28030000 hex | Motor Combination Error 2 | The value set for the motor exceeds the drive range of the motor. | • The Motor Rated Rms Current is too low compared with the maximum motor capacity of the Servo Drive.<br>• The percentage of the Motor Coil Unit Mass to the Motor Rated Force is too high.<br>• The automatically adjusted Current Loop Proportional Gain/Current Loop Integral Gain is too high.<br>• The percentage of the Motor Peak Absolute Current to the Motor Rated Rms Current is greater than 500%. | | | S | | | Same as above. |
| 34E10000 hex | Servo Drive Overheat | The temperature of the Servo Drive radiator or power elements exceeded the specified value. | • The ambient temperature of the Servo Drive exceeded the specified value.<br>• Overload | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34E20000 hex | Overload | When the feedback value for torque/force command exceeds the overload level specified in the Overload Detection Level Setting (3512 hex), overload protection is performed according to the overload characteristics. | • Operation was continued for a long time while overloaded.<br>• There is incorrect wiring of the motor line or a broken cable. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 34E30000 hex | Regeneration Overload | The regenerative energy exceeds the processing capacity of the Regeneration Resistor. | • The load inertia/load mass is too large. Or, the Servomotor rotation speed/motor speed is too high is too high to absorb the regenerative energy within the specified deceleration time.<br>• This Regeneration Resistor cannot be used for continuous regenerative braking. (The operating limit of the external resistor is limited to a 10% duty.) | | | S | | | Same as above. |
| 34E40000 hex | Error Counter Overflow | Position error pulses exceeded the setting of the Following error window (6065 hex). | • Motor operation does not follow the command.<br>• The value of the Following error window (6065 hex) is small.<br>• The encoder/external encoder wiring is incorrect. | | | S | | | Same as above. |
| 34E50000 hex | Excessive Velocity Error | The difference between the internal position command velocity and the actual velocity (i.e., the velocity error) exceeded the Excessive Velocity Error Setting (3602 hex). | • Motor operation does not follow the command.<br>• The setting of the Excessive Velocity Error Setting (3602 hex) is too small. | | | S | | | Same as above. |
| 34E60000 hex | Overspeed | The Servomotor rotation speed/motor speed exceeded the value set on the Overspeed Detection Level Setting (3513 hex). | • The velocity command value is too large.<br>• There is overshooting.<br>• The wiring is incorrect. | | | S | | | Same as above. |
| 383F0000 hex | Excessive Hybrid Following Error | During fully-closed control, the difference between the load position from the external encoder and the Servomotor position from the encoder was larger than the number of pulses set as the Hybrid Following Error Counter Overflow Level (3328 hex). | • Connections are not correct.<br>• The settings are not correct. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 38400000 hex | Overspeed 2 | The Servomotor rotation speed/motor speed exceeded the value set on Overspeed Detection Level Setting at Immediate Stop (3615 hex). | • The velocity command value is too large.<br>• There is overshooting.<br>• The wiring is incorrect. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 38410000 hex | Command Error | The position command variation after the electronic gear exceeded the specified value. | • The change in position command is too large.<br>• The backlash compensation amount is too large. | | | S | | | Same as above. |
| 38420000 hex | Command Generation Error | During position command processing, an error such as a calculation range error occurred. | • During position command processing, an error such as a calculation range error occurred. | | | S | | | Same as above. |
| 38430000 hex | Error Counter Overflow 1 | The absolute encoder position/absolute scale position in pulses divided by the electronic gear ratio exceeded $\pm 2^{31}$ (2,147,483,648). | • The absolute encoder position/absolute scale position in pulses divided by the electronic gear ratio exceeded $\pm 2^{31}$ (2,147,483,648). | | | S | | | Same as above. |
| 38440000 hex | Error Counter Overflow 2 | The position following error in pulses exceeded $\pm 2^{29}$ (536,870,912). Or, the position following error in command units exceeded $\pm 2^{30}$ (1,073,741,824). | • There is insufficient torque/force.<br>• There is insufficient gain.<br>• The encoder/external encoder wiring is incorrect. | | | S | | | Same as above. |
| 38450000 hex | Interface Input Duplicate Allocation Error 1 | There is a duplicate setting in the input signal (IN1, IN2, IN3, and IN4) function allocations. | • There is a duplicate setting in the input signal (IN1, IN2, IN3, and IN4) function allocations. | | | S | | | Same as above. |
| 38460000 hex | Interface Input Duplicate Allocation Error 2 | There is a duplicate setting in the input signal (IN5, IN6, IN7, and IN8) function allocations. | • There is a duplicate setting in the input signal (IN5, IN6, IN7, and IN8) function allocations. | | | S | | | Same as above. |
| 38470000 hex | Interface Input Function Number Error 1 | There is an undefined number specification in the input signal (IN1, IN2, IN3, and IN4) function allocations. Or, a logic setting error was detected. | • There is an undefined number specification in the input signal (IN1, IN2, IN3, and IN4) function allocations.<br>• Different logic is set for the same function in the function assignments of the input signals (IN1, IN2, IN3, and IN4). | | | S | | | Same as above. |
| 38480000 hex | Interface Input Function Number Error 2 | There is an undefined number specification in the input signal (IN5, IN6, IN7, and IN8) function allocations. Or, a logic setting error was detected. | • There is an undefined number specification in the input signal (IN5, IN6, IN7, and IN8) function allocations.<br>• Different logic is set for the same function in the function assignments of the input signals (IN5, IN6, IN7, and IN8). | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 38490000 hex | Interface Output Function Number Error 1 | There is an undefined number specification in the output signal (OUTM1) function allocation. | • There is an undefined number specification in the output signal (OUTM1) function allocation. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 384A0000 hex | Interface Output Function Number Error 2 | There is an undefined number specification in the output signal (OUTM2) function allocation. | • There is an undefined number specification in the output signal (OUTM2) function allocation. | | | S | | | Same as above. |
| 384B0000 hex | External Latch Input Allocation Error | There is an error in the latch input function allocation. | • The latch input was allocated to an input signal other than IN5, IN6, or IN7.<br>• A latch input is assigned to an NC signal.<br>• The same latch input is not assigned to the same pin in all Control Modes. | | | S | | | Same as above. |
| 384C0000 hex | Overrun Limit Error | The Servomotor exceeded the allowable operating range set in the Overrun Limit Setting (3514 hex) with respect to the position command input range. | • The gain or inertial ratio/mass ratio is not suitable.<br>• The set value of the Overrun Limit Setting (3514 hex) is too small. | | | S | | | Same as above. |
| 384D0000 hex | Absolute Encoder System Down Error | The voltage of the built-in capacitor dropped below the specified value because the power supply to the encoder or the battery power supply was down. | • The voltage of the built-in capacitor dropped below the specified value because the power supply to the encoder or the battery power supply was down. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 384E0000 hex | Absolute Encoder Counter Overflow Error | The multi-rotation counter of the encoder exceeded the specified value. | • The set value for switching operation with the absolute encoder is too large.<br>• The traveling distance from home of the machine exceeded 32,767 revolutions. | | | S | | | Same as above. |
| 384F0000 hex | Object Setting Error 1 | The electronic gear ratio exceeded the allowable range. | • The electronic gear ratio exceeded the allowable range. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 38500000 hex | Object Setting Error 2 | External encoder ratio exceeded the allowable range. | • External encoder ratio exceeded the allowable range. | | | S | | | Same as above. |
| 38510000 hex | External Encoder Connection Error | The set value of the External Feedback Pulse Type Selection (3323 hex) differs from the external encoder type that is connected for serial communications. | • The set value of the External Feedback Pulse Type Selection (3323 hex) differs from the external encoder type that is connected for serial communications. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 38520000 hex | Function Setting Error | The function that was set does not support the communications period. | • The electronic gear object ratio was not 1:1 when the communications period was set to 500 μs.<br>• Modes of operation (6060 hex) was set to pp or hm when the communications period was set to 500 μs.<br>• More than 12 bytes were mapped for RxPDO in Fully-closed Control Mode (This applies only to Cylinder-type Servomotors.).<br>• Modes of operation (6060 hex) was set to pp or hm in Fully-closed Control Mode when the communications period was set to 1 ms and the electronic gear parameter ratio was not set to 1:1 (This applies only to Cylinder-type Servomotors.).<br>• No bytes (i.e., no objects) were mapped for RxPDO.<br>• More than 10 objects were mapped for RxPDO.<br>• More than 11 objects were mapped for TxPDO.<br>• CSP Switching Reference Position (4020 hex) was mapped for TxPDO when the communications period was set to 500 μs or when the electronic gear object ratio was not set to 1:1. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 38530000 hex | Magnetic Pole Position Estimation Error 1 | Magnetic pole position estimation was not completed successfully. | • Settings associated with the external encoder are incorrect.<br>• The command time or force command value for magnetic pole position estimation is too low.<br>• There is a large unbalanced load or friction. | | | S | | | Linear Motor Manual (Cat. No. I577) |
| 38540000 hex | Magnetic Pole Position Estimation Error 2 | Magnetic pole position estimation was not completed successfully because the motor did not stop within the Magnetic Pole Position Estimation Time Limit for Stop. | • The value set for the Magnetic Pole Position Estimation Time Limit for Stop (3927 hex) is small compared with the actual stop time of the motor.<br>• The motor is moving when no force is applied. | | | S | | | Same as above. |
| 38550000 hex | Magnetic Pole Position Estimation Error 3 | Magnetic pole position restoration was not completed successfully. | • The Magnetic Pole Detection Method (3920 hex) object was set to 3 (Magnetic pole position restoration method), although magnetic pole position estimation had never been executed.<br>• The Magnetic Pole Detection Method (3920 hex) was set to 3 (Magnetic pole position restoration method) when a non-absolute type external encoder was used. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 38560000 hex | Motor Auto-setting Error | The current exceeded the limit when it was applied to the Motor when the Servo was locked or when FFT measurement preparations were performed. | • The Current Loop Proportional Gain or the Current Loop Integral Gain was too large before auto-setting was performed. | | | S | | | Linear Motor Manual (Cat. No. I577) |
| 64E00000 hex | Drive Prohibition Input Error 1 | When the Drive Prohibition Input Selection (3504 hex) was set to 0, both the Forward/Positive Drive Prohibition Input (POT) and Reverse/Negative Drive Prohibition Input (NOT) turned ON. Or, when the Drive Prohibition Input Selection (3504 hex) was set to 2, either the Forward/Positive Drive Prohibition Input (POT) or Reverse/Negative Drive Prohibition Input (NOT) turned ON. | • A problem occurred with the switches, wires, and power supplies that are connected to the Forward/Positive Drive Prohibition Input (POT) and Reverse/Negative Drive Prohibition Input (NOT). | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 64E10000 hex | Drive Prohibition Input Error 2 | An operation command (such as a trial run of FFT) was received from the CX-Drive when the Drive Prohibition Input Selection (3504 hex) was set to 0, EtherCAT communications was interrupted, and either POT or NOT was ON. Or, POT or NOT turned ON while operation was being performed for a CX-Drive operation command. | • A problem occurred with the switches, wires, and power supplies that are connected to the Forward/Positive Drive Prohibition Input (POT) and Reverse/Negative Drive Prohibition Input (NOT). | | | S | | | Same as above. |
| 64E20000 hex | Immediate Stop Input Error | An Immediate Stop (STOP) signal was input. | • An Immediate Stop (STOP) signal was input.<br>• Incorrect wiring of the immediate stop input (STOP). | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 74810000 hex | Command Error | A mistake was made in using a command. | • When bit 09 (Remote) of the Statusword (6041 hex) was set to 1 (remote), and the Servo Drive was in operation enabled state (Servo ON), a command was received that changes the communications state from Operational to another state (Init, Pre-operational, or Safe-operational state).<br>• When bit 09 (Remote) of the Statusword (6041 hex) was set to 0 (local), a command was received during FFT or test run status that changes the ESM state from Operational, Safe-operational, or Pre-operational state to Init state.<br>• An unsupported number was set for 6060 hex (Operation Mode).<br>• During Fully-closed Control Mode, csv or cst was set for 6060 hex (Operation Mode) (This applies to Cylinder-type Servomotors.).<br>• The setting of 6060 hex (Operation Mode) was changed at an interval of less than 2 ms.<br>• Homing was started when 6098 hex (Homing Method) was set to a value other than 8, 12, 19, 20, 33, 34,or 35.<br>• Data setting warnings (B0 hex) occurred continuously for the number of data setting warnings that is set in 3781 hex (Data Setting Warning Detection Count). | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 78010000 hex | Operation Command Competition | An attempt was made to establish EtherCAT communications or to turn ON the Servo from the Controller (enable operation) while executing an FFT that operates with the Servo Drive alone or a trial run. | • EtherCAT communications (change from Init to Pre-operational state) was established or an attempt to turn ON the Servo from the Controller (enable operation) was made while executing an FFT that operates with the Servo Drive trial run. | | | S | | | Same as above. |
| 78020000 hex | Absolute Encoder Status Error | The rotation of the encoder was higher than the specified value when the power supply was turned ON. | • The rotation of the encoder was higher than the specified value when the power supply was turned ON. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 84B10000 hex | EtherCAT State Change Error | A communications state change command was received for which the current communications state could not be changed. | • A communications state change command was received for which the current communications state could not be changed. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84B20000 hex | EtherCAT Illegal State Change Error | An undefined communications state change command was received. | • An undefined communications state change command was received. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 84B30000 hex | Communications Synchronization Error | The number of consecutive errors in receiving data during the communication sync time exceeded the value specified for the Communications Control Setting. | • Power to the host controller was interrupted during PDO communications.<br>• An EtherCAT communications cable is disconnected, broken, or incorrectly connected.<br>• Noise | | | S | | | Same as above. |
| 84B40000 hex | Synchronization Error | A synchronization error occurred. | • Noise<br>• Control PCB error | | | S | | | Same as above. |
| 84B50000 hex | Sync Manager WDT Error | PDO communications were stopped for more than the specified period of time. | • The EtherCAT communications cable is disconnected or broken.<br>• There is an error in the host controller. | | | S | | | Same as above. |
| 84B60000 hex | ESC Initialization Error | An error occurred in ESC initialization. | • Control PCB error | | | S | | | Same as above. |
| 84B70000 hex | Slave Unit Verification Error | An error occurred in Slave Unit verification. | • Control PCB error | | | S | | | Same as above. |
| 84B80000 hex | Communications Setting Error | There is an error in the communications settings. | • An out-of-range value was set from the host controller.<br>• A command that changes the communications state to an unsupported state was received. | | | S | | | Same as above. |
| 84B90000 hex | Synchronization Interruption Error | A synchronization interruption error occurred. | • Control PCB error | | | S | | | Same as above. |
| 98010000 hex | Absolute Value Cleared | The multi-rotation counter for the absolute encoder was cleared during USB communications by the CX-Drive. | • The multi-rotation counter for the absolute encoder was cleared during USB communications by the CX-Drive. | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) |
| 98020000 hex | Position Data Initialized | A Config operation was performed or the multi-rotation counter was cleared for the absolute encoder during EtherCAT communications. | • A Config operation was performed during EtherCAT communications.<br>• The multi-rotation counter was cleared for the absolute encoder. (This applies only to Cylinder-type Servomotors.) | | | S | | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 08010000 hex | Battery Warning | The battery voltage is 3.2 V or less. | • The battery voltage is 3.2 V or lower. | | | | S | | Cylinder-type Motor Manual (Cat. No. I576) |
| 08020000 hex | Fan Warning | The fan stop state continued for 1 second. | • There is foreign matter in the fan.<br>• The Servo Drive failed. | | | | S | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 08030000 hex | Encoder Communications Warning | Encoder communications errors occurred in series more frequently than the specified value. | • There is insufficient power supply voltage for the encoder.<br>• Noise is entering on the encoder line. | | | | S | | Cylinder-type Motor Manual (Cat. No. I576) |
| 08040000 hex | Encoder/Serial Conversion Unit Overheating Warning | The encoder temperature exceeded the specified value or an overheating warning was detected for the Serial Conversion Unit. | • The ambient temperature is too high.<br>• Servomotor/Linear Motor failed. | | | | S | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 08050000 hex | Life Expectancy Warning | The remaining life of the capacitor or the fan is shorter than the specified value. | • The life expectancy of the capacitor or the fan is shorter than the specified value. | | | | S | | Same as above. |
| 08060000 hex | External Encoder Error Warning | The external encoder detected a warning. | • There is insufficient power supply voltage for the external encoder.<br>• Noise is entering on the external encoder connector cable.<br>• The external encoder failed. | | | | S | | Same as above. |
| 08070000 hex | External Encoder Communications Warning | The external encoder had more communications errors than the specified value. | • There is insufficient power supply voltage for the external encoder.<br>• Noise is entering on the external encoder connector cable. | | | | S | | Same as above. |
| 34E00000 hex | Data Setting Warning | An object setting is out of range. | • An object setting is out of range. | | | | S | | Same as above. |
| 383C0000 hex | Overload Warning | The load ratio is 85% or more of the protection level. | • Overload<br>• There is incorrect wiring of the motor line or a broken cable. | | | | S | | Same as above. |
| 383D0000 hex | Excessive Regeneration Warning | The regeneration load ratio is 85% or more of the level. | • There is excessive regeneration.<br>• This Regeneration Resistor cannot be used for continuous regenerative braking. | | | | S | | Same as above. |
| 383E0000 hex | Vibration Detection Warning | Vibration was detected. | • The gain or inertial ratio/mass ratio setting is not suitable. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 74800000 hex | Command Warning | A command could not be executed. | • The absolute multi-rotation counter was cleared when the Servo was not OFF when using an absolute encoder for semi-closed control (This applies only to Cylinder-type Servomotors.).<br>• A forced brake operation request was sent while the Servo was ON.<br>• A Switch ON command was sent when the main power was OFF. (When 3508 hex = 0)<br>• An Enable Operation command was sent to request turning ON the Servo when the Servomotor was operating at 30 r/min or 30 mm/s, or higher.<br>• A latch operation was started under the following conditions.<br>  • An absolute external encoder was used and phase Z was selected as the trigger for fully-closed control (This applies only to Cylinder-type Servomotors.).<br>  • The absolute multi-rotation data was being cleared or the Config operation was being performed.<br>  • The Statusword (6041 hex) bit 09 (remote) was 0 (local).<br>• An operation command is given in the prohibited direction after the motor made an immediate stop due to a drive prohibition input. | | | | S | | Cylinder-type Motor Manual (Cat. No. I576) and Linear Motor Manual (Cat. No. I577) |
| 84B00000 hex | EtherCAT Communications Warning | An EtherCAT communications error occurred one or more times. | • The EtherCAT communications cable is disconnected or broken.<br>• Noise | | | | S | | Same as above. |

