

MPE720 Ver.7.94Version Up Information

1. Functional Additions and Improvements

1.1 Ver.7.94Version Up Information

Items added and features improved from MPE720 version 7.93 to version 7.94 are as follows.

No.	Function items	classification
1.	Simulation function has been developed.	New Function
2.	The configuration of the register mapping screen has been changed for multi-scan models.	Function Enhancement
3.	For multi-scan models, the control device settings and group definition screens have been integrated.	Function Enhancement
4.	Added support for YRM1010 optional unit RC-01 (RM).	Function Enhancement
5.	The sub-CPU function of the CPU-203F model is now supported.	Function Enhancement
6.	The transfer function has been improved.	Improving
7.	In the YRM1000 series, the constraints of the I/O registers of the I/O unit have been changed.	Improving
8.	The visibility of selected cells has been improved in the watch window.	Improving
9.	In the multi-scan model, the scan display of each screen has been improved.	Improving
10.	Several bugs have been fixed.	Improving
11.	Several bugs have been fixed for the multi-scan model.	Improving

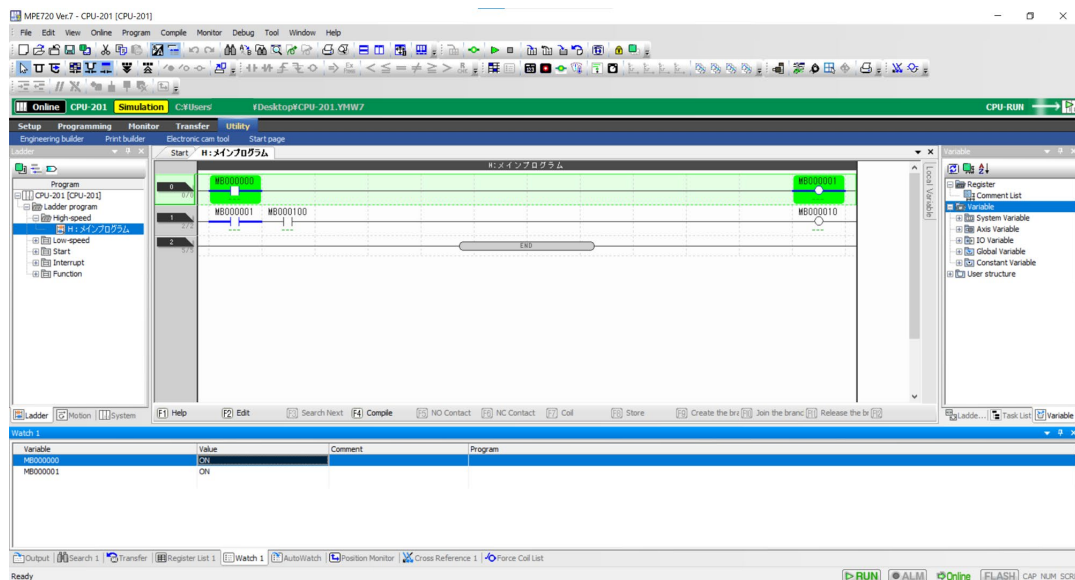
2. Description

No. 1 Simulation function has been developed

In the absence of a controller, it will be possible to check the operation equivalent to the online state.

With the simulation feature, you can:

- You can check the operation status of the rudder and motion program with the ladder editor, watch, axis operation monitor, axis alarm monitor, adjustment panel, trace, etc.
- You can check the motion control in the control of the built-in motion module. (At this time, the servo will operate in simulation mode.)
- You can easily change the value of the register.



○ Controller

Controller	SimulatorVer
CPU-201	1.47
CPU-202	1.47
CPU-301(16axex)	1.47
CPU-301(32axex)	1.47
CPU-302(16axex)	1.47
CPU-302(32axex)	1.47

*The following functions are not available during the simulation function.

