

Machine Automation Controller

NJ/NX-series

Firmware Update Instruction with Memory Cards

NX701-□□□□

NX502-□□□□

NX102-□□□□

NX1P2-□□□□□□

NJ501-□□□□



NJ301-1□□□

NJ101-□□□□

NOTE

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Introduction

Thank you for purchasing NJ/NX-series products.

This manual contains information that is necessary to update the firmware of NJ/NX-series products. Please read this manual and make sure you understand the firmware update 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 B 3503.

Applicable Products

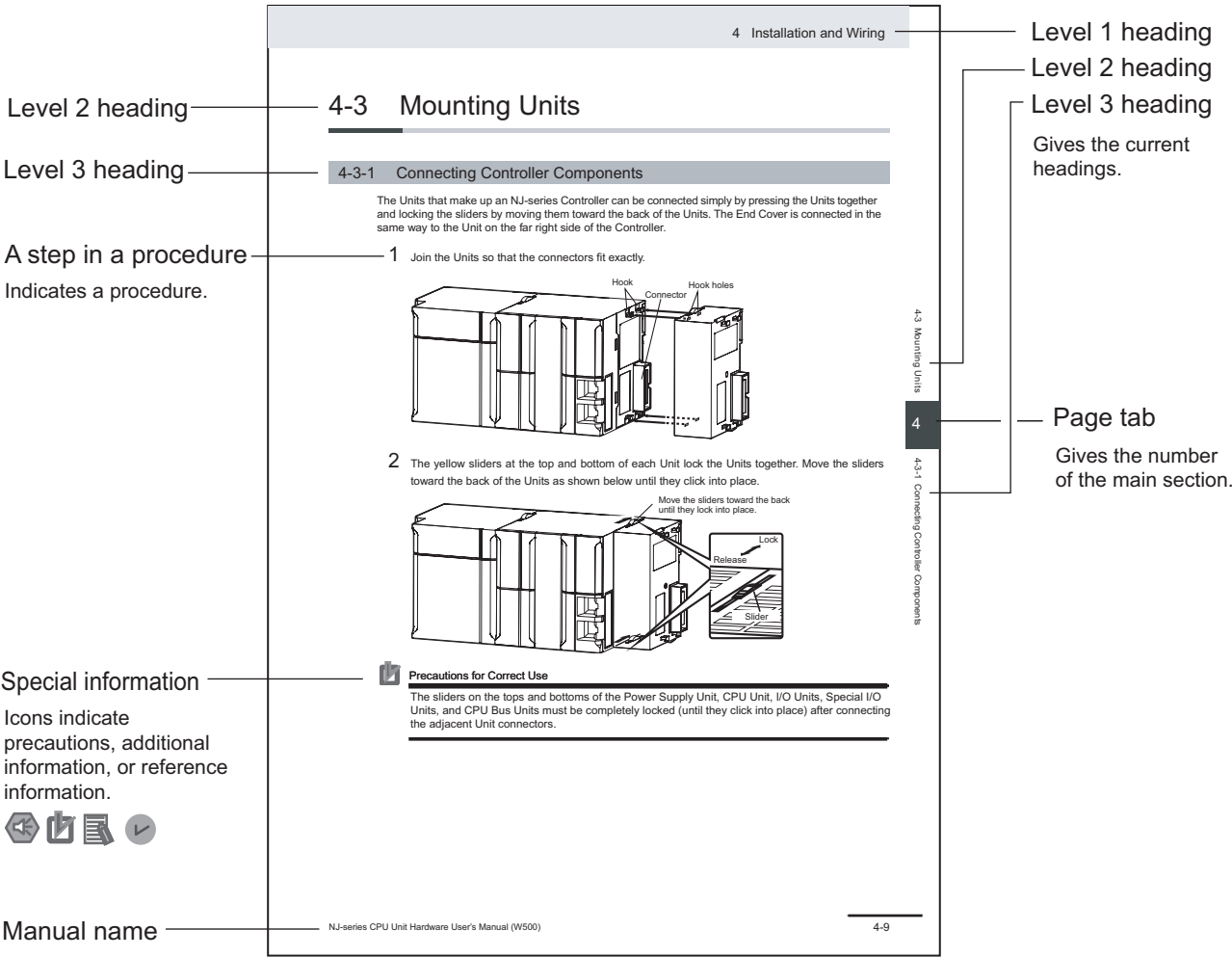
This manual covers the following products.

