MPE720 Ver.7.A2 Version Upgrade Information

1. Functional Additions and Improvements

1.1 Ver.7.A2 Version Up Information

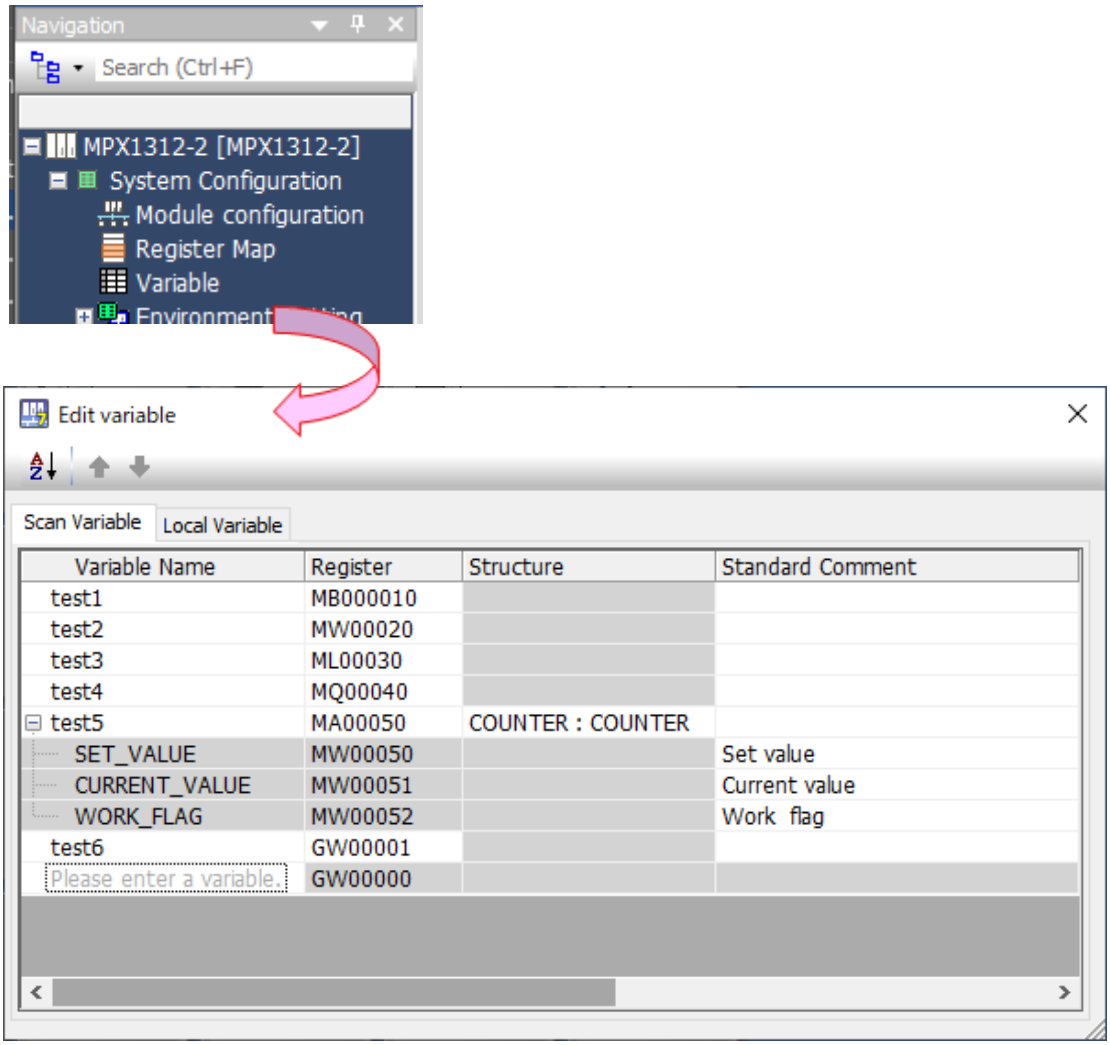
MPE720 Ver.7.A1→ Ver.7.A2 function additions and improvements are as follows.

No.	Function items	classification
1.	Variable registration of global variables and local variables can now be registered and edited in one window.	Enhancements
2.	For the YRM1000/MPX1000 series, the maximum number of motion programs has been extended from 512 to 4094.	Enhancements
3.	The function of the Motion Recorder has been improved.	Improvement
4.	In the "Import all together of Fixed/Setting Parameters" section of the Module Configuration, you can now change the combination of files to be imported.	Improvement
5.	The name of the CPU module/base unit of the MPX1310 has been changed.	Improvement
6.	In the variable function, the definition of a text string structure for data collection to YCP2 has been supported.	Improvement
7.	Several bugs have been fixed.	Improvement