	備考
Transfer function	<ul style="list-style-type: none"> • Write/Read to controller • Flash saving • Comparison with controller/Comparison between flash and RAM
Online Security	
Print Manager	
Test drive	
Axis Setup Wizard	
Logging	Configurable
Calendar settings	
Communication setting	
Servo Parameter Editing	
Self-configuration	

Memory clearing	<ul style="list-style-type: none">·Memory clear·Memory clrea(including backup data)·All memory clear
Trace : Servo Trace	

No. 2. The configuration of the register mapping screen has been changed for multi-scan models.

The configuration of the register mapping screen has been changed for multi-scan models.

Register Map ×

Register Range Settings ⓘ

M Register G Register

Scan	Registers		
	First Address	Size (Words)	Register Range
-CPU0	00000	1048576	MW00000 to MW1048575
H	00000	50000	MW00000 to MW49999
L	100000	100000	MW100000 to MW199999
Scan2	50000	50000	MW50000 to MW99999

Replacement option ⓘ

Execute the replacement processing.

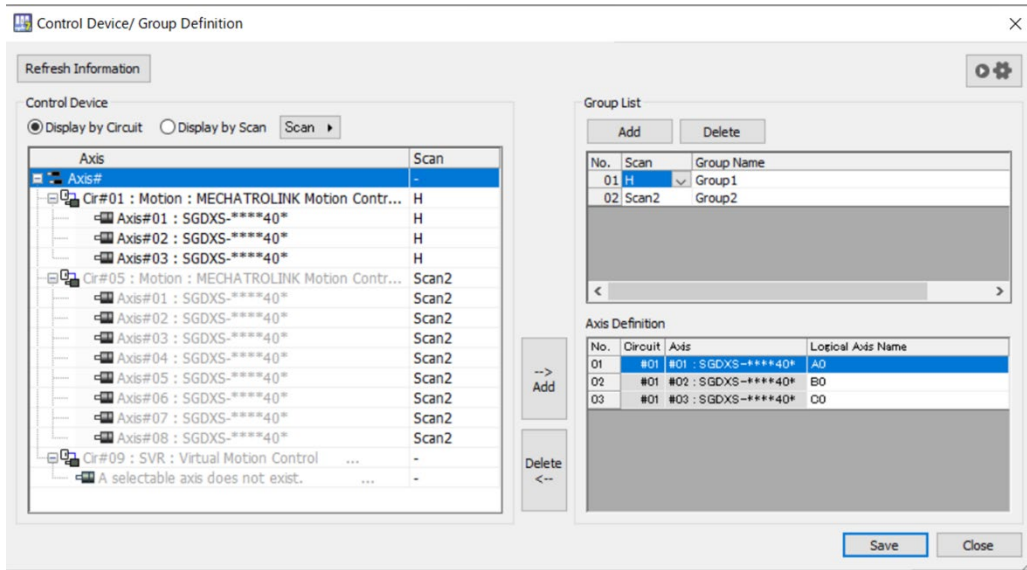
Copy Register Settings ⓘ Delete Selected Row Copy Size Monitor

No.	Source Registers						Destination Registers		
	First Address	Number of Registers	Size (Words)	Last Address	Scan		First Address	Last Address	Scan
1	MW10000	10	10	MW10009	H	=>	MW50000	MW50009	Scan2
2	MQ10100	5	20	MQ10119	H	=>	GW1000000	GW1000019	Scan2
3									
4									
5									
6									
7									