- | | |
|-----------------------|-----------------------|
| • NX-series CPU Units | • NJ-series CPU Units |
| • NX701-□7□□ | • NJ501-□5□□ |
| • NX701-□6□□ | • NJ501-□4□□ |
| • NX502-15□□ | • NJ501-□3□□ |
| • NX502-14□□ | • NJ301-12□□ |
| • NX502-13□□ | • NJ301-11□□ |
| • NX102-12□□ | • NJ101-10□□ |
| • NX102-11□□ | • NJ101-90□□ |
| • NX102-10□□ | |
| • NX102-90□□ | |
| • NX1P2-11□□□□ | |
| • NX1P2-11□□□□1 | |
| • NX1P2-10□□□□ | |
| • NX1P2-10□□□□1 | |
| • NX1P2-90□□□□ | |
| • NX1P2-90□□□□1 | |
| • NX1P2-9B□□□□ | |
| • NX1P2-9B□□□□1 | |

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.



Version Information

Information on differences in specifications and functionality for Controller with different unit versions and for different versions of the Sysmac Studio is given.

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Warranty, Limitations of Liability

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Safety Precautions

Refer to the following manuals for safety precautions.

- NX-series CPU Unit Hardware User's Manual (Cat. No. W535)
- NX-series NX502 CPU Unit Hardware User's Manual (Cat. No. W629)
- NX-series NX102 CPU Unit Hardware User's Manual (Cat. No. W593)
- NX-series NX1P2 CPU Unit Hardware User's Manual (Cat. No. W578)
- NJ-series CPU Unit Hardware User's Manual (Cat No. W500)
- Sysmac Studio Version 1 Operation Manual (Cat. No. W504)

Precautions for Safe Use

Refer to the following manuals for precautions for safe use.

- NX-series CPU Unit Hardware User's Manual (Cat. No. W535)
- NX-series NX502 CPU Unit Hardware User's Manual (Cat. No. W629)
- NX-series NX102 CPU Unit Hardware User's Manual (Cat. No. W593)
- NX-series NX1P2 CPU Unit Hardware User's Manual (Cat. No. W578)
- NJ-series CPU Unit Hardware User's Manual (Cat. No. W500)
- Sysmac Studio Version 1 Operation Manual (Cat. No. W504)

Turning ON the Power Supply

- It takes up to approximately five minutes to complete firmware update after the power is turned ON. During that time, outputs will be OFF or values will be according to settings in the Units or slaves. Also, external communications cannot be performed. Implement fail-safe circuits so that external devices do not operate incorrectly.

After Downloading the Project

- Check the operation of the downloaded project for proper execution before you use it for actual operation.

Actual Operation

- The performance may be different if the hardware revisions are different. Before you transfer the user program, data, and parameter settings to the CPU Units with the different hardware revisions, check them for proper execution and then use them for actual operation.

Motion Control

- Precautions on the Absolute Encoder Home Offset
The **absolute encoder home offsets** are retained in the CPU Unit as absolute encoder information. If any of the following conditions is met, clear the absolute encoder home offsets from the list of data items to restore, and then restore the data. Then, define the absolute encoder home again. If you do not define home, unintended operation of the controlled system may occur.
 - a) The Servomotor or Servo Drive was changed since the data was backed up.
 - b) The absolute encoder was set up after the data was backed up.
 - c) The absolute data for the Servo Drive with an absolute encoder was lost.

Backing Up Data

- For NX-series CPU Unit, the present values of variables are backed up by the backup operation. However, we recommend that you execute it while the retained variables are not refreshed. If you

back up the following variables while the values of retained variables are refreshed, the data may not be saved correctly.

- a) Structure members whose data size is 16 bits or more.
- b) Array elements whose data size is 16 bits or more.

Restoring Data

- Check the operation of the restored project for proper execution before you use it for actual operation.

Precautions for Correct Use

Refer to the following manuals for precautions for correct use.

- NX-series CPU Unit Hardware User's Manual (Cat. No. W535)
- NX-series NX502 CPU Unit Hardware User's Manual (Cat. No. W629)
- NX-series NX102 CPU Unit Hardware User's Manual (Cat. No. W593)
- NX-series NX1P2 CPU Unit Hardware User's Manual (Cat. No. W578)
- NJ-series CPU Unit Hardware User's Manual (Cat No. W500)
- Sysmac Studio Version 1 Operation Manual (Cat. No. W504)

Operation

- In order to prevent unintended firmware update operation due to unauthorized operation of DIP switch, take sufficient measures by means of locking the installation area and entrance management, etc.

