

# Upgrade Information of MPE720 Version 7.45 Lite

## 1. Added and Improved Functions

### 1.1 Version 7.45 Lite Upgrade Information

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

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

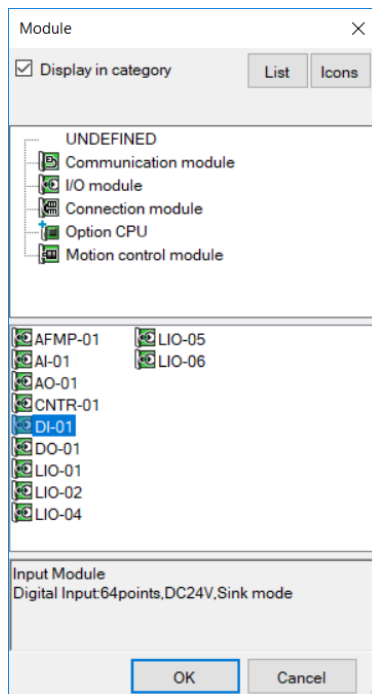
### 1.2 Past Upgrade Information

No.	Upgrade Information	Remarks
1	<a href="#">MPE720 version 7.42 Lite upgrade information</a>	version 7.41→version 7.42
2	<a href="#">MPE720 version 7.43 Lite upgrade information</a>	version 7.42→version 7.43
3	<a href="#">MPE720 version 7.44 Lite upgrade information</a>	version 7.43→version 7.44

## 2. Description

### No. 1 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
Σ-7C	Ver.1.09 or later
MP2400	Not supported by the MP2000 Series.

## No. 2 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

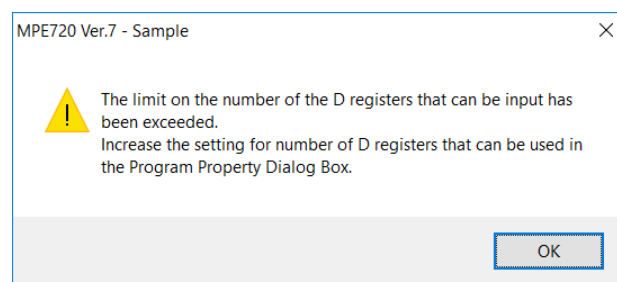
### ○ROBOT CONFIGURATION

- 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
Σ-7C	Ver.1.08 or later
MP2400	Not supported by the MP2000 Series.

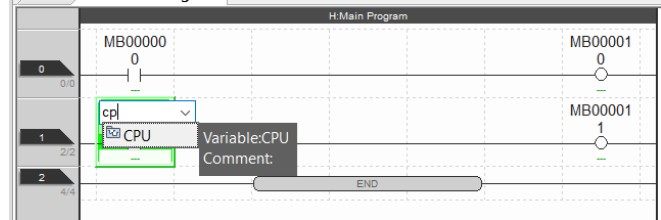
### No. 3 How the variable auto-complete feature displays the structure variables has been improved.

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.

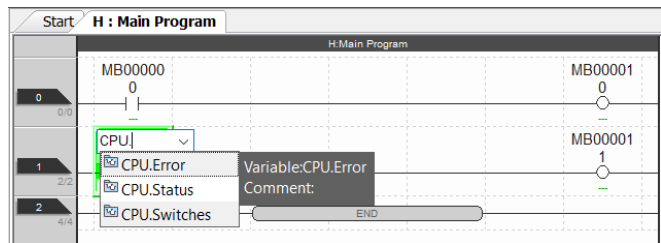
Variables are now hierarchically displayed so that you can easily search for the desired variables.

