

# Upgrade Information of MPE720 Version 7.46

## 1. Added and Improved Functions

### 1.1 Version 7.46 Upgrade Information

Items added and features improved from MPE720 version 7.45 to version 7.46 are as follows.

No.	Feature	Classification
1	Position teaching function has been added.	Newly added
2	The function for configuring logging settings from tools other than MPE720 has been added.	Newly added
3	The maximum number of target registers for logging that can be selected is now 256.	Functional Enhancement
4	“DATE/TIME(0.01us)” and “system operation time” can now be set in the settings for logging output file.	Functional Enhancement
5	The DATE/TIME (0.01us) and system operation time can be checked and the system operation time can be initialized under System Setting in the Environment Settings.	Functional Enhancement
6	The Scan Time Monitor has been added to the window for the CPU Performance.	Functional Enhancement
7	Monitor parameters for Servo Drives have been added that can be specified on the Maintenance Monitor.	Functional Enhancement
8	Function are added to import variables and comments of SLIO coupler which are exported from SLIO ML Configuration Tool.	Functional Enhancement
9	We improved performance when not using robot control instructions.	Functional Enhancement
10	The GA700 inverter can now be assigned as MECHATROLINK-III's slave axis so that each parameter can be set.	Functional Enhancement
11	On the Logging Setting Window of the communication platform, an item for setting enable/disable of the log output function (logging function) of the communication platform has been added.	Functional Enhancement
12	The comment displayed in the comment list by default has been improved.	Improvement
13	On the Module Configuration Definition Tab Page, the axis copy & paste function has been improved.	Improvement
14	The compilation function of the motion program has been improved.	Improvement
15	Processing of the transfer function when running the Module Configuration Definition Tab Page has been improved.	Improvement
16	Processing of the Module Configuration Definition Tab Page has been improved.	Improvement
17	The editing window for device assignment to the Motion Module has been changed.	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】

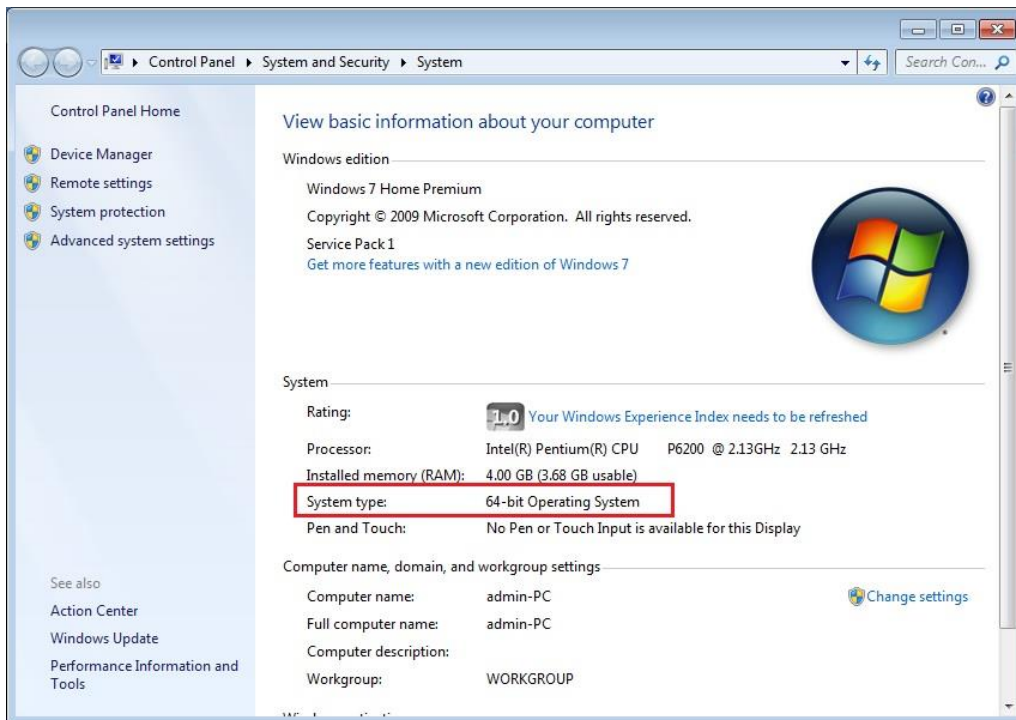
D(\*5)\Tools\CleanUp\MPE720Ver7\_x86.bat (32bitOS)

D(\*5)\Tools\CleanUp\MPE720Ver7\_x64.bat (64bitOS)