SD Memory Cards

- When using an SD Memory Card, make sure that the SD Memory Card is usable before use. You can check if the SD Memory Card is usable or not by the `_Card1Ready` system-defined variable and the SD PWR indicator.
- If the SD Memory Card is write-protected, writing with the Firmware Updater Writer is not possible.
- When performing firmware update, use the SD Memory Card in write-protected state.
- Do not format the SD Memory Card on a computer or CPU Unit. Use the SD Memory Card Formatter provided by the SD Association when you format the SD Memory Card.
- Insert the SD Memory Card all the way.

Updating Firmware

- Do not remove the SD Memory Card during firmware update. Doing so may damage the data in the SD Memory Card.
- Updating the firmware initializes the existing data such as various settings, user program, and variables in the CPU Unit.
- Do not turn OFF the power to the Controller while updating the firmware (when the BUSY indicator is flashing).
While updating the firmware, the firmware in the built-in non-volatile memory in the CPU Unit is re-written.
The firmware will not be updated normally if the power supply is turned OFF.

Failure to Update Firmware

- Refer to *3-1 Troubleshooting during Firmware Update* on page 3-2 and be sure to execute the firmware updating procedures again if you cannot confirm correct completion of present updating procedures with the indicators.

Regulations and Standards

Refer to the following manuals for regulations and standards.

- NX-series CPU Unit Hardware User's Manual (Cat. No. W535)
- NX-series NX502 CPU Unit Hardware User's Manual (Cat. No. W629)
- NX-series NX102 CPU Unit Hardware User's Manual (Cat. No. W593)
- NX-series NX1P2 CPU Unit Hardware User's Manual (Cat. No. W578)
- NJ-series CPU Unit Hardware User's Manual (Cat No. W500)
- Sysmac Studio Version 1 Operation Manual (Cat. No. W504)

Versions

Hardware revisions and unit versions are used to manage the hardware and software in NJ/NX-series Units and EtherCAT slaves.

The hardware revision or unit version is updated each time there is a change in hardware or software specifications. Even when two Units or EtherCAT slaves have the same model number, they will have functional or performance differences if they have different hardware revisions or unit versions.

Refer to the following manuals for versions.

- NX-series CPU Unit Hardware User's Manual (Cat. No. W535)
- NX-series NX502 CPU Unit Hardware User's Manual (Cat. No. W629)
- NX-series NX102 CPU Unit Hardware User's Manual (Cat. No. W593)
- NX-series NX1P2 CPU Unit Hardware User's Manual (Cat. No. W578)
- NJ-series CPU Unit Hardware User's Manual (Cat No. W500)

Related Manuals

The followings are the manuals related to this manual. Use these manuals for reference.

Manual name	Cat.No.	Model numbers	Application	Description
NX-series CPU Unit Hardware User's Manual	W535	NX701-□□□□	Learning the basic specifications of the NX701 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX701 system is provided along with the following information on the CPU Unit. <ul style="list-style-type: none"> • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection
NX-series NX502 CPU Unit Hardware User's Manual	W629	NX502-□□□□	Learning the basic specifications of the NX502 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX502 system is provided along with the following information on the CPU Unit. <ul style="list-style-type: none"> • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection
NX-series NX102 CPU Unit Hardware User's Manual	W593	NX102-□□□□	Learning the basic specifications of the NX102 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX102 system is provided along with the following information on the CPU Unit. <ul style="list-style-type: none"> • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection
NX-series NX1P2 CPU Unit Hardware User's Manual	W578	NX1P2-□□□□	Learning the basic specifications of the NX1P2 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX1P2 system is provided along with the following information on the CPU Unit. <ul style="list-style-type: none"> • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection
NJ-series CPU Unit Hardware User's Manual	W500	NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	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. <ul style="list-style-type: none"> • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection

Manual name	Cat.No.	Model numbers	Application	Description
NJ/NX-series CPU Unit Software User's Manual	W501	NX701-□□□□ NX502-□□□□ NX102-□□□□ NX1P2-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	Learning how to program and set up an NJ/NX-series CPU Unit. Mainly software information is provided.	The following information is provided on a Controller built with an NJ/NX-series CPU Unit. <ul style="list-style-type: none"> • CPU Unit operation • CPU Unit features • Initial settings • Programming based on IEC 61131-3 language specifications
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.

