Upgrade Information of MPE720 Version 7.43

1. Added and Improved Functions

1.1 Version 7.43 Upgrade Information

Items added and features improved from MPE720 version 7.42 to version 7.43 are as follows.

No.	Feature	Classification
1	Chinese language was supported.	New Function
2	Supported multiple register comment function.	New Function
3	Supported visual compare function.	New Function
4	Supported a base project package and a configuration definition package in the library function.	Functional Enhancement
5	The library function was improved.	Functional Enhancement
6	Supported monitor screen of maintenance monitor function.	Functional Enhancement
7	Display switch function in auto-complete list was supported.	Functional Enhancement
8	Supported the function that make auto-complete list transparent.	Functional Enhancement
9	Improved the display of auto-complete list which is at the time of register input.	Functional Enhancement
10	Improved so that Read Again can be performed during trace execution.	Functional Enhancement
11	Sampling and trigger setting screen were improved.	Improvement
12	Improved the contents of the error message when switching trace enable/disable.	Improvement
13	Improved selecting the target axis of sampling and trigger setting.	Improvement
14	Improved the switching operation of "Real time display" mode.	Improvement
15	Improved the transfer processing of remote connecting.	Improvement
16	Improved comment out processing of motion program.	Improvement
17	Improved displaying current value of Expression instruction.	Improvement
18	The Compile Programs Being Edited function was added.	Improvement
19	Lock displayed positions of registers function was added to the watch function.	Improvement
20	Improved the processing at the time of copy operation of watch function.	Improvement
21	Improved the password input display.	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)

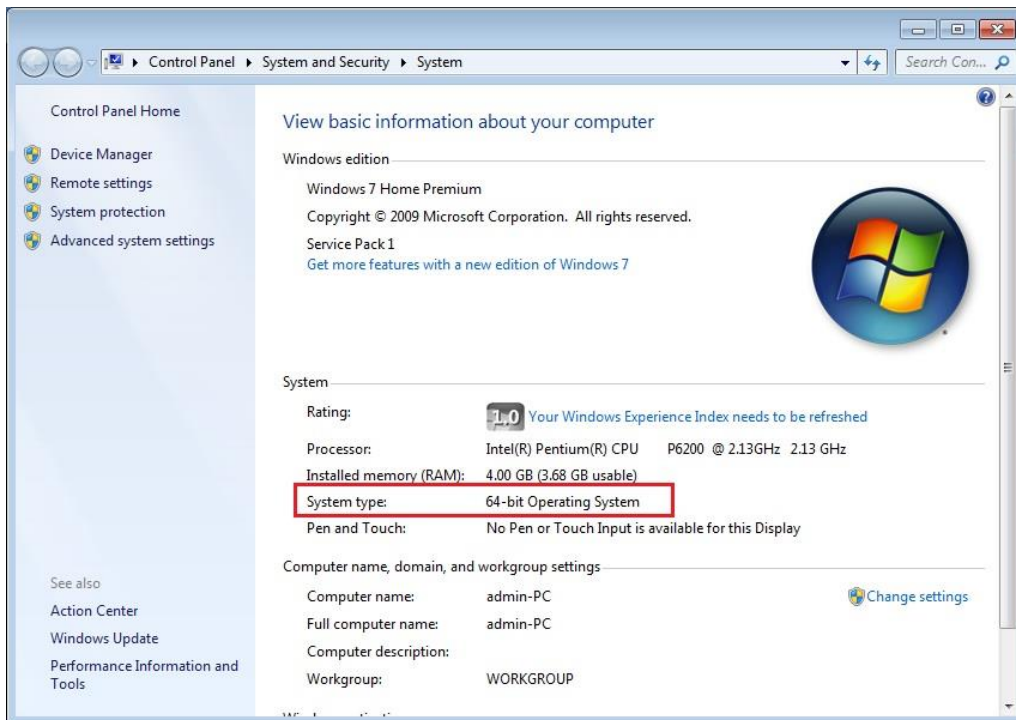   MPE720Ver7_xxx(*4)¥Tools¥CleanUp¥MPE720Ver7_x64.bat (64bitOS)