OK Cancel

- 1) "Range Settings Tab" and "Register Copy Settings" have been integrated into one screen.
- 2) As a range setting, it is now possible to set the settings for all CPUs in one table. In addition, the column header of the Scan Display column has been changed to "Scan Name".
- 3) The explanatory text on the screen can be checked by ballooning the help icon.
- 4) The wording of the checkbox of the replacement process setting has been changed to "Execute replacement process".
- 5) As a copy setting, the selection of the destination scan has been removed, and the CPU/Scan column has been added in the source settings table.
- 6) The CPU columns of the copy source register and the copy destination register are not editable.
- 7) The wording of "Upper limit confirmation" in the copy settings has been changed to "Usage size monitor".
- 8) The "Usage Size Monitor" displays the contents of all scans. The scan-to-scan copy size table shows the hierarchy of the destination scans. It also shows the total copy size for each scan.
- 9) Corrected the use of the wording of "Range setting tab" and "Register copy setting tab".
- 1 0) In the register copy settings, "Destination register range setting" has been deleted.
- 1 1) In relation to the integration of screens, the check process has been corrected.
- 1 2) The copy source register and the copy destination register can now be entered with Intellisense. In addition, WLQFD can be used for input register types.
- 1 3) The "Type Column" in the source/destination register settings has been deleted.
- 1 4) Added the "Number of registers" column to the source register.
- 1 5) In register input, the CPU column and the scan column are automatically displayed from the input of the first address.

No. 3 For multi-scan models, the control device settings and group definition screens have been integrated.
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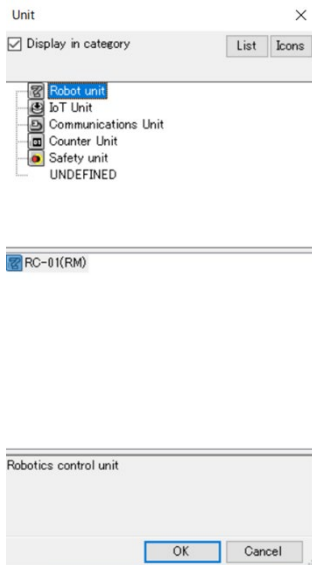


- 1) From the navigation pane, I deleted "Group Definitions" and replaced it with "Control Device/Group Definitions". In addition, the control device setting screen and the group definition screen have been integrated.
- 2) The resizing function on the control device/group definition screen is now supported.
- 3) In the tree display of the control device settings, the Scan column and the Group column have been added.
- 4) By pressing the Add button, it is possible to add the axes selected in the control device settings to the group definition.
- 5) By pressing the delete button, it is possible to delete an axis from the group definition.
- 6) You can add/remove groups.
- 7) By saving the configured data, the scan information file and the group definition file are updated.
- 8) Use the close button to close the screen.

No. 4 Added support for YRM1010 optional unit RC-01 (RM).

As FC units in the YRM1000 series, we have added the robot module unit RC-01 (RM) and the safety unit RSF-13.

- "RC-01 (RM)" can be selected from the FC unit selection screen of the YRM1000 series, and it can be assigned (up to 1 unit) "CM-SC01" can be selected from the FC unit selection screen of the YRM controller, and it can be assigned (up to 8 units).



- Parameters can be set on the detailed definition screen of RC-01(RM).
- "RSF-13" can be selected from the FC unit selection screen of the YRM1000 series, and it can be assigned (up to 1 unit)



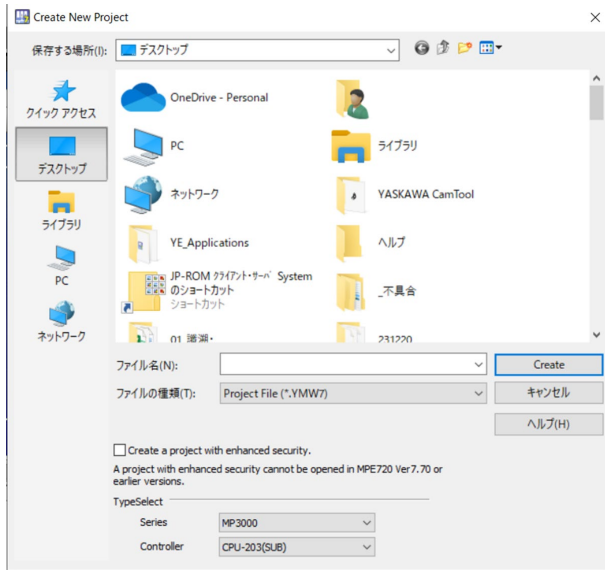
[Supported versions]

○ Controller

controller	Supported Firmware Versions
YRM1010	2.03(planned)

No. 5 The sub-CPU function of the CPU-203F model is now supported.

