

Upgrade Information of MPE720 Version 7.45

1. Added and Improved Functions

1.1 Version 7.45 Upgrade Information

Items added and features improved from MPE720 version 7.44 to version 7.45 are as follows.

No.	Feature	Classification
1	The Robot Controller RM100 is now available with the MP3300 Controller.	Newly added
2	The DI-01 Module is now supported as an I/O module.	Newly added
3	Robot control instructions are added.	Functional Enhancement
4	A MP3000 bus is now supported as a transmission type that can be specified in the SVK detailed definition.	Functional Enhancement
5	How the variable auto-complete feature displays the structure variables has been improved.	Functional Enhancement
6	The variable/register auto-complete feature is now available with each function.	Functional Enhancement
7	"7: Read Memory" and "8: Write Memory" are added as the motion subcommands for motion parameters (setting parameters).	Functional Enhancement
8	ISC (INTERPOLATION S-CURVE TIME CHANGE) instruction is added as the motion instruction.	Functional Enhancement
9	How the cross-reference target program is displayed has been improved.	Improvement
10	The processing when "Display Register Map" is selected has been improved.	Improvement
11	Real-time trace processing has been improved.	Improvement
12	The operation of an extended comment has been improved.	Improvement
13	The processing of displaying real-time trace waveform has been improved.	Improvement
14	How the program tree for motion programs is displayed has been improved.	Improvement

(*): When MPE720 Ver.7 before MPE720 Ver.7.11 is already installed in Windows Vista and Windows 7, it may not operate for the newest information of the servo model addition by the axial setup wizard function (the newest information added into the database) updated by after MPE720 Ver.7.13.

Please refer to the following page for operating procedures.

【About the restriction matter when using MPE720 Ver.7 in Windows Vista and Windows 7】

When MPE720 Ver.7 is used in Windows Vista and Windows 7, the following phenomena might be generated.

<Phenomena>

When MPE720 Ver.7 before MPE720 Ver.7.11 is already installed in Windows Vista and Windows 7, it may not operate for the newest information of the servo model addition by the axial setup wizard function (the newest information added into the database) updated by after MPE720 Ver.7.13.

<Measures>

Using a batch file, the following folder is deleted. (*1)

C:\Users\UserName(*2)\AppData\Local\VirtualStore\Program Files(*3)\YASKAWA\MPE720 Ver7

Procedure

1. The batch file enclosed by MPE720 Ver.7 installer is copied to a desktop.

【Download Version】

MPE720Ver7_xxx(*4)\Tools\CleanUp\MPE720Ver7_x86.bat (32bitOS)

MPE720Ver7_xxx(*4)\Tools\CleanUp\MPE720Ver7_x64.bat (64bitOS)

【DVD Media Version】

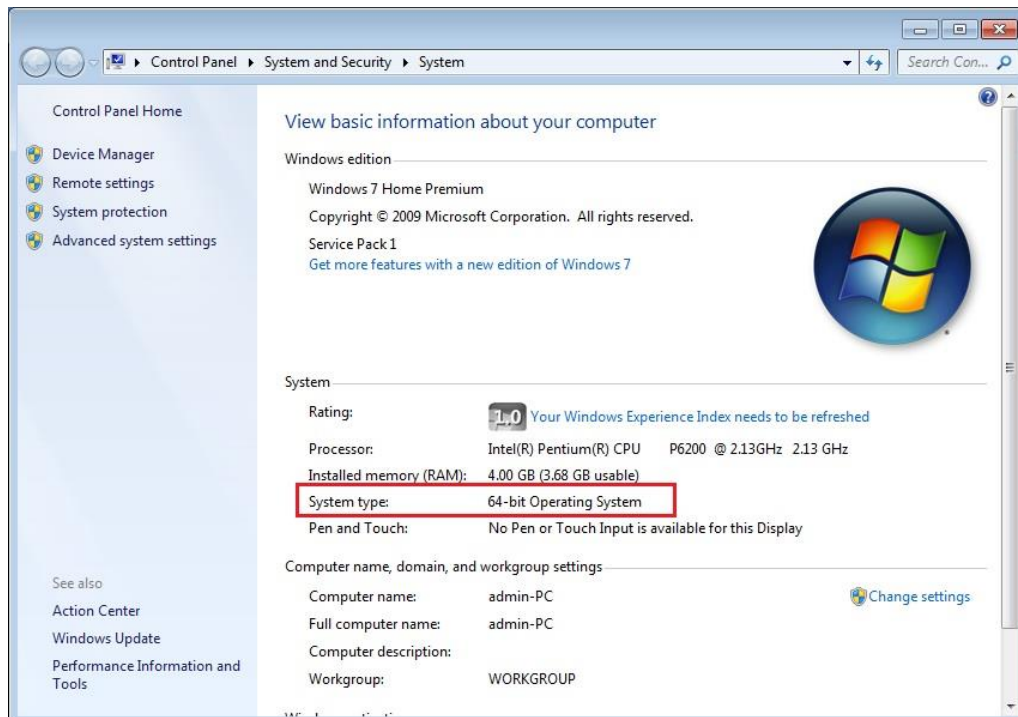
D(*5)\Tools\CleanUp\MPE720Ver7_x86.bat (32bitOS)