## MX2/RX-series Inverters with EtherCAT Communications Units

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04A10000 hex | Non-volatile Memory Hardware Error | An error occurred in non-volatile memory. | • Non-volatile memory failure | | | S | | | MX2/RX Series Inverter EtherCAT Communication Unit User's Manual (Cat. No. I574) |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04BA0000 hex | Connection Error between Inverter and Communications Unit | An error occurred in the connection between the Inverter and the EtherCAT Communications Unit for the Inverter. | • Contact failure between the Inverter and the EtherCAT Communications Unit for the Inverter.<br>• Inverter trip was reset.<br>• The Inverter was initialized or the mode was changed.<br>• The EtherCAT Communications Unit for the Inverter failed. | | | S | | | MX2/RX Series Inverter EtherCAT Communication Unit User's Manual (Cat. No. I574) |
| 04BB0000 hex | Inverter Warning | An Inverter warning was detected. | • An Inverter warning was detected. | | | S | | | Same as above. |
| 04BC0000 hex | Inverter Trip | An Inverter trip was detected. | • An Inverter trip was detected. | | | S | | | Same as above. |
| 34F00000 hex | PDO Setting Error | There is an illegal setting value in the PDO mapping. | • The PDO mapping or SyncManager settings are incorrect. | | | S | | | Same as above. |

## EtherCAT FQ-M-series Specialized Vision Sensors for Positioning

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 78080000 hex | TRIG Input Error | A TRIG signal was input when the BUSY signal for Sensor measurement was ON. | • A TRIG signal was input when the BUSY signal for Sensor measurement was ON.<br>• Chattering occurred for a contact input. | | | S | | | FQ-M-series Specialized Vision Sensor for Positioning User's Manual (Cat. No. Z314) |
| 780A0000 hex | Scene Data Error | The scene data to switch to is corrupted. | • The power supply was interrupted when the scene data to switch to was saved. | | | S | | | Same as above. |
| 780B0000 hex | Model Error | A model was re-registered with an image with low contrast. | • A model was re-registered with an image with low contrast. | | | S | | | Same as above. |
| 780C0000 hex | Logging Error | Some data was not saved when logging data to files on an SD card. | • Too much data to log in files occurred in a short period of time, and writing to the SD card could not keep up. | | | S | | | Same as above. |
| 780D0000 hex | Output Timeout | A timeout occurred in data output handshaking control for measurement results. | • The data output handshaking controls in the program (i.e., the ON/OFF timing of the DSA signal) are not correct.<br>• The output control timeout time is too short in comparison with the program processing time. | | | S | | | Same as above. |
| 780E0000 hex | Output Size Error | The data output size setting and the PDO mapping setting do not agree. | • The EtherCAT data output size setting in the Sensor and the PDO mapping setting in the EtherCAT master do not agree. | | | S | | | Same as above. |

## E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04C4 0000 hex | Sensor Communications Error | An error occurred in a Sensor connection. | • The Sensor is disconnected. | | | S | | | EtherCAT Digital-type Sensor Communications Unit Operation Manual (Cat. No. E413) |
| 04C5 0000 hex | Sensor Communications Has Not Been Established | Communications has not been established with the Sensor. | • A Sensor is not connected. | | | S | | | Same as above. |
| 14A0 0000 hex | Non-volatile Memory Checksum Error | An error occurred in the control parameters. | • Noise | | | S | | | Same as above. |
| 2478 0000 hex | Number of Sensors Verify Error | The number of Sensors that is connected does not agree with the settings. | • The set value does not match the number of Sensors that are actually connected. | | | S | | | Same as above. |
| 2479 0000 hex | Number of Sensors Over Limit | Too many Sensors are connected. | • More than the maximum number of Sensors are connected. | | | S | | | Same as above. |
| 34F8 0000 hex | Dummy Sensors Setting Error | Too many Dummy Units are set. | • There are too many Dummy Units set, so some Sensors are not assigned logical unit numbers. | | | S | | | Same as above. |
| 04A1 0000 hex | Non-volatile Memory Hardware Error | An error occurred in non-volatile memory. | • Non-volatile memory failure | | | | S | | Same as above. |

## E3NW-ECT EtherCAT Digital Sensor Communications Unit

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04C4 0000 hex | Sensor Communications Error | An error occurred in a Sensor connection. | • The Sensor is disconnected. | | | S | | | EtherCAT Digital Sensor Communications Unit Operation Manual (Cat. No. E429) |
| 04C5 0000 hex | Sensor Communications Has Not Been Established | Communications has not been established with the Sensor. | • A sensor is not connected. | | | S | | | Same as above. |
| 14A0 0000 hex | Non-volatile Memory Checksum Error | An error occurred in the control parameters. | • Noise | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 247A 0000 hex | Number of Distributed Sensor Unit Verify Error | The number of Distributed Sensor Unit that is checked at power up is decreased. | • The Distributed Sensor Unit is disconnected | | | S | | | EtherCAT Digital Sensor Communications Unit Operation Manual (Cat. No. E429) |
| 247B 0000 hex | Number of Sensors Over Limit | Too many Sensors are connected. | • More than the maximum number of Sensors are connected. | | | S | | | Same as above. |
| 247C 0000 hex | Number of Sensors Verify Error | The number of Sensors that is connected does not agree with the settings. | • The set value does not match the number of Sensors that are actually connected | | | S | | | Same as above. |
| 247D 0000 hex | Number of Sensors Over at Distributed Sensor Unit | Too many Sensors are connected at Distributed Sensor Unit. | • More than the maximum number of Sensors are connected at Distributed Sensor Unit. | | | S | | | Same as above. |
| 34F8 0000 hex | Dummy Sensors Setting Error | Too many Dummy Units are set. | • There are too many Dummy Units set, so some Sensors are not assigned logical unit numbers. | | | S | | | Same as above. |
| 04A1 0000 hex | Non-volatile Memory Hardware Error | An error occurred in non-volatile memory. | • Non-volatile memory failure | | | | S | | Same as above. |

## ZW-CE1□T Confocal Fiber Type Displacement Sensor

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04D0 0000 hex | Hardware error | Some abnormality occurred on the displacement sensor hardware. | • Hardware damage | | | S | | | ZW-CE1□T Confocal Fiber Type Displacement Sensor User's Manual (Cat. No. Z332) |
| 14B0 0000 hex | Linearity correction data error | The linearity correction data of the displacement sensor is damaged. | • Calibration ROM damage | | | S | | | Same as above. |
| 14B1 0000 hex | Linearity correction data read error | Reading of the displacement sensor linearity correction data was not executed correctly. | • Calibration ROM not inserted<br>• Calibration ROM damage | | | S | | | Same as above. |
| 14B2 0000 hex | System setting error | The system settings saved to the displacement sensor are corrupt. | • The displacement sensor power was turned OFF during saving/loading of system settings. | | | S | | | Same as above. |
| 14B3 0000 hex | Bank data error | The bank data saved to the displacement sensor is corrupt. | • The displacement sensor power was turned OFF during saving/loading of bank data. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 24810000 hex | Ethernet communication parameter error | An invalid IP address is set for the displacement sensor. | • Invalid IP address setting | | | S | | | ZW-CE1□T Confocal Fiber Type Displacement Sensor User's Manual (Cat. No. Z332) |
| 74900000 hex | Multiple control signal input error | Multiple control signals turned ON in the same cycle. | • Multiple control signals turned ON in the same cycle. | | | S | | | Same as above. |
| 74910000 hex | EXE input error | EXE input processing was not executed correctly. | • EXE input turned ON in the FUN mode.<br>• EXE input turned ON with READY output OFF. | | | S | | | Same as above. |
| 74920000 hex | SYNC input error | SYNC input processing was not executed correctly. | • SYNC input turned ON in the FUN mode. | | | S | | | Same as above. |
| 74930000 hex | TIMING input error | TIMING input processing was not executed correctly. | • TIMINGx input turned ON in the FUN mode.<br>• TIMINGx input turned ON or OFF while RESETx input was ON.<br>• TIMINGx input turned ON in a non-measurement state.<br>• TIMINGx input turned ON before the "delay time + sampling time" elapsed. | | | S | | | Same as above. |
| 74940000 hex | RESET input error | RESET input processing was not executed correctly. | • RESETx input turned ON in the FUN mode. | | | S | | | Same as above. |
| 74950000 hex | ZERO input error | ZERO input processing was not executed correctly. | • ZEROx input turned ON in the FUN mode.<br>• ZEROx input turned ON in a non-measurement state.<br>• ZEROx input turned ON for a task whose status is OFF. | | | S | | | Same as above. |
| 74960000 hex | ZEROCLR input error | ZEROCLR input processing was not executed correctly. | • ZEROCLRx input turned ON in the FUN mode. | | | S | | | Same as above. |

## 3-1-7 Errors in CJ-series Units

The section provides tables of the events that can occur in the CJ-series Units.

- Analog I/O Units
- Process I/O Units
- Temperature Control Units
- ID Sensor Units
- High-speed Counter Units
- Serial Communications Units
- DeviceNet Units
- EtherNet/IP Units
- CompoNet Master Units

### CJ-series Analog I/O Units

The section provides tables of the events that can occur in the following Units.

CJ1W-AD041-V1/AD081-V1

CJ1W-AD042

CJ1W-DA021/DA041

CJ1W-DA08V/DA08C

CJ1W-DA042V

CJ1W-MAD42

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04600000 hex | A/D Conversion Error | An error occurred in A/D conversion. | • There is a source of noise nearby.<br>• A/D converter failed. | | | S | U | | CJ-series Analog I/O Units Operation Manual for NJ-series CPU Unit (Cat. No. W490) |
| 04620000 hex | Non-volatile Memory Error | An error occurred in non-volatile memory. | • There is a source of noise nearby.<br>• Non-volatile memory failed. | | | S | | | Same as above. |
| 34800000 hex | Mean Value Processing Setting Error | There is a mistake in the setting of the number of samplings for mean value processing. | • There is a mistake in the setting of the number of samplings for mean value processing. | | | S | | | Same as above. |
| 34830000 hex | Scaling Data Setting Error | There is a mistake in the scaling data settings. | • The upper or lower limit data for scaling is outside the setting range. Or, the maximum value and minimum value are not 0 and they are the same. | | | S | | | Same as above. |
| 34840000 hex | Input Signal Range Setting Error or Error in Number of Inputs Setting | There is a mistake in the input signal range setting or in the number of inputs setting. | • The settings of the input signal range or the setting of the number of analog inputs that are used is incorrect. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34850000 hex | Mean Value Processing Setting Error | There is a mistake in the setting of the number of samplings for mean value processing. | • There is a mistake in the setting of the number of samplings for mean value processing. | | | S | | | CJ-series Analog I/O Units Operation Manual for NJ-series CPU Unit (Cat. No. W490) |
| 34860000 hex | Error in Setting of Conversion Mode | There is a mistake is the Conversion Mode setting. | • The specification of the Cyclic Conversion Mode or Direct Conversion Mode is not correct. | | | S | | | Same as above. |
| 34870000 hex | Output Hold Setting Error | There is a mistake in the output hold setting. | • The setting for output status when conversion stops is incorrect. | | | S | | | Same as above. |
| 34890000 hex | Conversion Time/Resolution or Operation Mode Setting Error | There is a mistake in the conversion time/resolution or operation mode setting. | • There is a mistake in the conversion time/resolution or operation mode setting. | | | S | | | Same as above. |
| 348A0000 hex | Output Signal Range Setting Error or Error In Number of Outputs Used Setting | There is a mistake in the output signal range setting or in the number of outputs setting. | • There is a mistake in the output signal range setting or in the number of outputs setting. | | | S | | | Same as above. |
| 38010000 hex | Scaling Data Setting Error/Ratio Conversion Use Setting Error | There is an error in the scaling data setting or ratio conversion use setting. | • The upper or lower limit data for scaling is outside the setting range. Or, the maximum value and minimum value are not 0 and they are the same.<br>• The I/O number for ratio conversion is set to *Not used* in the I/O specifications. | | | S | | | Same as above. |
| 38020000 hex | Ratio Set Value Error | There is a mistake is the ratio setting for ratio conversion. | • A value other than 16#0000 to 16#9999 (0.00 to 99.99) was specified for the ratio conversion A constant for ratio conversion. | | | S | | | Same as above. |
| 64780000 hex | Input Disconnection Detected | The input is disconnected. | • Input wiring is broken.<br>• Input wiring disconnection | | | S | U | | Same as above. |
| 64790000 hex | Output Set Value Error | The output setting is out of range. | • An output set value setting is out of range. | | | S | U | | Same as above. |
| 34810000 hex | Input Value Exceeded Adjustment Range in Adjustment Mode | In Adjustment Mode, the input value exceeded the range for which adjustment is possible. | • In Adjustment Mode, the input value exceeded the range for which adjustment is possible, so the offset and gain cannot be adjusted. | | | U | S | | Same as above. |
| 34820000 hex | Input Number Specification Error in Adjustment Mode | The input number specified in Adjustment Mode is not enabled or the input number is wrong. | • The input number that was specified in Adjustment Mode is not enabled.<br>• The setting of the Adjustment Input Number (device variable **_AdjCh*) is incorrect, so adjustment is not possible. | | | U | S | | Same as above. |
| 34880000 hex | Output Number Specification Error in Adjustment Mode | The output number specified in Adjustment Mode is not enabled or the output number is wrong. | • The output number that was specified in Adjustment Mode is not enabled.<br>• The setting of the Adjustment Output Number (device variable **_AdjCh*) is incorrect, so adjustment is not possible. | | | U | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 348C 0000 hex | I/O Number Specification Error in Adjustment Mode | The I/O numbers specified in Adjustment Mode are not enabled or the I/O numbers are wrong. | • The I/O numbers that were specified in Adjustment Mode are not enabled.<br>• The setting of the Adjustment I/O Number (device variable **_AdjCh*) is incorrect, so adjustment is not possible. | | | U | S | | CJ-series Analog I/O Units Operation Manual for NJ-series CPU Unit (Cat. No. W490) |

## CJ-series Process I/O Units

The section provides tables of the events that can occur in the following Units.

CJ1W-PDC15

CJ1W-AD04U

CJ1W-PH41U

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 0460 0000 hex | A/D Conversion Error | An error occurred in A/D conversion. | • There is a source of noise nearby.<br>• A/D converter failed. | | | S | U | | CJ-series Analog I/O Units Operation Manual for NJ-series CPU Unit (Cat. No. W498) |
| 0461 0000 hex | Cold Junction Sensor Error | An error occurred in the cold junction sensor. | • Faulty connection to the cold junction sensor for the CJ1W-PH41U.<br>• The cold junction sensor failed. | | | S | U | | Same as above. |
| 0462 0000 hex | Non-volatile Memory Error | An error occurred in non-volatile memory. | • There is a source of noise nearby.<br>• Non-volatile memory failed. | | | S | | | Same as above. |
| 348D 0000 hex | Data Range Error | A set value is out of range. | • A set value is out of range. | | | S | | | Same as above. |
| 647A 0000 hex | Input Error | An input error occurred. | • The analog input signal is out of range.<br>• Input wiring is broken.<br>• Input wiring disconnection or loose terminal | | | S | U | | Same as above. |
| 647D 0000 hex | Zero/Span Adjustment Period End | The zero/span adjustment period expired. | • The zero/span adjustment period expired. | | | U | S | | Same as above. |
| 647E 0000 hex | Zero/Span Adjustment Period Notice | The zero/span adjustment period is close to expiring. | • The notification period for the expiration of zero/span adjustment occurred. | | | U | S | | Same as above. |

## CJ-series Temperature Control Units

The section provides tables of the events that can occur in the following Units.

CJ1W-TC003

CJ1W-TC004

CJ1W-TC103

CJ1W-TC104

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04680000 hex | Cold Junction Sensor Error | An error occurred in the cold junction sensor. | • Faulty connection to the cold junction sensor.<br>• The cold junction sensor failed. | | | U | S | | CJ-series Temperature Control Units Operation Manual for NJ-series CPU Unit (Cat. No. W491) |
| 34940000 hex | Setting Error | There is an illegal setting. | • The set value is incorrect. | | | U | S | | Same as above. |
| 64840000 hex | Sensor Error | An error occurred in the sensor input. | • Error in input from the Sensor. | | | U | S | | Same as above. |
| 64850000 hex | CT Overflow | An overflow occurred in the CT input. | • The heater current exceeded 55.0 A. | | | U | S | | Same as above. |
| 64860000 hex | Heater Burnout Alarm | A heater burnout occurred. | • The power supply to the heater is not ON.<br>• The heater is burned out or deteriorated. | | | U | S | | Same as above. |

## CJ-series ID Sensor Units

The section provides tables of the events that can occur in the following Units.