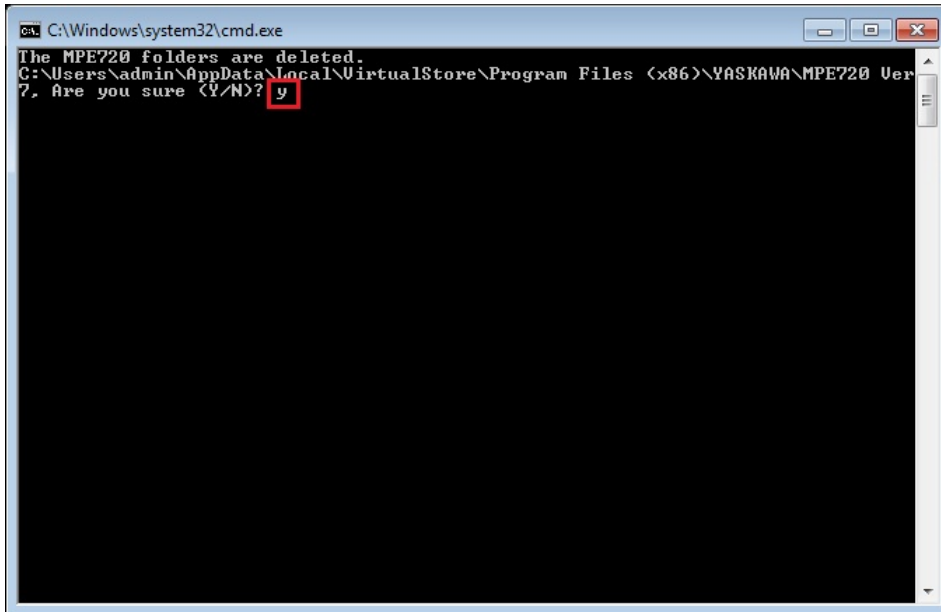
2. The copied batch file is performed.

MPE720Ver7\_x86.bat (32bitOS)

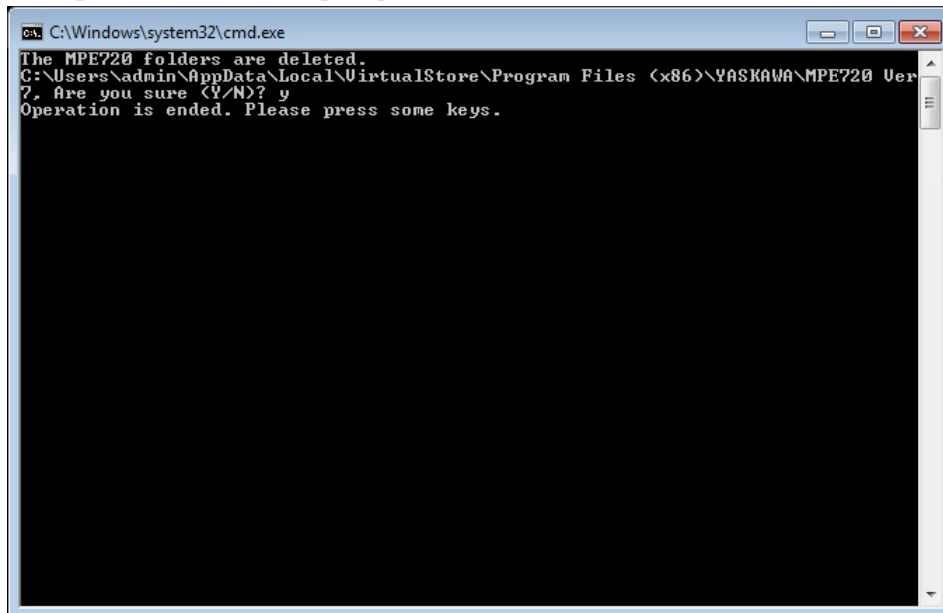
MPE720Ver7\_x64.bat (64bitOS)



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】

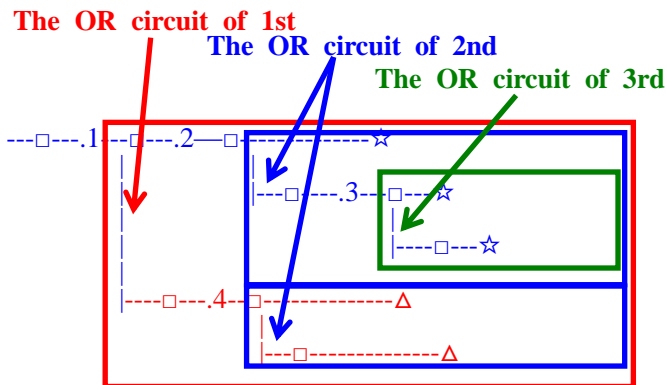
In the Ladder program of MPE720 Ver7 before MPE720 Ver7.23, when the parallel circuit is used, the following phenomena may occur.

<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 1<sup>st</sup> class must operate essentially in response to the conditional instruction before the OR circuit of 1<sup>st</sup> 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.

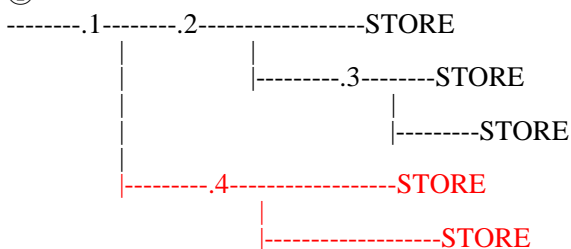
△(Output instruction): Coil, Block instruction(Expression, STORE, COPYW)etc