**[Usage Method]**

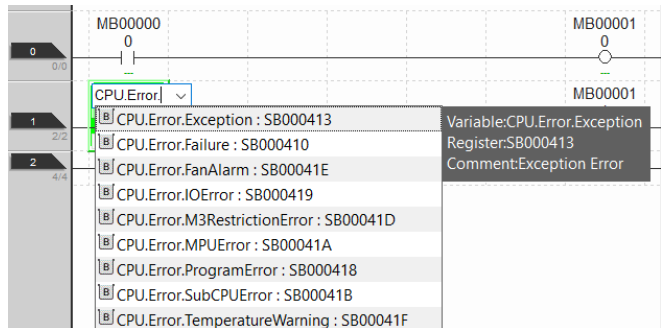
(1) Select the structure variable for the variable you want to search for.



(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
Σ-7C	Not dependent on the controller version
MP2400	Not dependent on the controller version

#### **No. 4 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

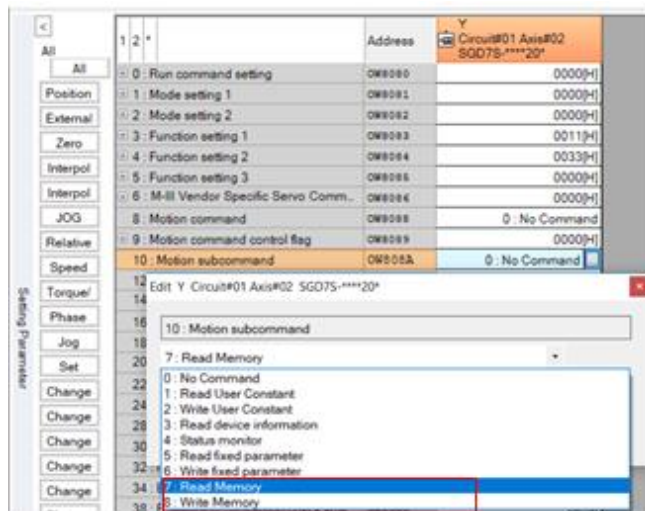
#### **【Support Version】**

○Controller

Controller	Support Firmware Version
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.

No. 5 "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]

Sigma-7C: 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...	0W80D4	0000[H]
Change	85 : Servo driver for assistance user c...	0W80D5	1
Change	86 : Servo driver for assistance user c...	0L80D6	0
Change	88 : Address Setting	0L80D8	0000 0000[H]
Change	91 : Device Information Select Code	0W80DB	0 : Invalid
Change	92 : Fixed Parameter Number	0W80DC	0
Change	94 : Encoder position when power is of...	0L80DE	0[pulse]
Change	96 : Encoder position when power is of...	0L80E0	0[pulse]
Change	98 : Pulse position when power is off [...]	0L80E2	0[pulse]
Change	100 : Pulse position when power is off...	0L80E4	0[pulse]
Read	102 : Positive software limit value	0L80E6	0[pulse]
Write	104 : Negative software limit value	0L80E8	0[pulse]
Alarm	106 : Auxiliary Address Setting	0L80EA	0000 00FF[H]
	110 : System reservation ( Stop distan...	0L80EE	0[pulse]

【Support Version】

○Controller

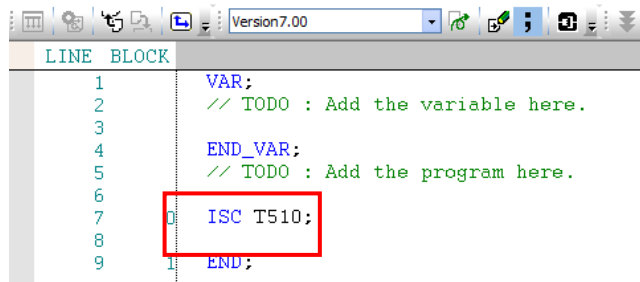
Controller	Support Firmware Version
Σ-7C	Ver.1.07 or later
MP2400	Not supported by the MP2000 Series.

**No. 6 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
Σ-7C	Ver.1.06 or later
MP2400	Not supported by the MP2000 Series.