CJ1W-V680C11

CJ1W-V680C12

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 046C0000 hex | Unit Status, Antenna Power Supply Error | An error occurred in the power supply to the Antenna. | • An error occurred in the power supply (24 V) to the Antenna. | | | S | | | CJ-series ID Sensor Units Operation Manual for NJ-series CPU Unit (Cat. No. Z317) |
| 046D0000 hex | Unit Status, Memory Error | An error occurred when reading non-volatile memory. | • There is a source of noise nearby.<br>• Non-volatile memory failure | | | S | | | Same as above. |
| 046E0000 hex | Results Information, Antenna Error | An error occurred in the Antenna. | • The Antenna is not connected.<br>• Antenna failure<br>• The ID Sensor Unit failed. | | | S | | | Same as above. |
| 046F0000 hex | Unit Status, Unit Busy | An error occurred in an ID Sensor Unit. | • There is a source of noise nearby.<br>• The ID Sensor Unit failed. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 24400000 hex | Unit Status, Antenna Error | An error occurred in the Antenna. | • The setting of the Connected Antenna Setting (device variable **_Ch#_AntConn*) does not agree with the Antenna that is connected.<br>• The V680-H01 or V680-H01-V2 was connected to the CJ1W-V680C12. | | | S | | | CJ-series ID Sensor Units Operation Manual for NJ-series CPU Unit (Cat. No. Z317) |
| 34980000 hex | Results Information, Data Storage Area Specification Error | The data storage area specification is not correct. | • The user program specifies addresses in the DM, CIO, AR, EM, or other areas that exceed the ranges defined for the data storage area specifications. | | | S | | | Same as above. |
| 54A00000 hex | Results Information, ID Tag Address Error | The address of the ID Tag is wrong. | • The address of an ID Tag specified in a command is incorrect. | | | S | | | Same as above. |
| 54A10000 hex | Results Information, Write Protection Error | An attempt was made to write to a write-protected area of the ID Tag. | • The specified address or number of bytes is incorrect.<br>• Write-protection is enabled for the area you attempted to write to in the ID Tag. | | | S | | | Same as above. |
| 54A20000 hex | Results Information, Command Error | The command to the ID Sensor Unit is not correct. | • The contents of the following external device variables is not data that can be specified (where # is the channel number).<br>*_Ch#_CmdSet<br>*_Ch#_ProcAdr<br>*_Ch#_ProcByte<br>*_Ch#_CmdOption<br>"#" in the variable name is the Antenna (Head) number. | | | S | | | Same as above. |
| 648C0000 hex | Unit Status, Command Error End | A processing error occurred. | • A processing error occurred. | | | S | | | Same as above. |
| 648D0000 hex | Results Information, Verification Error | The correct data could not be written to the ID Tag. | • The travel speed of the ID Tag is outside the specified range.<br>• The distance between the Antenna and ID Tag is outside the specified range.<br>• Noise | | | S | | | Same as above. |
| 648E0000 hex | Results Information, ID Tag Communications Error | An error occurred in communications with an ID Tag, preventing a normal end. | • The travel speed of the ID Tag is outside the specified range.<br>• The distance between the Antenna and ID Tag is outside the specified range.<br>• Noise | | | S | | | Same as above. |
| 648F0000 hex | Results Information, ID Tag Missing Error | There is no ID Tag in the communications area. | • The communications specification is set to trigger, and the ID Tag is not in the communications area when the trigger occurs.<br>• The communications specification is set to single auto or repeat auto, and the wait time reached the Auto Wait Time.<br>• An Amplifier is connected, but an Antenna is not connected. | | | S | | | Same as above. |
| 64900000 hex | Results Information, ID System Error 1 | ID system error 1 occurred. | • System error 1 occurred. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 64910000 hex | Results Information, ID System Error 2 | ID system error 2 occurred. | • System error 2 occurred. | | | S | | | CJ-series ID Sensor Units Operation Manual for NJ-series CPU Unit (Cat. No. Z317) |
| 64920000 hex | Results Information, ID System Error 3 | ID system error 3 occurred. | • System error 3 occurred. | | | S | | | Same as above. |
| 64930000 hex | Results Information, ID Tag Status | One of the following occurred.<br>• The number of writes was exceeded for a Number of Writes Control command.<br>• An overflow or underflow occurred for a Calculation Write command.<br>• The data did not verify for a Data Check command.<br>• An error occurred in the data for a Read with Error Correction command.<br>• An error occurred when writing for a Copy command. | • The number of writes was exceeded for a Number of Writes Control command.<br>• An overflow or underflow occurred for a Calculation Write command.<br>• The data did not verify for a Data Check command.<br>• An error occurred in the data for a Read with Error Correction command.<br>• An error occurred when writing for a Copy command. | | | S | | | Same as above. |
| 64940000 hex | Results Information, Error Correction | A Write with Error Correction command performed a 1-bit error correction. | • There is ambient noise where the ID Tag is used.<br>• ID Tag error. | | | S | | | Same as above. |

## CJ-series High-speed Counter Units

The section provides tables of the events that can occur in the following Units.

CJ1W-CT021

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 68010000 hex | Unit Error | An error occurred in the High-speed Counter Unit. | • There is an error in the Special Unit Setup.<br>• An overflow or underflow error occurred.<br>• An illegal preset value was used.<br>• A CPU Unit monitor error or bus error occurred. | | | S | | | CJ-series High-speed Counter Units Operation Manual for NJ-series CPU Unit (Cat. No. W492) |

## CJ-series Serial Communications Units

The section provides tables of the events that can occur in the following Units.

CJ1W-SCU22

CJ1W-SCU32

CJ1W-SCU42

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04740000 hex | Error Log Data Error | An error occurred in the error log data. | • There is a source of noise nearby.<br>• Non-volatile memory failure | | | S | | | CJ-series Serial Communications Units Operation Manual for NJ-series CPU Unit (Cat. No. W494) |
| 14800000 hex | Protocol Data Error | A protocol data checksum error has occurred. | • The communications connector with the CX-Protocol was disconnected or the power supply to the Controller was interrupted during transfer of the protocol data from the CX-Protocol.<br>• The Serial Communications Unit failed. | | | S | | | Same as above. |
| 34A40000 hex | System Setup Error | There is an error in the system settings for the Serial Communications Unit. | • There is an error in the system settings for the Serial Communications Unit. | | | S | | | Same as above. |
| 04750000 hex | DTR Check Error | An error was found during the DTR check. | • Loopback test jig failure.<br>• Noise<br>• The communications circuits in the Serial Communications Unit are faulty. | | | | S | | Same as above. |
| 04760000 hex | CTS Check Error | An error was found during the CTS check. | • Loopback test jig failure.<br>• Noise<br>• The communications circuits in the Serial Communications Unit are faulty. | | | | S | | Same as above. |
| 54A80000 hex | Command Error | A command error occurred. | • The constant in the expected receive message that is set in the protocol macro is different from the constant in the message that was received. | | | | S | | Same as above. |
| 54A90000 hex | Sequence Abort Completed | The sequence was ended by an Abort setting for the next processing or error processing. | • The protocol macro data is not set correctly.<br>The baud rate, frame format, or other system setting does not agree with the remote node. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 54AA0000 hex | Protocol Macro Error | An error occurred in the protocol macro. | • Sequence No. Error: An unregistered number was specified for *SeqNo* (communications sequence number) of the ExecPMCR instruction (no indicators light).<br>• Data read/write area exceeded error: The specified area range was exceeded when data was written to or read from the CPU Unit. (The ERC indicator and ERR/ALM indicator will flash.)<br>• Protocol data syntax error: There was a code that cannot be executed during protocol execution. (The ERC indicator and ERR/ALM indicator will flash.)<br>  • The total of the areas specified for link words O1, O2, I1, and I2 exceeded 500 words.<br>  • The same link word is used by both ports 1 and 2.<br>  • Writing was specified with a constant.<br>  • Interrupt notification was specified for a Serial Communications Unit.<br>  • Thirty one or more items were set for the write attribute data for one message.<br>  • A length of 0 bytes was specified for a message that was sent or received.<br>  • The length of a message to be sent or received exceeds the maximum send/receive bytes.<br>  • A message is not registered for matrix reception.<br>  • The transmission control is set to both RTS/CTS flow control and Xon/Xoff flow control. | | | | S | | CJ-series Serial Communications Units Operation Manual for NJ-series CPU Unit (Cat. No. W494) |
| 64A00000 hex | Tfs (Send Finished Monitoring Time) Exceeded | The time required to complete a send operation exceeded the Send Finished Monitoring Time. | • Noise<br>• The monitor time is shorter than the actual completion time. | | | | S | | Same as above. |
| 64A10000 hex | Tfr (Receive Finished Monitoring Time) Exceeded | The time required to complete a reception operation exceeded the Receive Finished Monitoring Time. | • Noise<br>• The monitoring time is shorter than the actual completion time. | | | | S | | Same as above. |
| 64A20000 hex | Tr (Receive Wait Monitoring Time) Exceeded | The receive waiting time exceeded the Receive Wait Monitoring Time. | • Noise<br>• The monitoring time is shorter than the actual completion time. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 64A30000 hex | FCS Check Error | One of the following errors occurred in the converted protocol at the serial gateway.<br>• When converting to CompoWay/F command: BCC error<br>• When converting to Modbus-RTU command: CRC error<br>• When converting to Modbus-ASCII command: CRC error<br>• When converting to Host Link FINS command: FCS error<br>Protocol Macros<br>• The check code attached to the received message does not match the check code that was calculated from the received message. | • Noise<br>• There was a mistake in the CRC code that was attached to the command frame. | | | | S | | CJ-series Serial Communications Units Operation Manual for NJ-series CPU Unit (Cat. No. W494) |
| 64A40000 hex | Timeout Error | A timeout error occurred. | • The steps in the communications sequence of a protocol macro are not progressing.<br>• There is no remote device to receive the command.<br>• The command frame is incorrect.<br>• The remote device is not using the same serial communications settings.<br>• Wiring is not correct or terminating resistance is not set correctly.<br>• The remote device could not interpret the protocol command.<br>• The response from the remote device was sent too soon.<br>• The response timeout monitoring time of the serial gateway is too short.<br>• The loopback test jig failed.<br>• The communications circuits in the Serial Communications Unit are faulty.<br>• A serial gateway interrupted processing between protocol macro steps.<br>• Noise occurred.<br>• The Serial Communications Mode setting is incorrect. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 64A50000 hex | Comparison Error | A comparison error occurred. | • Loopback test jig failure.<br>• Noise<br>• The communications circuits in the Serial Communications Unit are faulty. | | | | S | | CJ-series Serial Communications Units Operation Manual for NJ-series CPU Unit (Cat. No. W494) |
| 64A60000 hex | Reception Overflow | More than the specified amount of receive data was received in No-protocol Mode. | • One or more bytes of data was received after the completion the reception. | | | | S | | Same as above. |
| 64A70000 hex | Command Format Error | An illegal function code or address was specified in a received Modbus-RTU command. | • An illegal function code, address, or data was specified in a received Modbus-RTU command. | | | | S | | Same as above. |
| 84680000 hex | Transmission Error | A transmission error occurred. | • One of the following errors occurred.<br>  • Tfs (Send Finished Monitoring Time) Exceeded<br>  • Tfr (Receive Finished Monitoring Time) Exceeded<br>  • Tr (Receive Wait Monitoring Time) Exceeded<br>  • FCS Check Error<br>  • Command Error<br>  • Timeout Error<br>  • Overrun Error<br>  • Framing Error<br>  • Parity Error | | | | S | | Same as above. |
| 84690000 hex | Overrun Error | An overrun occurred. | • In Serial Gateway Mode or Protocol Macro Mode:<br>  • The reception circuits in the Serial Communications Unit are faulty.<br>  • A transmission error occurred due to noise or other factors.<br>• No-protocol Mode:<br>  • The reception buffer received more than 259 bytes of data before the SerialRcv/SerialRcvNoClear instruction was executed.<br>• During Loopback Test<br>  • Loopback test jig failure.<br>  • Noise<br>  • The communications circuits in the Serial Communications Unit are faulty. | | | | S | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 846A 0000 hex | Framing Error | A frame error occurred. | • In Serial Gateway Mode or Protocol Macro Mode:<br>  • The reception circuits in the Serial Communications Unit are faulty.<br>  • A transmission error occurred due to noise or other factors.<br>• During Loopback Test<br>  • Loopback test jig failure.<br>  • Noise<br>  • The communications circuits in the Serial Communications Unit are faulty. | | | | S | | CJ-series Serial Communications Units Operation Manual for NJ-series CPU Unit (Cat. No. W494) |
| 846B 0000 hex | Parity Error | A parity error occurred. | • In Serial Gateway Mode or Protocol Macro Mode:<br>  • The reception circuits in the Serial Communications Unit are faulty.<br>  • A transmission error occurred due to noise or other factors.<br>• During Loopback Test<br>  • Loopback test jig failure.<br>  • Noise<br>  • The communications circuits in the Serial Communications Unit are faulty. | | | | S | | Same as above. |
| 846C 0000 hex | Overrun Error, Framing Error, or Parity Error (Transmission Error) | An overrun error, framing error, or parity error occurred. | • The communications conditions and baud rate settings do not match the host.<br>• Noise or other external interference.<br>• The baud rate is outside the allowable range or there are bit errors due to different stop bit settings or other parameters.<br>• The communications cable wiring is faulty.<br>• Terminating resistance is not set correctly for the RS-422A/485 ports.<br>• Wiring is faulty or terminating resistance is not set correctly on an NT-AL001 or other Adapter. | | | | S | | Same as above. |
| 846D 0000 hex | Transmission Error (CRC Error) | A CRC error occurred. | • Noise<br>• CRC calculation method does not match the device. | | | | S | | Same as above. |

## CJ-series DeviceNet Units

The section provides tables of the events that can occur in the following Units.

CJ1W-DRM21

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 04880000 hex | Unit Memory Error | An error occurred when writing to internal memory where the error history is saved. | • There is a source of noise nearby.<br>• Non-volatile memory failure | | | S | U | | CJ-series DeviceNet Units Operation Manual for NJ-series CPU Unit (Cat. No. W497) |
| 04890000 hex | Network Power Error | Network power is not being supplied. | • Communications power is not being supplied normally from the network. | | | S | | | Same as above. |
| 148D0000 hex | Invalid Scan List Data | There is an error in the contents of the slave scan list or master scan list stored in non-volatile memory. | • The power was interrupted during writing the scan list to the non-volatile memory. | | | S | | | Same as above. |
| 148E0000 hex | Invalid Setup Data | There is illegal data in the settings for the slave function. | • The power was interrupted while the system was writing the parameters.<br>• Non-volatile memory life | | | S | | | Same as above. |
| 24480000 hex | Node Address Duplicated Error | An error was discovered during the node address duplication check when starting the DeviceNet Unit. | • The node address of the DeviceNet Unit is also set for another node. | | | S | | | Same as above. |
| 34BC0000 hex | Routing Table Error | There is illegal data in the routing tables set in the CPU Unit. | • The local DeviceNet Unit is not in the routing tables.<br>• The routing table format is incorrect.<br>• Reading the routing tables timed out. | | | S | U | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34BD 0000 hex | Verification Error | The slave information registered in the scan list does not agree with the actual slave information. | • A slave that is in the scan list does not exist.<br>• The node address of the local Unit, which is the master, is registered in the scan list.<br>• If the system is set to check the vendor in the detailed verification settings, the vendor of the slave does not match the registration in the scan list.<br>• If the connection path is set in the detailed verification settings, then setting the connection path that is set in the scan list failed.<br>• The size of the slave I/O data does not match the registration in the scan list.<br>• If the device type is set in the detailed verification settings, then setting the device type that is set in the scan list failed.<br>• If the product code is set in the detailed verification settings, then setting the product code that is set in the scan list failed.<br>• The device does not support the I/O service specified in the scan list. | | | S | | | CJ-series DeviceNet Units Operation Manual for NJ-series CPU Unit (Cat. No. W497) |
| 34BE 0000 hex | Structure Error | The scan list is disabled and an error occurred that prevented making I/O allocations. | • The I/O words allocated to slave overlap.<br>• The I/O words allocated to the slave exceed the valid range.<br>• The I/O size of the slave exceeds 200 bytes for outputs or 200 bytes for inputs. | | | S | | | Same as above. |
| 34BF 0000 hex | Master I/O Refresh Error | The I/O memory in the destination CPU Unit for I/O refreshing could not be found when refreshing the master function data in the CPU Unit. | • I/O words are allocated in an EM bank that does not exist. | | | S | | | Same as above. |
| 34C0 0000 hex | Master User-set Allocations User Setting Failed | An error occurred in the following operation for user allocation of the master. | • The master function is not enabled.<br>• There is a mistake in the user allocations in the master.<br>• CPU Unit is not in PROGRAM mode.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | Same as above. |
| 34C1 0000 hex | Communications Cycle Time Setting Failed | An error occurred in one of the following operations when setting the communications cycle time. | • There is an error in the set information.<br>• CPU Unit is not in PROGRAM mode. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34C20000 hex | Slave I/O Refresh Error | The I/O memory in the destination CPU Unit for I/O refreshing could not be found when refreshing the slave function data in the CPU Unit. | • I/O words are allocated in an EM bank that does not exist. | | | S | | | CJ-series DeviceNet Units Operation Manual for NJ-series CPU Unit (Cat. No. W497) |
| 34C30000 hex | Slave User Allocation Area Setting Failed | An error occurred in the following operation for user allocation of the slave. | • The slave function is not disabled.<br>• There is a mistake in the user allocations to a slave.<br>• CPU Unit is not in PROGRAM mode.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | Same as above. |
| 64AC0000 hex | Send Timeout Error | A send timeout occurred. | • There is no slave or other device on the network.<br>• The same baud rate is not set for all nodes.<br>• Communications cable lengths (trunk line and branch lines) are unsuitable.<br>• A communications cable is disconnected or loose.<br>• The terminating resistance is somewhere other than the ends of the trunk line.<br>• Noise<br>• There is an error in the CAN controller. | | | S | | | Same as above. |
| 74600000 hex | Master Function Enable/Disable Failed | An operating error occurred when enabling or disabling the master function. | • An attempt was made to enable the master function when it was already enabled.<br>• An attempt was made to disable the master function when it was already disabled.<br>• CPU Unit is not in PROGRAM mode.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | Same as above. |
| 74610000 hex | Master Fixed Allocation Area Setting Failed | An error occurred in one of the following operations for fixed allocation of the master. | • The master function is not enabled.<br>• The scan list is not disabled.<br>• CPU Unit is not in PROGRAM mode.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 74620000 hex | Scan List Register/Clear Failed | An operating error occurred when registering or clearing the scan list by performing one of the following operations. | • CPU Unit is not in PROGRAM mode.<br>• Request processing is not possible in this status or the request was made when the operation was already in progress. The following are the main causes of Unit status errors.<br>  • A software switch operation for the master function was executed when the master function was disabled.<br>  • A switch that can be used only when the scan list is disabled was used when the scan list was enabled.<br>  • A switch that can be used only when the scan list is enables was used when the scan list was disabled.<br>  • A software switch operation for the slave function was executed when the slave function was disabled.<br>• A configuration error has occurred.<br>• There is an error in the parameters specified in the user settings, and the requested setting could not be made.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | CJ-series DeviceNet Units Operation Manual for NJ-series CPU Unit (Cat. No. W497) |
| 74630000 hex | Slave Function Enable/Disable Failed | An error occurred in one of the following operations in the slave function. | • An attempt was made to enable the slave function when it was already enabled.<br>• An attempt was made to disable the slave function when it was already disabled.<br>• CPU Unit is not in PROGRAM mode.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | Same as above. |
| 74640000 hex | Slave Fixed Allocation Area Setting Failed | An error occurred in one of the following operations for fixed allocation of the slave. | • The slave function is not disabled.<br>• CPU Unit is not in PROGRAM mode.<br>• More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84740000 hex | Bus Off Detected | A Bus Off error occurred (i.e., communications stopped because there were too many communications errors). | • The master and slave have different baud rates.<br>• Communications cable lengths (trunk line and branch lines) are unsuitable.<br>• A communications cable is disconnected or loose.<br>• The terminating resistance is somewhere other than the ends of the trunk line.<br>• Noise | | | S | | | CJ-series DeviceNet Units Operation Manual for NJ-series CPU Unit (Cat. No. W497) |
| 84750000 hex | Remote I/O Communications Error | A timeout occurred in remote I/O communications. | • The master and slaves have different baud rates.<br>• Communications cable lengths (trunk line and branch lines) are unsuitable.<br>• A communications cable is disconnected or loose.<br>• The terminating resistance is somewhere other than the ends of the trunk line.<br>• Noise | | | S | U | | Same as above. |
| 84760000 hex | Remote I/O Communications Error (during Slave Operation) | An error occurred in remote I/O communications. | • The master is not in operation.<br>• The master and slaves have different baud rates.<br>• Communications cable lengths (trunk line and branch lines) are unsuitable.<br>• A communications cable is disconnected or loose.<br>• The terminating resistance is somewhere other than the ends of the trunk line.<br>• Noise | | | S | | | Same as above. |
| 84770000 hex | Slave COS Send Failed | An attempt was made to send COS data to the master using the Slave COS Send Switch (software switch 2, device variable **_Sw2SlavCOSSendCmd*), but the send failed. | • A COS connection to the master is not open.<br>• A Bus Off state occurred.<br>• A network power error occurred.<br>• A send timeout occurred. | | | S | | | Same as above. |
| 048A0000 hex | File Read/Write Error | An error occurred when user setup data was read from an SD Memory Card in the CPU Unit or when data was written as a file to an SD Memory Card. | • The available capacity on the SD Memory Card was insufficient to write a file.<br>• Write-protection is set on the SD Memory Card when you write to a file.<br>• Noise<br>• The SD Memory Card is damaged.<br>• The CPU Unit has failed. | | | U | S | | Same as above. |
| 148C0000 hex | Invalid Message Timer List Error | The data in the message monitoring timer list is not correct. | • The power supply was interrupted while writing the message-monitoring timer list to the non-volatile memory. | | | U | S | | Same as above. |