<Pattern>

Symbol	Instruction
[	NO Contact
STORE	STORE instruction
()	Coil

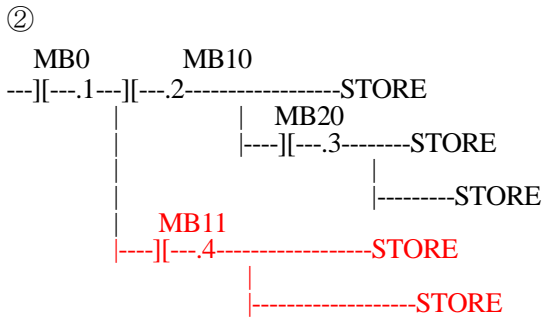
<NG Pattern>

①



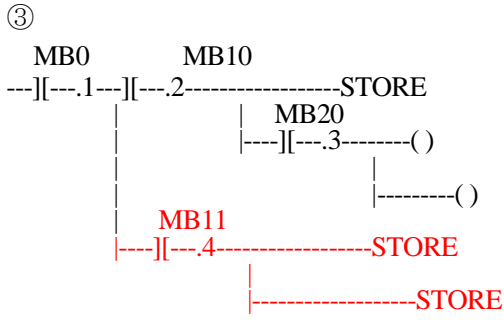
This pattern is minimum circuit pattern.

This is NG.



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

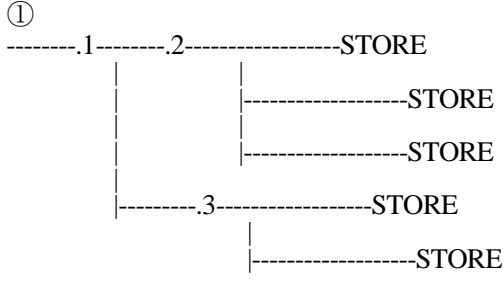
This is NG



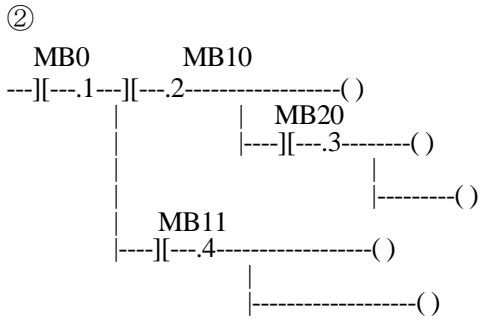
It is NG when there are at least one block commands (STORE command etc.) here.

This is NG

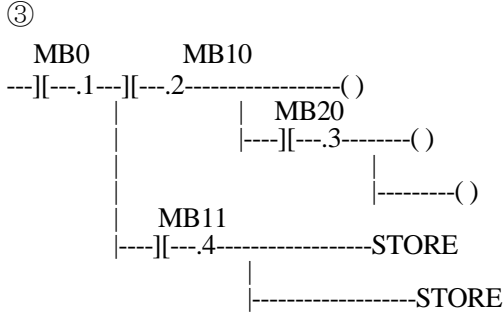
<OK Pattern>



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	<a href="#">MPE720 version 7.11 upgrade information</a>	version 7.10→version 7.11
2	<a href="#">MPE720 version 7.13 upgrade information</a>	version 7.11→version 7.13
3	<a href="#">MPE720 version 7.14 upgrade information</a>	version 7.13→version 7.14
4	<a href="#">MPE720 version 7.20 upgrade information</a>	version 7.14→version 7.20
5	<a href="#">MPE720 version 7.21 upgrade information</a>	version 7.20→version 7.21
6	<a href="#">MPE720 version 7.23 upgrade information</a>	version 7.21→version 7.23
7	<a href="#">MPE720 version 7.24 upgrade information</a>	version 7.23→version 7.24
8	<a href="#">MPE720 version 7.26 upgrade information</a>	version 7.24→version 7.26
9	<a href="#">MPE720 version 7.27 upgrade information</a>	version 7.26→version 7.27
10	<a href="#">MPE720 version 7.28 upgrade information</a>	version 7.27→version 7.28
11	<a href="#">MPE720 version 7.29 upgrade information</a>	version 7.28→version 7.29
12	<a href="#">MPE720 version 7.30 upgrade information</a>	version 7.29→version 7.30
13	<a href="#">MPE720 version 7.31 upgrade information</a>	version 7.30→version 7.31
14	<a href="#">MPE720 version 7.33 upgrade information</a>	version 7.31→version 7.33
15	<a href="#">MPE720 version 7.34 upgrade information</a>	version 7.33→version 7.34
16	<a href="#">MPE720 version 7.35 upgrade information</a>	version 7.34→version 7.35
17	<a href="#">MPE720 version 7.36 upgrade information</a>	version 7.35→version 7.36
18	<a href="#">MPE720 version 7.37 upgrade information</a>	version 7.36→version 7.37
19	<a href="#">MPE720 version 7.38 upgrade information</a>	version 7.37→version 7.38
20	<a href="#">MPE720 version 7.39 upgrade information</a>	version 7.38→version 7.39
21	<a href="#">MPE720 version 7.40 upgrade information</a>	version 7.39→version 7.40
22	<a href="#">MPE720 version 7.41 upgrade information</a>	version 7.40→version 7.41
23	<a href="#">MPE720 version 7.42 upgrade information</a>	version 7.41→version 7.42
24	<a href="#">MPE720 version 7.43 upgrade information</a>	version 7.42→version 7.43
25	<a href="#">MPE720 version 7.44 upgrade information</a>	version 7.43→version 7.44
26	<a href="#">MPE720 version 7.45 upgrade information</a>	version 7.44→version 7.45

