SAFETY PRECAUTIONS

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully, and pay full attention to safety to handle the product correctly.

The precautions given in this manual concerned with this product only. For the safety precautions for the programmable controller system, refer to the user's manual for the CPU module used and MELSEC iQ-R Module Configuration Manual.

In this manual, the safety precautions are classified into two levels: "⚠️ WARNING" and "⚠️ CAUTION".

⚠️ WARNING

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

⚠️ CAUTION

Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠️ CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

⚠️ WARNING

● When data change, program change, or status control are performed from a personal computer to a running CPU module, create an interlock circuit outside the programmable controller to ensure that the whole system always operates safely.

   Furthermore, for the online operations performed from a personal computer to a programmable controller CPU, the corrective actions against a communication error due to such as a cable connection fault should be predetermined as a system.

● To maintain the safety of the programmable controller system against unauthorized access from external devices via the network, take appropriate measures.

   To maintain the safety against unauthorized access via the Internet, take measures such as installing a firewall.
[Startup and Maintenance Precautions]

⚠️ CAUTION

● Debug a converted project before executing it in a programmable controller CPU.
● The online operations performed from a personal computer to a running CPU module (program change while a CPU module is in RUN, operating status changes such as RUN-STOP switching, and remote control operation) must be executed after the manual has been carefully read and the safety has been ensured.
● When changing a program while a CPU module is in RUN (online program change), it may cause a program corruption in some operating conditions. Fully understand the precautions before use.
● The positioning test functions such as OPR, JOG, inching, or testing positioning data for positioning module must be executed with the CPU module set to STOP after the manual has been carefully read and the safety has been ensured. Specially when executing the function on the network system, ensure the safety thoroughly since the machinery whose operation cannot be checked by an operator may be activated. The operation failure may cause the injury or machine damage.
(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
   i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
   ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.
(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

("Prohibited Application")
Prohibited Applications include, but not limited to, the use of the PRODUCT in:
• Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
• Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
• Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.
INTRODUCTION

Thank you for your patronage. We appreciate your purchase of the engineering software, MELSOFT series.
This manual describes the operations of MELSEC-A/QnA → MELSEC iQ-R Conversion Support Tool.
Before using the product, please read this manual carefully and develop familiarity with the functions and performance of MELSEC-A/QnA → MELSEC iQ-R Conversion Support Tool to handle the product correctly.
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CONDITIONS OF USE FOR THE PRODUCT ..................... 3
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RELEVANT MANUALS

<table>
<thead>
<tr>
<th>Manual name [manual number]</th>
<th>Description</th>
<th>Available form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transition from MELSEC-A/QnA (Large Type) Series to MELSEC iQ-R Series Handbook [L-08666ENG]</td>
<td>Alternative models and the procedure to replace each module, battery, and project from MELSEC-A/QnA series to MELSEC iQ-R series</td>
<td>PDF</td>
</tr>
<tr>
<td>Transition from MELSEC-AnS/QnAS (Small Type) Series to MELSEC iQ-R Series Handbook [L-08668ENG]</td>
<td>Alternative models and the procedure to replace each module, battery, and project from MELSEC-AnS/QnAS series to MELSEC iQ-R series</td>
<td>PDF</td>
</tr>
</tbody>
</table>

Point

e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.
e-Manual has the following features:

• Required information can be cross-searched in multiple manuals.
• Other manuals can be accessed from the links in the manual.
• Hardware specifications of each part can be found from the product figures.
• Pages that users often browse can be bookmarked.
• Sample programs can be copied to an engineering tool.
1 BEFORE USING THIS PRODUCT

1.1 MELSEC-A/QnA->MELSEC iQ-R Conversion Support Tool

MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool converts a GX Developer format project into a GX Works3 format project.

This tool also can output support information which is necessary to correct the converted project.

1.2 Features

This section explains the features of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool.

Project conversion with only one tool

In the existing method, operating each of GX Developer, GX Works2, and GX Works3 was required to convert a GX Developer format project for MELSEC-QnA or MELSEC-A series into a GX Works3 format project for MELSEC iQ-R series. However, MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool makes it possible to convert a project by operating only this tool.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>📦</td>
<td>GX Developer format project</td>
</tr>
<tr>
<td>📦</td>
<td>GX Works2 format project</td>
</tr>
<tr>
<td>📦</td>
<td>GX Works3 format project</td>
</tr>
</tbody>
</table>
Instant check of where to correct

If a special relay/register, instruction, and special function module which are not available for an RCPU are used in a program, the program needs to be corrected after converting a project.