## CJ-series EtherNet/IP Unit

The following table lists the events that can occur for an EtherNet/IP Unit with the following model number.

CJ1W-EIP21

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 047A 0000 hex | Unit Memory Error (Device Error) | An error occurred when writing to the error history or device parameters in non-volatile memory in the EtherNet/IP Unit. | • There is a source of noise nearby.<br>• Non-volatile memory failure | | | S | | | CJ-series EtherNet/IP Units Operation Manual for NJ-series CPU Unit (Cat. No. W495) |
| 047B 0000 hex | Non-volatile Memory Error | An error occurred in non-volatile memory. | • There is a source of noise nearby.<br>• Non-volatile memory failure | | | S | | | Same as above. |
| 047C 0000 hex | Communications Controller Error | An error occurred in the communications controller. | • Noise<br>• Communications Controller hardware error | | | S | | | Same as above. |
| 1484 0000 hex | Invalid Communications Parameter | An error was found in the validation check of the parameters for tag data links that are saved in non-volatile memory. | • The power was interrupted during a download.<br>• A communications error occurred during a download.<br>• Non-volatile memory failure | | | S | | | Same as above. |
| 1485 0000 hex | Tag Database Error | A tag database error occurred in the CPU Unit when using variables for tag data links, status layout, etc. | • The power was interrupted during a download.<br>• A communications error occurred during a download. | | | S | | | Same as above. |
| 34A8 0000 hex | Verification Error | The information registered for a target node in the tag data link parameters is different from the actual node information. | • The specified target does not exist.<br>• Variable names do not match.<br>• The connection size is incorrect.<br>• Insufficient connection resources | | | S | | | Same as above. |
| 34A9 0000 hex | Tag Data Link Error | There were two or more errors in a connection as an originator. The following are excluded.<br>• Connections as a target<br>• Connection timeouts due to a Link OFF Error with the Ethernet switch | • The power supply to the target node is OFF.<br>• Communications with the target node stop.<br>• The Ethernet cable for EtherNet/IP is disconnected.<br>• The Ethernet cable for EtherNet/IP is disconnected.<br>• Noise | | | S | | | Same as above. |
| 34AA 0000 hex | Tag Refresh Error | An unsupported data area or address range is specified for the tag data links. | • An unsupported data area or address range was specified for the tag data links. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 34AB0000 hex | Basic Ethernet Setting Error | There is an illegal TCP/IP setting. | • The power was interrupted during a download.<br>• A communications error occurred during a download. | | | S | | | CJ-series EtherNet/IP Units Operation Manual for NJ-series CPU Unit (Cat. No. W495) |
| 34AC0000 hex | IP Address Table Error | The IP address table information is incorrect. | • The power was interrupted during a download.<br>• A communications error occurred during a download. | | | S | | | Same as above. |
| 34AD0000 hex | IP Router Table Error | The IP router table information is incorrect. | • The power was interrupted during a download.<br>• A communications error occurred during a download. | | | S | | | Same as above. |
| 34AE0000 hex | Routing Table Error | The routing table information is incorrect. | • The power was interrupted during a download.<br>• A communications error occurred during a download. | | | S | | | Same as above. |
| 34AF0000 hex | Ethernet Advanced Setting Error | There is an illegal FINS setting. | • The power was interrupted during a download.<br>• A communications error occurred during a download. | | | S | | | Same as above. |
| 34B00000 hex | Address Mismatch | The host ID of the local IP address is inconsistent with the FINS node address. Or, the last segment of the local IP address is inconsistent with the setting on the node address switches. | • The IP address conversion method is set to automatic generation, but the host ID of the local IP address is inconsistent with the FINS node address or the last segment of the local IP address is inconsistent with the setting on the node address switch. | | | S | | | Same as above. |
| 381C0000 hex | Status Area Layout Setting Error | An error occurred in the layout setting of the EtherNet/IP Unit. | • There is an error in the layout settings of the EtherNet/IP Unit. | | | S | | | Same as above. |
| 54AE0000 hex | Multiple Switches ON Error | More than one software switch changed to TRUE at the same time. | • More than one software switch changed to TRUE at the same time. Or, another software switch changed to TRUE before processing was completed for a previous software switch. | | | S | U | | Same as above. |
| 84E00000 hex | IP Address Duplication Error | The same IP address is used more than once. | • The IP address of the EtherNet/IP port is also used as the IP address of another node. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84E1 0000 hex | BOOTP Server Error | Connection with the BOOTP server failed. | • Server setting error (The acquired IP address is illegal.)<br>• Server is down.<br>• An error occurred in the communications path. | | | S | | | CJ-series EtherNet/IP Units Operation Manual for NJ-series CPU Unit (Cat. No. W495) |
| 54AF 0000 hex | Variable Access Error | Accessing a tag variable that is used in a tag data link failed. | • An out-of-range value was written by an EtherNet/IP tag data link for a variable that specifies SUBRANGE. | | | | S | | Same as above. |
| 84E2 0000 hex | Link OFF Error | The Ethernet link status turned OFF. | • The Ethernet cable is disconnected.<br>• An Ethernet cable is disconnected or loose.<br>• The switching hub power supply is turned OFF.<br>• Baud rate mismatch.<br>• Noise | | | U | S | | Same as above. |

## CJ-series CompoNet Master Unit

The section provides a table of the events that can occur in the following Unit.

CJ1W-CRM21

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 349C 0000 hex | Registration Table Verification Error | An inconsistency was found when verifying the slave registration table. | • There is at least one entry in the slave registration table where the node address and Slave Unit model are inconsistent. | | | S | | | CJ-series CompoNet Master Units Operation Manual for NJ-series CPU Unit (Cat. No. W493) |
| 349D 0000 hex | Slave Unit Duplicated Address Error | The same address is used by more than one Slave Unit or the same word has been allocated to more than one Slave Unit. | • The same node address is set for more than one Slave Unit.<br>• There are no duplicated node addresses set for the Slave Units, but allocated words overlap.<br>• A Slave Unit was disconnected from the network, and then another Slave Unit with the same node address but a different I/O capacity joined the network. | | | S | | | Same as above. |
| 349E 0000 hex | Repeater Unit Node Duplicated Address Error | The node address of the Repeater Unit is also set for another node. | • The node address of the Repeater Unit is also used for anther node. | | | S | | | Same as above. |

| Event code | Event name | Meaning | Assumed cause | Level | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Maj | Prt | Min | Obs | Info | |
| 84600000 hex | Communications Error | A Slave Unit was disconnected from the network. | • Cable lengths (trunk line and branch lines) are unsuitable.<br>• A cable is disconnected or loose.<br>• A terminating resistance is not connected. Or, the terminating resistance is somewhere other than the end of the trunk line.<br>• Noise<br>• The Slave Unit does not respond to communications from the Master Unit because the Slave Unit is faulty, the line is disconnected, or the communications power supply is interrupted. | | | S | U | | CJ-series CompoNet Master Units Operation Manual for NJ-series CPU Unit (Cat. No. W493) |
| 84610000 hex | Repeater Unit Communications Error | An error occurred in Repeater Unit communications. | • Cable lengths (trunk line and branch lines) are unsuitable.<br>• A cable is disconnected or loose.<br>• A terminating resistance is not connected. Or, the terminating resistance is somewhere other than the end of the trunk line.<br>• Noise<br>• The Repeater Unit does not respond to communications from the Master Unit because the Repeater Unit is faulty, the line is disconnected, or the communications power is interrupted. | | | S | U | | Same as above. |
| 64980000 hex | Representative Warning | A warning has occurred in at least one Slave Unit. | • A warning has occurred in at least one Slave Unit. | | | | S | | Same as above. |
| 64990000 hex | Representative Alarm | An alarm has occurred in at least one Slave Unit. | • An alarm has occurred in at least one Slave Unit. | | | | S | | Same as above. |

# 3-2 Events in Order of Event Codes

This section provides a table of all events in order of the event codes. Events that are not errors are also given in the tables.

## 3-2-1 Interpreting Error Descriptions

The contents of the error table is described below.

| Item | Description |
|---|---|
| Event code | The event code of the error in the NJ-series Controller is given. The codes are given in eight hexadecimal digits. |
| Event name | The name of the event is given |
| Functional classification | A functional classification of the source is given. |
| Reference | The catalog number of the manual that provides details on the event are given. |

Refer to information for the specified functional classification of the error in the error descriptions in the manual given in the *Reference* column in the tables for detailed information on an error.

The manual names are given below for the catalog numbers.

| Cat. No. | Manual name |
|---|---|
| W500 | NJ-series CPU Unit Hardware User's Manual |
| W501 | NJ-series CPU Unit Software User's Manual |
| W502 | NJ-series Instructions Reference Manual |
| W490 | CJ-series Analog I/O Units Operation Manual for NJ-series CPU Unit |
| W491 | CJ-series Temperature Control Units Operation Manual for NJ-series CPU Unit |
| W492 | CJ-series High-speed Counter Units Operation Manual for NJ-series CPU Unit |
| W498 | CJ-series Analog I/O Units Operation Manual for NJ-series CPU Unit |
| W488 | GX-series EtherCAT Slave Units User's Manual |
| W493 | CJ-series CompoNet Master Units Operation Manual for NJ-series CPU Unit |
| W494 | CJ-series Serial Communications Units Operation Manual for NJ-series CPU Unit |
| W495 | CJ-series EtherNet/IP Units Operation Manual for NJ-series CPU Unit |
| W497 | CJ-series DeviceNet Units Operation Manual for NJ-series CPU Unit |
| W505 | NJ-series CPU Unit Built-in EtherCAT Port User's Manual |
| W506 | NJ-series CPU Unit Built-in EtherNet/IP Port User's Manual |
| I574 | MX2/RX Series Inverter EtherCAT Communication Unit User's Manual |
| W507 | NJ-series CPU Unit Motion Control User's Manual |
| W508 | NJ-series Motion Control Instructions Reference Manual |
| I576 | AC Servomotors/Servo Drives G5 Series with Built-in EtherCAT Communications User's Manual |
| I577 | G5-series Linear Motors/Drives with Built-in EtherCAT Communications Linear Motor Type User's Manual |
| E413 | EtherCAT Digital-type Sensor Communications Unit Operation Manual |
| E429 | EtherCAT Digital Sensor Communications Unit Operation Manual |
| Z317 | CJ-series ID Sensor Units Operation Manual for NJ-series CPU Unit |
| Z314 | FQ-M-series Specialized Vision Sensor for Positioning User's Manual |
| Z332 | ZW-CE1□T Confocal Fiber Type Displacement Sensor User's Manual |

Events that are marked with an asterisk in the *Event code* column were added for version upgrades. Refer to *3-1 Errors by Source* for the versions for which events can occur. Event codes for instructions are supported by CPU Units with unit version 1.02 or later.