## 2. Description

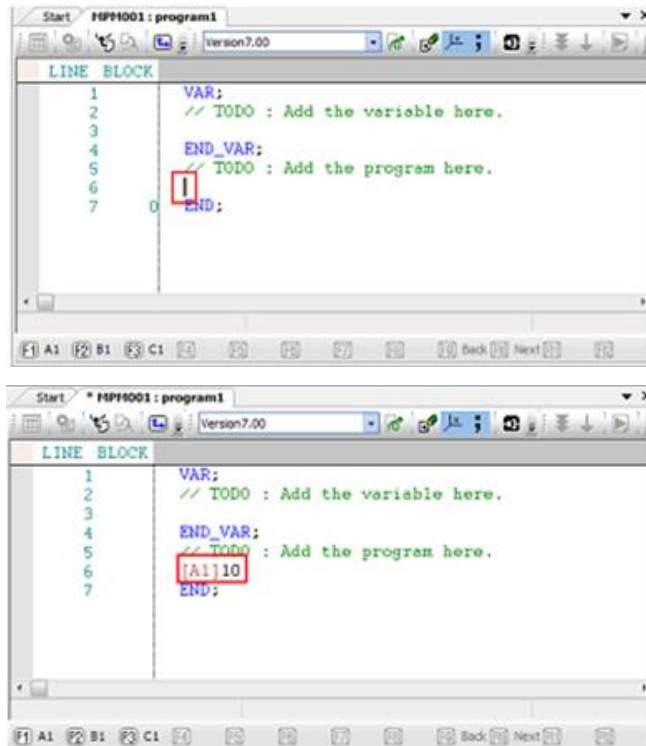
### No. 1 Position teaching function has been added.

1. In the motion program, if you click the function key of the logical axis you want to insert, the work coordinate system feedback position is inserted by the position teaching function.

#### · Operation Method

Display the cursor at the point where you want to insert the work coordinate system feedback position, and click the function key to which the logical axis is assigned.

(For the assignment of logical axis of function keys, refer to the next section.)



#### · Insertion form

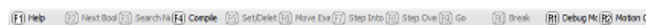
[Logical axis name] Work coordinate system feedback position

2. Function bar can now be switched to "teaching mode".

The number of keys in the function bar is insufficient in the normal mode. If you do any of the following operations, the function bar display changes from normal mode to teaching mode.

- Click Program- Position Teaching Mode from the menu bar
- Click the Position Teaching Mode Button
- Press Ctrl + F12 keys

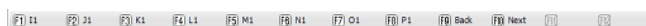
<Function bar in normal mode>



<Function bar in teaching mode>



In the teaching mode, you can assign the logical axis to the F1 to F8 keys, the page switching function to the F9 and F10 keys on the function bar, and switch the pages to display the logical axes of up to 32 axes.



- F1 to F8 keys: Display logical axis names (Nothing is displayed for keys without logical axis assigned: see (1) below)
- F9 key: "Back" is displayed (It becomes invalid when the previous page does not exist: see (2) below)
- F10 key: "Next" is displayed (It becomes invalid when the next page does not exist: see (3) below)
- F11 and F12 key: invalid

(1)



(2)



(3)



[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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.

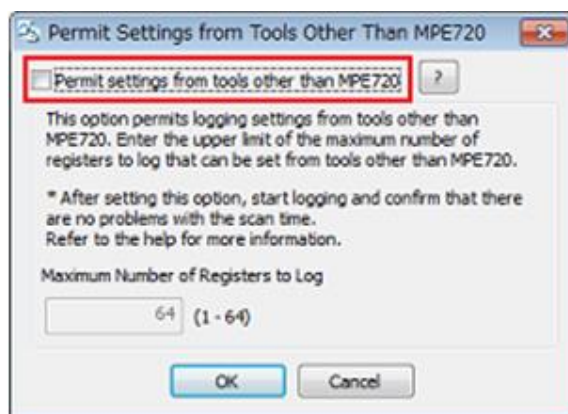


## No. 2 The function for configuring logging settings from tools other than MPE720 has been added.

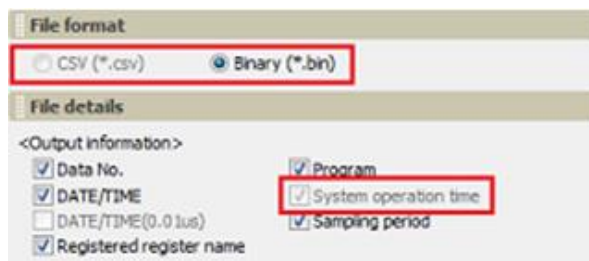
- When you select the check box for permitting settings from tools other than MPE720, you can change target registers for logging from tools other than MPE720.

Note:

When you use this function, the maximum number of target registers for logging is configured. When you execute logging after configuring the setting, the overhead for logging processing for the configured number of target registers for logging is added to the scan time. Based on this, with the MPE720, you can set the scan time in advance so that this error does not occur. Doing so can prevent an error from occurring when due to the maximum value for scan time exceeding the setting value, even if you change the target registers for logging from a tool other than MPE720 when operating the device.