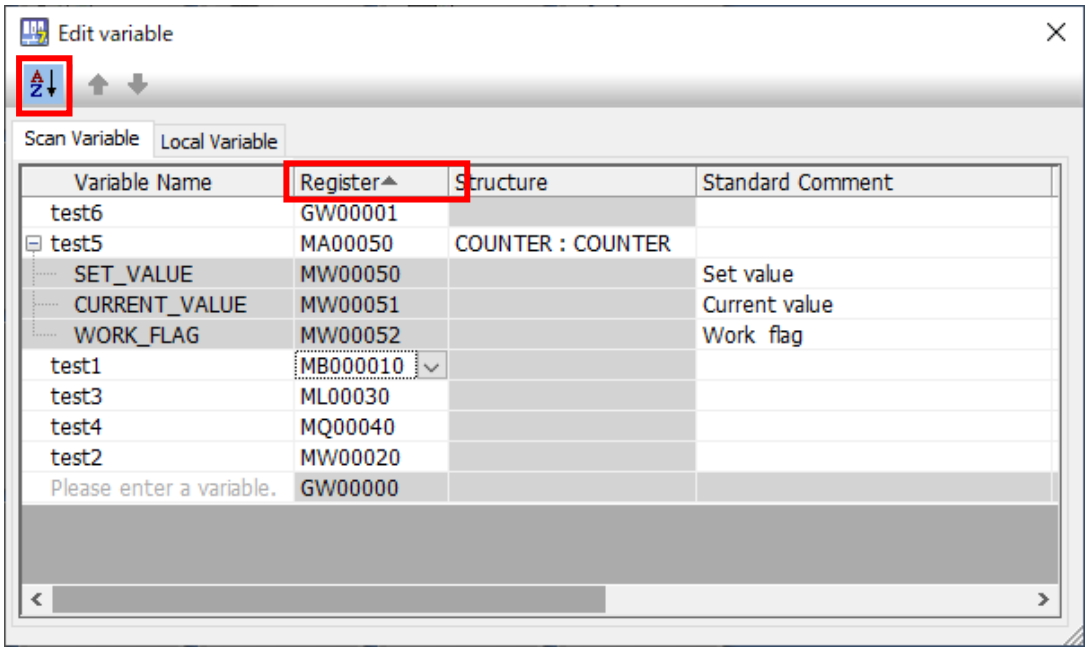
2. Details of the amendment

No.1 Variable registration of Global Variable and Local Variable can now be registered and edited in one window.

1) In the System Window or Navigation Window, "Variable" has been added.
By selecting this menu, you will start the Edit variable window.
On the Edit variable window, you can register, edit, and delete variables in bulk.



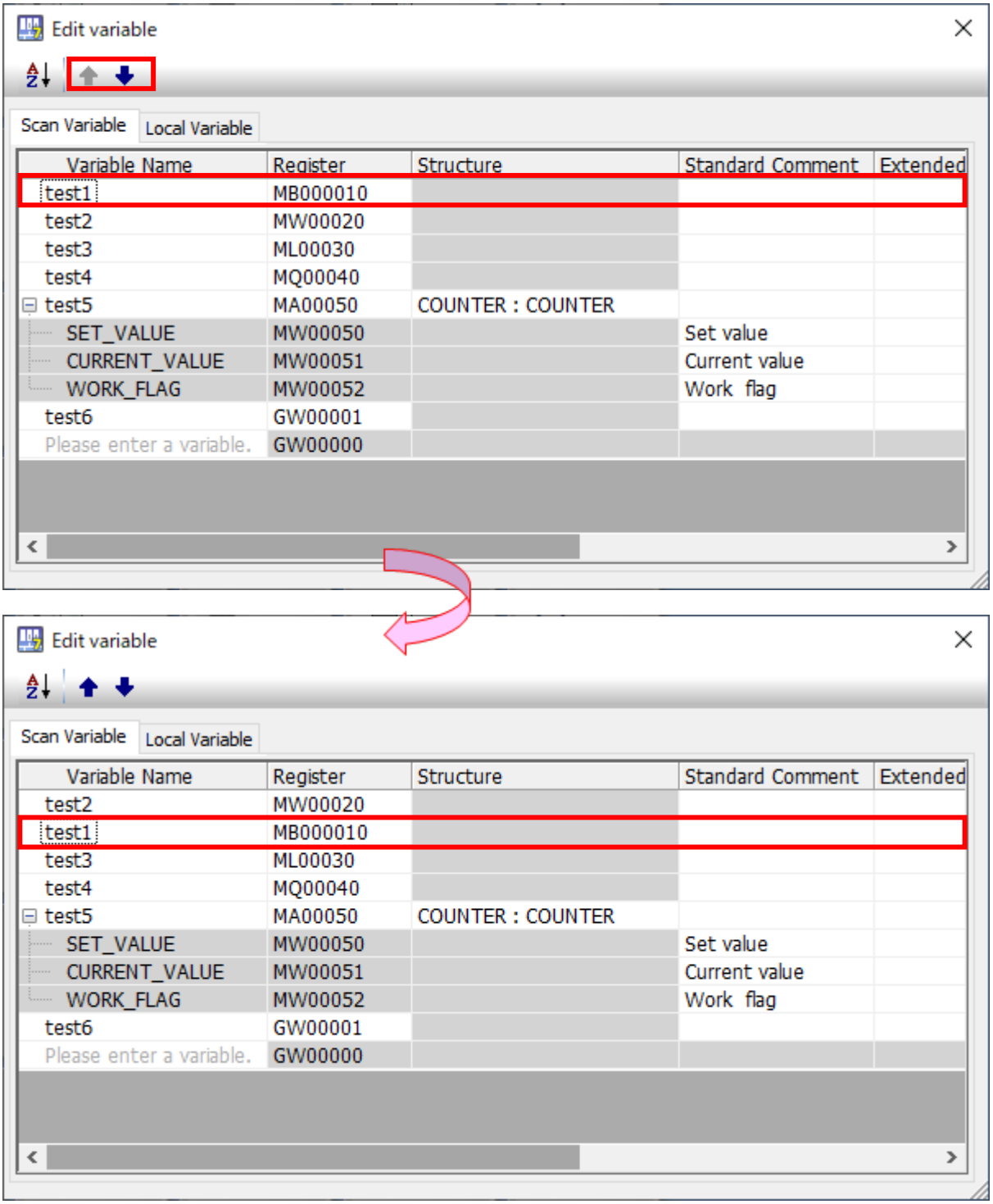
2) Variables can be sorted.