## 3-2-2 Error Table

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 00070000 hex | Real-Time Clock Stopped | Errors for Self Diagnosis | W500 |
| 00080000 hex | Real-Time Clock Failed | Errors for Self Diagnosis | W500 |
| 00090000 hex | DIP Switch Setting Error | Errors for Self Diagnosis | W500 |
| 000B0000 hex | Low Battery Voltage | Errors for Self Diagnosis | W500 |
| 000C0000 hex | CPU Unit Overheat | Errors for Self Diagnosis | W500 |
| 000D0000 hex | Internal NJ-series Bus Check Error | Errors for Self Diagnosis | W500 |
| 000E0000 hex | Non-volatile Memory Life Exceeded | Errors for Self Diagnosis | W500 |
| 000F0000 hex | SD Memory Card Invalid Type | Errors for Self Diagnosis | W500 |
| 00100000 hex | SD Memory Card Life Exceeded | Errors for Self Diagnosis | W500 |
| 04010000 hex | I/O Bus Check Error | Errors Related to Unit Configuration | W500 |
| 04200000 hex | Communications Controller Failure | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 04400000 hex | Communications Controller Failure | Built-in EtherCAT Master in CPU Unit | W500 |
| 04600000 hex | A/D Conversion Error | CJ-series Analog I/O Units and CJ-series Process I/O Units | W490, W498 |
| 04610000 hex | Cold Junction Sensor Error | CJ-series Process I/O Units | W498 |
| 04620000 hex | Non-volatile Memory Error | CJ-series Analog I/O Units and CJ-series Process I/O Units | W490, W498 |
| 04680000 hex | Cold Junction Sensor Error | CJ-series Temperature Control Units | W491 |
| 046C0000 hex | Unit Status, Antenna Power Supply Error | CJ-series ID Sensor Units | Z317 |
| 046D0000 hex | Unit Status, Memory Error | CJ-series ID Sensor Units | Z317 |
| 046E0000 hex | Results Information, Antenna Error | CJ-series ID Sensor Units | Z317 |
| 046F0000 hex | Unit Status, Unit Busy | CJ-series ID Sensor Units | Z317 |
| 04740000 hex | Error Log Data Error | CJ-series Serial Communications Units | W494 |
| 04750000 hex | DTR Check Error | CJ-series Serial Communications Units | W494 |
| 04760000 hex | CTS Check Error | CJ-series Serial Communications Units | W494 |
| 047A0000 hex | Unit Memory Error (Device Error) | CJ-series EtherNet/IP Units | W495 |
| 047B0000 hex | Non-volatile Memory Error | CJ-series EtherNet/IP Units | W495 |
| 047C0000 hex | Communications Controller Error | CJ-series EtherNet/IP Units | W495 |
| 04880000 hex | Unit Memory Error | CJ-series DeviceNet Units | W497 |
| 04890000 hex | Network Power Error | CJ-series DeviceNet Units | W497 |
| 048A0000 hex | File Read/Write Error | CJ-series DeviceNet Units | W497 |
| 04A10000 hex | Non-volatile Memory Hardware Error | Block I/O (GX-series EtherCAT Slave Units), MX2/RX-series Inverters with EtherCAT Communications Units, EtherCAT M3X Photoelectric Fiber Amplifiers, E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors, and EtherCAT Digital Sensor Communications Units Operation Manual | W488, I574, E413, and E429 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 04A80000 hex | Control Power Supply Undervoltage | Servo G5 and G5 Linear | I576, I577 |
| 04A90000 hex | Overvoltage | Servo G5 and G5 Linear | I576, I577 |
| 04AA0000 hex | Main Circuit Power Supply Undervoltage (Undervoltage between positive and negative terminals) | Servo G5 and G5 Linear | I576, I577 |
| 04AB0000 hex | Main Circuit Power Supply Undervoltage (AC Cutoff Detected) | Servo G5 and G5 Linear | I576, I577 |
| 04AC0000 hex | Overcurrent | Servo G5 and G5 Linear | I576, I577 |
| 04AD0000 hex | IPM Error | Servo G5 and G5 Linear | I576, I577 |
| 04AE0000 hex | Regeneration Tr Error | Servo G5 and G5 Linear | I576, I577 |
| 04AF0000 hex | Encoder Phase-Z Error | Servo G5 | I576 |
| 04B00000 hex | Encoder CTS Signal Error | Servo G5 | I576 |
| 04B10000 hex | Node Address Setting Error | Servo G5 and G5 Linear | I576, I577 |
| 04B20000 hex | Other Errors | G5 Linear | I577 |
| 04BA0000 hex | Connection Error between Inverter and Communications Unit | MX2/RX-series Inverters with EtherCAT Communications Units | I574 |
| 04BB0000 hex | Inverter Warning | MX2/RX-series Inverters with EtherCAT Communications Units | I574 |
| 04BC0000 hex | Inverter Trip | MX2/RX-series Inverters with EtherCAT Communications Units | I574 |
| 04C40000 hex | Sensor Communications Error | E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors and EtherCAT Digital Sensor Communications Units Operation Manual | E413 and E429 |
| 04C50000 hex | Sensor Communications Has Not Been Established | E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors and EtherCAT Digital Sensor Communications Units Operation Manual | E413 and E429 |
| 04D00000 hex* | Hardware Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 08010000 hex | Battery Warning | Servo G5 | I576 |
| 08020000 hex | Fan Warning | Servo G5 and G5 Linear | I576, I577 |
| 08030000 hex | Encoder Communications Warning | Servo G5 | I576 |
| 08040000 hex | Encoder/Serial Conversion Unit Overheating Warning | Servo G5 and G5 Linear | I576, I577 |
| 08050000 hex | Life Expectancy Warning | Servo G5 and G5 Linear | I576, I577 |
| 08060000 hex | External Encoder Error Warning | Servo G5 and G5 Linear | I576, I577 |
| 08070000 hex | External Encoder Communications Warning | Servo G5 and G5 Linear | I576, I577 |
| 08080000 hex | Encoder Communications Disconnection Error | Servo G5 | I576 |
| 08090000 hex | Encoder Communications Error | Servo G5 | I576 |
| 080A0000 hex | Encoder Communications Data Error | Servo G5 | I576 |
| 080B0000 hex | Safety Input Error | Servo G5 and G5 Linear | I576, I577 |
| 080C0000 hex | External Encoder Connection Error | Servo G5 and G5 Linear | I576, I577 |
| 080D0000 hex | External Encoder Communications Data Error | Servo G5 and G5 Linear | I576, I577 |
| 080E0000 hex | External Encoder Status Error 0 | Servo G5 and G5 Linear | I576, I577 |
| 080F0000 hex | External Encoder Status Error 1 | Servo G5 and G5 Linear | I576, I577 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 08100000 hex | External Encoder Status Error 2 | Servo G5 and G5 Linear | I576, I577 |
| 08110000 hex | External Encoder Status Error 3 | Servo G5 and G5 Linear | I576, I577 |
| 08120000 hex | External Encoder Status Error 4 | Servo G5 and G5 Linear | I576, I577 |
| 08130000 hex | External Encoder Status Error 5 | Servo G5 and G5 Linear | I576, I577 |
| 08140000 hex | Phase-A Connection Error | Servo G5 and G5 Linear | I576, I577 |
| 08150000 hex | Phase-B Connection Error | Servo G5 and G5 Linear | I576, I577 |
| 08160000 hex | Phase-Z Connection Error | Servo G5 and G5 Linear | I576, I577 |
| 08170000 hex | Encoder Data Restoration Error | Servo G5 | I576 |
| 08180000 hex | External Encoder Data Restoration Error | Servo G5 | I576 |
| 10010000 hex | Non-volatile Memory Restored or Formatted | Errors for Self Diagnosis | W500 |
| 10020000 hex | Non-volatile Memory Data Corrupted | Errors for Self Diagnosis | W500 |
| 10030000 hex | SD Memory Card Invalid Format | Errors for Self Diagnosis | W500 |
| 10040000 hex | SD Memory Card Restored or Formatted | Errors for Self Diagnosis | W500 |
| 10060000 hex | SD Memory Card Data Corrupted | Errors for Self Diagnosis | W500 |
| 10070000 hex | SD Memory Card Access Power OFF Error | Errors for Self Diagnosis | W500 |
| 10080000 hex | Main Memory Check Error | Errors for Self Diagnosis | W500 |
| 10090000 hex | Battery-backup Memory Check Error | Errors for Self Diagnosis | W500 |
| 100C0000 hex* | Event Level Setting Error | Errors for Self Diagnosis | W500 |
| 10200000 hex | User Program/Controller Configurations and Setup Transfer Error | Errors Related to Controller Operation | W500, W501 |
| 10210000 hex | Illegal User Program Execution ID | Errors Related to Controller Operation | W500, W501 |
| 10230000 hex | Event Log Restoration Error | Errors Related to Controller Operation | W500, W501 |
| 10240000 hex | Illegal User Program | Errors Related to Controller Operation | W500, W501 |
| 10250000 hex | Illegal User Program/Controller Configurations and Setup | Errors Related to Controller Operation | W500, W501 |
| 10260000 hex | Trace Setting Transfer Failure | Errors Related to Controller Operation | W500, W501 |
| 10270000 hex* | Error in Starting Automatic Transfer | Errors Related to Controller Operation | W500, W501 |
| 10280000 hex* | Error in Executing Automatic Transfer | Errors Related to Controller Operation | W500, W501 |
| 10290000 hex* | Backup Failed to Start | Errors Related to Controller Operation | W500, W501 |
| 102A0000 hex* | Backup Failed | Errors Related to Controller Operation | W500, W501 |
| 102B0000 hex* | Restore Operation Failed to Start | Errors Related to Controller Operation | W500, W501 |
| 102C0000 hex* | Restore Operation Failed | Errors Related to Controller Operation | W500, W501 |
| 102D0000 hex* | CJ-series Unit Backup Failed | Errors Related to Unit Configuration | W500 |
| 102E0000 hex* | CJ-series Unit Restore Operation Failed | Errors Related to Unit Configuration | W500 |
| 102F0000 hex* | EtherCAT Slave Backup Failed | Built-in EtherCAT Master in CPU Unit | W505 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 10300000 hex* | EtherCAT Slave Restore Operation Failed | Built-in EtherCAT Master in CPU Unit | W505 |
| 10310000 hex* | Incorrect SD Memory Card Removal | Errors for Self Diagnosis | W500 |
| 14010000 hex | CPU Bus Unit Setup Area Error | Errors Related to FINS Communications | W501 |
| 14200000 hex | MAC Address Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 14210000 hex | Identity Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 14220000 hex | EtherNet/IP Processing Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 14400000 hex | MAC Address Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 14600000 hex | Absolute Encoder Home Offset Read Error | General Motion Control | W507 |
| 14610000 hex | Motion Control Parameter Setting Error | General Motion Control | W507 |
| 14620000 hex | Cam Data Read Error | General Motion Control | W507 |
| 14630000 hex | Cam Table Save Error | General Motion Control | W507 |
| 14800000 hex | Protocol Data Error | CJ-series Serial Communications Units | W494 |
| 14840000 hex | Invalid Communications Parameter | CJ-series EtherNet/IP Units | W495 |
| 14850000 hex | Tag Database Error | CJ-series EtherNet/IP Units | W495 |
| 148C0000 hex | Invalid Message Timer List Error | CJ-series DeviceNet Units | W497 |
| 148D0000 hex | Invalid Scan List Data | CJ-series DeviceNet Units | W497 |
| 148E0000 hex | Invalid Setup Data | CJ-series DeviceNet Units | W497 |
| 14A00000 hex | Non-volatile Memory Checksum Error | EtherCAT Block I/O, E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors, and EtherCAT Digital Sensor Communications Units Operation Manual | W488, E413, and E429 |
| 14A80000 hex | Object Error | Servo G5 and G5 Linear | I576, I577 |
| 14A90000 hex | Object Error | Servo G5 and G5 Linear | I576, I577 |
| 14AA0000 hex | Object Error | Servo G5 and G5 Linear | I576, I577 |
| 14AB0000 hex | Object Corrupted | Servo G5 and G5 Linear | I576, I577 |
| 14AC0000 hex | Object Corrupted | Servo G5 and G5 Linear | I576, I577 |
| 14AD0000 hex | Object Corrupted | Servo G5 and G5 Linear | I576, I577 |
| 14B00000 hex* | Linearity Correction Data Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 14B10000 hex* | Linearity Correction Data Read Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 14B20000 hex* | System Setting Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 14B30000 hex* | Bank Data Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 18200000 hex | Absolute Encoder Overspeed Error | Servo G5 | I576 |
| 18210000 hex | Encoder Initialization Error | Servo G5 | I576 |
| 18220000 hex | Absolute Encoder One-rotation Counter Error | Servo G5 | I576 |
| 18230000 hex | Absolute Encoder Multi-rotation Counter Error | Servo G5 | I576 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 24010000 hex | Unsupported Unit Detected | Errors Related to Unit Configuration | W500 |
| 24020000 hex | Too Many I/O Points | Errors Related to Unit Configuration | W500 |
| 24030000 hex | End Cover Missing | Errors Related to Unit Configuration | W500 |
| 24040000 hex | Incorrect Unit/Expansion Rack Connection | Errors Related to Unit Configuration | W500 |
| 24050000 hex | Duplicate Unit Number | Errors Related to Unit Configuration | W500 |
| 24200000 hex | Slave Node Address Duplicated | Built-in EtherCAT Master in CPU Unit | W505 |
| 24400000 hex | Unit Status, Antenna Error | CJ-series ID Sensor Units | Z317 |
| 24480000 hex | Node Address Duplicated Error | CJ-series DeviceNet Units | W497 |
| 24610000 hex | Switch Setting Error | Block I/O (GX-series EtherCAT Slave Units) | W488 |
| 24680000 hex | Motor Non-conformity | Servo G5 | I576 |
| 24690000 hex | Motor Non-conformity | Servo G5 | I576 |
| 246A0000 hex | Motor Non-conformity | Servo G5 | I576 |
| 246B0000 hex | Motor Non-conformity | Servo G5 | I576 |
| 246C0000 hex | Motor Non-conformity | Servo G5 | I576 |
| 24780000 hex | Number of Sensors Verify Error | E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors | E413 |
| 24790000 hex | Number of Sensors Over Limit | E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors | E413 |
| 247A0000 hex* | Number of Distributed Sensor Unit Verify Error | EtherCAT Digital Sensor Communications Units Operation Manual | E429 |
| 247B0000 hex* | Number of Sensors Over Limit | EtherCAT Digital Sensor Communications Units Operation Manual | E429 |
| 247C0000 hex* | Number of Sensors Verify Error | EtherCAT Digital Sensor Communications Units Operation Manual | E429 |
| 247D0000 hex* | Number of Sensors Over at Distributed Sensor Unit | EtherCAT Digital Sensor Communications Units Operation Manual | E429 |
| 24810000 hex* | Ethernet Communications Parameter Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 28010000 hex | Motor Setting Error | G5 Linear | I577 |
| 28020000 hex | Motor Combination Error 1 | G5 Linear | I577 |
| 28030000 hex | Motor Combination Error 2 | G5 Linear | I577 |
| 30200000 hex* | Unsupported Unit Setting | Errors Related to Unit Configuration | W500 |
| 34010000 hex | I/O Setting Check Error | Errors Related to Unit Configuration | W500 |
| 34100000 hex | IP Address Table Setting Error | Errors Related to FINS Communications | W501 |
| 34110000 hex | Unknown Destination Node | Errors Related to FINS Communications | W501 |
| 34130000 hex | FINS/TCP Connection Table Setting Error | Errors Related to FINS Communications | W501 |
| 34200000 hex | Tag Data Link Setting Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34210000 hex | Basic Ethernet Setting Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34220000 hex | TCP/IP Basic Setting Error (Local Port IP Address) | Built-in EtherNet/IP Port on CPU Unit | W506 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 34230000 hex | TCP/IP Advanced Setting Error (IP Router Table) | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34240000 hex | FTP Server Setting Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34250000 hex | NTP Client Setting Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34260000 hex | SNMP Setting Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34270000 hex | Tag Name Resolution Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 34400000 hex | Network Configuration Information Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 34600000 hex | Required Process Data Object Not Set | General Motion Control | W507 |
| 34610000 hex | Process Data Object Setting Missing | Motion Control Instructions | W508 |
| 34630000 hex | Axis Slave Disabled | General Motion Control | W507 |
| 34640000 hex | Network Configuration Information Missing for Axis Slave | General Motion Control | W507 |
| 34800000 hex | Mean Value Processing Setting Error | CJ-series Analog I/O Units | W490 |
| 34810000 hex | Input Value Exceeded Adjustment Range in Adjustment Mode | CJ-series Analog I/O Units | W490 |
| 34820000 hex | Input Number Specification Error in Adjustment Mode | CJ-series Analog I/O Units | W490 |
| 34830000 hex | Scaling Data Setting Error | CJ-series Analog I/O Units | W490 |
| 34840000 hex | Input Signal Range Setting Error or Error in Number of Inputs Setting | CJ-series Analog I/O Units | W490 |
| 34850000 hex | Mean Value Processing Setting Error | CJ-series Analog I/O Units | W490 |
| 34860000 hex | Error in Setting of Conversion Mode | CJ-series Analog I/O Units | W490 |
| 34870000 hex | Output Hold Setting Error | CJ-series Analog I/O Units | W490 |
| 34880000 hex | Output Number Specification Error in Adjustment Mode | CJ-series Analog I/O Units | W490 |
| 34890000 hex | Conversion Time/Resolution Setting Error or Operation Mode Setting Error | CJ-series Analog I/O Units | W490 |
| 348A0000 hex | Output Signal Range Setting Error or Error In Number of Outputs Used Setting | CJ-series Analog I/O Units | W490 |
| 348C0000 hex | I/O Number Specification Error in Adjustment Mode | CJ-series Analog I/O Units | W490 |
| 348D0000 hex | Data Range Error | CJ-series Process I/O Units | W498 |
| 34940000 hex | Setting Error | CJ-series Temperature Control Units | W491 |
| 34980000 hex | Results Information, Data Storage Area Specification Error | CJ-series ID Sensor Units | Z317 |
| 349C0000 hex | Registration Table Verification Error | CJ-series CompoNet Master Unit | W493 |
| 349D0000 hex | Slave Unit Duplicated Address Error | CJ-series CompoNet Master Unit | W493 |
| 349E0000 hex | Repeater Unit Node Duplicated Address Error | CJ-series CompoNet Master Unit | W493 |
| 34A40000 hex | System Setup Error | CJ-series Serial Communications Units | W494 |
| 34A80000 hex | Verification Error | CJ-series EtherNet/IP Units | W495 |
| 34A90000 hex | Tag Data Link Error | CJ-series EtherNet/IP Units | W495 |
| 34AA0000 hex | Tag Refresh Error | CJ-series EtherNet/IP Units | W495 |
| 34AB0000 hex | Basic Ethernet Setting Error | CJ-series EtherNet/IP Units | W495 |
| 34AC0000 hex | IP Address Table Error | CJ-series EtherNet/IP Units | W495 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 34AD0000 hex | IP Router Table Error | CJ-series EtherNet/IP Units | W495 |
| 34AE0000 hex | Routing Table Error | CJ-series EtherNet/IP Units | W495 |
| 34AF0000 hex | Ethernet Advanced Setting Error | CJ-series EtherNet/IP Units | W495 |
| 34B00000 hex | Address Mismatch | CJ-series EtherNet/IP Units | W495 |
| 34BC0000 hex | Routing Table Error | CJ-series DeviceNet Units | W497 |
| 34BD0000 hex | Verification Error | CJ-series DeviceNet Units | W497 |
| 34BE0000 hex | Structure Error | CJ-series DeviceNet Units | W497 |
| 34BF0000 hex | Master I/O Refresh Error | CJ-series DeviceNet Units | W497 |
| 34C00000 hex | Master User-set Allocations User Setting Failed | CJ-series DeviceNet Units | W497 |
| 34C10000 hex | Communications Cycle Time Setting Failed | CJ-series DeviceNet Units | W497 |
| 34C20000 hex | Slave I/O Refresh Error | CJ-series DeviceNet Units | W497 |
| 34C30000 hex | Slave User Allocation Area Setting Failed | CJ-series DeviceNet Units | W497 |
| 34E00000 hex | Data Setting Warning | Servo G5 and G5 Linear | I576, I577 |
| 34E10000 hex | Servo Drive Overheat | Servo G5 and G5 Linear | I576, I577 |
| 34E20000 hex | Overload | Servo G5 and G5 Linear | I576, I577 |
| 34E30000 hex | Regeneration Overload | Servo G5 and G5 Linear | I576, I577 |
| 34E40000 hex | Error Counter Overflow | Servo G5 and G5 Linear | I576, I577 |
| 34E50000 hex | Excessive Velocity Error | Servo G5 and G5 Linear | I576, I577 |
| 34E60000 hex | Overspeed | Servo G5 and G5 Linear | I576, I577 |
| 34F00000 hex | PDO Setting Error | MX2/RX-series Inverters with EtherCAT Communications Units | I574 |
| 34F80000 hex | Dummy Sensors Setting Error | E3X-series Fiber Sensors with EtherCAT Communications Unit for Digital Sensors and EtherCAT Digital Sensor Communications Units Operation Manual | E413 and E429 |
| 38010000 hex | Scaling Data Setting Error/Ratio Conversion Use Setting Error | CJ-series Analog I/O Units | W490 |
| 38020000 hex | Ratio Set Value Error | CJ-series Analog I/O Units | W490 |
| 381C0000 hex | Status Area Layout Setting Error | CJ-series EtherNet/IP Units | W495 |
| 383C0000 hex | Overload Warning | Servo G5 and G5 Linear | I576, I577 |
| 383D0000 hex | Excessive Regeneration Warning | Servo G5 and G5 Linear | I576, I577 |
| 383E0000 hex | Vibration Detection Warning | Servo G5 and G5 Linear | I576, I577 |
| 383F0000 hex | Excessive Hybrid Following Error | Servo G5 | I576 |
| 38400000 hex | Overspeed 2 | Servo G5 and G5 Linear | I576, I577 |
| 38410000 hex | Command Error | Servo G5 and G5 Linear | I576, I577 |
| 38420000 hex | Command Generation Error | Servo G5 and G5 Linear | I576, I577 |
| 38430000 hex | Error Counter Overflow 1 | Servo G5 and G5 Linear | I576, I577 |
| 38440000 hex | Error Counter Overflow 2 | Servo G5 and G5 Linear | I576, I577 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 38450000 hex | Interface Input Duplicate Allocation Error 1 | Servo G5 and G5 Linear | I576, I577 |
| 38460000 hex | Interface Input Duplicate Allocation Error 2 | Servo G5 and G5 Linear | I576, I577 |
| 38470000 hex | Interface Input Function Number Error 1 | Servo G5 and G5 Linear | I576, I577 |
| 38480000 hex | Interface Input Function Number Error 2 | Servo G5 and G5 Linear | I576, I577 |
| 38490000 hex | Interface Output Function Number Error 1 | Servo G5 and G5 Linear | I576, I577 |
| 384A0000 hex | Interface Output Function Number Error 2 | Servo G5 and G5 Linear | I576, I577 |
| 384B0000 hex | External Latch Input Allocation Error | Servo G5 and G5 Linear | I576, I577 |
| 384C0000 hex | Overrun Limit Error | Servo G5 and G5 Linear | I576, I577 |
| 384D0000 hex | Absolute Encoder System Down Error | Servo G5 | I576 |
| 384E0000 hex | Absolute Encoder Counter Overflow Error | Servo G5 | I576 |
| 384F0000 hex | Object Setting Error 1 | Servo G5 and G5 Linear | I576, I577 |
| 38500000 hex | Object Setting Error 2 | Servo G5 and G5 Linear | I576, I577 |
| 38510000 hex | External Encoder Connection Error | Servo G5 and G5 Linear | I576, I577 |
| 38520000 hex | Function Setting Error | Servo G5 and G5 Linear | I576, I577 |
| 38530000 hex | Magnetic Pole Position Estimation Error 1 | Servo G5 | I576 |
| 38540000 hex | Magnetic Pole Position Estimation Error 2 | Servo G5 | I576 |
| 38550000 hex | Magnetic Pole Position Estimation Error 3 | Servo G5 | I576 |
| 38560000 hex | Motor Auto-setting Error | Servo G5 | I576 |
| 40160000 hex | Safe Mode | Errors Related to Controller Operation | W500, W501 |
| 40170000 hex* | Safe Mode | Errors Related to Controller Operation | W500, W501 |
| 44010000Hex | EtherCAT Fault | Built-in EtherCAT Master in CPU Unit | W505 |
| 44200000 hex | Motion Control Initialization Error | General Motion Control | W507 |
| 50010000 hex* | Controller Insufficient Memory Warning | Built-in EtherCAT Master in CPU Unit and Built-in EtherNet/IP Port on CPU Unit | W500, W501 |
| 54010400 hex | Input Value Out of Range | Instructions | W502 |
| 54010401 hex | Input Mismatch | Instructions | W502 |
| 54010402 hex | Floating-point Decimal Error | Instructions | W502 |
| 54010403 hex | BCD Error | Instructions | W502 |
| 54010404 hex | Signed BCD Error | Instructions | W502 |
| 54010405 hex | Illegal Bit Position Specified | Instructions | W502 |
| 54010406 hex | Illegal Data Position Specified | Instructions | W502 |
| 54010407 hex | Data Range Exceeded | Instructions | W502 |
| 54010409 hex | No Errors to Clear | Instructions | W502 |