- When permitting logging settings from tools other than MPE720, the file format and a portion of file details for the logging file can not be changed.



- When permitting logging settings from tools other than MPE720, target registers for logging can not be changed from MPE720.

No.	Register	Variable	Comment	Pr...
1	SD00000			---
2	SD00050			---
3	SD00100			---
4	SD00150			---
5	SD00200			---
6	SD00250			---
7	SD00300			---
8	SD00350			---
9	SD00400			---

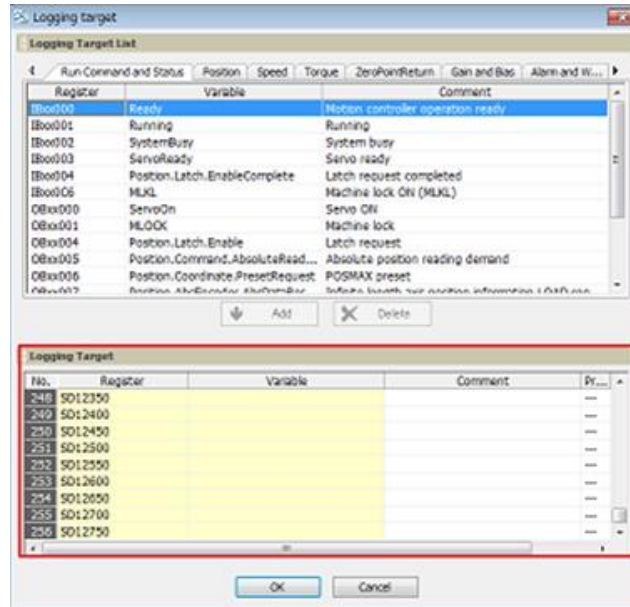
[Supported Versions]

○Controller

Controller	Supported Firmware Versions
MP3000 Series	Ver.1.44 or later
Σ-7 Series	Ver.1.09 or later
MP2000 Series	Not supported by the MP2000 Series.

**No. 3 The maximum number of target registers for logging that can be selected is now 256.**

The maximum of 256 target registers can be set in the Logging Target Window of the logging function.



[Supported Versions]

○Controller

Controller	Supported Firmware Versions
MP3000 Series	Ver.1.44 or later
Σ-7 Series	Ver.1.09 or later
MP2000 Series	Not supported by the MP2000 Series.

**No. 4 A “DATE/TIME(0.01us)” and “system operation time” can now be set in the settings for logging output file.**

The following selection items have been added in the Format Window of the logging function.

1) DATE/TIME(0.01us)

Only one of “DATE/TIME” or “DATE/TIME(0.01us)” can be selected.

“DATE/TIME(0.01us)” is different from “DATE/TIME” in the following three points.

- Unit (0.01 us)
- Data storage register
- Time is counted up at a high-speed scan cycle.

2) System operation time

This means the accumulated operation time of system which is counted up at a high-speed scan cycle.

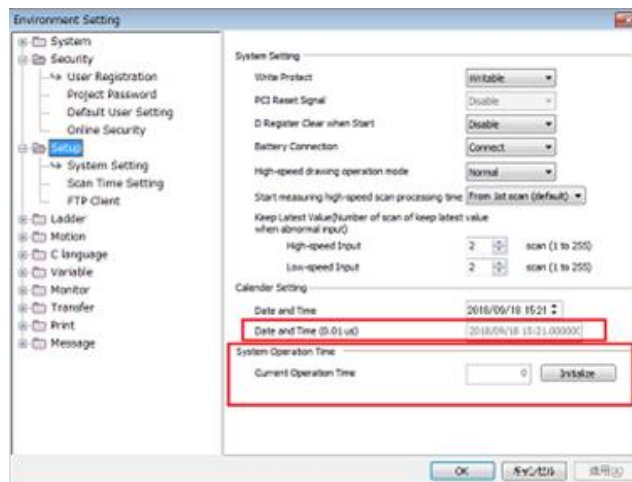


[Supported Versions]

○Controller

Controller	Supported Firmware Versions
MP3000 Series	Ver.1.44 or later
Σ-7 Series	Ver.1.09 or later
MP2000 Series	Not supported by the MP2000 Series.

**No. 5 The DATE/TIME (0.01us) and system operation time can be checked and the system operation time can be initialized under System Setting in the Environment Settings.**



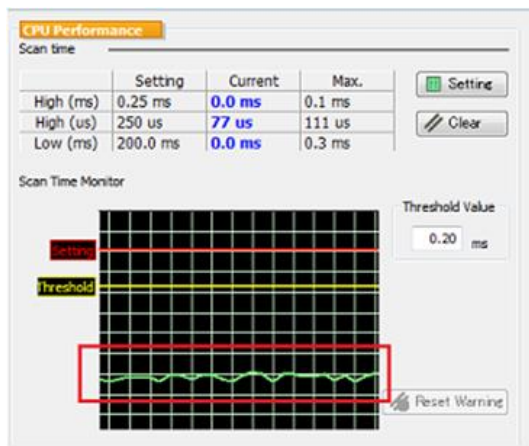
[Supported Versions]

○Controller

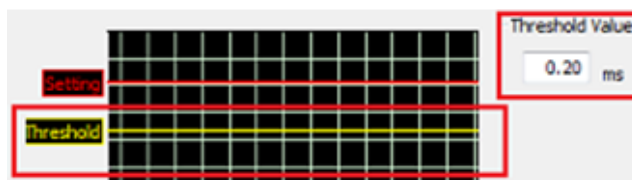
Controller	Supported Firmware Versions
MP3000 Series	Ver.1.44 or later
Σ-7 Series	Ver.1.09 or later
MP2000 Series	Not supported by the MP2000 Series.