3) You can reorder the variables.

* The sort order is valid only on Edit variable window. It is not reflected in the Variable window.

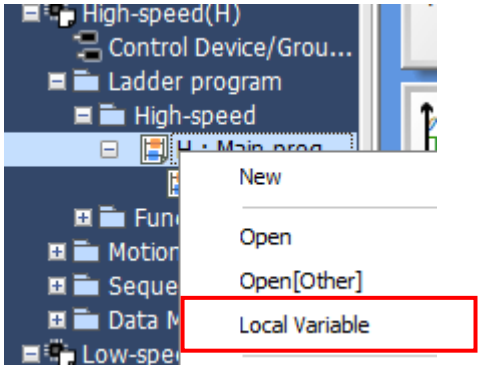
If you import variables, they are imported in the order in which they appear in the file to be imported.



4) The output order of the variable export is changed to the order on Edit variable window.

Register	Comment	Variable	Struct	S
MF00030		test3		
ML00020		test2		
MW00010		test1		
MQ00040		test4		
MD00050		test5		
MA00060		test6	COUNTER	
GB000001		test7		

5) In the Ladder Window or Navigation Window, "Local Variable" have been added to the context menu of the Ladder program. By selecting this menu, you can display the local variable of the program on Edit variable.



No.2 For the YRM1000/MPX1000 series, the maximum number of motion programs has been extended from 512 to 4094.

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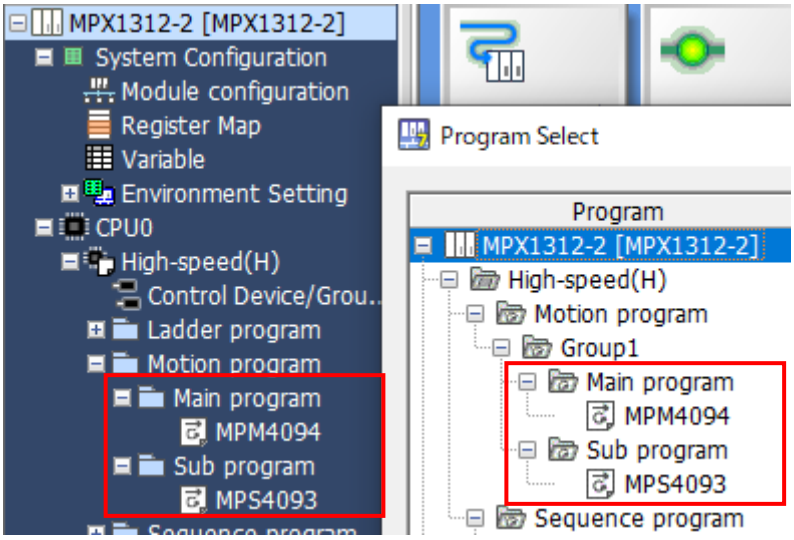


The program name will be written in 3-digit notation (MPM001, MPS999, etc.) as before, and 4-digit notation (MPM1234, MPS4094, etc.) after 1000.

The program number of the sequence program is the same as before, from 001 to 512.

[Compatible models]

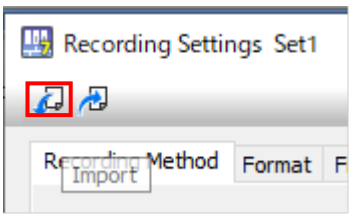
series	model	Supported Firmware Versions
YRM1000	CPU-12	Ver.2.11
MPX1000	MPX1012J-10	
	MPX1012J-20	
	MPX1312-1	
	MPX1312-2	

No.3 The function of the Motion Recorder has been improved.

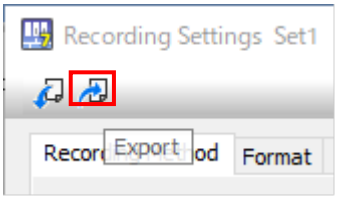
The function of the Motion Recorder has been improved.

1) It is now possible to import and export configuration data.

