MPE720 Ver.7.A3 Version Upgrade Information

1. Functional Additions and Improvements

1.1 Ver.7.A3 Version Up Information

MPE720 Ver.7.A2→ Ver.7.A3 function additions and improvements are as follows.

No.	Function items	classification
1.	The following has been added to the models to be simulated. - CPU-203 - CPU-203F - MPX1312-1 - MPX1312-2 - MPX1012J-10	Enhancements
2.	Added support for the CPU-12U of the MPX1000 series.	Enhancements
3.	The following communication option units are now supported. - CM-PB02 compatible - CM-PN02 compatible	Enhancements
4.	The following communication option modules are now supported. - CM-CF02M compatible - CM-PB02M compatible - CM-PN02M compatible	Enhancements
5.	Import/export table data can now also import table data that does not exist in the tree.	Enhancements
6.	Motion programs and sequence programs can use variables other than the M and G register global variables.	Enhancements
7.	Added a feature to the Motion Recorder.	Improvement
8.	In a model that supports multiple scans, user functions are consolidated into high-speed (H) scanning.	Improvement
9.	In a model that supports multiple scans, it is now possible to transfer individually using only user functions.	Improvement
10.	In the device configuration definition, the setting target has been expanded.	Improvement
11.	Several bugs have been fixed.	Improvement

2. Details of Fixes

No.1 Simulation target model has been added.

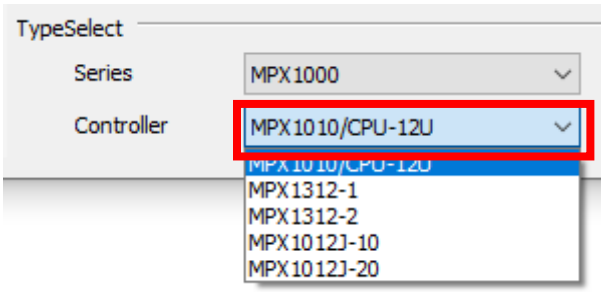
1) Simulation execution is now possible for the following models.

series	model	Simulator version
MP3000	CPU-203	1.69
	CPU-203F	1.69
MPX1000	MPX1312-1	2.01
	MPX1312-2	2.01
	MPX1012J-10	2.01

The restrictions during simulation execution are as described in the "MPE720 Ver.7 User Manual - 6.12 Simulation". No changes have been made to the existing simulation-compatible models (CPU-202, CPU-301, etc.) starting from Ver.7.A2.

No.2 Added support for the CPU-12U of the MPX1000 series.

1) You can create a new project of the CPU-12U as a MPX1000 series.



2) You can connect to the CPU-12U online.

No.3 Support has been added for two communication option units for the YRM1010 controller.

The CM-PB02 (PROFIBUS) and CM-PN02 (PROFINET) have been added as communication option units.

1) You can select "CM-PB02" and "CM-PN02" from the FC unit selection screen and assign them.

2) You can set parameters on the detailed definition screen of "CM-PB02" and "CM-PN02".

[Supported versions]

○ Controller

controller	Supported firmware versions
YRM1010	3.01

No.4 Support has been added for three communication option modules in the MPX1000 series.

The CM-CF02M (CC-Link IE Field), CM-PB02M (PROFIBUS), and CM-PN02M (PROFINET) have been added as communication option modules.

1) You can select CM-CF02M, CM-PB02M, or CM-PN02M from the FC unit selection screen and assign them.

2) You can set parameters on the CM-CF02M, CM-PB02M, and CM-PN02M detailed definition screens.