| 5401040B hex | No User Errors to Clear | Instructions | W502 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 5401 040C hex | Limit Exceeded for User-defined Error | Instructions | W502 |
| 5401 040D hex | Illegal Unit Specified | Instructions | W502 |
| 5401 040F hex | Unit Restart Failed | Instructions | W502 |
| 5401 0410 hex | Text String Format Error | Instructions | W502 |
| 5401 0411 hex | Illegal Program Specified | Instructions | W502 |
| 5401 0413 hex | Undefined CJ-series Memory Address | Instructions | W502 |
| 5401 0414 hex | Stack Underflow | Instructions | W502 |
| 5401 0416 hex | Illegal Number of Array Elements or Dimensions | Instructions | W502 |
| 5401 0417 hex | Specified Task Does Not Exist | Instructions | W502 |
| 5401 0418 hex | Unallowed Task Specification | Instructions | W502 |
| 5401 0419 hex | Incorrect Data Type | Instructions | W502 |
| 5401 041A hex | Multi-execution of Instructions | Instructions | W502 |
| 5401 041B hex* | Data Capacity Exceeded | Instructions | W502 |
| 5401041C hex* | Different Data Sizes | Instructions | W502 |
| 5401 0800 hex | FINS Error | Instructions | W502 |
| 5401 0801 hex | FINS Port Already in Use | Instructions | W502 |
| 5401 0C00 hex | Illegal Serial Communications Mode | Instructions | W502 |
| 5401 0C02 hex | Port Setup Already Busy | Instructions | W502 |
| 5401 1400 hex | SD Memory Card Access Failure | Instructions | W502 |
| 5401 1401 hex | SD Memory Card Write-protected | Instructions | W502 |
| 5401 1402 hex | SD Memory Card Insufficient Capacity | Instructions | W502 |
| 5401 1403 hex | File Does Not Exist | Instructions | W502 |
| 5401 1404 hex | Too Many Files/ Directories | Instructions | W502 |
| 5401 1405 hex | File Already in Use | Instructions | W502 |
| 5401 1406 hex | Open Mode Mismatch | Instructions | W502 |
| 5401 1407 hex | Offset Out of Range | Instructions | W502 |
| 5401 1408 hex | Directory Not Empty | Instructions | W502 |
| 5401 1409 hex | That File Name Already Exists | Instructions | W502 |
| 5401 140A hex | Write Access Denied | Instructions | W502 |
| 5401 140B hex | Too Many Files Open | Instructions | W502 |
| 5401 140C hex | Directory Does Not Exist | Instructions | W502 |
| 5401 140D hex | File or Directory Name Is Too Long | Instructions | W502 |
| 5401 140E hex | SD Memory Card Access Failed | Instructions | W502 |
| 5401 1800 hex | EtherCAT Communications Error | Instructions | W502 |
| 5401 1801 hex | EtherCAT Slave Does Not Respond | Instructions | W502 |
| 5401 1802 hex | EtherCAT Timeout | Instructions | W502 |
| 5401 1803 hex | Reception Buffer Overflow | Instructions | W502 |
| 5401 1804 hex | SDO Abort Error | Instructions | W502 |
| 5401 1805 hex | Saving Packet Monitor File | Instructions | W502 |
| 5401 1806 hex | Packet Monitoring Function Not Started | Instructions | W502 |
| 5401 1807 hex | Packet Monitoring Function in Operation | Instructions | W502 |
| 5401 1808 hex | Communications Resource Overflow | Instructions | W502 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 5401 1809 hex* | Packet Monitoring Function Not Supported | Instructions | W502 |
| 5401 1C00 hex | Explicit Message Error | Instructions | W502 |
| 5401 1C01 hex | Incorrect Route Path | Instructions | W502 |
| 5401 1C02 hex | CIP Handle Out of Range | Instructions | W502 |
| 5401 1C03 hex | CIP Communications Resource Overflow | Instructions | W502 |
| 5401 1C04 hex | CIP Timeout | Instructions | W502 |
| 5401 2000 hex | Local IP Address Setting Error | Instructions | W502 |
| 5401 2001 hex | TCP/UDP Port Already in Use | Instructions | W502 |
| 5401 2002 hex | Address Resolution Failed | Instructions | W502 |
| 5401 2003 hex | Status Error | Instructions | W502 |
| 5401 2004 hex | Local IP Address Not Set | Instructions | W502 |
| 5401 2006 hex | Socket Timeout | Instructions | W502 |
| 5401 2007 hex | Socket Handle Out of Range | Instructions | W502 |
| 5401 2008 hex | Socket Communications Resource Overflow | Instructions | W502 |
| 5401 2400 hex* | No Execution Right | Instructions | W502 |
| 5401 2401 hex* | Settings Update Failed | Instructions | W502 |
| 5401 2402 hex* | Too Many Simultaneous Instruction Executions | Instructions | W502 |
| 5401 3461 hex | Process Data Object Setting Missing | Instructions | W502 |
| 5401 5420 hex | Electronic Gear Ratio Numerator Setting Out of Range | Instructions | W502 |
| 5401 5421 hex | Electronic Gear Ratio Denominator Setting Out of Range | Instructions | W502 |
| 5401 5422 hex | Target Velocity Setting Out of Range | Instructions | W502 |
| 5401 5423 hex | Acceleration Setting Out of Range | Instructions | W502 |
| 5401 5424 hex | Deceleration Setting Out of Range | Instructions | W502 |
| 5401 5425 hex | Jerk Setting Out of Range | Instructions | W502 |
| 5401 5427 hex | Torque Ramp Setting Out of Range | Instructions | W502 |
| 5401 5428 hex | Master Coefficient Scaling Out of Range | Instructions | W502 |
| 5401 5429 hex | Slave Coefficient Scaling Out of Range | Instructions | W502 |
| 5401 542A hex | Feeding Velocity Setting Out of Range | Instructions | W502 |
| 5401 542B hex | Buffer Mode Selection Out of Range | Instructions | W502 |
| 5401 542C hex | Coordinate System Selection Out of Range | Instructions | W502 |
| 5401 542D hex | Circular Interpolation Mode Selection Out of Range | Instructions | W502 |
| 5401 542E hex | Direction Selection Out of Range | Instructions | W502 |
| 5401 542F hex | Path Selection Out of Range | Instructions | W502 |
| 5401 5430 hex | Position Type Selection Out of Range | Instructions | W502 |
| 5401 5431 hex | Travel Mode Selection Out of Range | Instructions | W502 |
| 5401 5432 hex | Transition Mode Selection Out of Range | Instructions | W502 |
| 5401 5433 hex | Continue Method Selection Out of Range | Instructions | W502 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54015434 hex | Combine Mode Selection Out of Range | Instructions | W502 |
| 54015435 hex | Synchronization Start Condition Selection Out of Range | Instructions | W502 |
| 54015436 hex | Master and Slave Defined as Same Axis | Instructions | W502 |
| 54015437 hex | Master and Auxiliary Defined as Same Axis | Instructions | W502 |
| 54015438 hex | Master/Slave Axis Numbers Not in Ascending Order | Instructions | W502 |
| 54015439 hex | Incorrect Cam Table Specification | Instructions | W502 |
| 5401543A hex | Synchronization Stopped | Instructions | W502 |
| 5401543B hex | Motion Control Instruction Re-execution Disabled | Instructions | W502 |
| 5401543C hex | Motion Control Instruction Multi-execution Disabled | Instructions | W502 |
| 5401543D hex | Instruction Not Allowed for Encoder Axis Type | Instructions | W502 |
| 5401543E hex | Instruction Cannot Be Executed during Multi-axes Coordinated Control | Instructions | W502 |
| 5401543F hex | Multi-axes Coordinated Control Instruction Executed for Disabled Axes Group | Instructions | W502 |
| 54015440 hex | Axes Group Cannot Be Enabled | Instructions | W502 |
| 54015441 hex | Impossible Axis Operation Specified when the Servo is OFF | Instructions | W502 |
| 54015442 hex | Composition Axis Stopped Error | Instructions | W502 |
| 54015443 hex | Motion Control Instruction Multi-execution Buffer Limit Exceeded | Instructions | W502 |
| 54015444 hex | Insufficient Travel Distance | Instructions | W502 |
| 54015445 hex | Insufficient Travel Distance to Achieve Blending Transit Velocity | Instructions | W502 |
| 54015446 hex | Move Link Constant Velocity Insufficient Travel Distance | Instructions | W502 |
| 54015447 hex | Positioning Gear Operation Insufficient Target Velocity | Instructions | W502 |
| 54015448 hex | Same Start Point and End Point for Circular Interpolation | Instructions | W502 |
| 54015449 hex | Circular Interpolation Center Specification Position Out of Range | Instructions | W502 |
| 5401544A hex | Instruction Execution Error Caused by Count Mode Setting | Instructions | W502 |
| 5401544C hex | Parameter Selection Out of Range | Instructions | W502 |
| 5401544D hex | Stop Method Selection Out of Range | Instructions | W502 |
| 5401544E hex | Latch ID Selection Out of Range for Trigger Input Condition | Instructions | W502 |
| 5401544F hex | Setting Out of Range for Writing MC Setting | Instructions | W502 |
| 54015450 hex | Trigger Input Condition Mode Selection Out of Range | Instructions | W502 |
| 54015451 hex | Drive Trigger Signal Selection Out of Range for Trigger Input Condition | Instructions | W502 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 5401 5453 hex | Motion Control Instruction Re-execution Disabled (Axis Specification) | Instructions | W502 |
| 5401 5454 hex | Motion Control Instruction Re-execution Disabled (Buffer Mode Selection) | Instructions | W502 |
| 5401 5455 hex | Motion Control Instruction Re-execution Disabled (Direction Selection) | Instructions | W502 |
| 5401 5456 hex | Motion Control Instruction Re-execution Disabled (Execution Mode) | Instructions | W502 |
| 5401 5457 hex | Motion Control Instruction Re-execution Disabled (Axes Group Specification) | Instructions | W502 |
| 5401 5458 hex | Motion Control Instruction Re-execution Disabled (Jerk Setting) | Instructions | W502 |
| 5401 5459 hex | Motion Control Instruction Re-execution Disabled (Master Axis) | Instructions | W502 |
| 5401 545A hex | Motion Control Instruction Re-execution Disabled (MasterOffset) | Instructions | W502 |
| 5401 545B hex | Motion Control Instruction Re-execution Disabled (MasterScaling) | Instructions | W502 |
| 5401 545C hex | Motion Control Instruction Re-execution Disabled (MasterStartDistance) | Instructions | W502 |
| 5401 545D hex | Motion Control Instruction Re-execution Disabled (Continuous) | Instructions | W502 |
| 5401 545E hex | Motion Control Instruction Re-execution Disabled (MoveMode) | Instructions | W502 |
| 5401 545F hex | Illegal Auxiliary Axis Specification | Instructions | W502 |
| 5401 5460 hex | Illegal Axis Specification | Instructions | W502 |
| 5401 5461 hex | Illegal Axes Group Specification | Instructions | W502 |
| 5401 5462 hex | Illegal Master Axis Specification | Instructions | W502 |
| 5401 5463 hex | Motion Control Instruction Re-execution Disabled (SlaveOffset) | Instructions | W502 |
| 5401 5464 hex | Motion Control Instruction Re-execution Disabled (SlaveScaling) | Instructions | W502 |
| 5401 5465 hex | Motion Control Instruction Re-execution Disabled (StartPosition) | Instructions | W502 |
| 5401 5466 hex | Instruction Execution Error with Undefined Home | Instructions | W502 |
| 5401 5467 hex | Motion Control Instruction Re-execution Disabled Position Type) | Instructions | W502 |
| 5401 5468 hex | Unused Axis Specification for Master Axis | Instructions | W502 |
| 5401 5469 hex | First Position Setting Out of Range | Instructions | W502 |
| 5401 546A hex | Last Position Setting Out of Range | Instructions | W502 |
| 5401 546B hex | Illegal First/Last Position Size Relationship (Linear Mode) | Instructions | W502 |
| 5401 546C hex | Master Sync Start Position Setting Out of Range | Instructions | W502 |
| 5401 546D hex | Slave Sync Start Position Setting Out of Range | Instructions | W502 |
| 5401 546E hex | Duplicate Latch ID for Trigger Input Condition | Instructions | W502 |
| 5401 546F hex | Jerk Override Factor Out of Range | Instructions | W502 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54015470 hex | Acceleration/Deceleration Override Factor Out of Range | Instructions | W502 |
| 54015471 hex | First Position Method Specification Out of Range | Instructions | W502 |
| 54015472 hex | Motion Control Instruction Re-execution Disabled (First Position Method) | Instructions | W502 |
| 54015474 hex | Unused Axis Specification for Auxiliary Axis | Instructions | W502 |
| 54015475 hex | Position Gear Value Error | Instructions | W502 |
| 54015476 hex | Position Gear Master Axis Zero Velocity | Instructions | W502 |
| 54015478 hex | Target Position Setting Out of Range | Instructions | W502 |
| 54015479 hex | Travel Distance Out of Range | Instructions | W502 |
| 5401547A hex | Cam Table Start Point Setting Out of Range | Instructions | W502 |
| 5401547B hex | Cam Master Axis Following First Position Setting Out of Range | Instructions | W502 |
| 5401547C hex | Circular Interpolation Radius Setting Error | Instructions | W502 |
| 5401547D hex | Circular Interpolation Radius Overflow | Instructions | W502 |
| 5401547E hex | Circular Interpolation Setting Out of Range | Instructions | W502 |
| 5401547F hex | Auxiliary/Slave Axis Numbers Not in Ascending Order | Instructions | W502 |
| 54015480 hex | Cam Table Property Ascending Data Error at Update | Instructions | W502 |
| 54015481 hex | MC_Write Target Out of Range | Instructions | W502 |
| 54015482 hex | Master Travel Distance Specification Out of Range | Instructions | W502 |
| 54015483 hex | Master Distance in Acceleration Specification Out of Range | Instructions | W502 |
| 54015484 hex | Master Distance in Deceleration Specification Out of Range | Instructions | W502 |
| 54015487 hex | Execution Mode Selection Out of Range | Instructions | W502 |
| 54015488 hex | Permitted Following Error Out of Range | Instructions | W502 |
| 54015489 hex | Border Point/Center Position/Radius Specification Out of Range | Instructions | W502 |
| 5401548A hex | End Point Specification Out of Range | Instructions | W502 |
| 5401548B hex | Slave Travel Distance Specification Out of Range | Instructions | W502 |
| 5401548C hex | Phase Shift Amount Out of Range | Instructions | W502 |
| 5401548D hex | Feeding Distance Out of Range | Instructions | W502 |
| 5401548E hex | Auxiliary and Slave Defined as Same Axis | Instructions | W502 |
| 5401548F hex | Relative Position Selection Out of Range | Instructions | W502 |
| 54015490 hex | Cam Transition Specification Out of Range | Instructions | W502 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 5401 5491 hex | Synchronized Control End Mode Selection Out of Range | Instructions | W502 |
| 5401 5492 hex | Enable External Latch Instruction Execution Disabled | Instructions | W502 |
| 5401 5493 hex | Master Axis Offset Out of Range | Instructions | W502 |
| 5401 5494 hex | Slave Axis Offset Out of Range | Instructions | W502 |
| 5401 5495 hex | Command Current Position Count Selection Out of Range | Instructions | W502 |
| 5401 5496 hex | Master Axis Gear Ratio Numerator Out of Range | Instructions | W502 |
| 5401 5497 hex | Master Axis Gear Ratio Denominator Out of Range | Instructions | W502 |
| 5401 5498 hex | Auxiliary Axis Gear Ratio Numerator Out of Range | Instructions | W502 |
| 5401 5499 hex | Auxiliary Axis Gear Ratio Denominator Out of Range | Instructions | W502 |
| 5401 549A hex | Master Axis Position Type Selection Out of Range | Instructions | W502 |
| 5401 549B hex | Auxiliary Axis Position Type Selection Out of Range | Instructions | W502 |
| 5401 549C hex | Target Position Ring Counter Out of Range | Instructions | W502 |
| 5401 549D hex* | Axes Group Composition Axis Setting Out of Range | Instructions | W502 |
| 5401 549E hex* | Axis Use Setting Out of Range | Instructions | W502 |
| 5401 5700 hex* | Homing Parameter Setting Out of Range | Instructions | W502 |
| 5401 5702 hex* | Axis Use Change Error | Instructions | W502 |
| 5401 5720 hex* | Motion Control Parameter Setting Error When Changing Axis Use | Instructions | W502 |
| 5401 5721 hex* | Required Process Data Object Not Set When Changing Axis Use | Instructions | W502 |
| 5401 6440 hex | Target Position Positive Software Limit Exceeded | Instructions | W502 |
| 5401 6441 hex | Target Position Negative Software Limit Exceeded | Instructions | W502 |
| 5401 6442 hex | Command Position Overflow/Underflow | Instructions | W502 |
| 5401 6443 hex | Positive Limit Input | Instructions | W502 |
| 5401 6444 hex | Negative Limit Input | Instructions | W502 |
| 5401 7422 hex | Servo Main Circuits OFF | Instructions | W502 |
| 5420 0000 hex | Electronic Gear Ratio Numerator Setting Out of Range | Motion Control Instructions | W508 |
| 5421 0000 hex | Electronic Gear Ratio Denominator Setting Out of Range | Motion Control Instructions | W508 |
| 5422 0000 hex | Target Velocity Setting Out of Range | Motion Control Instructions | W508 |
| 5423 0000 hex | Acceleration Setting Out of Range | Motion Control Instructions | W508 |
| 5424 0000 hex | Deceleration Setting Out of Range | Motion Control Instructions | W508 |
| 5425 0000 hex | Jerk Setting Out of Range | Motion Control Instructions | W508 |
| 5427 0000 hex | Torque Ramp Setting Out of Range | Motion Control Instructions | W508 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54280000 hex | Master Coefficient Scaling Out of Range | Motion Control Instructions | W508 |
| 54290000 hex | Slave Coefficient Scaling Out of Range | Motion Control Instructions | W508 |
| 542A0000 hex | Feeding Velocity Setting Out of Range | Motion Control Instructions | W508 |
| 542B0000 hex | Buffer Mode Selection Out of Range | Motion Control Instructions | W508 |
| 542C0000 hex | Coordinate System Selection Out of Range | Motion Control Instructions | W508 |
| 542D0000 hex | Circular Interpolation Mode Selection Out of Range | Motion Control Instructions | W508 |
| 542E0000 hex | Direction Selection Out of Range | Motion Control Instructions | W508 |
| 542F0000 hex | Path Selection Out of Range | Motion Control Instructions | W508 |
| 54300000 hex | Position Type Selection Out of Range | Motion Control Instructions | W508 |
| 54310000 hex | Travel Mode Selection Out of Range | Motion Control Instructions | W508 |
| 54320000 hex | Transition Mode Selection Out of Range | Motion Control Instructions | W508 |
| 54330000 hex | Continue Method Selection Out of Range | Motion Control Instructions | W508 |
| 54340000 hex | Combine Mode Selection Out of Range | Motion Control Instructions | W508 |
| 54350000 hex | Synchronization Start Condition Selection Out of Range | Motion Control Instructions | W508 |
| 54360000 hex | Master and Slave Defined as Same Axis | Motion Control Instructions | W508 |
| 54370000 hex | Master and Auxiliary Defined as Same Axis | Motion Control Instructions | W508 |
| 54380000 hex | Master/Slave Axis Numbers Not in Ascending Order | Motion Control Instructions | W508 |
| 54390000 hex | Incorrect Cam Table Specification | Motion Control Instructions | W508 |
| 543A0000 hex | Synchronization Stopped | Motion Control Instructions | W508 |
| 543B0000 hex | Motion Control Instruction Re-execution Disabled | Motion Control Instructions | W508 |
| 543C0000 hex | Motion Control Instruction Multi-execution Disabled | Motion Control Instructions | W508 |
| 543D0000 hex | Instruction Not Allowed for Encoder Axis Type | Motion Control Instructions | W508 |
| 543E0000 hex | Instruction Cannot Be Executed during Multi-axes Coordinated Control | Motion Control Instructions | W508 |
| 543F0000 hex | Multi-axes Coordinated Control Instruction Executed for Disabled Axes Group | Motion Control Instructions | W508 |
| 54400000 hex | Axes Group Cannot Be Enabled | Motion Control Instructions | W508 |
| 54410000 hex | Impossible Axis Operation Specified when the Servo is OFF | Motion Control Instructions | W508 |
| 54420000 hex | Composition Axis Stopped Error | Motion Control Instructions | W508 |
| 54430000 hex | Motion Control Instruction Multi-execution Buffer Limit Exceeded | Motion Control Instructions | W508 |
| 54440000 hex | Insufficient Travel Distance | Motion Control Instructions | W508 |
| 54450000 hex | Insufficient Travel Distance to Achieve Blending Transit Velocity | Motion Control Instructions | W508 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54460000 hex | Move Link Constant Velocity Insufficient Travel Distance | Motion Control Instructions | W508 |
| 54470000 hex | Positioning Gear Operation Insufficient Target Velocity | Motion Control Instructions | W508 |
| 54480000 hex | Same Start Point and End Point for Circular Interpolation | Motion Control Instructions | W508 |
| 54490000 hex | Circular Interpolation Center Specification Position Out of Range | Motion Control Instructions | W508 |
| 544A0000 hex | Circular Interpolation Cannot Be Executed with Rotary (Infinite) Axis | Motion Control Instructions | W508 |
| 544C0000 hex | Parameter Selection Out of Range | Motion Control Instructions | W508 |
| 544D0000 hex | Stop Method Selection Out of Range | Motion Control Instructions | W508 |
| 544E0000 hex | Latch ID Selection Out of Range for Trigger Input Condition | Motion Control Instructions | W508 |
| 544F0000 hex | Setting Out of Range for Writing MC Setting | Motion Control Instructions | W508 |
| 54500000 hex | Trigger Input Condition Mode Selection Out of Range | Motion Control Instructions | W508 |
| 54510000 hex | Drive Trigger Signal Selection Out of Range for Trigger Input Condition | Motion Control Instructions | W508 |
| 54530000 hex | Motion Control Instruction Re-execution Disabled (Axis Specification) | Motion Control Instructions | W508 |
| 54540000 hex | Motion Control Instruction Re-execution Disabled (Buffer Mode Selection) | Motion Control Instructions | W508 |
| 54550000 hex | Motion Control Instruction Re-execution Disabled (Direction Selection) | Motion Control Instructions | W508 |
| 54560000 hex | Motion Control Instruction Re-execution Disabled (Execution Mode) | Motion Control Instructions | W508 |
| 54570000 hex | Motion Control Instruction Re-execution Disabled (Axes Group Specification) | Motion Control Instructions | W508 |
| 54580000 hex | Motion Control Instruction Re-execution Disabled (Jerk Setting) | Motion Control Instructions | W508 |
| 54590000 hex | Motion Control Instruction Re-execution Disabled (Master Axis) | Motion Control Instructions | W508 |
| 545A0000 hex | Motion Control Instruction Re-execution Disabled (MasterOffset) | Motion Control Instructions | W508 |
| 545B0000 hex | Motion Control Instruction Re-execution Disabled (MasterScaling) | Motion Control Instructions | W508 |
| 545C0000 hex | Motion Control Instruction Re-execution Disabled (MasterStartDistance) | Motion Control Instructions | W508 |
| 545D0000 hex | Motion Control Instruction Re-execution Disabled (Continuous) | Motion Control Instructions | W508 |
| 545E0000 hex | Motion Control Instruction Re-execution Disabled (MoveMode) | Motion Control Instructions | W508 |
| 545F0000 hex | Illegal Auxiliary Axis Specification | Motion Control Instructions | W508 |
| 54600000 hex | Illegal Axis Specification | Motion Control Instructions | W508 |
| 54610000 hex | Illegal Axes Group Specification | Motion Control Instructions | W508 |
| 54620000 hex | Illegal Master Axis Specification | Motion Control Instructions | W508 |
| 54630000 hex | Motion Control Instruction Re-execution Disabled (SlaveOffset) | Motion Control Instructions | W508 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54640000 hex | Motion Control Instruction Re-execution Disabled (SlaveScaling) | Motion Control Instructions | W508 |
| 54650000 hex | Motion Control Instruction Re-execution Disabled (StartPosition) | Motion Control Instructions | W508 |
| 54660000 hex | Instruction Execution Error with Undefined Home | Motion Control Instructions | W508 |
| 54670000 hex | Motion Control Instruction Re-execution Disabled (Position Type) | Motion Control Instructions | W508 |
| 54680000 hex | Unused Axis Specification for Master Axis | Motion Control Instructions | W508 |