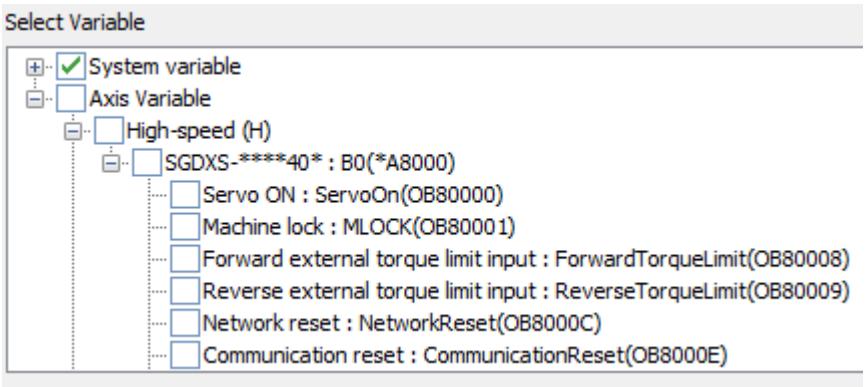
・Import



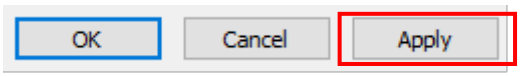
・Export



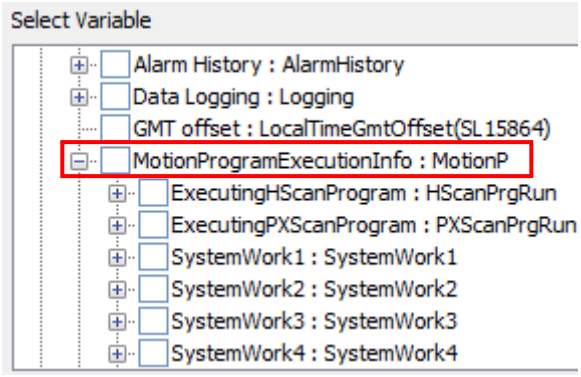
2) Improved to make it easier to select Axis Variable as collection targets.



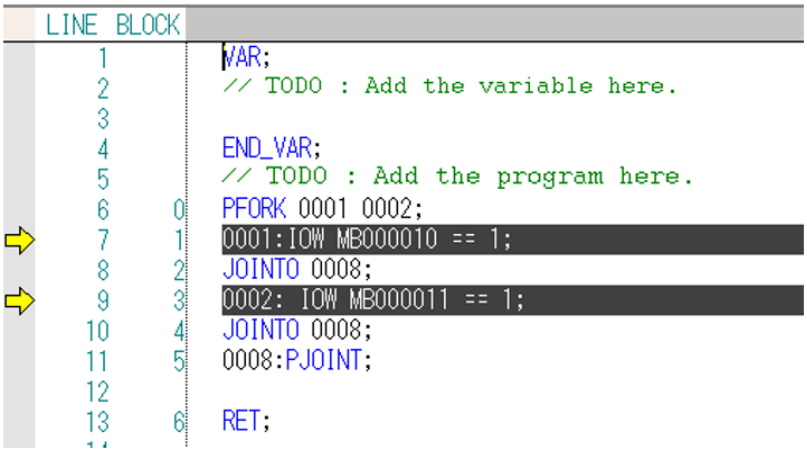
3) You can now add an "Apply" button to save your modifications without having to close the screen.



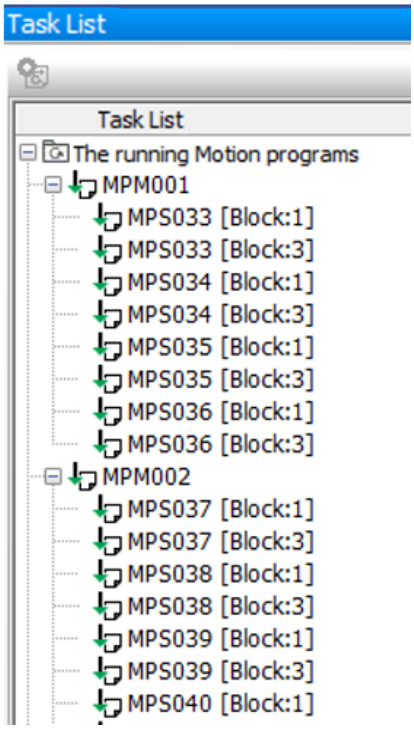
4) The System Variable "Motion Program Execution Info" has been improved to make it easier to select as a collection target.



5) In Playback Mode, when the system work registers of a motion program are collected, the execution line is highlighted in the motion program editor.

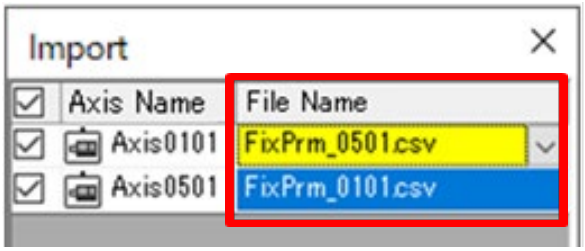


6) In Playback Mode, when the system work register of a motion program is collected, the program number and block number of the running motion program are displayed on the Task List window.