Terminology

Term	Description
firmware	System software of a CPU Unit, etc.
firmware update	Updating firmware. Or, the task of updating firmware.
Firmware Updater	Data for updating firmware.
Firmware Updater Profile	A profile that describes information such as the applicable model numbers, applicable hardware revisions and unit versions for the Firmware Updater.
Firmware Updater Package	A file which contains a collection of data for firmware update. It can be obtained from the OMRON website.
MD5 hash value	A unique value for each Firmware Updater Package. By checking the MD5 hash value, you can check whether the Firmware Updater Package is broken or not.
Firmware Updater Writer	A utility to create a Memory Card for updating firmware. Windows application software.

Revision History

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

Cat. No.

P161-E1-01

Revision code

Revision code	Date	Revised content
01	April 2023	Original production

Restrictions on Firmware Update

This section describes restrictions on firmware update.

1-1	Restrictions	1-2
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1-1 Restrictions

This section describes restrictions on the user programs and SD Memory Cards.

User Programs

Updating the firmware initializes the existing data such as various settings, user program, and variables in the CPU Unit.

The CPU Unit data initialized by the firmware update and the CPU Unit data retained are shown in the table below.

Type of data in CPU Unit		Initialized/Retained
User Program	POUs (program organization units)	Initialized
	Data	
	Global Variables	
Settings	Unit Configuration and Unit Setup	Initialized
	EtherCAT Configuration	
	EtherCAT Slave Configuration	
	EtherCAT Master Settings	
	I/O Map	
	Controller Setup	
	Operation Settings	
	Built-in EtherNet/IP Port Settings	
	Task Settings	
	Motion Control Setup	
	Cam Data Settings	
	Event Settings	
	Data Trace Settings	
	Tag Data Link Tables	
	Controller Name	
	Operation Authority Verification	
	User Authentication	
	Built-in Clock	Retained
	Set Time	Initialized
	Time Zone Setting	
Present Values	Values of Variables	Initialized
	Contents of memory used for CJ-series Units ^{*1}	Retained
Event Logs		Retained
Absolute Encoder Home Offsets		Initialized
OPC UA Settings ^{*2*3}		Initialized
Secure Socket Setting ^{*2}		Retained
Database Connection Settings ^{*2}		Initialized
AI Function Settings ^{*2}		Initialized
SECS/GEM Settings ^{*2}		Initialized
CNC Settings ^{*2}		Initialized
Robot Control Settings ^{*2}		Initialized

*1. Only for the NJ-series CPU Units.

*2. Only for the applicable models.

*3. The server certificate is retained.

**Precautions for Correct Use**

When you reuse the existing various settings, user program, and values of variables in the CPU Unit, make sure to back them up before updating the firmware, and restore them after the update.

SD Memory Cards

When you create a Memory Card for updating firmware, all data on the SD Memory Card are deleted, and it becomes an SD Memory Card dedicated for updating firmware.

When you create a Memory Card for updating firmware, separately save the data on the SD Memory Card in advance.

2

Performing Firmware Update

This section describes the procedures to perform firmware update.

2-1	Procedures to Perform Firmware Update	2-2
2-2	Operation Status Indicators	2-6

2-1 Procedures to Perform Firmware Update

This section describes procedures assuming that you finished creating the Memory Card for updating firmware.

The procedures to perform firmware update are as follows.

If you do not want to reuse the existing various settings, user program, and variables in the CPU Unit after the firmware update, proceed from step 2.

- 1 Back up the user program.



Precautions for Safe Use

- The performance may be different if the hardware revisions are different. Before you transfer the user program, data, and parameter settings to the CPU Units with the different hardware revisions, check them for proper execution and then use them for actual operation.
- For NX-series CPU Unit, the present values of variables are backed up by the backup operation. However, we recommend that you execute it while the retained variables are not refreshed. If you back up the following variables while the values of retained variables are refreshed, the data may not be saved correctly.
 - a) Structure members whose data size is 16 bits or more.
 - b) Array elements whose data size is 16 bits or more.
- Precautions on the Absolute Encoder Home Offset
 The **absolute encoder home offsets** are retained in the CPU Unit as absolute encoder information. If any of the following conditions is met, clear the absolute encoder home offsets from the list of data items to restore, and then restore the data. Then, define the absolute encoder home again. If you do not define home, unintended operation of the controlled system may occur.
 - a) The Servomotor or Servo Drive was changed since the data was backed up.
 - b) The absolute encoder was set up after the data was backed up.
 - c) The absolute data for the Servo Drive with an absolute encoder was lost.