D(*5)\Tools\CleanUp\MPE720Ver7_x64.bat (64bitOS)

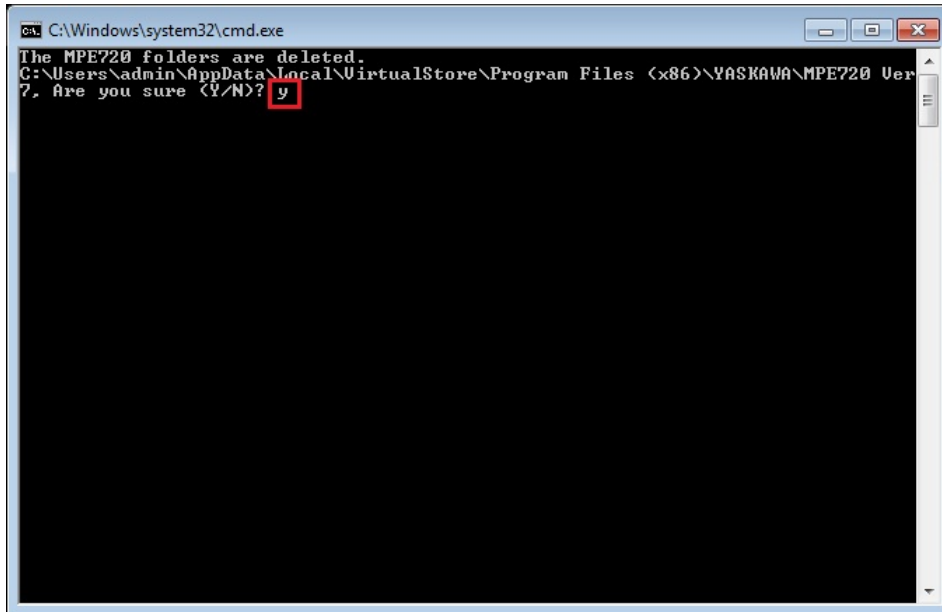
2. The copied batch file is performed.

MPE720Ver7_x86.bat (32bitOS)

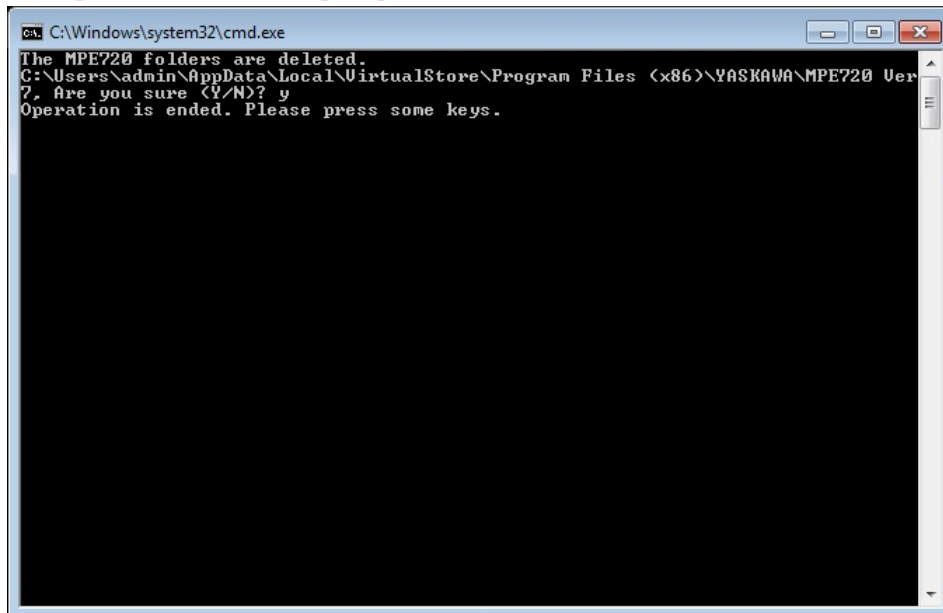
MPE720Ver7_x64.bat (64bitOS)



3. “y” is inputted on a command prompt and the Enter button is pushed.