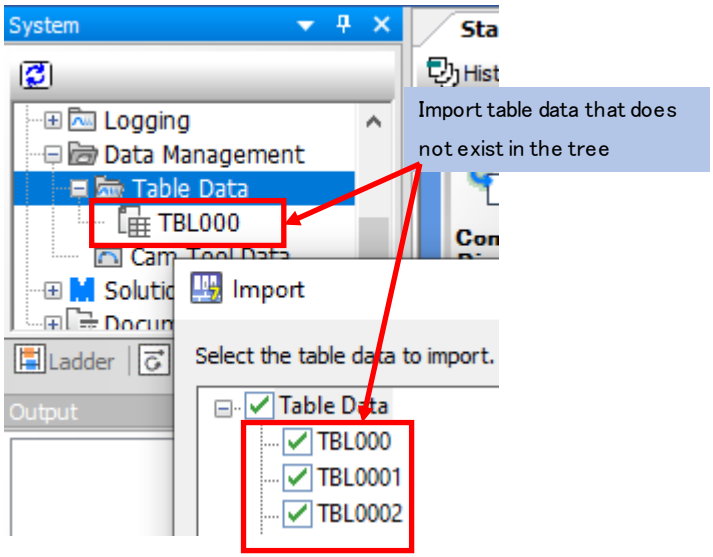
[Supported versions]

○ Controller

controller	Supported firmware versions
MPX1000	3.01

No.5 Import/Export Table Data now allows you to import table data that does not exist in the tree.

Table data can now be imported even if it does not exist in the tree.

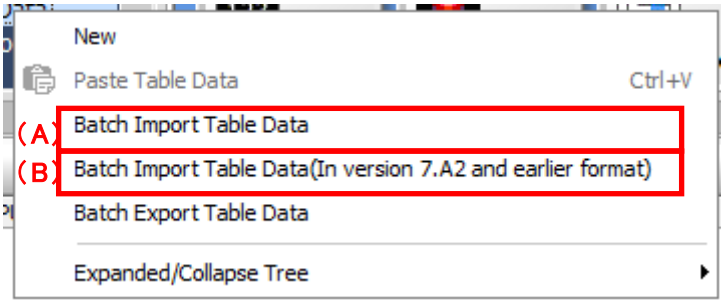


1) Change the output format and file format of "Batch Export Table Data" from this version.
   - Ver.7.A2 or earlier: csv file
   - Ver.7.A3 or later: txt file

2) If you exported table data (txt) from Ver.7.A3 or later, you can import table data that does not exist in the tree as described above.

3) You can still import table data (csv) exported before Ver. 7.A2. However, table data (csv) in Ver. 7.A2 and earlier formats cannot be imported unless the table data does not exist in the tree even after Ver. 7.A3.

4) Depending on the format of the export file, you will need to select the menu for Batch import Table Data.
   - Select (A) for the format (txt) Ver.7.A3 onwards.
   - Select (B) for the format (csv) before Ver.7.A2.



No.6 Motion Programs and Sequence Programs can now use variables other than the global variables of M and G registers.

Variables other than the global variables of M and G registers registered in the Variable Window can now be used in motion programs and sequence programs.

1) The following variables are available:
   - Constant variable (C register)
   - System Variable (S register)
   - Input variable (I register)
   - Output Variable (O register)
   - Axis Variable

2) Global variables of struct types can now be compiled even if they are nested in two layers or more.
   (Example)
   DB000001=DeviceA.Status.Running; ← nest can be used for more than 2 layers

3) ″ Display the Autocomplete list for variables and registers″ function is now supported.

No.7 Added a feature to the Motion Recorder.

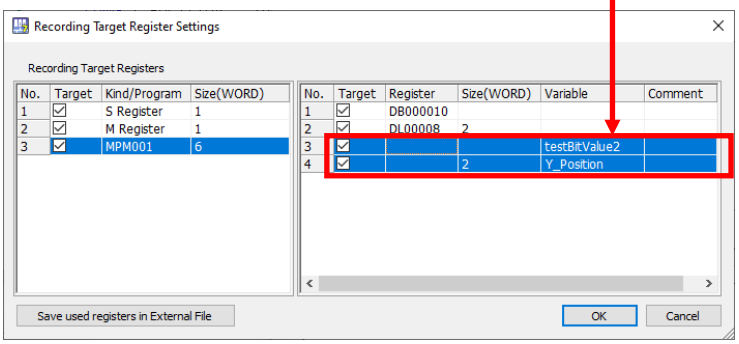
1) In Motion/Sequence programs, variables declared in blocks surrounded by VAR and END_VAR, and variables that are not associated with registers, can also be specified as collectibles.