**No. 6 The Scan Time Monitor has been added to the window for the CPU Performance.**

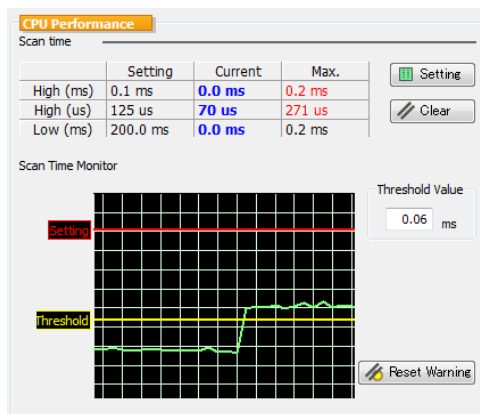
•The graph for the current value of the high-speed scan time can be monitored under CPU Performance in the System Monitor Window.



•A warning threshold can now be set.



The System Monitor Window will become active and a warning message will be displayed if the current value or maximum value of the scan time exceeds the set threshold.



[Supported Versions]

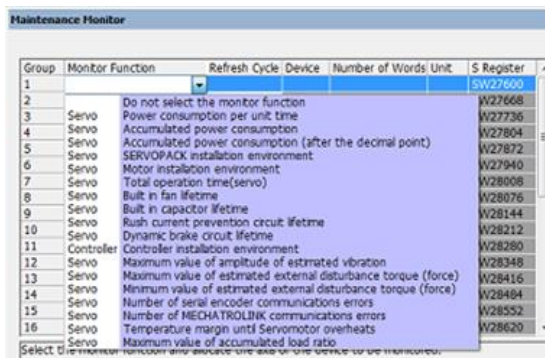
○Controller

Controller	Supported Firmware Versions
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 Monitor parameters for Servo Drives have been added that can be specified on the Maintenance Monitor.

On the Maintenance Monitor, the following monitor parameter items have been added.

- 1) Maximum value of amplitude of estimated vibration [min-1]
- 2) Maximum value of estimated external disturbance torque (force) [%]
- 3) Minimum value of estimated external disturbance torque (force) [%]
- 4) Number of serial encoder communications errors [times]
- 5) Number of MECHATROLINK communications errors [times]
- 6) Temperature margin until Servomotor overheats [deg. C]
- 7) Maximum value of accumulated load ratio [%]

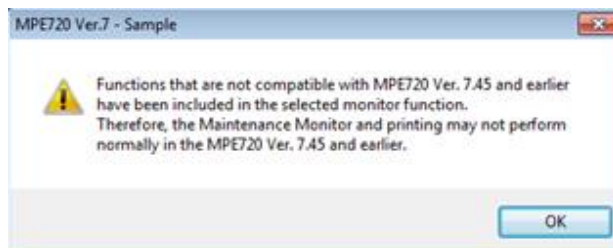


The above monitor parameters are displayed only on the Maintenance Monitor. It is not displayed on Visual Monitor.

### CAUTION

The above monitor parameters are not compatible with MPE720 Ver. 7.45 and earlier. When you select these parameters as monitor items and click the OK Button, a warning message will be displayed.

Also, MPE720 may not work properly when opening or printing the Maintenance Monitor including the above monitor parameters with MPE720 Ver. 7.45 and earlier.



### [Supported Versions]

#### ○Controller

Controller	Supported Firmware Versions
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not supported by the MP2000 Series.

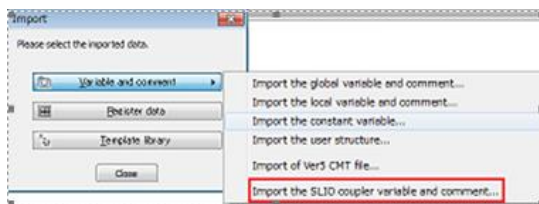
#### ○Servo

SERVOPACK	Supported Firmware Versions
Σ-7S	Ver.002C or later
Σ-7W	Ver.002C or later
Σ-7C	Ver.002C or later

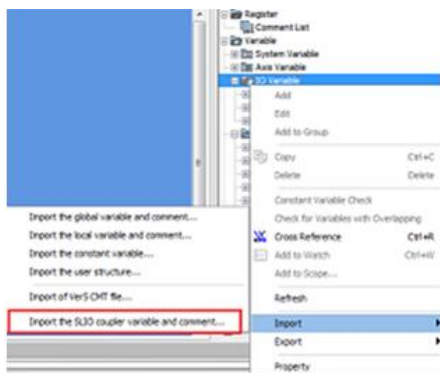
## No. 8 Function are added to import variables and comments of SLIO coupler which are exported from SLIO ML Configuration Tool.