No.4 In the "Import all together of Fixed/Setting Parameters" section of the Module Configuration, you can now change the combination of files to be imported.

In the ″Import all together of Fixed/Setting Parameters″ section of the Module Configuration, you can now change the combination of files to be imported.

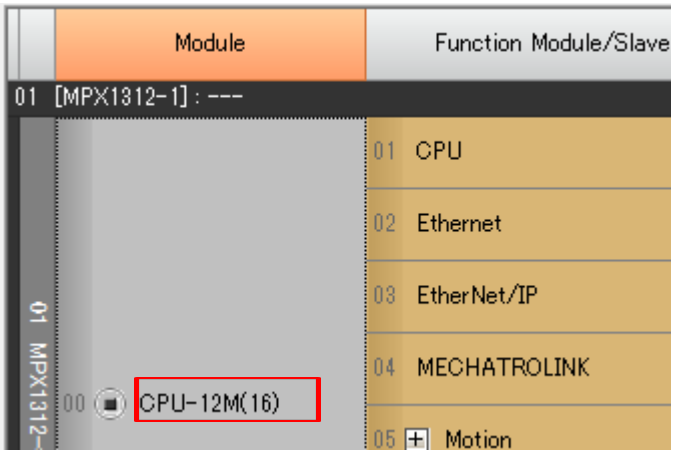


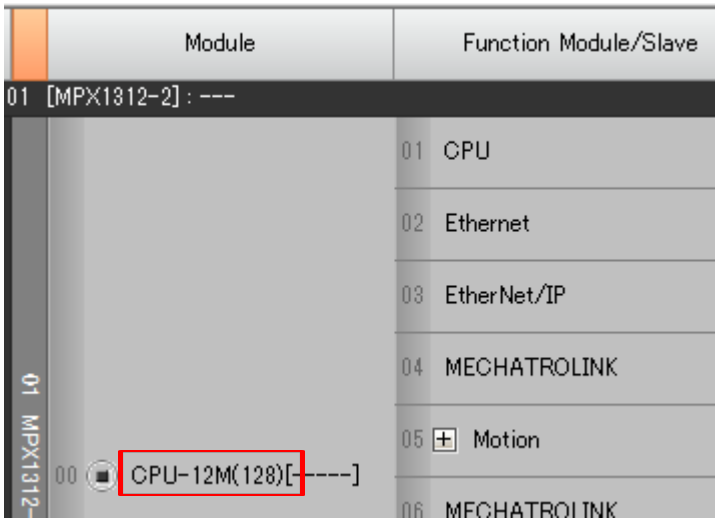
No.5 The name of the CPU module/base unit of the MPX1310 has been changed.

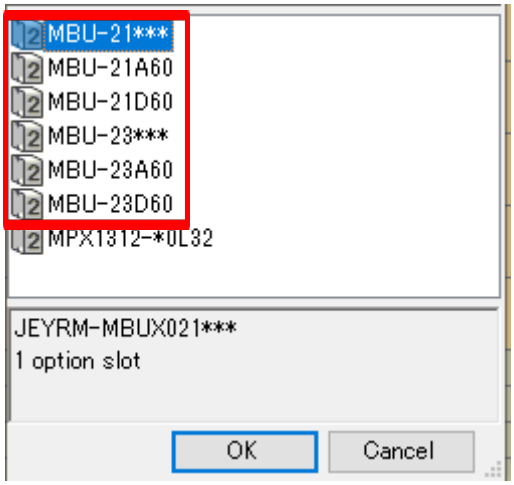
The name of the CPU module/base unit of the MPX1310 has been changed as follows.

model	CPU Modules
MPX1312-1	CPU-12M(16)
MPX1312-2	CPU-12M(128)

model	Base Unit
MPX1312-1/ MPX1312-2	MBU-21***
	MBU-21A60
	MBU-21D60
	MBU-23***
	MBU-23A60
	MBU-23D60



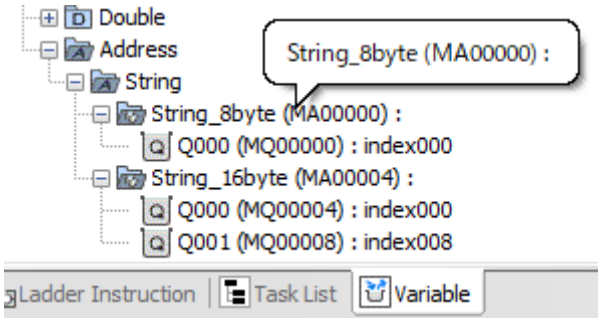




Printing the Module Configuration will change the name in the same way. Even if you open a project created in Ver.7.A1 or earlier, the new name will be displayed. However, if you open a project created with Ver.7.A2 and an MPE720 version 7.A1 or earlier, the name will be displayed in the old notation.

No.6 In the variable function, the definition of a text string structure for data collection to YCP2 has been supported.