   【DVD Media Version】

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

   D(*5):¥Tools¥CleanUp¥MPE720Ver7_x64.bat (64bitOS)
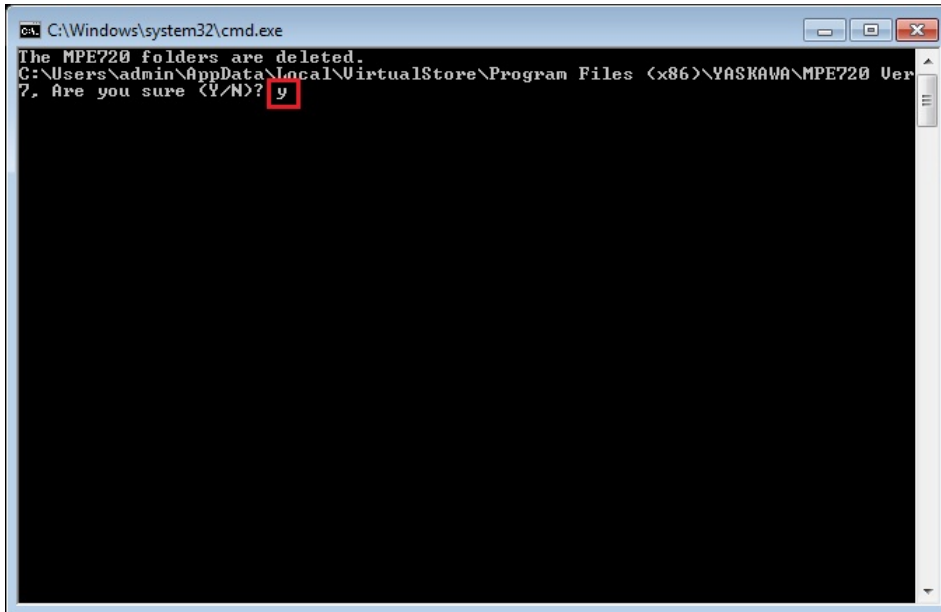
2. The copied batch file is performed.
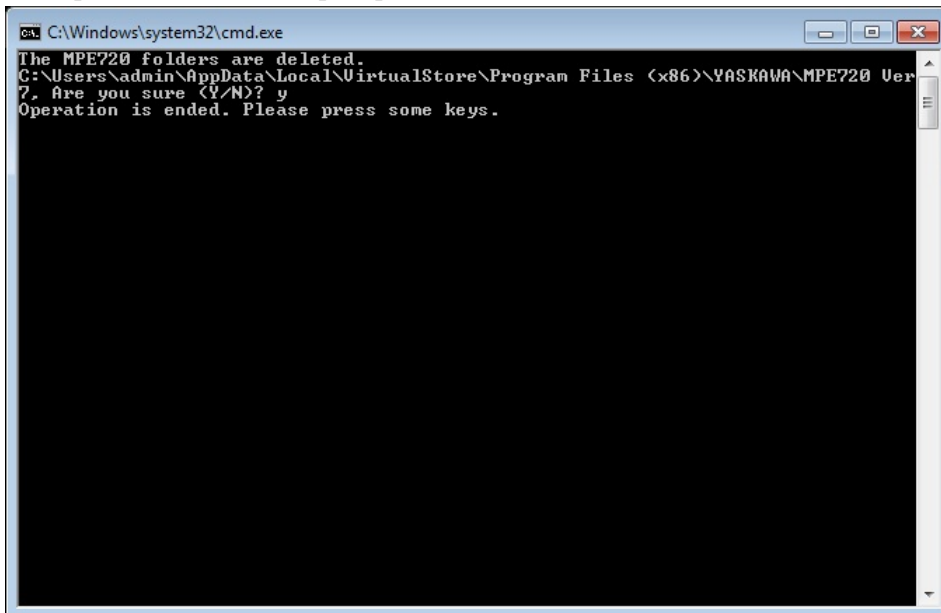
   MPE720Ver7_x86.bat (32bitOS)

   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

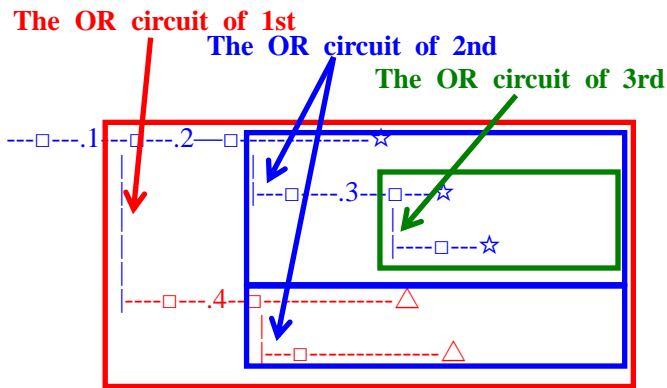# 【About compile of the parallel circuit】

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
The OR circuit of 2nd
The OR circuit of 3rd

```
---□---.1--□---.2—□-----------------☆
        |  |                    
        |  |---□----.3--□---☆        
        |  |            |----□---☆     
        |  |                       
  |----□---.4--□-----------△         
        |                         
        |---□-------------△         
```