| 54690000 hex | First Position Setting Out of Range | Motion Control Instructions | W508 |
| 546A0000 hex | Last Position Setting Out of Range | Motion Control Instructions | W508 |
| 546B0000 hex | Illegal First/Last Position Size Relationship (Linear Mode) | Motion Control Instructions | W508 |
| 546C0000 hex | Master Sync Start Position Setting Out of Range | Motion Control Instructions | W508 |
| 546D0000 hex | Slave Sync Start Position Setting Out of Range | Motion Control Instructions | W508 |
| 546E0000 hex | Duplicate Latch ID for Trigger Input Condition | Motion Control Instructions | W508 |
| 546F0000 hex | Jerk Override Factor Out of Range | Motion Control Instructions | W508 |
| 54700000 hex | Acceleration/Deceleration Override Factor Out of Range | Motion Control Instructions | W508 |
| 54710000 hex | First Position Method Specification Out of Range | Motion Control Instructions | W508 |
| 54720000 hex | Motion Control Instruction Re-execution Disabled (First Position Method) | Motion Control Instructions | W508 |
| 54740000 hex | Unused Axis Specification for Auxiliary Axis | Motion Control Instructions | W508 |
| 54750000 hex | Position Gear Value Error | Motion Control Instructions | W508 |
| 54760000 hex | Position Gear Master Axis Zero Velocity | Motion Control Instructions | W508 |
| 54770000 hex | Cam Table Data Error during Cam Motion | General Motion Control | W507 |
| 54780000 hex | Target Position Setting Out of Range | Motion Control Instructions | W508 |
| 54790000 hex | Travel Distance Out of Range | Motion Control Instructions | W508 |
| 547A0000 hex | Cam Table Start Point Setting Out of Range | Motion Control Instructions | W508 |
| 547B0000 hex | Cam Master Axis Following First Position Setting Out of Range | Motion Control Instructions | W508 |
| 547C0000 hex | Circular Interpolation Radius Setting Error | Motion Control Instructions | W508 |
| 547D0000 hex | Circular Interpolation Radius Overflow | Motion Control Instructions | W508 |
| 547E0000 hex | Circular Interpolation Setting Out of Range | Motion Control Instructions | W508 |
| 547F0000 hex | Auxiliary/Slave Axis Numbers Not in Ascending Order | Motion Control Instructions | W508 |
| 54800000 hex | Cam Table Property Ascending Data Error at Update | Motion Control Instructions | W508 |
| 54810000 hex | MC_Write Target Out of Range | Motion Control Instructions | W508 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54820000 hex | Master Travel Distance Specification Out of Range | Motion Control Instructions | W508 |
| 54830000 hex | Master Distance in Acceleration Specification Out of Range | Motion Control Instructions | W508 |
| 54840000 hex | Master Distance in Deceleration Specification Out of Range | Motion Control Instructions | W508 |
| 54850000 hex | Immediate Stop Instruction Executed | General Motion Control | W507 |
| 54860000 hex | Axes Group Immediate Stop Instruction Executed | General Motion Control | W507 |
| 54870000 hex | Execution Mode Selection Out of Range | Motion Control Instructions | W508 |
| 54880000 hex | Permitted Following Error Out of Range | Motion Control Instructions | W508 |
| 54890000 hex | Border Point/Center Position/Radius Specification Out of Range | Motion Control Instructions | W508 |
| 548A0000 hex | End Point Specification Out of Range | Motion Control Instructions | W508 |
| 548B0000 hex | Slave Travel Distance Specification Out of Range | Motion Control Instructions | W508 |
| 548C0000 hex | Phase Shift Amount Out of Range | Motion Control Instructions | W508 |
| 548D0000 hex | Feeding Distance Out of Range | Motion Control Instructions | W508 |
| 548E0000 hex | Auxiliary and Slave Defined as Same Axis | Motion Control Instructions | W508 |
| 548F0000 hex | Relative Position Selection Out of Range | Motion Control Instructions | W508 |
| 54900000 hex | Cam Transition Specification Out of Range | Motion Control Instructions | W508 |
| 54910000 hex | Synchronized Control End Mode Selection Out of Range | Motion Control Instructions | W508 |
| 54920000 hex | Enable External Latch Instruction Execution Disabled | Motion Control Instructions | W508 |
| 54930000 hex | Master Axis Offset Out of Range | Motion Control Instructions | W508 |
| 54940000 hex | Slave Axis Offset Out of Range | Motion Control Instructions | W508 |
| 54950000 hex | Command Current Position Count Selection Out of Range | Motion Control Instructions | W508 |
| 54960000 hex | Master Axis Gear Ratio Numerator Out of Range | Motion Control Instructions | W508 |
| 54970000 hex | Master Axis Gear Ratio Denominator Out of Range | Motion Control Instructions | W508 |
| 54980000 hex | Auxiliary Axis Gear Ratio Numerator Out of Range | Motion Control Instructions | W508 |
| 54990000 hex | Auxiliary Axis Gear Ratio Denominator Out of Range | Motion Control Instructions | W508 |
| 549A0000 hex | Master Axis Position Type Selection Out of Range | Motion Control Instructions | W508 |
| 549B0000 hex | Auxiliary Axis Position Type Selection Out of Range | Motion Control Instructions | W508 |
| 549C0000 hex | Target Position Ring Counter Out of Range | Motion Control Instructions | W508 |
| 549D000 hex* | Axes Group Composition Axis Setting Out of Range | Motion Control Instructions | W508 |
| 549E0000 hex* | Axis Use Setting Out of Range | Motion Control Instructions | W508 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 54A00000 hex | Results Information, ID Tag Address Error | CJ-series ID Sensor Units | Z317 |
| 54A10000 hex | Results Information, Write Protection Error | CJ-series ID Sensor Units | Z317 |
| 54A20000 hex | Results Information, Command Error | CJ-series ID Sensor Units | Z317 |
| 54A80000 hex | Command Error | CJ-series Serial Communications Units | W494 |
| 54A90000 hex | Sequence Abort Completed | CJ-series Serial Communications Units | W494 |
| 54AA0000 hex | Protocol Macro Error | CJ-series Serial Communications Units | W494 |
| 54AE0000 hex | Multiple Switches ON Error | CJ-series EtherNet/IP Units | W495 |
| 54AF0000 hex | Variable Access Error | CJ-series EtherNet/IP Units | W495 |
| 54E00000 hex | Variable Access Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 57000000 hex* | Homing Parameter Setting Out of Range | Motion Control Instructions | W508 |
| 57020000 hex* | Axis Use Change Error | General Motion Control | W508 |
| 57200000 hex* | Motion Control Parameter Setting Error When Changing Axis Use | General Motion Control | W508 |
| 57210000 hex* | Required Process Data Object Not Set When Changing Axis Use | General Motion Control | W508 |
| 571D0000 hex* | Too Many Reset Motion Control Error Instructions | General Motion Control | W507 |
| 60010000 hex | Task Period Exceeded | Errors Related to Tasks | W501 |
| 60020000 hex | Task Execution Timeout | Errors Related to Tasks | W501 |
| 60030000 hex | I/O Refreshing Timeout Error | Errors Related to Tasks | W501 |
| 60040000 hex | Insufficient System Service Time Error | Errors Related to Tasks | W501 |
| 60050000 hex | Task Period Exceeded | Errors Related to Tasks | W501 |
| 64010000 hex | Impossible to Access Special Unit | Errors Related to Unit Configuration | W500 |
| 64200000 hex | Emergency Message Detected | Built-in EtherCAT Master in CPU Unit | W505 |
| 64400000 hex | Target Position Positive Software Limit Exceeded | General Motion Control | W508 |
| 64410000 hex | Target Position Negative Software Limit Exceeded | General Motion Control | W508 |
| 64420000 hex | Command Position Overflow/Under-flow | General Motion Control | W508 |
| 64430000 hex | Positive Limit Input | General Motion Control | W508 |
| 64440000 hex | Negative Limit Input | General Motion Control | W508 |
| 64450000 hex | Positive Software Limit Exceeded | General Motion Control | W507 |
| 64460000 hex | Negative Software Limit Exceeded | General Motion Control | W507 |
| 64470000 hex | In-position Check Time Exceeded | General Motion Control | W507 |
| 64480000 hex | Following Error Limit Exceeded | General Motion Control | W507 |
| 64490000 hex | Immediate Stop Input | General Motion Control | W507 |
| 644A0000 hex | Positive Limit Input Detected | General Motion Control | W507 |
| 644B0000 hex | Negative Limit Input Detected | General Motion Control | W507 |
| 644C0000 hex | Following Error Warning | General Motion Control | W507 |
| 644D0000 hex | Velocity Warning | General Motion Control | W507 |
| 644E0000 hex | Acceleration Warning | General Motion Control | W507 |
| 644F0000 hex | Deceleration Warning | General Motion Control | W507 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 64500000 hex | Positive Torque Warning | General Motion Control | W507 |
| 64510000 hex | Negative Torque Warning | General Motion Control | W507 |
| 64520000 hex | Command Position Overflow | General Motion Control | W507 |
| 64530000 hex | Command Position Underflow | General Motion Control | W507 |
| 64540000 hex | Actual Position Overflow | General Motion Control | W507 |
| 64550000 hex | Actual Position Underflow | General Motion Control | W507 |
| 64560000 hex | Illegal Following Error | General Motion Control | W507 |
| 64570000 hex | Servo OFF Error | General Motion Control | W507 |
| 64580000 hex | Absolute Encoder Current Position Calculation Failed | General Motion Control | W507 |
| 64590000 hex | Home Undefined during Coordinated Motion | General Motion Control | W507 |
| 64780000 hex | Input Disconnection Detected | CJ-series Analog I/O Units | W490 |
| 64790000 hex | Output Set Value Error | CJ-series Analog I/O Units | W490 |
| 647A0000 hex | Input Error | CJ-series Process I/O Units | W498 |
| 647D0000 hex | Zero/Span Adjustment Period End | CJ-series Process I/O Units | W498 |
| 647E0000 hex | Zero/Span Adjustment Period Notice | CJ-series Process I/O Units | W498 |
| 64840000 hex | Sensor Error | CJ-series Temperature Control Units | W491 |
| 64850000 hex | CT Overflow | CJ-series Temperature Control Units | W491 |
| 64860000 hex | Heater Burnout Alarm | CJ-series Temperature Control Units | W491 |
| 648C0000 hex | Unit Status, Command Error End | CJ-series ID Sensor Units | Z317 |
| 648D0000 hex | Results Information, Verification Error | CJ-series ID Sensor Units | Z317 |
| 648E0000 hex | Results Information, ID Tag Communications Error | CJ-series ID Sensor Units | Z317 |
| 648F0000 hex | Results Information, ID Tag Missing Error | CJ-series ID Sensor Units | Z317 |
| 64900000 hex | Results Information, ID System Error 1 | CJ-series ID Sensor Units | Z317 |
| 64910000 hex | Results Information, ID System Error 2 | CJ-series ID Sensor Units | Z317 |
| 64920000 hex | Results Information, ID System Error 3 | CJ-series ID Sensor Units | Z317 |
| 64930000 hex | Results Information, ID Tag Status | CJ-series ID Sensor Units | Z317 |
| 64940000 hex | Results Information, Error Correction | CJ-series ID Sensor Units | Z317 |
| 64980000 hex | Representative Warning | CJ-series CompoNet Master Unit | W493 |
| 64990000 hex | Representative Alarm | CJ-series CompoNet Master Unit | W493 |
| 64A00000 hex | Tfs (Send Finished Monitoring Time) Exceeded | CJ-series Serial Communications Units | W494 |
| 64A10000 hex | Tfr (Receive Finished Monitoring Time) Exceeded | CJ-series Serial Communications Units | W494 |
| 64A20000 hex | Tr (Receive Wait Monitoring Time) Exceeded | CJ-series Serial Communications Units | W494 |
| 64A30000 hex | FCS Check Error | CJ-series Serial Communications Units | W494 |
| 64A40000 hex | Timeout Error | CJ-series Serial Communications Units | W494 |
| 64A50000 hex | Comparison Error | CJ-series Serial Communications Units | W494 |
| 64A60000 hex | Reception Overflow | CJ-series Serial Communications Units | W494 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 64A70000 hex | Command Format Error | CJ-series Serial Communications Units | W494 |
| 64AC0000 hex | Send Timeout Error | CJ-series DeviceNet Units | W497 |
| 64CC0000 hex | I/O Disconnection Detected | Block I/O (GX-series EtherCAT Slave Units) | W488 |
| 64E00000 hex | Drive Prohibition Input Error 1 | Servo G5 and G5 Linear | I576, I577 |
| 64E10000 hex | Drive Prohibition Input Error 2 | Servo G5 and G5 Linear | I576, I577 |
| 64E20000 hex | Immediate Stop Input Error | Servo G5 and G5 Linear | I576, I577 |
| 68010000 hex | Unit Error | CJ-series High-speed Counter Units | W492 |
| 74200000 hex | Motion Control Period Exceeded | General Motion Control | W507 |
| 74210000 hex | Servo Main Circuit Power OFF | General Motion Control | W507 |
| 74220000 hex | Servo Main Circuits OFF | Motion Control Instructions | W508 |
| 74230000 hex | Interrupt Feeding Interrupt Signal Missing | General Motion Control | W507 |
| 74240000 hex | Homing Opposite Direction Limit Input Detected | General Motion Control | W507 |
| 74250000 hex | Homing Direction Limit Input Detected | General Motion Control | W507 |
| 74260000 hex | Homing Limit Inputs Detected in Both Directions | General Motion Control | W507 |
| 74270000 hex | Home Proximity/Homing Opposite Direction Limit Input Detected | General Motion Control | W507 |
| 74280000 hex | Home Proximity/Homing Direction Limit Input Detected | General Motion Control | W507 |
| 74290000 hex | Home Input/Homing Opposite Direction Limit Input Detected | General Motion Control | W507 |
| 742A0000 hex | Home Input/Homing Direction Limit Input Detected | General Motion Control | W507 |
| 742B0000 hex | Invalid Home Input Mask Distance | General Motion Control | W507 |
| 742C0000 hex | No Home Input | General Motion Control | W507 |
| 742D0000 hex | No Home Proximity Input | General Motion Control | W507 |
| 742F0000 hex | Slave Error Detected | General Motion Control | W507 |
| 74300000 hex | Axes Group Composition Axis Error | General Motion Control | W507 |
| 74320000 hex | Slave Observation Detected | General Motion Control | W507 |
| 74330000 hex | MC Common Error Occurrence | General Motion Control | W507 |
| 74340000 hex | Latch Position Overflow | General Motion Control | W507 |
| 74350000 hex | Latch Position Underflow | General Motion Control | W507 |
| 74360000 hex | Master Sync Direction Error | General Motion Control | W507 |
| 74370000 hex | Slave Disconnection during Servo ON | General Motion Control | W507 |
| 74380000 hex | Feed Distance Overflow | General Motion Control | W507 |
| 74390000 hex | Error in Changing Servo Drive Control Mode | General Motion Control | W507 |
| 743A0000 hex | Master Axis Position Read Error | General Motion Control | W507 |
| 743B0000 hex | Auxiliary Axis Position Read Error | General Motion Control | W507 |
| 743C0000 hex | Cannot Execute Save Cam Table Instruction | General Motion Control | W507 |
| 74600000 hex | Master Function Enable/Disable Failed | CJ-series DeviceNet Units | W497 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 74610000 hex | Master Fixed Allocation Area Setting Failed | CJ-series DeviceNet Units | W497 |
| 74620000 hex | Scan List Register/Clear Failed | CJ-series DeviceNet Units | W497 |
| 74630000 hex | Slave Function Enable/Disable Failed | CJ-series DeviceNet Units | W497 |
| 74640000 hex | Slave Fixed Allocation Area Setting Failed | CJ-series DeviceNet Units | W497 |
| 74800000 hex | Command Warning | Servo G5 and G5 Linear | I576, I577 |
| 74810000 hex | Command Error | Servo G5 and G5 Linear | I576, I577 |
| 74900000 hex* | Multiple Control Signal Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 74910000 hex* | EXE Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 74920000 hex* | SYNC Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 74930000 hex* | TIMING Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 74940000 hex* | RESET Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 74950000 hex* | ZERO Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 74960000 hex* | ZEROCLR Input Error | ZW-CE1□T Confocal Fiber Type Displacement Sensor | Z332 |
| 78010000 hex | Operation Command Competition | Servo G5 and G5 Linear | I576, I577 |
| 78020000 hex | Absolute Encoder Status Error | Servo G5 | I576 |
| 78080000 hex | TRIG Input Error | EtherCAT FQ-M-series Specialized Vision Sensors for Positioning | Z314 |
| 780A0000 hex | Scene Data Error | EtherCAT FQ-M-series Specialized Vision Sensors for Positioning | Z314 |
| 780B0000 hex | Model Error | EtherCAT FQ-M-series Specialized Vision Sensors for Positioning | Z314 |
| 780C0000 hex | Logging Error | EtherCAT FQ-M-series Specialized Vision Sensors for Positioning | Z314 |
| 780D0000 hex | Output Timeout | EtherCAT FQ-M-series Specialized Vision Sensors for Positioning | Z314 |
| 780E0000 hex | Output Size Error | EtherCAT FQ-M-series Specialized Vision Sensors for Positioning | Z314 |
| 80010000 hex | Illegal Packet Discarded | Errors Related to Unit Configuration | W500 |
| 80100000 hex | Packet Discarded | Errors Related to FINS Communications | W501 |
| 80110000 hex | Packet Discarded | Errors Related to FINS Communications | W501 |
| 80120000 hex | Packet Discarded | Errors Related to FINS Communications | W501 |
| 84010000 hex | IP Address Duplication Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84020000 hex | BOOTP Server Connection Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84030000 hex | DNS Server Connection Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84040000 hex | NTP Server Connection Error | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84050000 hex | Packet Discarded Due to Full Reception Buffer | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84060000 hex | Link OFF Detected | Built-in EtherNet/IP Port on CPU Unit | W506 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 84070000 hex | Tag Data Link Connection Failed | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84080000 hex | Tag Data Link Timeout | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84090000 hex* | Tag Data Link Connection Timeout | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 84200000 hex | Link OFF Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 84210000 hex | Network Configuration Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 84220000 hex | Network Configuration Verification Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 84230000 hex | Slave Initialization Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 84280000 hex | Slave Application Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 84290000 hex | Process Data Transmission Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 842B0000 hex | Process Data Reception Timeout | Built-in EtherCAT Master in CPU Unit | W505 |
| 842C0000 hex | Process Data Communications Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 842D0000 hex | EtherCAT Message Error | Built-in EtherCAT Master in CPU Unit | W505 |
| 84400000 hex | EtherCAT Slave Communications Error | General Motion Control | W507 |
| 84600000 hex | Communications Error | CJ-series CompoNet Master Unit | W493 |
| 84610000 hex | Repeater Unit Communications Error | CJ-series CompoNet Master Unit | W493 |
| 84680000 hex | Transmission Error | CJ-series Serial Communications Units | W494 |
| 84690000 hex | Overrun Error | CJ-series Serial Communications Units | W494 |
| 846A0000 hex | Framing Error | CJ-series Serial Communications Units | W494 |
| 846B0000 hex | Parity Error | CJ-series Serial Communications Units | W494 |
| 846C0000 hex | Overrun Error, Framing Error, or Parity Error (Transmission Error) | CJ-series Serial Communications Units | W494 |
| 846D0000 hex | Transmission Error (CRC Error) | CJ-series Serial Communications Units | W494 |
| 84740000 hex | Bus Off Detected | CJ-series DeviceNet Units | W497 |
| 84750000 hex | Remote I/O Communications Error | CJ-series DeviceNet Units | W497 |
| 84760000 hex | Remote I/O Communications Error (during Slave Operation) | CJ-series DeviceNet Units | W497 |
| 84770000 hex | Slave COS Send Failed | CJ-series DeviceNet Units | W497 |
| 84B00000 hex | EtherCAT Communications Warning | Servo G5 and G5 Linear | I576, I577 |
| 84B10000 hex | EtherCAT State Change Error | Servo G5 and G5 Linear | I576, I577 |
| 84B20000 hex | EtherCAT Illegal State Change Error | Servo G5 and G5 Linear | I576, I577 |
| 84B30000 hex | Communications Synchronization Error | Servo G5 and G5 Linear | I576, I577 |
| 84B40000 hex | Synchronization Error | Servo G5 and G5 Linear | I576, I577 |
| 84B50000 hex | Sync Manager WDT Error | Servo G5 and G5 Linear | I576, I577 |
| 84B60000 hex | ESC Initialization Error | Servo G5 and G5 Linear | I576, I577 |
| 84B70000 hex | Slave Unit Verification Error | Servo G5 and G5 Linear | I576, I577 |
| 84B80000 hex | Communications Setting Error | Servo G5 and G5 Linear | I576, I577 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 84B90000 hex | Synchronization Interruption Error | Servo G5 and G5 Linear | I576, I577 |
| 84E00000 hex | IP Address Duplication Error | CJ-series EtherNet/IP Units | W495 |
| 84E10000 hex | BOOTP Server Error | CJ-series EtherNet/IP Units | W495 |
| 84E20000 hex | Link OFF Error | CJ-series EtherNet/IP Units | W495 |
| 90010000 hex | Clock Changed | Errors Related to Controller Operation | W500, W501 |
| 90020000 hex | Time Zone Changed | Errors Related to Controller Operation | W500, W501 |
| 90080000 hex | Variable Changed to TRUE with Forced Refreshing | Errors Related to Controller Operation | W500, W501 |
| 90090000 hex | Variable Changed to FALSE with Forced Refreshing | Errors Related to Controller Operation | W500, W501 |
| 900A0000 hex | All Forced Refreshing Cleared | Errors Related to Controller Operation | W500, W501 |
| 900B0000 hex | Memory All Cleared | Errors Related to Controller Operation | W500, W501 |
| 900C0000 hex | Event Log Cleared | Errors Related to Controller Operation | W500, W501 |
| 900F0000 hex* | Automatic Transfer Completed | Errors Related to Controller Operation | W500, W501 |
| 90110000 hex | Power Turned ON | Errors Related to Controller Operation | W500, W501 |
| 90120000 hex | Power Interrupted | Errors Related to Controller Operation | W500, W501 |
| 90130000 hex | Operation Started | Errors Related to Controller Operation | W500, W501 |
| 90140000 hex | Operation Stopped | Errors Related to Controller Operation | W500, W501 |
| 90150000 hex | Reset Executed | Errors Related to Controller Operation | W500, W501 |
| 90160000 hex | User Program Execution ID Write | Errors Related to Controller Operation | W500, W501 |
| 90180000 hex | All Controller Errors Cleared | Errors Related to Controller Operation | W500, W501 |
| 90190000 hex | Forced Refreshing Cleared | Errors Related to Controller Operation | W500, W501 |
| 901A0000 hex* | Backup Started | Errors Related to Controller Operation | W500, W501 |
| 901B0000 hex* | Backup Completed | Errors Related to Controller Operation | W500, W501 |
| 901C0000 hex* | Restore Operation Started | Errors Related to Controller Operation | W500, W501 |
| 901D0000 hex* | Restore Operation Completed | Errors Related to Controller Operation | W500, W501 |
| 94010000 hex | Tag Data Link Download Started | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94020000 hex | Tag Data Link Download Finished | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94030000 hex | Tag Data Link Stopped | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94040000 hex | Tag Data Link Started | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94050000 hex | Link Detected | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94060000 hex | Restarting Ethernet Port | Built-in EtherNet/IP Port on CPU Unit | W506 |