- On the "Recording Target Register Settings" screen, you can now specify the relevant variable as the collection target.

< examples>

```
VAR;
    // Register allocation
    BOOL testBitValue1 %DB000010 = 1;
    LONG X_Positon %DL00008 = 10000;

    // No Register allocation
    BOOL testBitValue2 = 0;
    LONG Y_Position = 10000;
END_VAR;
```



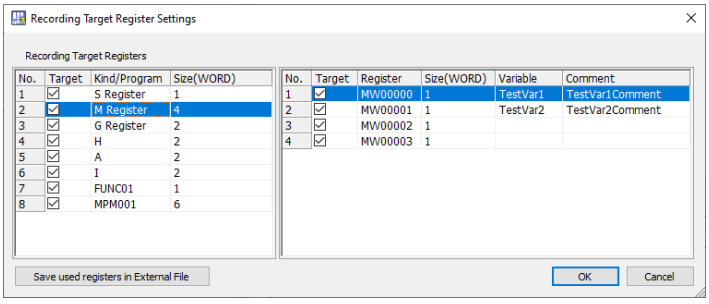
- The import and export function of recording settings supports importing and exporting configuration files containing the corresponding variables.
- In Playback Mode, the corresponding variables can also be displayed in "Watch" and "Auto Watch".

[Supported versions]

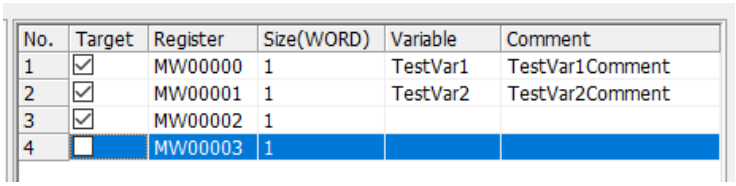
○ Controller

series	model	Supported firmware versions
YRM1000	CPU-12	3.01
MPX1000	MPX1012J-20	
	MPX1312-1	
	MPX1312-2	

2) In the " Recording Target Register Settings " screen, variables and comments associated with registers have been added to make it easier to understand what data the registers are.



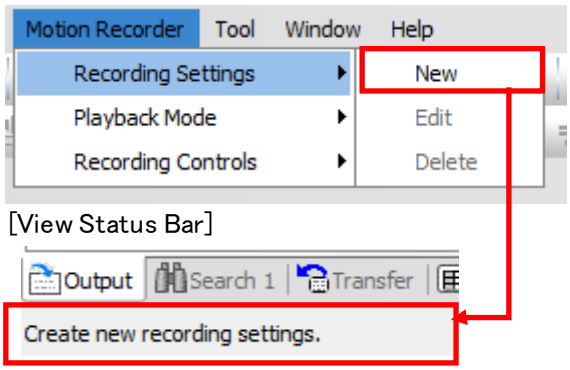
3) You can now select the registers to be excluded from the collection target individually.



No.	Target	Register	Size(WORD)	Variable	Comment
1	☑	MW00000	1	TestVar1	TestVar1Comment
2	☑	MW00001	1	TestVar2	TestVar2Comment
3	☑	MW00002	1		
4	☐	MW00003	1		

4) When you hover over the menu button, the status bar now displays the button description.

[Hover over]

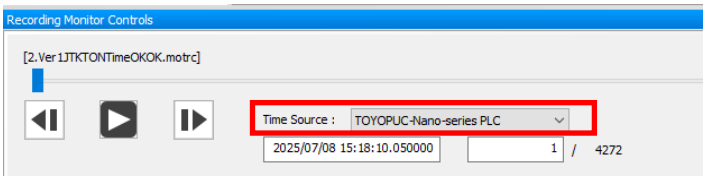


[View Status Bar]

5) It now supports playback of recording files created including time information from TOYOPUC-Nano series PLCs. During the playback mode of the target record file, you can switch the display of time information to one of the following:

- Controller time
- TOYOPUC-Nano series time

[When playing linked files]

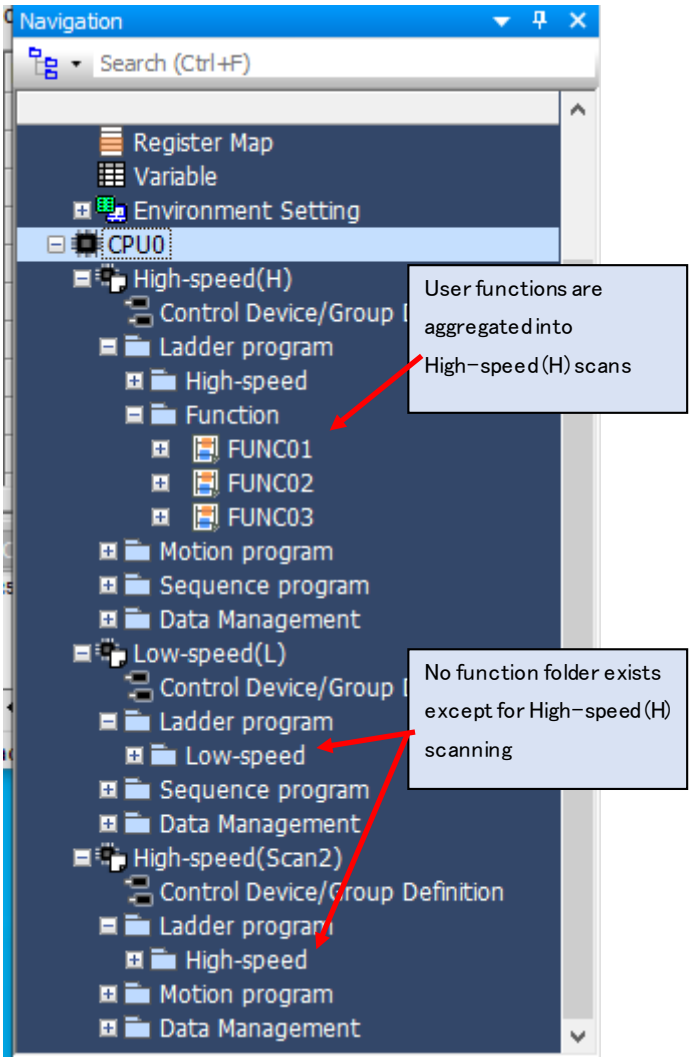


The following models support time linkage with PLCs of the TOYOPUC-Nano series.

series	model	Supported firmware versions
MPX1000	MPX1012J-20	3.01

No.8 In a model that supports multiple scans, user functions are consolidated into High-speed (H) scanning.

1) The user functions for displaying various screens (navigation window, program selection, etc.) in which the program configuration is displayed in the tree are summarized under the High-speed (H) scan.
This gives you a clear picture that can be recalled from any scan.
*In future versions, we plan to move from the High-speed (H) scan subordinate to the scanning common (newly established) subordinate unit.



2) If you set "Support Access Control between Scans" to "Enabled" in "Environment Setting" – "Setup", a warning message will not be displayed even if you compile under the following conditions.

- Calling user functions from programs other than High-speed (H) scanning
  If you compile a ladder program

- When using M registers or G registers outside the specified range for High-speed (H) scan defined by "Register Map" in a user function.

【Restrictions】

If you call the same user function from multiple scans at the same time, you may experience unexpected behavior before Controller Ver. 2.11, so please use Controller Ver. 2.11 or later. If the supported farm is not available, create a user function dedicated to the scan as usual and call it only from a single scan.

No.9 In a model that supports multiple scans, it is now possible to transfer individually using only user functions.

1） In Ver.7.A2 and earlier, when transferring user functions individually on a model that supports multiple scans, when the multiple scan settings were different between the source and destination, it was necessary to transfer all of the following at once.