Precautions for Correct Use

Updating the firmware deletes all of the user program and settings, therefore make sure you back up the data first.

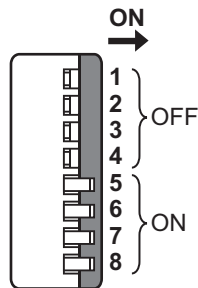
Refer to the *NJ/NX-series CPU Unit Software User's Manual (Cat. No. W501)* for information on backing up data.

- 2 Use the Sysmac Studio to set the **Firmware update prohibition** for the CPU Unit to **Do not use**.
 Refer to the *Sysmac Studio Version 1 Operation Manual (Cat. No. W504)* for the operating procedures of the Sysmac Studio.
- 3 Turn OFF the power supply to the CPU Unit.
- 4 Disconnect cables from the built-in EtherNet/IP ports and built-in EtherCAT port.
- 5 Insert the Memory Card for updating firmware to the Unit.

6 Configure the DIP switch settings as follows.

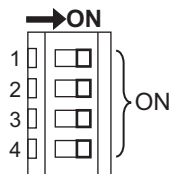
a) NX701 CPU Units

Set pins 1 to 4 to OFF, and pins 5 to 8 to ON on the DIP switch.



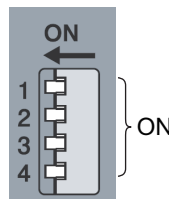
b) NX502 CPU Units, NX102 CPU Units, and NX1P2 CPU Units

Set all pins 1 to 4 on the DIP switch to ON.



c) NJ-series CPU Units

Set all pins 1 to 4 on the DIP switch to ON.

**7** Turn ON the power supply to the CPU Unit.

You can check the execution status of firmware update on the displays of the operation status indicators.

Refer to 2-2 *Operation Status Indicators* on page 2-6 on the displays of the operation status indicators.

**Precautions for Correct Use**

- Do not turn OFF the power supply to the CPU Unit during firmware update.
- If the power supply to the CPU Unit is interrupted during firmware update, the firmware update will not end normally.
- If you cannot confirm the completion of the firmware update from the indicators, refer to 3-1 *Troubleshooting during Firmware Update* on page 3-2 and be sure to perform the firmware update again.

8 When the firmware update is completed, turn OFF the power supply to the CPU Unit.**9** Remove the Memory Card for updating firmware from the CPU Unit.**10** Set all pins on the DIP switch to OFF.

- 11** Connect cables to the built-in EtherNet/IP ports and built-in EtherCAT port.
- 12** Turn ON the power supply to the CPU Unit.
- 13** The procedures to be performed differ as shown below depending on whether to reuse the existing various settings, user program, and variables in the CPU Unit after the firmware update or not to reuse them.
- a) Reusing Data
- Use the Sysmac Studio to execute restoration of the user program.
- Refer to the *NJ/NX-series CPU Unit Software User's Manual (Cat. No. W501)* for information on restoring data.



Precautions for Safe Use

Check the operation of the restored project for proper execution before you use it for actual operation.



Precautions for Correct Use

Restoring Data when EtherCAT Slaves Are Connected

- Always cycle the power supply to the NJ/NX-series Controller and the EtherCAT slaves after you restore data when EtherCAT slaves are connected. If you start operation without cycling the power supply, the Controller may perform unexpected operation.
 - To verify the data after you restore data with EtherCAT slaves connected, first turn OFF the power supply to the NJ/NX-series Controller and EtherCAT slaves, and then start in Safe Mode before you perform the verification procedure. If you cycle the power supply normally, the Controller will start operation before you can perform the verification procedure. That means that operation could be started with data that is not correct. For information on Safe Mode, refer to the *NJ/NX-series Troubleshooting Manual (Cat. No. W503)*.
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b) Not Reusing Data

Use the Sysmac Studio to set the **Firmware update prohibition** for the CPU Unit to **Use**.
Refer to the *Sysmac Studio Version 1 Operation Manual (Cat. No. W504)* for the operating procedures of the Sysmac Studio.