MELSEC-A/QnA → MELSEC iQ-R Conversion Support Tool provides information of the parts to be corrected in two formats. (Page 8 Outputting a review information list, Page 8 Inserting a line statement)

By referring the information, the program can be corrected efficiently.

Outputting a review information list

Information such as the number of items to be corrected and corrective actions is output in HTML format.

For a special function module, information of a recommended module to replace is also displayed.

Inserting a line statement

A line statement is inserted on a part to be corrected in a program.

On the line statement, information before and after conversion and an alert are displayed.
1.3 Learning Operation Methods

This section explains the operation methods of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool.

Displaying a manual

Refer to this manual to learn operations and functions.

**Operating procedure**

Click 📙 on the title bar, and select [Open instruction manual].


Checking the Version of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool

Display the version information of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool.

**Operating procedure**

Click 📙 on the title bar, and select [About].
This chapter explains the system configuration of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool for conversion.

Software versions

The following table shows the software versions which are necessary for converting a project.

<table>
<thead>
<tr>
<th>Software</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool</td>
<td>No restrictions</td>
</tr>
<tr>
<td>GX Developer</td>
<td>Version 8.503Z or later</td>
</tr>
<tr>
<td>GX Works2</td>
<td>Version 1.590Q or later</td>
</tr>
<tr>
<td>GX Works3</td>
<td>Version 1.066U or later</td>
</tr>
</tbody>
</table>

2.1 Convertible Projects

GX Developer format projects for the following CPU modules can be converted.

<table>
<thead>
<tr>
<th>PLC series</th>
<th>PLC Type</th>
<th>Program type</th>
<th>Label setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>QnACPU</td>
<td>Q2A, Q2AS(H), Q2AS1, Q2AS(H)S1, Q3A, Q4A, Q4AR</td>
<td>Ladder*¹</td>
<td>Do not use label</td>
</tr>
<tr>
<td>ACPU</td>
<td>A0J2H, A1FX, A1S, A1SJ, A1SH, A1SJH, A1N, A2C, A2CJ, A2N(S1), A2S, A2SH, A3N, A2A(S1), A3A, A2U(S1), A2US(S1), A2USH-S1, A3U, A4U</td>
<td>Ladder*¹</td>
<td>Do not use label</td>
</tr>
<tr>
<td>CNC(M6/M7)</td>
<td>Q4A</td>
<td>Ladder*¹</td>
<td>Do not use label</td>
</tr>
</tbody>
</table>

*¹ When using the SFC instruction in a ladder program, instructions other than the END instruction are deleted in a converted program.

A project including an SFC program cannot be converted.
Convert the project after deleting the SFC program.
## 3 FUNCTION LIST

This chapter shows the function list of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting a project</td>
<td>To convert a GX Developer format project into a GX Works3 format project automatically.</td>
<td>Page 16 CONVERTING PROJECT</td>
</tr>
<tr>
<td>Outputting a review information list</td>
<td>To output a list of the following information as an HTML file when converting a project: a special relay/register, instruction, and special function module which are not available for an RCPU.</td>
<td>Page 19 Review Information List</td>
</tr>
<tr>
<td>Embedding conversion information on a line statement</td>
<td>To embed the following information on a line statement of a converted project (program) when converting a project: a special relay/register, instruction, and special function module which are not available for an RCPU.</td>
<td>Page 21 Line Statement</td>
</tr>
</tbody>
</table>
4  OBTAINING AND START

4.1 Obtaining of MELSEC-A/QnA->MELSEC iQ-R Conversion Support Tool

Please contact your local Mitsubishi Electric sales office or representative.

4.2 Installation and Uninstallation

For the installation/uninstallation procedure of MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool, refer to the following:

MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool Installation Instructions (BCN-P5999-1284)

The above manual is stored in the zip file where the installer is located.

4.3 Start and End

This section explains the operation methods for starting and ending MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool.