- Module configuration definition
- Ladder Program
- User function
- Motion program
- Sequence program
- Table data
- Cam tool data

From this version onwards, even if the multiple scan settings are different between the source and destination, it is possible to transfer separately by the user function alone.

″Multiple Scan Settings″ refers to the following settings:

- Scan definition (adding, modifying, or deleting scans, changing scan properties)
- Settings in the Control Device/Group Definition window (add, change, delete)
- Register Map window settings (add, change, delete)

No.10 In the device configuration definition, the setting target has been expanded.

1) In the controller type list, it is now possible to save configuration information without selecting it.

[Supported versions]

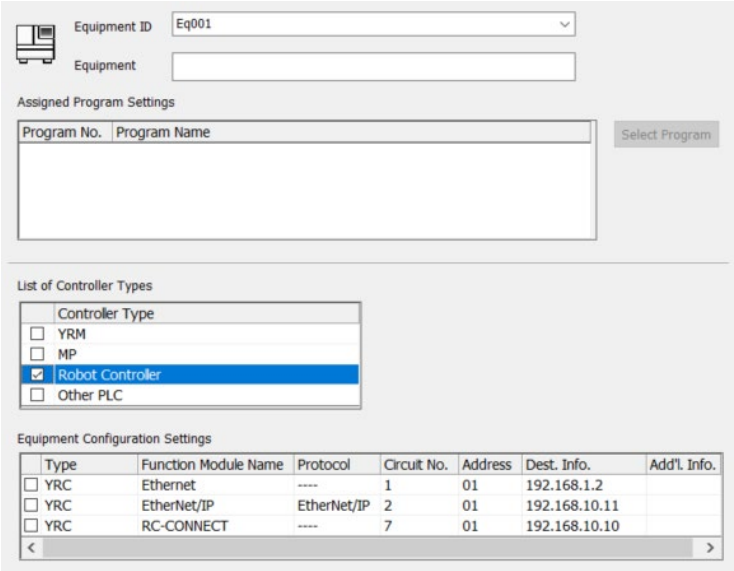
○ Controller

series	model	Supported versions
YRM1000	CPU-01	Version-independent
	CPU-12	
YRM-7	CPU-202Y1	

○YaskawaCockpit

Product Name	Supported versions
YaskawaCockpit2(YCP2)	Version-independent

2) For the robot controller connected to the YRM controller, the controller connected to the built-in Ethernet and EtherNet/IP can be displayed and selected in the device configuration settings.



[Supported versions]

○ Controller

series	model	Supported versions
YRM1000	CPU-01	Version-independent
	CPU-12	
YRM-7	CPU-202Y1	

○YaskawaCockpit

Product Name	Supported versions
YaskawaCockpit2(YCP2)	Ver.1.11

＊In the case of YCP2 before the supported version, it cannot be recognized as a equipment if a robot controller with built-in Ethernet or EtherNet/IP connection is configured.

No.11 Several bugs have been fixed.

The following bugs have been fixed.