4. The Enter button is pushed on a command prompt after deletion.



- (*1): When multi-user is using one set of PC, please operate it by each user.
- (*2): The user account name that logs in enters.
- (*3): The path changes by OS.
 - 32bitOS: Program Files
 - 64bitOS: Program Files (x86)
- (*4): The path changes by version.
- (*5): The path changes by DVD drive.
- (*6): When an installation path is changed at the time of MPE720 Ver.7 installation, please delete the “MPE720 Ver7” folder which a folder subordinate has below manually according to the installed path.
 - C:\Users¥UserName(*2)\AppData\Local\VirtualStore

【About compile of the parallel circuit】

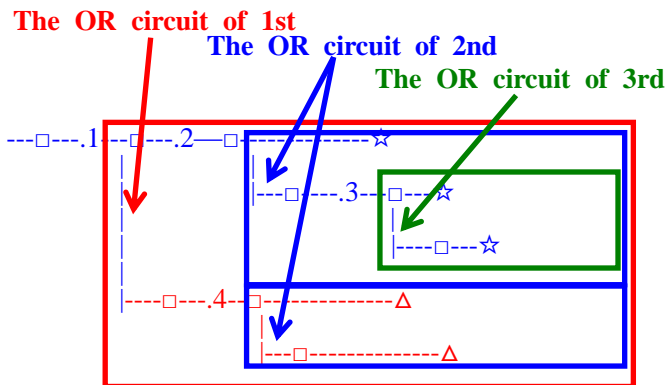
In the Ladder program of MPE720 Ver7 before MPE720 Ver7.23, when the parallel circuit is used, the following phenomena may occur.

<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

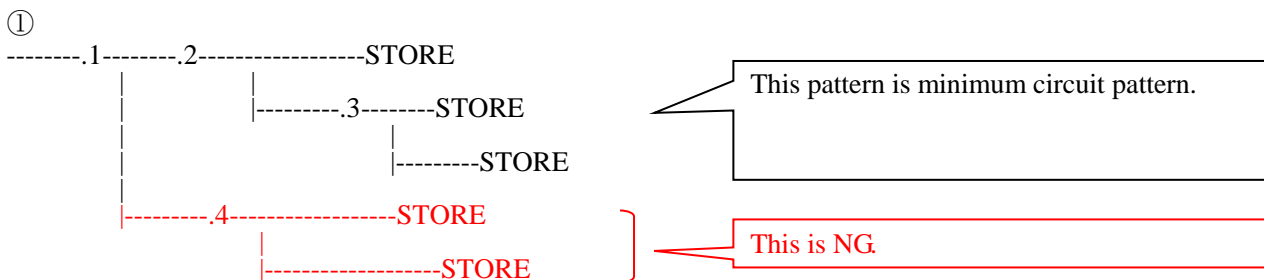
※However, when all ☆ is coil commands, a phenomenon does not occur.

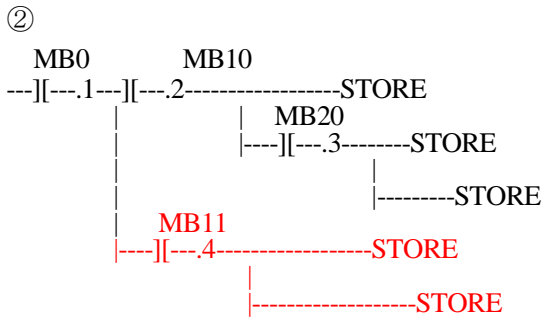
△(Output instruction): Coil, Block instruction(Expression, STORE, COPYW)etc

<Pattern>

Symbol	Instruction
[NO Contact
STORE	STORE instruction
()	Coil

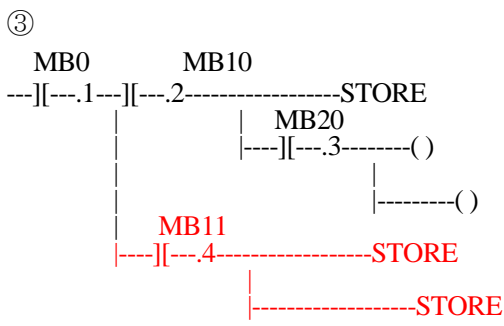
<NG Pattern>





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

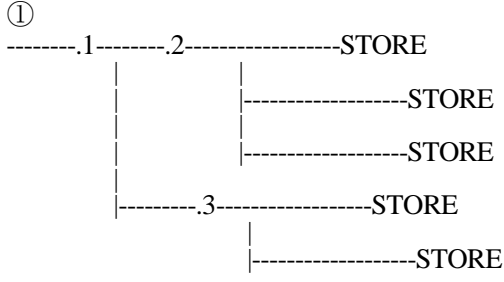
This is NG



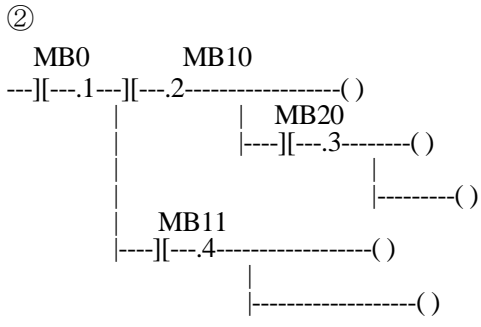
It is NG when there are at least one block commands (STORE command etc.) here.