Start

Operating procedure

Select ➤ [MELSOFT] ➤ [ARCnvSupport] from Windows Start.

End

Operating procedure

Click on the title bar, and select [Close].
4.4 Display Language Switching

MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool supports multiple languages, and therefore the display language such as one on the menu can be switched on a personal computer.

**Window**

Click on the title bar, and select [Switch Display Language].

![Switch Display Language](image)

**Precautions**

- If the display language differs from the one for the operating system, texts may not displayed properly in the screen. (Displayed texts may get cut.)
- When switching the display language in Windows® 10, supplemental fonts of the target language are required. The fonts can be added by the following operation.

**Ex**

Select [Settings] ⇒ [Apps] ⇒ [Apps & features] ⇒ [Manage optional features] ⇒ [Add a feature] from Windows Start.
This chapter explains the operations to convert a GX Developer format project into a GX Works3 format project.

### Precautions

When a program exists after the END instruction in a conversion source program, the program after the END instruction will be deleted at conversion.

### Operating procedure

1. Specify a conversion source GX Developer format project.

2. When a special function module is used in the source project, select the checkbox of "Special function module exists" and set the following items:
   - Special function module type
   - Special function module type name
   - Start XY No. (HEX)

- In an input screen for special function module information, data can be copied and pasted.
- In the following case, review information is embedded on a line statement of a converted program: there is an instruction using a buffer memory address or input/output signal of the special function module which was set in the step 2 in the source project. Also, the information is output as a list.
- If special function module information is not set in the step2, a program is not detected as the one to be reviewed even when using a special function module in the source project.
Precautions

- A converted model is R120CPU. Therefore, change the model to match customer use.
- The number of displayed contacts of a program is not applied from a GX Developer format project. Change the number as necessary in GX Works3.

For the method to change the module type and the number of displayed contacts, refer to the following:

- GX Works3 Operating Manual
If MELSEC-A/QnA→MELSEC iQ-R Conversion Support Tool is forcibly terminated or an error occurs in the tool while converting a project, a process of GX Works3 converting the project in the background may remain. In this case, terminate the process of GX Works3 by any of the following methods:

- Log off a personal computer.
- Terminate the process of "GXW3.exe" with the task manager.
6 CHECKING AND CORRECTING CONVERTED PROJECT

This chapter explains the operations to check the conversion result (a review information list and a line statement). Correct a project referring to the result.

6.1 Review Information List

Information regarding a special relay/register, instruction, and special function module which are not available for an RCPU is output in an HTML file.

Operating procedure

1. Right-click 'Index.htm' stored in (output folder for review information list)(folder with the converted project name), and select [Open with] ⇒ [(Web browser)].

The conversion result of all the programs is displayed.

A review information list is stored in the file specified in the following:

Page 16 CONVERTING PROJECT

2. Click each link displayed in "Display the Conversion Result" to check the detail.

Page 20 Detail Screen

By checking "Number of Detections," the number of unconverted special relays/resisters and instructions and programs for special function modules to be reviewed can be confirmed.
Detail Screen

The following images are display examples of a review information list.

Ex

Unconverted instruction (in order of step No.)

Unconverted Instruction (In Order of Step No.)

<table>
<thead>
<tr>
<th>Program Name: MAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Key</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>#000010</td>
</tr>
<tr>
<td>#000012</td>
</tr>
<tr>
<td>Instruction Name</td>
</tr>
<tr>
<td>LED</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Display instructions</td>
</tr>
<tr>
<td>Corrective Action</td>
</tr>
<tr>
<td>Counter Measured</td>
</tr>
<tr>
<td>LED display function is not included in PLC. Please consider to use QOT</td>
</tr>
<tr>
<td>Instruction Name</td>
</tr>
<tr>
<td>SLT</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Status latch instructions</td>
</tr>
<tr>
<td>Corrective Action</td>
</tr>
<tr>
<td>Counter Measured</td>
</tr>
<tr>
<td>There is no alternative action</td>
</tr>
</tbody>
</table>

A search key is displayed on a review information list. In a converted GX Works3 format project, by searching the search key with the character string search function, the cursor can jump to the target line statement.