"Import the SLIO coupler variable and comment" have been added to the selections of each window of the import function.

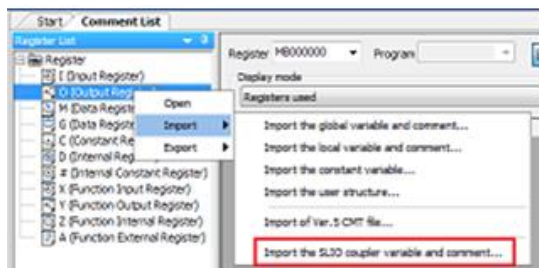
### Import Window



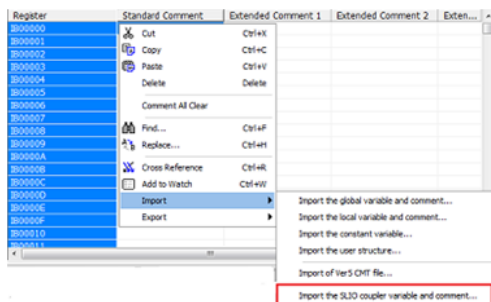
### Variable Pane



### Register List



### Comment List



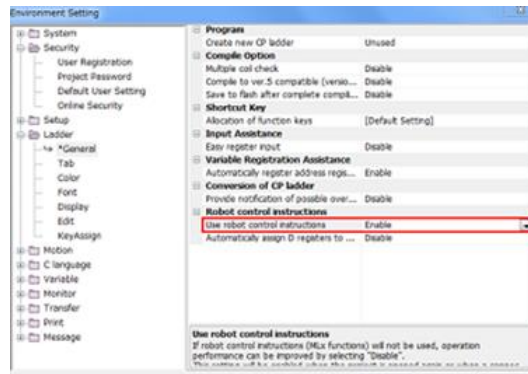
### [Supported Versions]

#### Controller

Controller	Supported Firmware Versions
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.

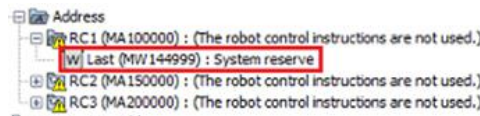
**No. 9 We improved performance when not using robot control instructions.**

The setting items related to the use of the robot control instructions have been added to the Environment Settings.



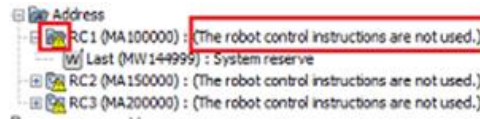
If "Use robot control instructions" is set to "Enable", it will be as follows.

1. MLx structure members are simplified. Only "Last" indicating the final address of the structure exists.



As a result, the time required for project openings and controller connections will be shortened.

2. If you display variables of the MLx structure on the Variable Pane, icons and wording that the robot control instruction is not used are displayed.



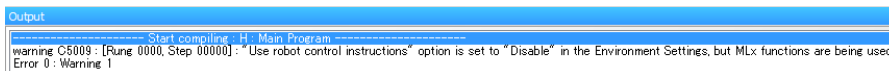
3. The color of the instruction is displayed as follows:

Instruction background color: control category color

Text color of instruction name: red



4. When compiling a ladder program containing robot control instructions, a warning is displayed.



[Supported Versions]

○Controller

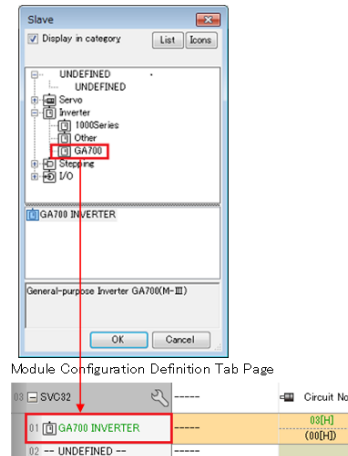
Controller	Supported Firmware Versions
MP3000 Series	Not dependent on the controller version.
Σ-7 Series	Not dependent on the controller version.
MP2000 Series	Not supported by the MP2000 Series.



**No. 10 The GA700 inverter can now be assigned as MECHATROLINK-III's slave axis so that each parameter can be set.**

On the Slave Selection Window, you can select "GA700 INVERTER" under "Inverter" and assign it to the module configuration definitions.

Slave Selection Window



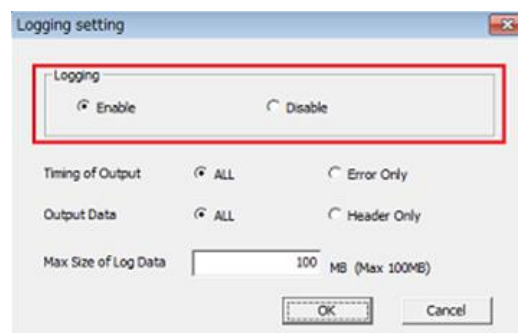
[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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 On the Logging Setting Window of the communication platform, an item for setting enable/disable of the log output function (logging function) of the communication platform has been added.**

The enable/ disable of the logging function can now be set.