This is NG

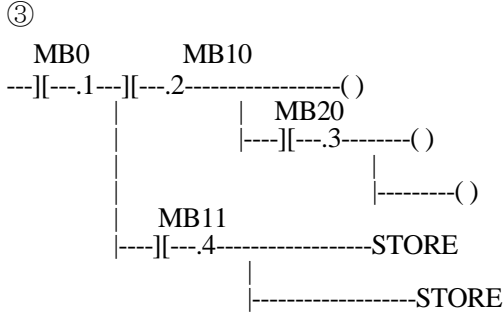
<OK Pattern>



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



Since it is the coil altogether, it is OK.



Since it is the coil altogether, it is OK.

1.2 Past Upgrade Information

No.	Upgrade Information	Remarks
1	MPE720 version 7.11 upgrade information	version 7.10→version 7.11
2	MPE720 version 7.13 upgrade information	version 7.11→version 7.13
3	MPE720 version 7.14 upgrade information	version 7.13→version 7.14
4	MPE720 version 7.20 upgrade information	version 7.14→version 7.20
5	MPE720 version 7.21 upgrade information	version 7.20→version 7.21
6	MPE720 version 7.23 upgrade information	version 7.21→version 7.23
7	MPE720 version 7.24 upgrade information	version 7.23→version 7.24
8	MPE720 version 7.26 upgrade information	version 7.24→version 7.26
9	MPE720 version 7.27 upgrade information	version 7.26→version 7.27
10	MPE720 version 7.28 upgrade information	version 7.27→version 7.28
11	MPE720 version 7.29 upgrade information	version 7.28→version 7.29
12	MPE720 version 7.30 upgrade information	version 7.29→version 7.30
13	MPE720 version 7.31 upgrade information	version 7.30→version 7.31
14	MPE720 version 7.33 upgrade information	version 7.31→version 7.33
15	MPE720 version 7.34 upgrade information	version 7.33→version 7.34
16	MPE720 version 7.35 upgrade information	version 7.34→version 7.35
17	MPE720 version 7.36 upgrade information	version 7.35→version 7.36
18	MPE720 version 7.37 upgrade information	version 7.36→version 7.37
19	MPE720 version 7.38 upgrade information	version 7.37→version 7.38
20	MPE720 version 7.39 upgrade information	version 7.38→version 7.39
21	MPE720 version 7.40 upgrade information	version 7.39→version 7.40
22	MPE720 version 7.41 upgrade information	version 7.40→version 7.41
23	MPE720 version 7.42 upgrade information	version 7.41→version 7.42
24	MPE720 version 7.43 upgrade information	version 7.42→version 7.43
25	MPE720 version 7.44 upgrade information	version 7.43→version 7.44

2. Description

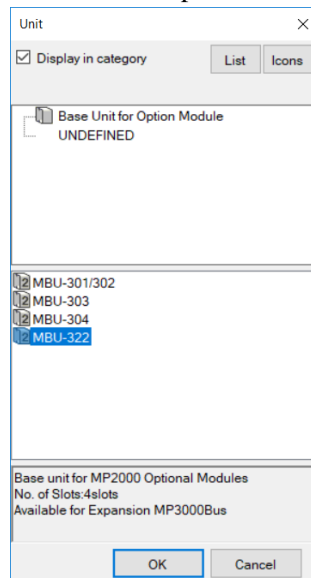
No. 1 The Robot Controller RM100 is now available with the MP3300 Controller.

The MP3300 module configuration definition now allows you to define RM100 for Unit 2 on Rack 1.

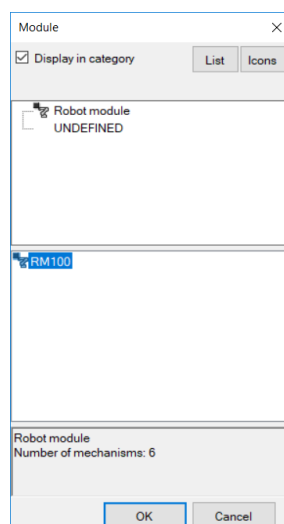
* When you use RM100, you must select MBU-322 as the option base unit for Unit 1.

Module	Function Module/Slave	Status	Cl
01 [CPU-302(16axes)] : --			
01 MBU-322	01 CPU	Driving	
	02 218IFD	Driving	品
	03 SVC	Driving	品
	04 SVR	Driving	品
	05 M-EXECUTOR	Driving	
	06 -- UNDEFINED --	----	
	07 -- UNDEFINED --	----	
01 -- UNDEFINED --[---]	----		
02 -- UNDEFINED --[---]	----		
03 -- UNDEFINED --[---]	----		
04 -- UNDEFINED --[---]	----		

(1) The device selection for Unit 1 now allows you to select the Option Base Unit MBU-322.



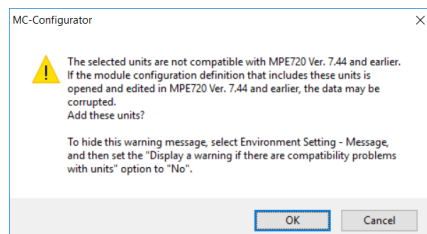
(2) The device selection for Unit 2 now allows you to select the Robot Controller RM100.