1) In the Module configuration, the axis number of the multi-axis servo pack cannot be replaced by dragging and dropping.
2) If there are environment-dependent characters in the file path or project file name, a message is displayed saying that the project cannot be opened, but it is difficult to know how to deal with it.
3) In the Navigation/Motion window, it takes a long time to open the hierarchy tree of the Motion program/Sequence program when connected online.
4) If you do not select "Register" for individual transfer to the CPU-203F and YRM1000/MPX1000 series, the servo pack parameters will not be written even if you select the "Write the parameter into the SERVOPACK." option.
5) When comparing the transfer functions, "[FBD]: Unmatched file data." is displayed even though the data is matched.
6) Even if you set the setting to flash save when writing the controller, it will not be flash saved when writing from the Automatically Updated Parameters window.
7) In the Ladder Program Edit window, the following fixes have been made:
   - In the online monitor, the current value behind the position using the array register may not be displayed.
   - The cursor position after selecting multiple rungs and cutting/deleting them may not be the youngest rung.
   - If you press "Ctrl+A" while editing instruction objects (instruction names, registers, variable names, comments), all ladder programs will be selected instead of all text selected.
   - If you press "Ctrl+End", the cursor moves to the final rung, but the vertical scrollbar does not follow it.
8) In the watch, the following fixes have been made:
   - The system variables "Logging" and "MotRec" are not displayed properly.
   - Even though the number of registers can be registered, the [Add Increment Variable] menu may be disabled.
9) For user functions with a program number prefixing with 'P', D registers cannot be read or written from register lists or watches.
10) After the initial installation, when opening a project for a model that supports multiple scans, the navigation window does not display.
11) An error occurs when copying a child drawing with a SEE instruction and pasting it into a P drawing.
12) In a model that supports multiple scans project, the CP ladder drawing can be mistakenly duplicated by dragging and dropping.
13) When creating a CP ladder or opening a comment list in Engineering builder, it is forcibly terminated when a P drawing is specified.
14) If you copy a child drawing with a D register in the Tuning panel and paste it into the P drawing, the drawing of the D register in the Tuning Panel is not set.
15) A constant group that contains the entire register range of the created constant group can be mistakenly created without error.
16) In the Standard Comment on the variable editing screen, the type of comment set in the Current Comment in [Environment Setting] – [Variable] – [General] is mistakenly displayed.
17) If the total number of Motion/Sequence/Function programs using any register exceeds 2560, the error message "Error code: 0x800706BA RPC server is not available" is displayed when the comment list, register list, cross reference, and motion recorder settings screen is displayed, and then the MPE720 does not work properly.
18) On the Motion Recorder Recording Settings. the following fixes have been made:
   - Only information for 128 Motion, Sequence, and Function programs is mistakenly displayed in the Recording Target List and the Recording Target Register Settings Window.
   - If you reset the same item in [Kind/Program] in [Register Range Settings], the input values of "First Address" and "Size(WORD)" will be deleted.
   - On the "Recording Targets List" Window, the size of the register selected in [Select Variable] is not displayed correctly.
   - If you select a character set to "Recording Settings Name" and enter a full-width string, you may not be able to enter

the characters.

- When the axis variable is in the state of ″Axis cannot be identified.″, the MPE720 terminates abnormally when exporting or importing the configuration file.
- When importing a configuration file, the ″Recording Target Register Setting″ button may be incorrect.
- After importing a configuration file where ″Add date information at the end of the folder name.″ is invalid, check box ″Add date information at the end of the folder name.″ Enabling does not add date information to the folder name preview.

Appendix A: Compilation of Parallel Circuits

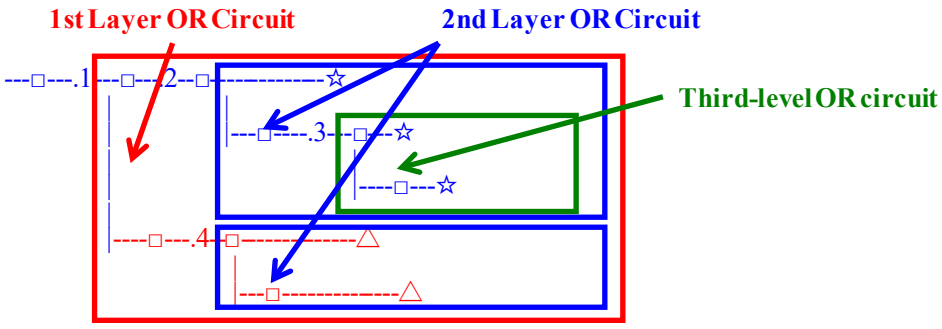
In the ladder program of MPE720 Ver.7.23 or earlier, the following symptoms may occur when using parallel circuits.

< phenomenon>

When a circuit containing the following pattern was created, there was a phenomenon that the circuit on the lower side of the first-layer OR circuit originally received a conditional instruction in front of the first-level OR circuit and operated without being subjected to the condition.

< measures>

If this phenomenon occurs, recompile the corresponding ladder program with MPE720 Ver.7.24 or later MPE720 Ver.7. Alternatively, select "Compile All Program" from the "Compile" menu again.