## No. 7 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
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.



## No. 8 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
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.

## No. 9 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
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.

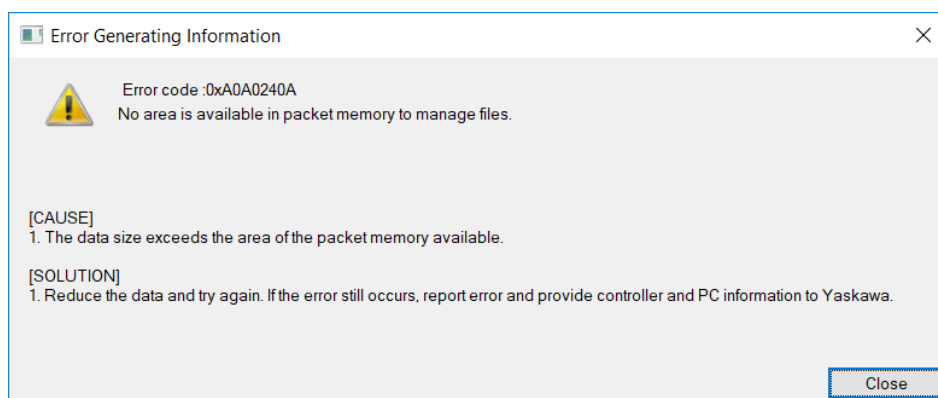
## No. 10 The operation of an extended comment has been improved.

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

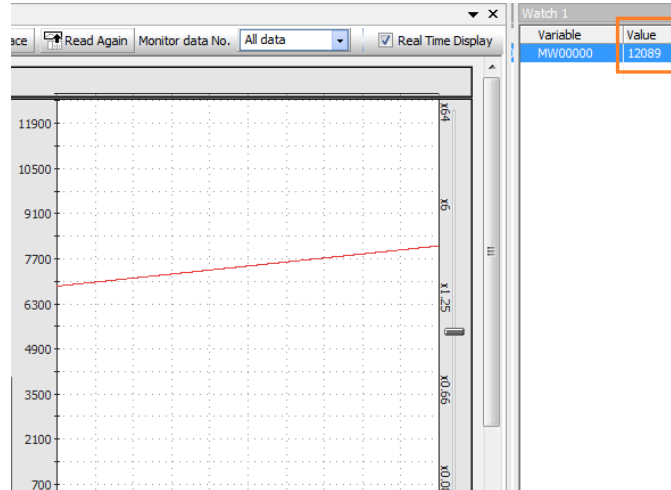
Controller	Support Firmware Version
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.

## No. 11 The processing of displaying real-time trace waveform has been improved.

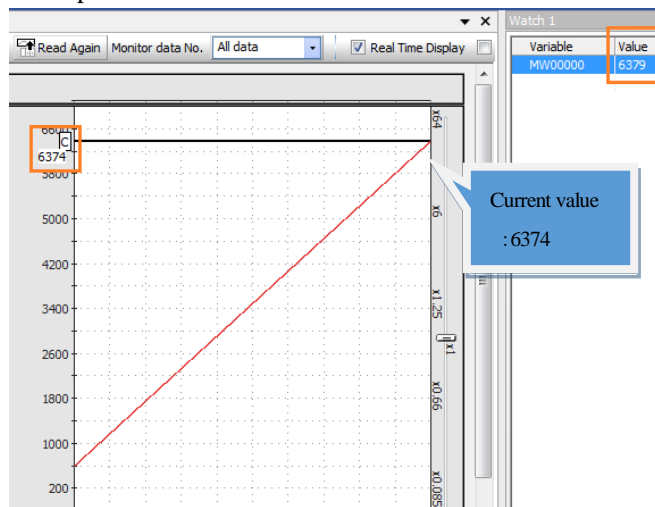
The real-time trace display sometimes displayed a value apart from the current value under the following conditions:

[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
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.

## No. 12 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
Σ-7C	Not dependent on the controller version.
MP2400	Not dependent on the controller version.