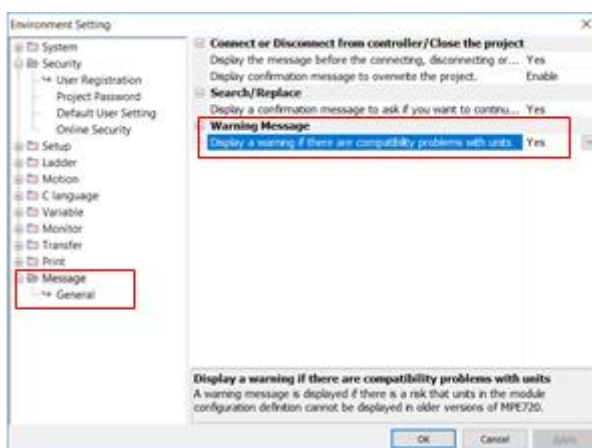
(3) A warning message appears if the module configuration definition contains MBU-322 and/or RM100 because they are not supported by the previous versions of MPE720.

(The warning appears when you open the Module Configuration Tab Page that contains those units or select and save those units.)

*When you open the Module Configuration Tab Page, the following warning message appears:



To suppress the warning message display, use the "Environment Setting" > "Message" page.



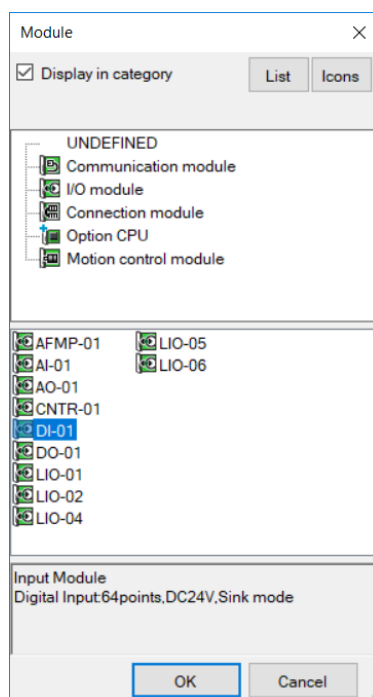
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.42 or later
Σ-7 Series	Not supported by theΣ-7 Series.
MP2000 Series	Not supported by the MP2000 Series.

No. 2 The DI-01 Module is now supported as an I/O module.

The DI-01 Module (64-point digital input, 24 VDC) is additionally supported as a controller-assignable I/O module.



【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.43 or later
Σ-7 Series	Ver.1.09 or later
MP2000 Series	Ver.3.06 or later

No. 3 Robot control instructions are added.

The following robot control instructions (MLx functions) have been added to the ROBOT SYSTEM, ROBOT CONFIGURATION, and ROBOT MOTION categories on the ladder instructions pallet:

○ROBOT SYSTEM

- MLxSetCalendar

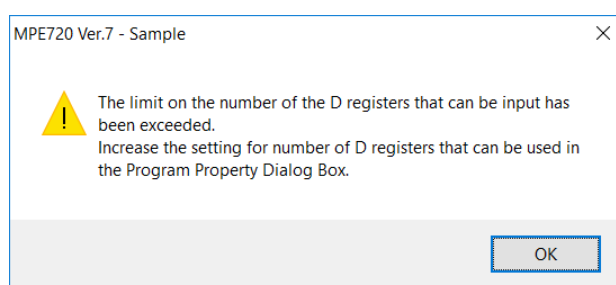
○ROBOT CONFIGURATION

- MLxSetGlobalParameter
- MLxRobotCalib
- MLxRobotSetToolCalib
- MLxPendantDriver

○ROBOT MOTION

- MLxRobotConvSyncStart
- MLxRobotConvSyncStop
- MLxRobotConvSyncStopWithAxisMot
- MLxRobotConvSyncStopWithLinMot
- MLxRobotCoordinatedMoveOn
- MLxRobotCoordinatedMoveOff
- MLxRobotIndividualMoveOn
- MLxRobotIndividualMoveOff
- MLxRobotMoveCircular
- MLxRobotReleaseBrake

In addition, an improvement has been made so that a warning message appears if "Automatically assign D registers to Param operand" is set to "Enable" and the D registers assigned to the Param operand are outside the range of the number of registers that can be used.