| Event code | Event name | Functional classification | Reference |
|---|---|---|---|
| 94070000 hex | Tag Data Link All Run | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94080000 hex | IP Address Fixed | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94090000 hex | BOOTP Client Started | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 940A0000 hex | FTP Server Started | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 940B0000 hex | NTP Client Started | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 940C0000 hex | SNMP Started | Built-in EtherNet/IP Port on CPU Unit | W506 |
| 94200000 hex | Notice of Insufficient Travel Distance to Achieve Blending Transit Velocity | General Motion Control | W507 |
| 94210000 hex | Error Clear from MC Test Run Tab Page | General Motion Control | W507 |
| 94220000 hex | Slave Error Code Report | General Motion Control | W507 |
| 94400000 hex | Slave Disconnected | Built-in EtherCAT Master in CPU Unit | W505 |
| 94410000 hex | Slave Connected | Built-in EtherCAT Master in CPU Unit | W505 |
| 94430000 hex | Errors Reset | Built-in EtherCAT Master in CPU Unit | W505 |
| 94440000 hex* | Slave Disabled | Built-in EtherCAT Master in CPU Unit | W505 |
| 94450000 hex* | Slave Enabled | Built-in EtherCAT Master in CPU Unit | W505 |
| 98010000 hex | Absolute Value Cleared | Servo G5 | I576 |
| 98020000 hex | Position Data Initialized | Servo G5 and G5 Linear | I576, I577 |

# 3-3 Instruction Error Table

For descriptions of the error codes for the motion control instructions and other instructions, refer to the descriptions of the corresponding event codes. Events that occur for motion control instructions are given in *3-1-3 Errors in the Motion Control Function Module*. Events that occur for other instructions are given in *3-1-2 Errors in the PLC Function Module*. Refer to *1-3-1 Types of Non-fatal Errors* for the relationship between event codes and error codes.

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