CPU-203F sub-CPU model has been added.



- 1) It is possible to create a project file by specifying the series name "MP3000" and the model "CPU-203F (SUB)".
- 2) It can be connected to the CPU-203F for engineering.
- 3) When the main CPU is "CPU-203 and CPU-203F", CPU-203F can be assigned as a sub-CPU

[Supported versions]

○ Controller

controller	Supported Firmware Versions
CPU-203F(SUB)	1.71

No. 6 The transfer function has been improved.

The transfer function has been improved.

- 1) Error messages have been revised.
- 2) For multi-scan models, if the multiple scan settings of the transfer source and destination match, it is now possible to transfer the program individually.
- 3) When performing an individual transfer of a program, the reference data map of the scan is merged among the multiple scan settings. In the merge process,
(1) if there is no data name with the same name, it will be added, (2) if the data type and data name are the same for the same scan, (3) if the data type is different, it will be added even if the data name is the same, and (4) if there is a data type or data name that is the same for different scans, it will not be added.
- 4) If the merge fails during the transfer, an error message will be displayed.

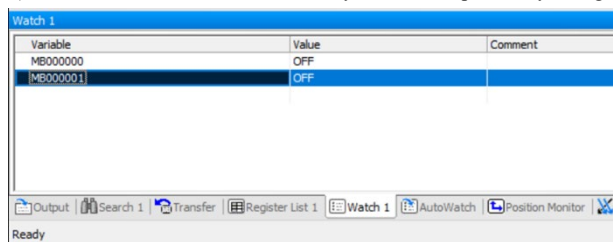
No. 7 In the YRM1000 series, the constraints of the I/O registers of the IO unit have been changed.

In the YRM1000 series, the constraints of the I/O registers of the IO unit have been changed.

- 1) In the IO unit, it is possible to duplicate registers between the input unit and the output unit.
 - * The combination of input unit and input unit, and output unit and output unit cannot duplicate register addresses as before.
 - * IO under MECHATROLINK is not eligible.
- 2) The default register addresses of the input and output units are the minimum values of their respective registers. The minimum register address of the I/O unit is the minimum value that does not overlap in both the input and output registers.
- 3) The I/O unit uses a large address.

No. 8 The visibility of selected cells has been improved in the watch window.

- 1) For the table window, the visibility has been improved by changing the background color of the selected cell.



- 2) For table-style windows, the background color of the entire row from which the drag is dragged has been changed to improve visibility when dragging and dropping.

[Affected Functions]

Function	Remarks (correspondence contents)
Watch	1), 2)
Auto Watch	1)
Position Monitor	2)
Adjustment panel	1), 2)

No. 9 In the multi-scan model, the scan display of each screen has been improved.

- 1) On the program selection screen, the program display has been organized by CPU/Scan.
- 2) Added CPU/Scan column to double coil check and forced coil list.
- 3) In cross-reference, it has been corrected so that it is displayed as start/interrupt.

No. 10 Several bugs have been fixed.

- 1) When using UFC/FUNC instructions in motion programs, the target program name is not judged to be an A register when compounded with other character strings. If the function name is the A register itself, a compilation error occurs.
- 2) The setting screen for doubling the scan time during flash saving has been changed to "MP2000 model without SVC".
- 3) The FT model connected to the CPU-203 is now displayed as a search target in the communication settings even if it is connected to CN2 or later.
- 4) When writing servo pack parameters to a servo pack with 31 axes or later, if the servo pack is not connected, a "servo pack not connected" error is displayed.
- 5) Fixed the PKT015 error when saving the M-EXECUTOR file.
- 6) In Chinese (simplified), the parts that are garbled as a result of using "~" have been corrected so that they are not garbled.
- 7) Even if the cover page is targeted when printing, the motion program and sequence program are now printed.
- 8) Fixed so that even if the window layout is restored, the shortcut key operation of each window is valid.
- 9) Fixed a bug that caused the ADR number to be displayed as the line number in the caption bar of the module configuration definition when connecting to an MP relay connection to an FT model.
- 10) Fixed a bug that the display of the title bar and tabs when restoring the window layout was not reflected in the settings at the time of restoration.