- 14** Use the Sysmac Studio to check the unit version.
- Refer to the *Sysmac Studio Version 1 Operation Manual (Cat. No. W504)* for the operating procedures of the Sysmac Studio.

The firmware update is completed.



Precautions for Correct Use

In order to reuse the SD Memory Card after the firmware update, it is necessary to format the SD Memory Card.
Refer to *A-1 Formatting SD Memory Cards* on page A-2 for information on formatting the SD Memory Cards.

**Additional Information**

You can use the Sysmac Studio to check the firmware update log. Refer to *A-2 Displaying Firmware Update Log* on page A-3 for displaying the firmware update log.

2-2 Operation Status Indicators

This section describes the indicators that represent CPU Unit statuses and the indicators during firm-ware update.

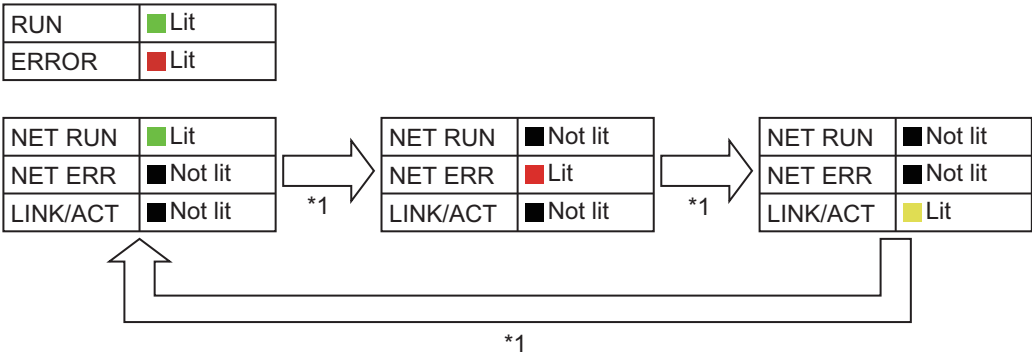
CPU Unit Status Displays

The table below describes the indicators that represent the CPU Unit statuses.

Indicator		Meaning
RUN (green)	ERROR (red)	
Not lit	Not lit	The CPU Unit is not started.
Flashing	Not lit	This is the stage before a firmware update starts.
Lit	Lit	Updating the firmware, or the firmware update was completed normally.
Lit	Flashing	An error occurred in firmware update.
Not lit	Lit	Firmware update could not start.
Flashing	Lit	
Flashing	Flashing	

Indicators during Firmware Update

During firmware update, both of the RUN (green) and ERROR (red) indicators are lit. With both of the above indicators lit, the NET RUN (green), NET ERR (red), and LINK/ACT (yellow) indicators are lit in order every one second.





*1. The display toggles every one second.

Indicators When Firmware Update Is Completed Correctly

Both of the RUN (green) and ERROR (red) indicators are lit when the firmware update is completed correctly.

With both of the above indicators lit, the NET RUN (green), NET ERR (red), and LINK/ACT (yellow) indicators are all lit.

RUN	 Lit
ERROR	 Lit

NET RUN	 Lit
NET ERR	 Lit
LINK/ACT	 Lit

3

Troubleshooting

3

This section describes how to troubleshoot problems that occur during firmware update.

3-1	Troubleshooting during Firmware Update.....	3-2
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3-1 Troubleshooting during Firmware Update

This section describes how to troubleshoot problems that occur during firmware update. Check the operation status indicators, and implement corrections and measures.