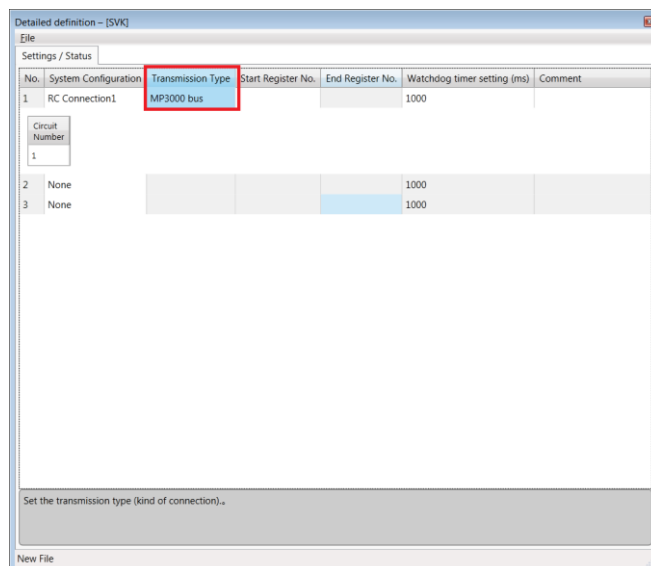
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.42 or later
Σ-7 Series	Ver.1.08 or later
MP2000 Series	Not supported by the MP2000 Series.

No. 4 A MP3000 bus is now supported as a transmission type that can be specified in the SVK detailed definition.

Now you can select a MP3000 bus as a transmission type.



[Applicable Model]

- CPU302 (16axes/32axes)

【Support Version】

○ Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.42 or later
Σ-7 Series	Not supported by the Σ-7 Series.
MP2000 Series	Not supported by the MP2000 Series.

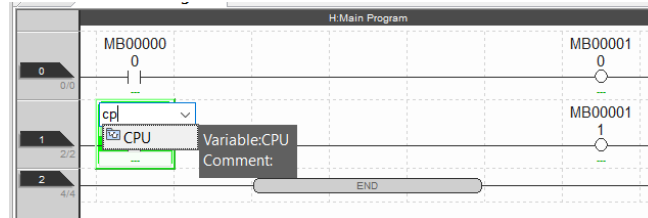
No. 5 How the variable auto-complete feature displays the structure variables has been improved.

Entire variables (even including member variables for structure variables) were enumerated in the auto-complete list and it was difficult to search for the desired variables.

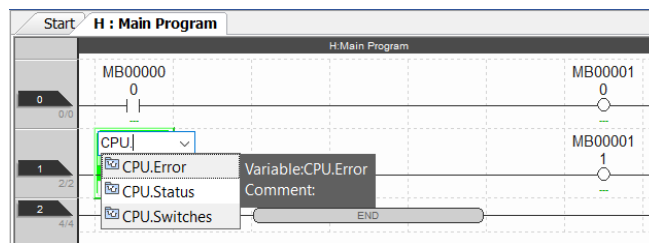
Variables are now hierarchically displayed so that you can easily search for the desired variables.

[Usage Method]

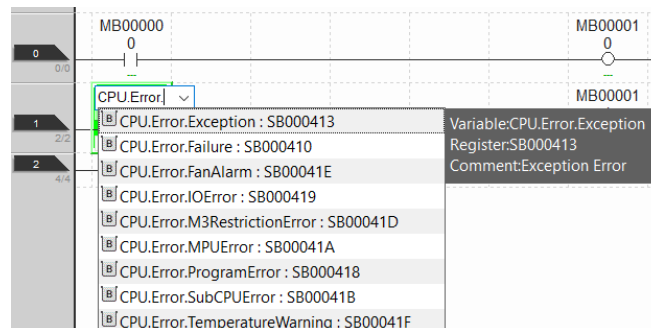
(1) Select the structure variable for the variable you want to search for.



(2) Enter a dot (.) to display the member variables for the selected structure variable.



(3) Repeat steps (1) and (2) until you reach the desired variable's hierarchical level.



【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version
MP2000 Series	Not dependent on the controller version

No. 6 The variable/register auto-complete feature is now available with each function.

The variable/register auto-complete feature is now available with the following functions:

[Functions with the Variable/Register Auto-Complete Feature]

- Ladder editor search
- Ladder editor replacement
- Search in project
- Watch
- Tuning panel
- Cross-reference
- Ladder editor parameter setting

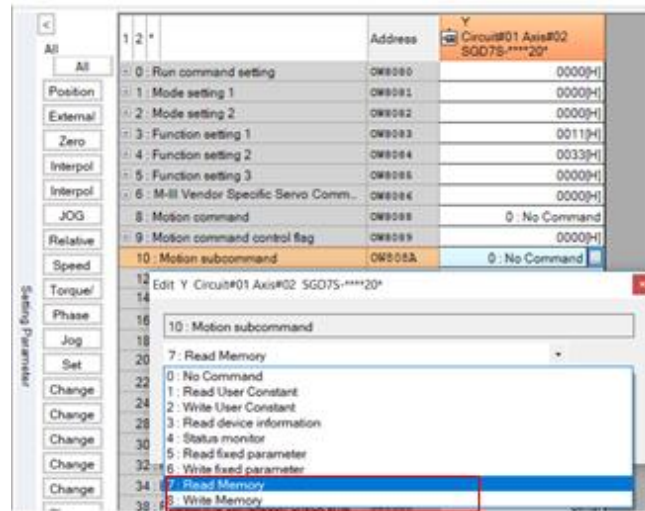
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.