No. 11 Several bugs have been fixed for the multi-scan model.

- 1) Fixed the WildCard I/O allocation information so that it does not change.
- 2) It is now possible to change the protocol of the MECHATROLINK module even immediately after the transfer of a project in which a servo parameter file exists.
- 3) Even if the MNI is imported after the protocol change, the slave device information of the MNI is reflected.
- 4) Even if the self-configuration is executed, the display of the service scan column is now H/L.
- 5) Fixed so that I/O variables are created even when allocating output units for SLIO I/O.
- 6) In the case of multi-scan models, when functions were created for multiple scans on the write screen to the controller, the same functions were displayed in duplicate under the high-speed scan (H) in addition to the functions under the original scan.
- 7) In the case of multi-scan models, when multiple functions are used, if only the second or subsequent function from the top of the screen is to be transferred, the confirmation message with the multiple scan settings is not displayed.

Appendix A:

[About compile of the parallel circuit]

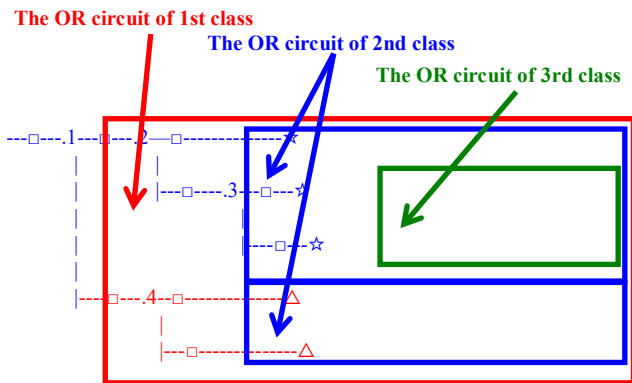
In the Ladder program of MPE720 Ver7 before MPE720 Ver7.23, when the parallel circuit is used, the following phenomena may occur.

<Phenomena>

When the circuit containing the following pattern was created, there was a phenomenon of operating without receiving the condition that the circuit below the OR circuit of 1st class must operate essentially in response to the conditional instruction before the OR circuit of 1st class.

<Measures>

When a phenomenon occurs, please carry out re-compile about the Ladder program in MPE720 Ver7 after MPE720 Ver7.24. Or please carry out again “Compile All Programs” of “Compile” menu.



The OR circuit of 1st class : The OR circuit branched from the bus-bar of language.

The OR circuit of 2nd class : The OR circuit branched out of the OR circuit of 1st class.

The OR circuit of 3rd class : The OR circuit branched out of the OR circuit of 2nd class.

□(Conditional instruction) : NO Contact, NC Contact, Coil, instruction(==, !=, >, <), power line (-----) etc.

☆(Output instruction) : Coil, Block instruction(Expression, STORE, COPYW) etc

※However, when all ☆ is coil commands, a phenomenon does not occur.

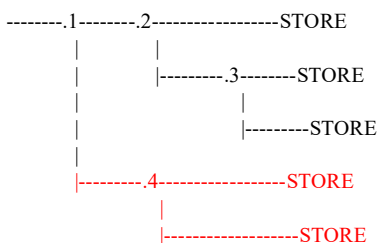
△(Output instruction) : Coil, Block instruction(Expression, STORE, COPYW)etc

<Pattern >

Symbol	Instruction
] [NO Contact
STORE	STORE instruction
()	Coil

<NG Pattern >

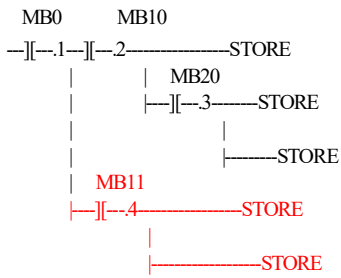
①



This pattern is minimum circuit pattern.