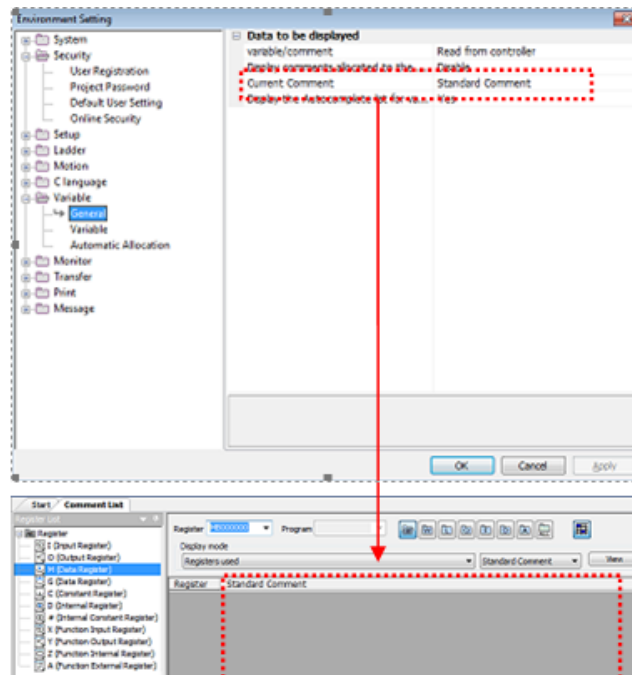
[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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 comment displayed in the comment list by default has been improved.

The comment set on the Environment Settings is made to be the comment displayed in the comment list by default.



The displayed comment can be switched on the comment list. To switch displayed comments, select the target comment from the combo box shown below and click the View Button.



[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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 On the Module Configuration Definition Tab Page, the axis copy & paste function has been improved

When overwriting copies of axes, model information is also overwritten.

Model Information of Module Configuration Definition Tab Page

Module	Function Module/Slave	Hardware Version	Software Version	Model
01 [CPU-342] ---	---	---	---	---
---	---	---	---	---
---	---	---	---	---
	CPU	----	----	----
	Z1HFD	----	----	----
	SVC02	----	----	----
F1	SGD75-****20*	----	Device Version (3333)	SERVOPACK Model (SGD75-****20*)
F2	SGD75-****20*	----	Device Version (3333)	SERVOPACK Model (SGD75-****20*)

[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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 The compilation function of the motion program has been improved.

1) Even if OR (||) is used as a conditional expression of the SFORK instruction and the SFORK instruction is nested, the transition (transition to processing specified by "Label 2") is made correctly when the condition of "Label 2" is satisfied.

2) Even if "!" is used in the second and subsequent conditional statements of the SFORK instruction, it can be compiled normally.

3) If there are multiple terminators (semicolons) in the same line, compilation error is now occurs.

[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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. 15 Processing of the transfer function when running the Module Configuration Definition Tab Page has been improved.**

The transfer function now operates normally even when running the Module Configuration Definition Tab Page.

[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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. 16 Processing of the Module Configuration Definition Tab Page has been improved.**

An improvement has been made so that the MPE720 operates normally when the MP720 is online and the detailed definitions of the Module Configuration Definition Tab Page are changed and written to the Controller.

[Supported Versions]

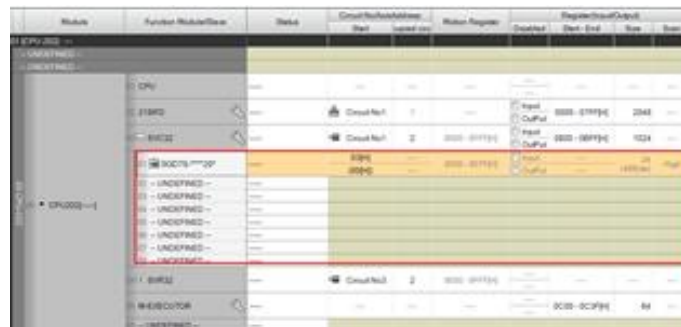
○Controller

Controller	Supported Firmware Versions
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.

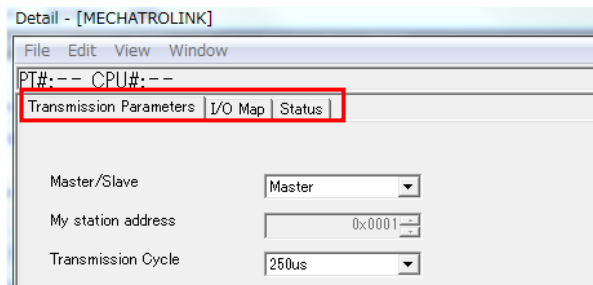
**No. 17 The editing window for device assignment to the Motion Module has been changed.**

The Link Assignment Tab of the Detail Dialog Box for the Motion Module has been deleted. Device assignment to the Motion Module is now possible only in the Module Configuration Definition Tab Page.

[Module Configuration Definition Tab Page]



[Detail Dialog Box for Motion Module]



[Supported Versions]

○Controller

Controller	Supported Firmware Versions
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.