No. 7 "7: Read Memory" and "8: Write Memory" are added as the motion subcommands for motion parameters (setting parameters).

"7: Read Memory" and "8: Write Memory" have been added as the motion subcommands for SVC/SVD control axes.



[Applicable Motion Modules]

MP2000: SVC built-in CPU, SVC-01

MP3000: SVC/SVC32 built-in CPU

Sigma-7: SVC4/SVD built-in CPU

"106: Auxiliary Address Setting" has been added as the motion parameter for setting the memory address for which these commands are executed.

Set	84 : Servo driver for assistance user c...	0C80D4	0000[H]
Change	85 : Servo driver for assistance user c...	0C80D5	1
Change	86 : Servo driver for assistance user c...	0C80D6	0
Change	88 : Address Setting	0C80D8	0000 0000[H]
Change	91 : Device Information Select Code	0C80DB	0 : Invalid
Change	92 : Fixed Parameter Number	0C80DC	0
Change	94 : Encoder position when power is of...	0C80DE	0[pulse]
Change	96 : Encoder position when power is of...	0C80E0	0[pulse]
Change	98 : Pulse position when power is off [...]	0C80E2	0[pulse]
Change	100 : Pulse position when power is off...	0C80E4	0[pulse]
Read	102 : Positive software limit value	0C80E6	0[pulse]
Write	104 : Negative software limit value	0C80E8	0[pulse]
Alarm	106 : Auxiliary Address Setting	0C80EA	0000 00FF[H]
	110 : System reservation (Stop distan...	0C80EK	0[pulse]

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.41 or later
Σ-7 Series	Ver.1.07 or later
MP2000 Series	Ver.3.07 or later

○Option Module

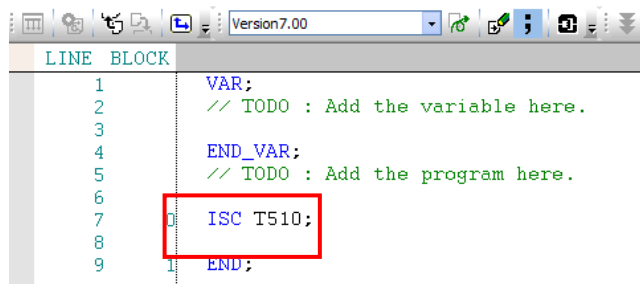
Option Module	Support Firmware Version
SVC-01	Ver.1.22 or later

No. 8 ISC (INTERPOLATION S-CURVE TIME CHANGE) instruction is added as the motion instruction.

ISC (INTERPOLATION S-CURVE TIME CHANGE) instruction is added with compiler version 7.00 of the motion program.

[Instruction Format]

ISC T Interpolation S-curve Time;



```
Version7.00
LINE BLOCK
1      VAR;
2      // TODO : Add the variable here.
3
4      END_VAR;
5      // TODO : Add the program here.
6
7      ISC T510;
8
9      END;
```

[Setting Range]

Interpolation S-curve Time T: 0 ms to 510 ms

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.41 or later
Σ-7 Series	Ver.1.06 or later
MP2000 Series	Not supported by the MP2000 Series.

No. 9 How the cross-reference target program is displayed has been improved.

Once the target program was set with a local register when performing cross-reference search, the same setting was inherited even when searching for a global register. Therefore, when searching for local registers and then global registers, it was necessary to manually set "*: all program".

So, we improved as follows.

If a local register is entered and the entered register is changed to a global register, cross-reference search is now performed with "*: all program" set on the search target drawing.

When you search for two global registers in succession, the search conditions are inherited. (The setting is not reset to "*: all program".)

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.

No. 10 The processing when “Display Register Map” is selected has been improved.

An improvement has been made so that MPE720 Ver.7 does not fail to operate under the following conditions:

[Conditions]

- (1) Contacts with variables/registers configured are selected in the ladder editor.
- (2) The register list is displayed by selecting **Debug - Display Register Map** from the menu bar.
- (3) Repeat steps (1) and (2).

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.

No. 11 Real-time trace processing has been improved.

An improvement has been made so that MPE720 Ver.7 does not fail to operate under the following conditions:

[Conditions]

- (1) Tracing is started by turning ON the real-time display.
- (2) The trace screen is left displayed in the top window for several hours.
- (3) MPE720 Ver.7 is operated.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.