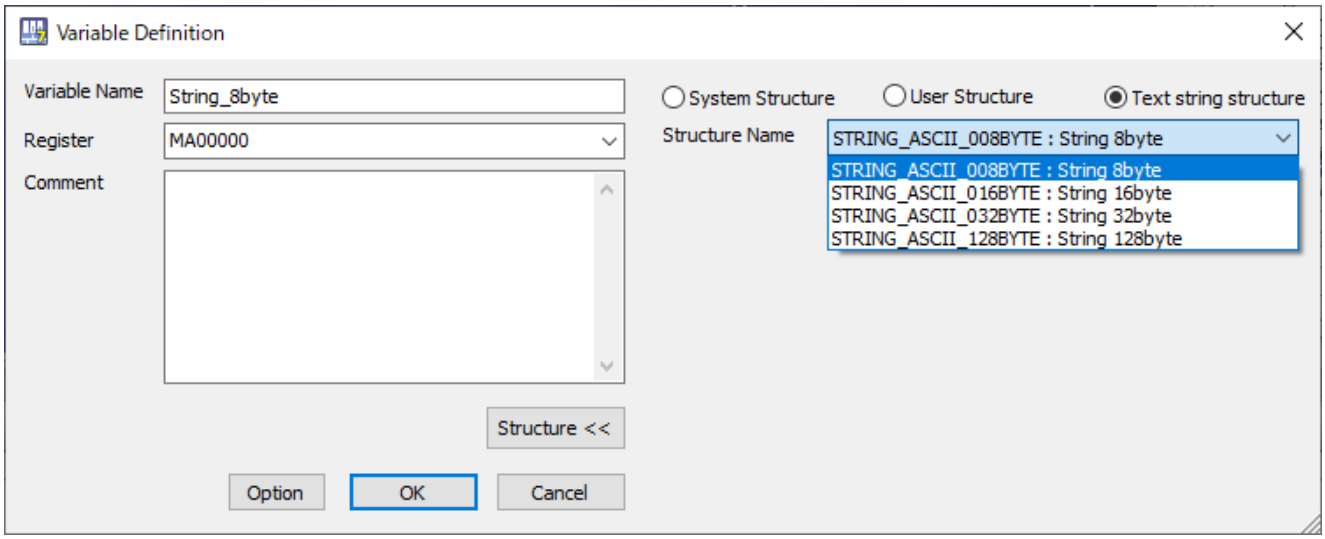
1) From the Variables window, you can define a text string structure.
The defined variables are listed under the Address type folder and the String type folder in the Variable window.
* String-type variables are not subject to the variable group function.



2) If you open a project that contains a text string structure in an earlier version, you will receive an error message that the structure is not registered.

3) Text string structure is available for M/G registers.

4) In the Variable Definition, a "Text string structure" radio button has been added for string type registration.
* Text string structure is not displayed in the list of System Structure.
* When selecting a text string structure, select the following structure.
・STRING_ASCII_008BYTE
・STRING_ASCII_016BYTE
・STRING_ASCII_032BYTE
・STRING_ASCII_128BYTE
* When a text string structure is selected, the member list is not displayed.
* Text string structure cannot be registered as Local variable.



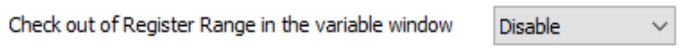
It is possible to use a text string structure as a member of a user structure.

No.7 Several bugs have been fixed.
The following bugs have been fixed.

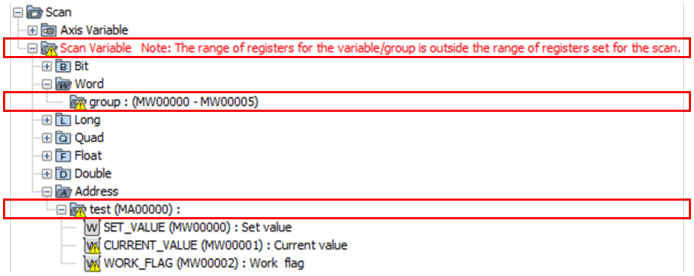
1) Fixed a problem in which transfer could not be completed when [Format] was set to [Compressed XX] in [Write to External Media] of the transfer function.
2) Fixed a problem in which all servo parameters might be shown as default values when reading servopack parameters in transfer (Read from Controller).
3) Fixed a bug in MPX1312-*/MPX1012J-** models where an error message "G register: invalid handle" was displayed in the output window and could not be transferred when G register was acquired by "Read from Controller" in the transfer function.
4) Fixed a problem in which the controller would not respond when the motion program was run with the order of Group Definitions switched on multi-scan compatible models.
5) Fixed a problem in which it took a long time to open a project on multi-scan compatible models when there were many address type variables.
   When updating the display of the variable window, a warning is displayed in the following cases, but this process took a long time.
   - The register range of the variable group is outside the register range of the scan.
   - The register of the structure member of the Address variable is outside the register range of the scan.

   *Since the display of the variable window is updated by editing variables and comments, it can also be done in addition to operating the variable window, such as the Ladder Editor and Comment List.

   [Check out of Register Range in the variable window] added to [Environment Setting] - [Setup] - [System Setting] is set to [Disable], the refresh time when displaying the window may decrease.