Ex

Program for special function modules necessary in review (in alphabetical order of special function module name)

Program for Special Function Modules Necessary in Review (In Alphabetical Order of Module Name)

<table>
<thead>
<tr>
<th>Program Name: SUB1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Function Module Name (Start XY No.)</td>
</tr>
<tr>
<td>A616AD (000)</td>
</tr>
<tr>
<td>A616AVV (001)</td>
</tr>
<tr>
<td>Special Function Module Name (Start XY No.)</td>
</tr>
<tr>
<td>A616AD (000)</td>
</tr>
<tr>
<td>A616AVV (001)</td>
</tr>
<tr>
<td>Recommended Module to Replace</td>
</tr>
<tr>
<td>Corrective Action</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Search Key of the Program after Conversion</td>
</tr>
<tr>
<td>#000014</td>
</tr>
<tr>
<td>#000016</td>
</tr>
<tr>
<td>#000018</td>
</tr>
</tbody>
</table>

"Recommended Module to Replace" is displayed in a detail screen of "Program for Special Function Modules Necessary in Review."
The following manuals appear by clicking the module name, and shows a comparison table of recommended modules.

- Transition from MELSEC-A/QnA Series to MELSEC iQ-R Series Handbook
- Transition from MELSEC-AnS/QnAS Series to MELSEC iQ-R Series Handbook
6.2 Line Statement

Information regarding a special relay/register, instruction, and special function module which are not available for an RCPU is embedded on a line statement of a relevant ladder block.

A line statement type is set to ‘In Peripheral.’ (‘***’ is added at the beginning of the character strings)

For the operation method of a statement, refer to the following:

GX Works3 Operating Manual

A search key (example: #000000) for each step is added on a line statement.

This search key is also displayed on a review information list, and it is possible to search mutually with this key.

Operating procedure

1. Open a converted GX Works3 format project.

A converted project is stored in the folder specified in the following:

Page 16 CONVERTING PROJECT

2. Select [View] → [Statement Display].

3. Check an embedded line statement.

Page 21 Checking conversion information of special relay/resister and instruction

Page 22 Checking conversion information of a special function module

Checking conversion information of special relay/resister and instruction

A special relay/resister and instruction which are not available in an RCPU are converted as follows.

Special relays/resisters: SM4095/SD4095

Instructions: OUT SM4095

Ex

Special relays/resisters

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#000000</td>
<td>MOV SD4095 D20</td>
</tr>
<tr>
<td>#000001</td>
<td>MOV SD4095 D21</td>
</tr>
<tr>
<td>#000002</td>
<td>MOV SD4095 D22</td>
</tr>
<tr>
<td>#000003</td>
<td>MOV SD4095 D23</td>
</tr>
</tbody>
</table>

(1) Search Key

(2) Conversion information

By searching a search key in a detail screen of a review information list, the cursor can jump to the review information for the program.
### Checking conversion information of a special function module

A buffer memory address and input/output signal of a special function module are not converted. Therefore, a statement showing that reviewing is needed is inserted on a part in which an instruction to access a special function module (FROM, DFRO, TO, DTO) and input/output signal exist.

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Check the processing of special module." /></td>
<td><img src="image" alt="Check the processing of special module." /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM120 Y20</td>
</tr>
</tbody>
</table>

(1) Search key
(2) Alert
(3) Model name of a special function module (start and end input/output numbers)

By searching a search key in a detail screen of a review information list, the cursor can jump to the review information for the program.

### 6.3 Project correction

A project can be corrected by checking a review information list and a line statement of a program. For details on the correcting method, refer to the following:

- Transition from MELSEC-A/QnA Series to MELSEC iQ-R Series Handbook
- Transition from MELSEC-AnS/QnAS Series to MELSEC iQ-R Series Handbook

Each manual appears from [Open the Instructions to Replace from A/QnA (Large Type)]/[Open the Instructions to Replace from AnS/QnAS (Small Type)] in the menu displayed by clicking on the title bar.
REVISIONS

*The manual number is given on the bottom left of the back cover.

<table>
<thead>
<tr>
<th>Revision date</th>
<th>*Manual number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2020</td>
<td>SH(NA)-082277ENG-A</td>
<td>First edition</td>
</tr>
</tbody>
</table>

Japanese manual number: SH-082276-A

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