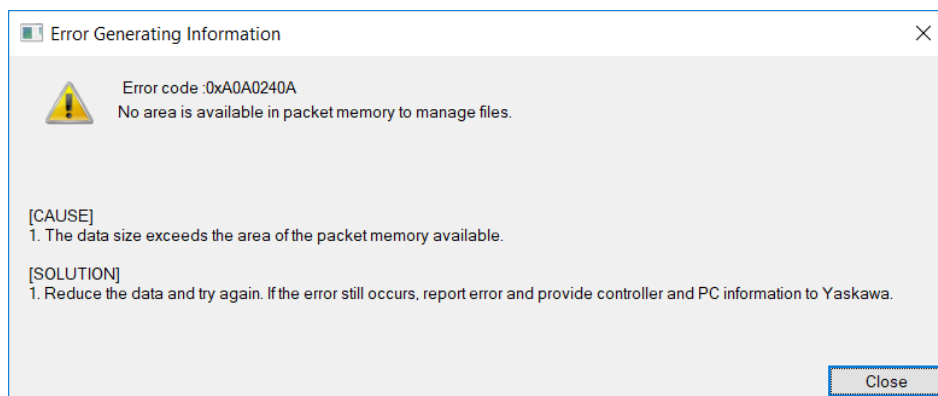
No. 12 The operation of an extended comment has been improved.

The following problems occurred with extended comments:

- (1) When many extended comments were created to exceed the comment capacity upper limit, no error was displayed but saving them failed.
- (2) When project conversion was performed, the extended comments for global registers sometimes failed to be transferred to the conversion destination.
- (3) When an extended comment was set to a local register in the ladder program, the current comment was changed, and compilation was repeated, the extended comment sometimes disappeared.
- (4) When an extended comment was added to a project file for the MP2000 Series and the project was converted to the MP2000 Series format, a conversion error (A0A05487) sometimes occurred, resulting in failure to convert the extended comment.

The problems shown have been improved as follows:

- (1) An improvement has been made so that an error is displayed when the comment capacity upper limit is exceeded.



- (2) An improvement has been made to ensure that the extended comments for global registers are transferred to the conversion destination when project conversion is performed.
- (3) An improvement has been made so that extended comments do not disappear when compilation is repeated while changing the current comment.
- (4) An improvement has been made to ensure that no error occurs when a project file with an extended comment is converted to the MP2000 Series format.

【Support Version】

○Controller

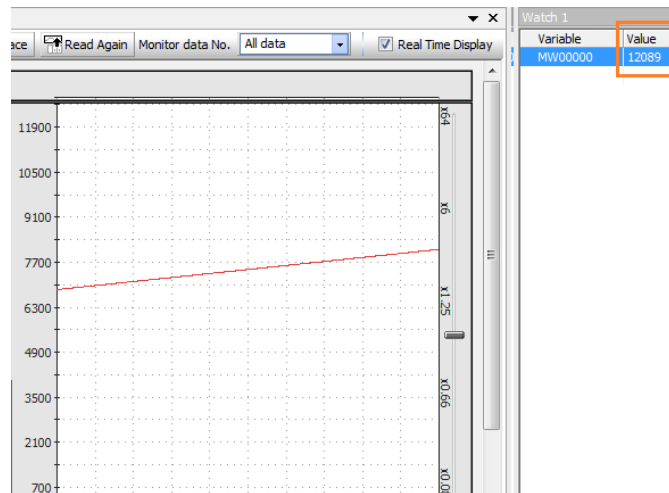
Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.

No. 13 The processing of displaying real-time trace waveform has been improved.

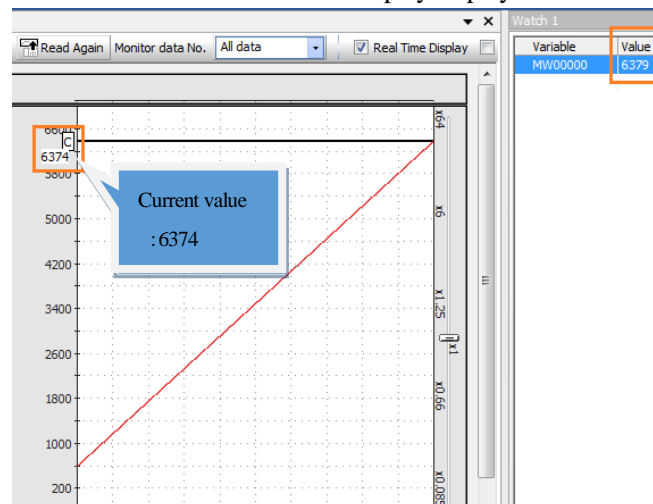
The real-time trace display sometimes displayed a value apart from the current value under the following conditions:

[Conditions]

- (1) Tracing is started by turning ON the real-time display.
- (2) The trace screen is closed and left as such for several hours.
- (3) When the trace screen is opened again, a value apart from the current value is displayed.



An improvement has been made to ensure that the real-time trace display displays the current value under the above conditions.



【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.

No. 14 How the program tree for motion programs is displayed has been improved.

When a nonexistent program was called via an MSEE instruction, empty registration information with the program number of that nonexistent program was generated inside the controller and the program was displayed in **UnknownGroup** when updated to latest information. So, an improvement has been made to ensure that programs with empty registration information are not displayed in the tree for motion programs.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not dependent on the controller version.