1st level OR circuit: OR circuit branched from Lang's busbar
2nd layer OR circuit: OR circuit branched from within the 1st level OR circuit
3rd level OR circuit: OR circuit branched from within the 2nd level OR circuit

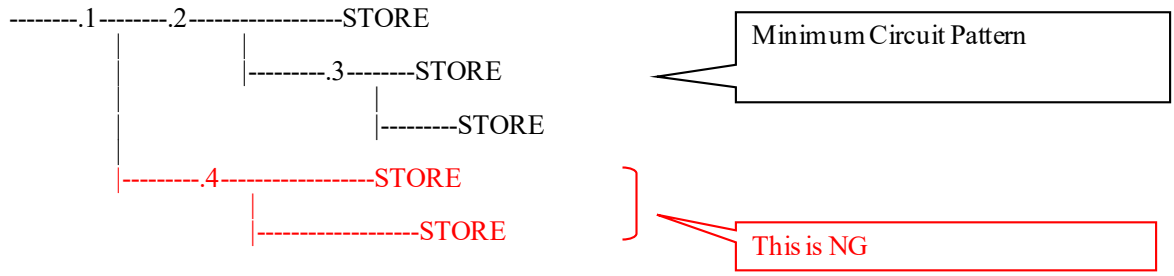
☐ (Conditional Instructions): A contact, B contact, comparison (==, !=, >, <) instructions, etc.
* ☐ (conditional instructions) includes power wires (−−−−−−)
☆ (Output instructions): coils, block instructions (Expression, STORE, COPYW) instructions, etc.
* However, if all ☆ are coil instructions, this phenomenon will not occur.
△ (Output instructions): Coils, block instructions (Expression, STORE, COPYW) instructions, etc.

[Phenomenon occurrence pattern]

symbol	order
][	A contact
STORE	STORE command
( )	coil

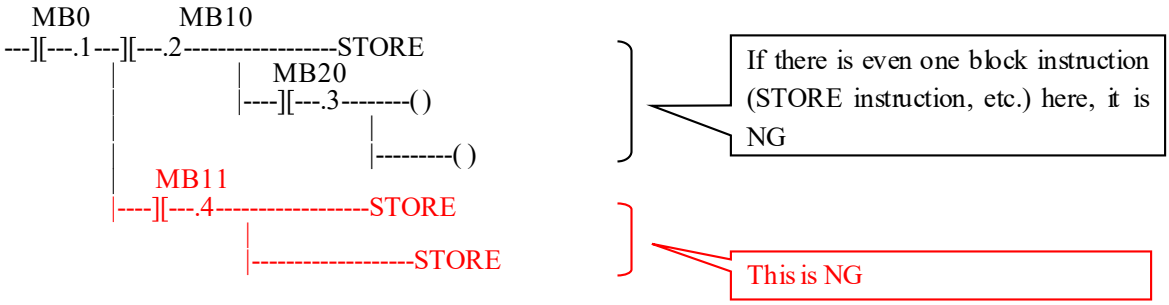
[NG pattern]