This is NG.

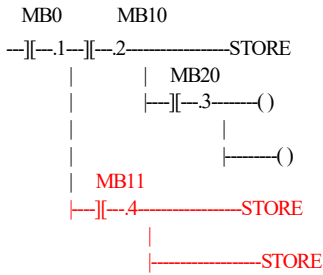
②



It is NG even if the minimum circuit pattern has conditional instructions (NO Contact etc.).

This is NG

③

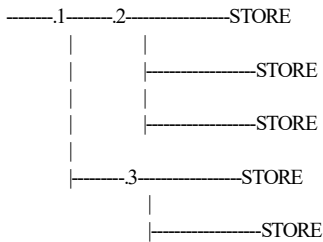


It is NG when there are at least one block commands (STORE command etc.) here.

This is NG

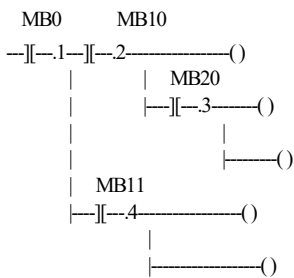
< OK Pattern >

①



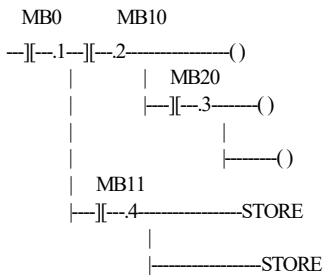
Since it is the OR circuit of 2nd, it is OK.

②



Since it is the coil altogether, it is OK.

③



Since it is the coil altogether, it is OK.

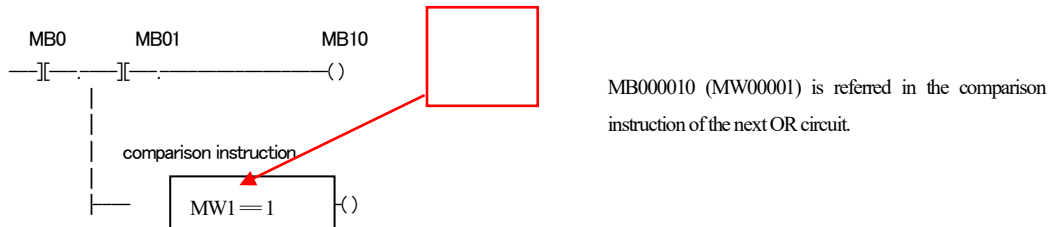
Appendix B:

【About compile with a comparison instruction in branch】

In the Ladder program of MPE720 Ver7 before MPE720 Ver7.63, when a comparison instruction is used in branch, the following phenomena may occur.

<Phenomena>

When the circuit containing the following pattern was created, the value of the register set in the upper OR circuit must be reflected to the comparison instructions in the lower OR circuit in the same scan. However, there was a phenomenon that it was reflected in the next scan.



<Measures>

When a phenomenon occurs, please carry out re-compile about the Ladder program in MPE720 Ver7 after MPE720 Ver7.64. Or please carry out again “Compile All Programs” of “Compile” menu. Also, about these programs that include circuits with this pattern, the number of internal steps will change in Ver7.64 or later, so when cross-reference is performed in a project created in an earlier version, there is a possibility of jumping to an unintended location. In this case, please recompile too.

Appendix C:

【About high DPI setting】

When MPE720 Ver.7 is started on a computer that supports high DPI such as a 4K display, part of MPE720 screen may not be displayed depending on the resolution and scale settings. From MPE720 Ver.7.67, the high DPI setting of MPE720's property is set to disable. This avoids phenomena such as the screen being cut off. If you want to use the high DPI setting, please change the MPE720 Ver.7's property setting.