   When set to [Enable], a warning will be displayed when a variable or group of registers is outside the range of the values set for [Register Range] on the [Register Map] window.

6) Fixed a problem in which an unnecessary message dialog was displayed when closing the Automatically Updated Parameters screen started from the Module Configuration Definition screen.
7) Fixed a problem that prevented designated module self-configuration of the second and third slots in MPX1312 3-slot models.
8) Fixed a problem in which the MECHATROLINK Detailed Definition screen would crash if the MECHATROLINK Detailed Definition screen was opened in a project that imported an MNI file containing non-targeted slave devices.
9) Fixed a problem in which the RPI value in the EtherNet/IP connection list of 218IFG was displayed as one-tenth of the original value when an EDS file was read.
10) Fixed a bug that did not result in a compile error when compiling offline when the parallel number of motion program PFORK instructions is one.
11) Fixed a bug in which the parallel number of tasks displayed on the motion alarm screen did not start with 0.
12) Fixed a bug in which the cursor could not move up and down in the Expression Editor screen when the auto-complete function in the Preferences was enabled.

13) Fixed a bug in which comments in the detailed definition screen of the DeviceNet communication module could only be input up to 28 one-byte characters and 14 two-byte characters, although originally 32 one-byte characters and 16 two-byte characters could be input.
14) Fixed a problem in which an error could be displayed when editing group information on the variable screen, even if the group hierarchy was 5 or less.
15) Fixed the problem in which address duplication was detected in spite of register address match and bit address mismatch in BIT type variable registration.
16) Fixed a bug in which a warning message indicating duplicated addresses was displayed when an I/O variable was newly added, even though the address did not duplicate that of the registered variable.
17) Fixed the problem in which MPE720 froze when the comment of an Address type variable to which no structure was assigned was changed outside of the variable window.
18) Fixed the problem that the variable which cannot be used was registered in the system variable.
19) Fixed the problem that the address type variable of the member could not be opened for the user structure of two or more levels in the watch window.
20) Fixed a problem in which the message notifying that monitor information is not displayed in the [Maintenance Monitor] tab was difficult to understand, depending on the parameters set in the maintenance monitor.
21) Fixed a bug in the graph display of the real-time trace function in which the horizontal scroll bar of the graph could not be operated unless the vertical scroll bar of the window was scrolled down.
22) Fixed a problem in which the ladder program could not be printed when the number of characters printed in the cross information was 15 or more when printing the ladder program in the Print Manager.
23) Fixed a bug that caused the write process to the controller to fail when the " Write the parameter into the SERVOPACK." option was selected in a project where the Σ-MxS SERVOPACK parameters were saved.

Appendix A: Compilation of Parallel Circuits

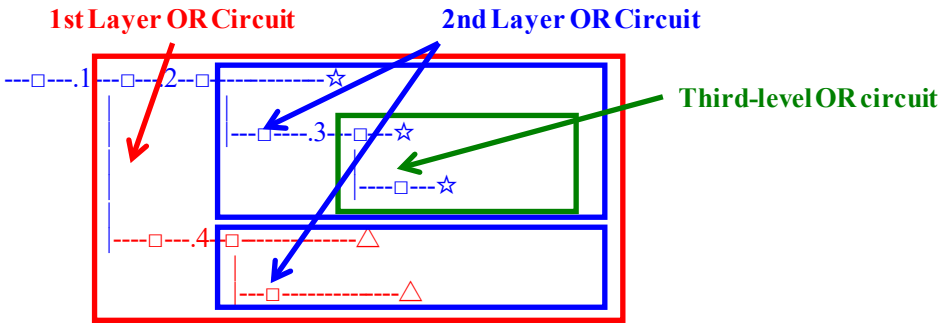
In the ladder program of MPE720 Ver7.23 or earlier, the following symptoms may occur when using parallel circuits.

< 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 Ver7.24 or later MPE720 Ver7. 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

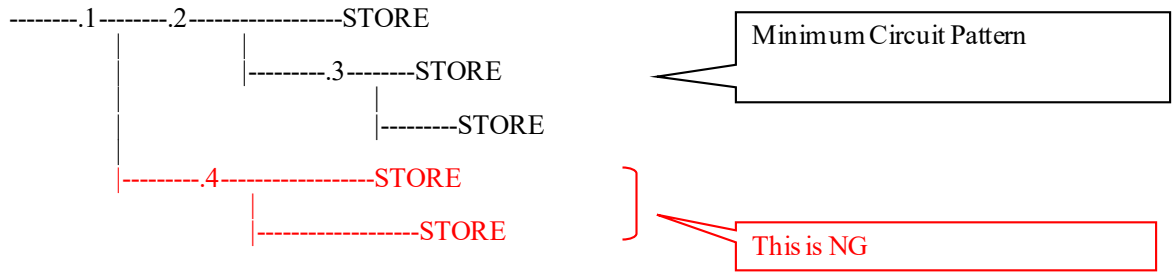
□ (Conditional Instructions): A contact, B contact, comparison (==, !=, >, <) instructions, etc.
* □ (conditional instructions) includes power wires (−−−−−−)
☆ (Output instructions): coils, block instructions (Expression, STORE, COPYW) instructions, etc.
* However, if all ☆ are coil instructions, this 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