①



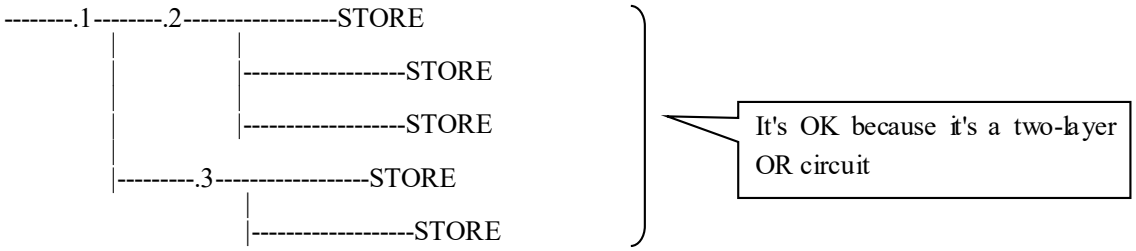
②

③

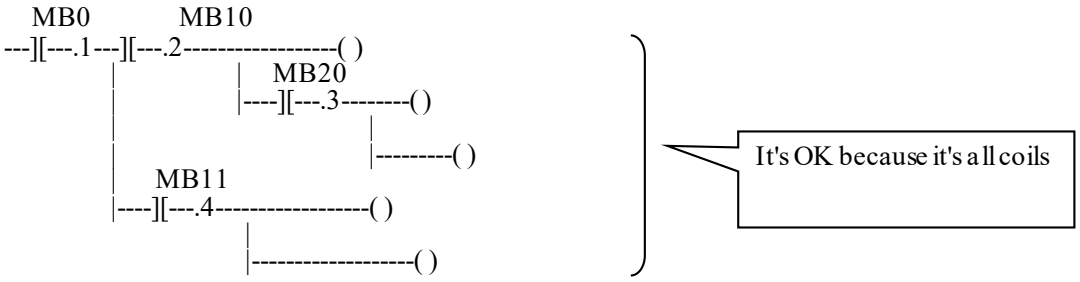


[OK pattern]

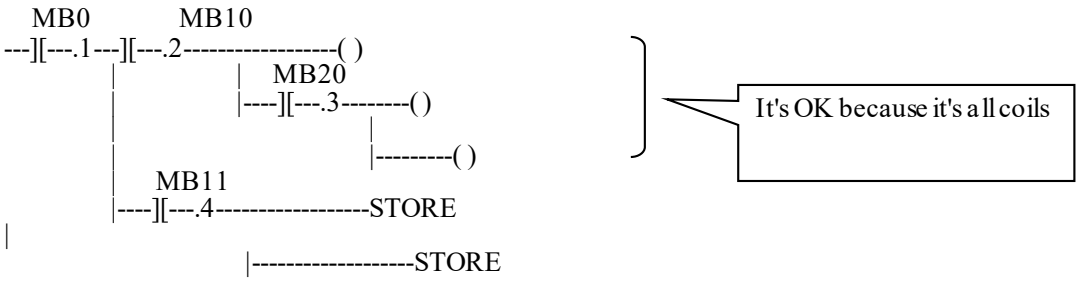
①



②



③

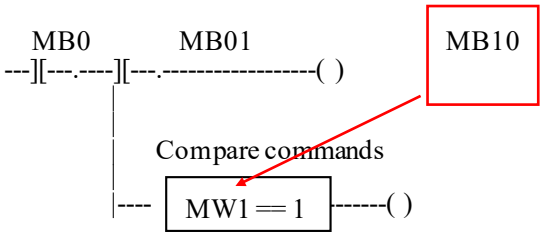


Appendix B: Compilation when there are comparison instructions in a parallel circuit

MPE720 Ver.7.In the ladder program of the MPE720 Ver.7 before 63, the following symptoms may occur when using parallel circuits.

< phenomenon >

When a circuit containing the following pattern was created, the value of the register set in the upper circuit of the OR circuit was reflected in the next scan when it should have been reflected in the comparison instruction in the subsequent OR circuit in the same scan.



A pattern in which a register set in the circuit above the parallel circuit is referenced in subsequent comparison instructions in the parallel circuit.

< measures>

If this phenomenon occurs, recompile the corresponding ladder program with MPE720 Ver.7.64 or later MPE720 Ver.7. In addition, the number of internal steps changes in programs that include circuits with this pattern in Ver. 7.64 or later, so there is a possibility that you may jump to an unintended place when cross-referencing is performed in a project created in the previous version. In that case, please recompile the program. Alternatively, select "Compile All Program" from the "Compile" menu again.

Appendix C: High DPI

When the MPE720 Ver.7 was started on a computer that supports high DPI, such as a 4K display, part of the screen could not be displayed depending on the resolution and scale settings. Therefore, from MPE720 Ver.7.67, the high DPI setting of the MPE720 properties has been disabled. This avoids phenomena such as screen cutouts. If you need to use it at a high DPI setting due to circumstances, please change the high DPI setting from the properties screen of MPE720 Ver.7.