Indicator		Cause of error	Correction
RUN ERROR NET RUN NET ERR LINK/ACT	Not lit Lit --- --- ---	<ul style="list-style-type: none"> The Memory Card for updating firmware is not inserted. The Memory Card for updating firmware is not recognized. The DIP switch settings are not correct. 	<ul style="list-style-type: none"> Insert the Memory Card for updating firmware and perform the firmware update. The SD Memory Cards that comply with the SDXC standard cannot be used. Check the DIP switch settings and set them correctly.
RUN ERROR NET RUN NET ERR LINK/ACT	Flashing Lit --- --- ---	<ul style="list-style-type: none"> The model number of the CPU Unit is not applicable for the Memory Card for updating firmware. Firmware that is applicable to the hardware revision of the CPU Unit to be updated is not included in the Memory Card for updating firmware. It is not a Memory Card for updating firmware. 	Use a Memory Card for updating firmware that is compatible with the CPU Unit to which the firmware update is applied.
		Updated the firmware of the CPU Unit that does not have <i>F1</i> marked near the DIP switch. *1	To update the firmware of a CPU Unit that does not have <i>F1</i> marked near the DIP switch, contact your OMRON representative.
RUN ERROR NET RUN NET ERR LINK/ACT	Lit Flashing NET RUN, NET ERR, and LINK/ACT are all not lit, or either one is lit.	<ul style="list-style-type: none"> The contents of Memory Card for updating firmware are broken. The required files in the Memory Card for updating firmware are missing. Failed to rewrite the firmware of the CPU Unit. Malfunction of the CPU Unit. 	<ul style="list-style-type: none"> The Memory Card for updating firmware is broken. Use the Firmware Updater Writer to create a Memory Card for updating firmware again, and then perform the firmware update. If the above corrections do not solve the problem, replace the CPU Unit.
RUN ERROR NET RUN NET ERR LINK/ACT	Flashing Flashing Not lit Not lit Not lit	The Firmware update prohibition for the CPU Unit is set to Use .	Set the Firmware update prohibition for the CPU Unit to Do not use , and then perform the firmware update.
RUN ERROR NET RUN NET ERR LINK/ACT	Flashing Not lit --- --- ---	<ul style="list-style-type: none"> The DIP switch settings are not correct. Updated the firmware of the CPU Unit that does not have <i>F1</i> marked near the DIP switch. *2 	<ul style="list-style-type: none"> Check the DIP switch settings and set them correctly. To update the firmware of a CPU Unit that does not have <i>F1</i> marked near the DIP switch, contact your OMRON representative.

*1. This applies to the NX701 CPU Unit, NX102 CPU Unit, and NX1P2 CPU Unit.

*2. This applies to the NJ Series.



Appendices

This section describes how to format SD Memory Cards.

A-1	Formatting SD Memory Cards	A-2
A-2	Displaying Firmware Update Log	A-3

A-1 Formatting SD Memory Cards

Use the SD Memory Card Formatter provided by the SD Association, not the formatting tool provided with the operating system, when you format an SD Memory Card that was prepared as an SD Memory Card for firmware update.

Download the SD Memory Card Formatter from the SD Association website.

A-2 Displaying Firmware Update Log

You can use the Sysmac Studio to display the firmware update log.

The Sysmac Studio displays the firmware update log only when the Controller is placed online.

You can display the firmware update log by selecting **Controller - Firmware Update Log** on the Sysmac Studio. The Firmware Update Log Dialog Box is displayed.

The Sysmac Studio version 1.53 or higher and an NJ-series CPU Unit, NX1P2 CPU Unit, or NX102 CPU Unit with unit version 1.60 or later, or an NX701 CPU Unit with unit version 1.32 or later are required to use the function to display the firmware update log.

The items in the firmware update log are shown in the table below.

Item	Display content	Description
Index	The record index of a firmware update execution log.	1 represents the most recent execution log and the logs are output in ascending order. When the maximum number of log entries is reached, the oldest log will be overwritten thereafter. *1
Update Time (UTC)	yyyy/MM/dd hh:mm:ss	Displays the firmware update execution time in UTC.
Unit Version	Example: 1.60.00	Displays the unit version of the firmware.
Identifier	The identifier of the executed Firmware Updater.	Displays system information stored in the Firmware Updater. *2
Update Mode	Cleanup/ Development/ Manufacturing	Displays the mode of firmware update.
Result	Successfully completed/ Failed	Displays the execution result of the firmware update.

*1. The maximum number of log entries varies depending on the CPU Unit as follows.

- For NX701 and NX502 CPU Units, 127 entries.
- For NX102 and NX1P2 CPU Units, 63 entries.
- For NJ-series CPU Units, 127 entries.

*2. If the unit version displayed in the firmware update log is one of the following unit versions, the identifier column is in blank.

- NX701 CPU Unit with unit version 1.29 or earlier
- NJ-series, NX102, and NX1P2 CPU Units with unit version 1.50 or earlier

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