The OR circuit of 1st class：The OR circuit branched from the bus-bar of langue.
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
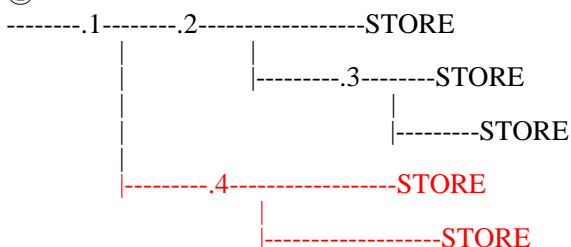　　　　　　　　　※However, when all ☆ is coil commands, a phenomenon does not occur.
△(Output instruction)：Coil, Block instruction(Expression, STORE, COPYW)etc

＜Pattern＞

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

＜NG Pattern＞

①
```
--------.1--------.2-----------------STORE
         |         |
         |         |---------.3--------STORE
         |                    |
         |                    |--------STORE
         |
         |---------.4-------------------STORE
                    |
                    |-------------------STORE
```

This pattern is minimum circuit pattern.

This is NG.

②

```
  MB0        MB10
---][---.1---][---.2-----------------STORE
        |              |   MB20
        |              |----][---.3--------STORE
        |              |           |
        |              |           |--------STORE
        |   MB11
        |----][---.4-----------------STORE
                       |
                       |------------------STORE
```
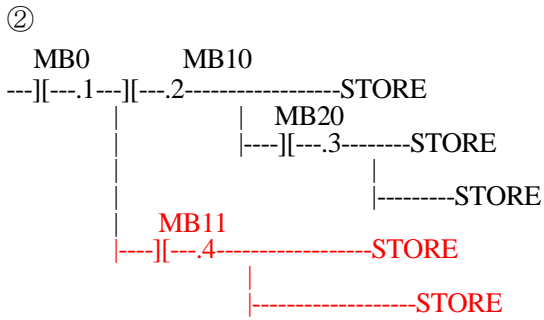
It is NG even if the minimum circuit pattern has conditional instructions (NO Contact etc.).

This is NG

③

```
  MB0        MB10
---][---.1---][---.2-----------------STORE
        |              |   MB20
        |              |----][---.3--------( )
        |              |           |
        |              |           |--------( )
        |   MB11
        |----][---.4-----------------STORE
                       |
                       |------------------STORE
```
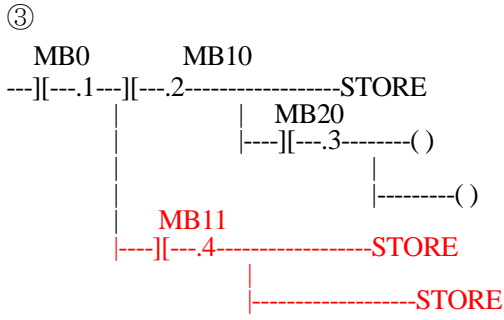
It is NG when there are at least one block commands (STORE command etc.) here.

This is NG

＜OK Pattern＞

①

```
--------.1--------.2-----------------STORE
        |          |
        |          |------------------STORE
        |          |
        |          |------------------STORE
        |
        |---------.3-----------------STORE
                   |
                   |------------------STORE
```
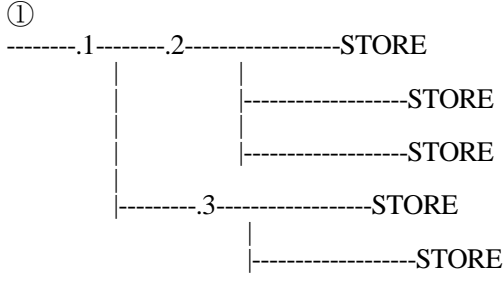
Since it is the OR circuit of 2nd, it is OK.

②

```
  MB0        MB10
---][---.1---][---.2-----------------( )
        |              |   MB20
        |              |----][---.3--------( )
        |              |           |
        |              |           |--------( )
        |   MB11
        |----][---.4-----------------( )
                       |
                       |------------------( )
```

Since it is the coil altogether, it is OK.

③

```
  MB0        MB10
---][---.1---][---.2-----------------( )
        |              |   MB20
        |              |----][---.3--------( )
        |              |           |
        |              |           |--------( )
        |   MB11
        |----][---.4-----------------STORE
                       |
                       |------------------STORE
```
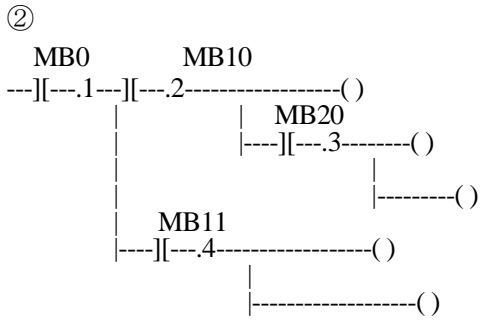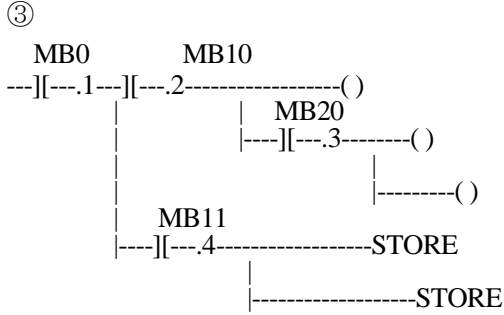
Since it is the coil altogether, it is OK.