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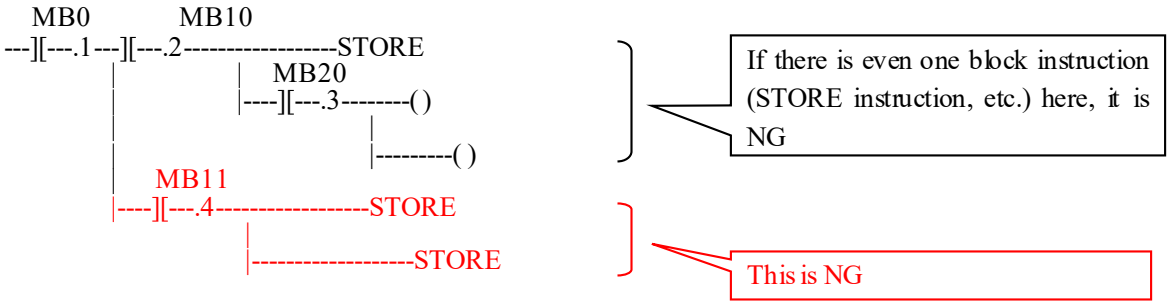
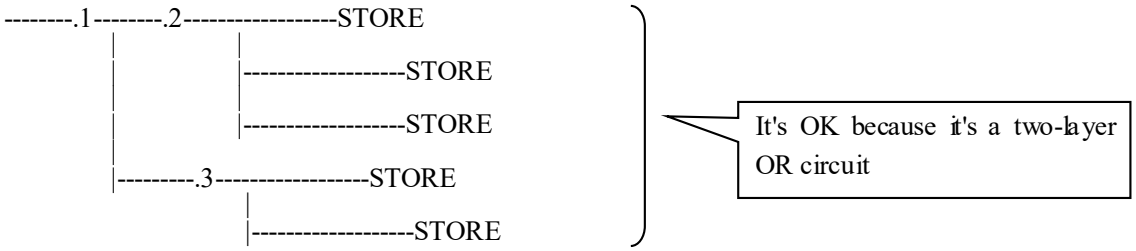
③



[OK pattern]

①



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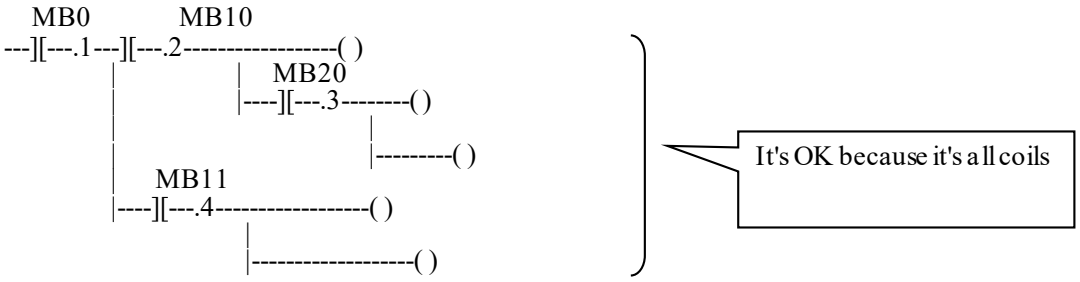

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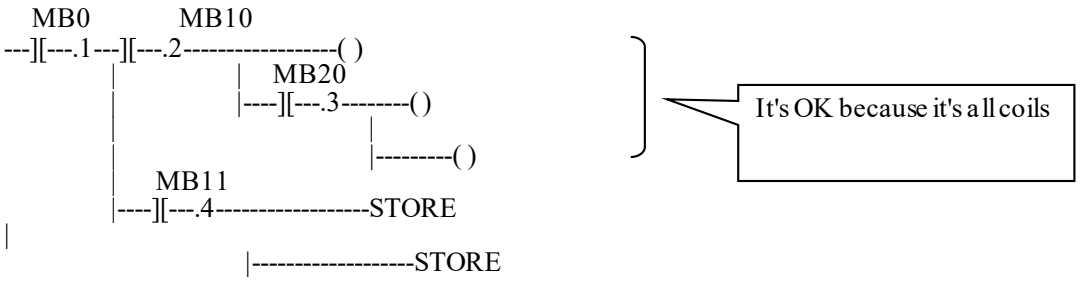
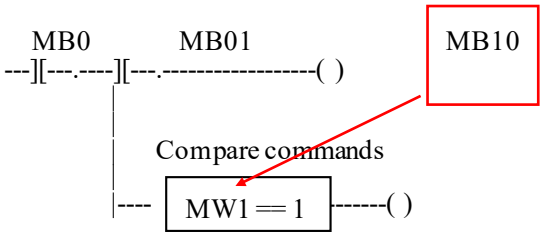


Appendix B: Compilation when there are comparison instructions in a parallel circuit

MPE720 Ver7.In the ladder program of the MPE720 Ver7 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 Ver7.64 or later MPE720 Ver7. 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.