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

2. Description
No. 1 Chinese language was supported.
MPE720 Ver.7 supports Chinese language. (Simplified, China)

You can select Chinese from Language page of Environment Setting.
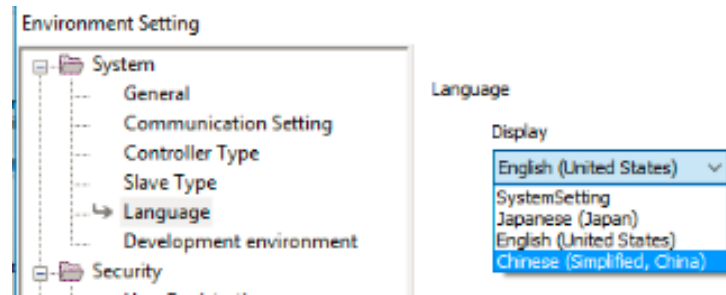
When choosing Chinese in WindowsPC of Chinese OS, a language is switched over to Chinese after MPE720Ver.7 restart.

When choosing Chinese in WindowsPC besides Chinese OS, there is a possibility that garble forms.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 2 Supported multiple register comment function.

"Expansion comment" of 3 (total of 4) as well as the register comment could be established now.

It's possible to display/edit expansion comment same as "standard comment".

(1)   4 comments could be edited now by a comment list.
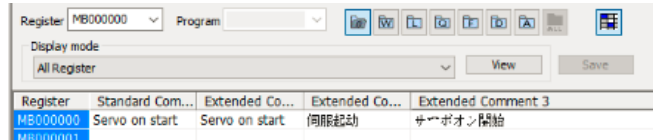
It's possible to display/edit expansion comment by MPE720 Ver.7's setting language (Japanese, English and Chinese) besides the OS language.

When displaying a comment (example for rudder program), there is a possibility that a language besides the OS language turns into garble.

(2) Added the item from which the current comment is chosen in the page of "variable" - "general" of Environment Setting.
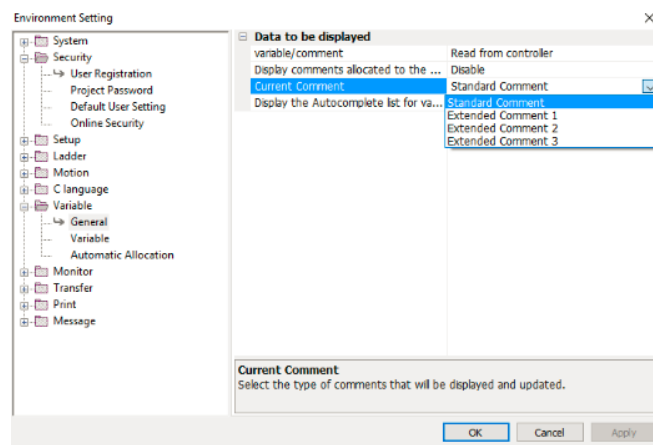
(3) Added the item setting which comment is transferred to the transfer/compare dialog.

(In case of both of a local register comment and global register comments, Only the comment chosen is transferred.)
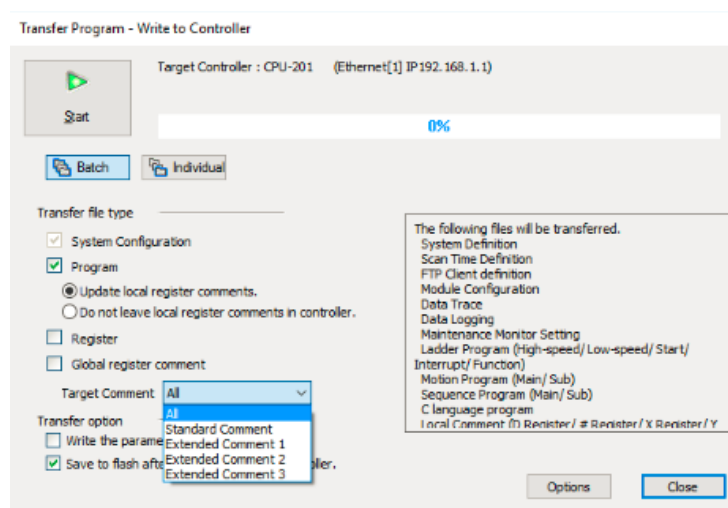
(4) Added the function that import/export four kinds of commnet together.
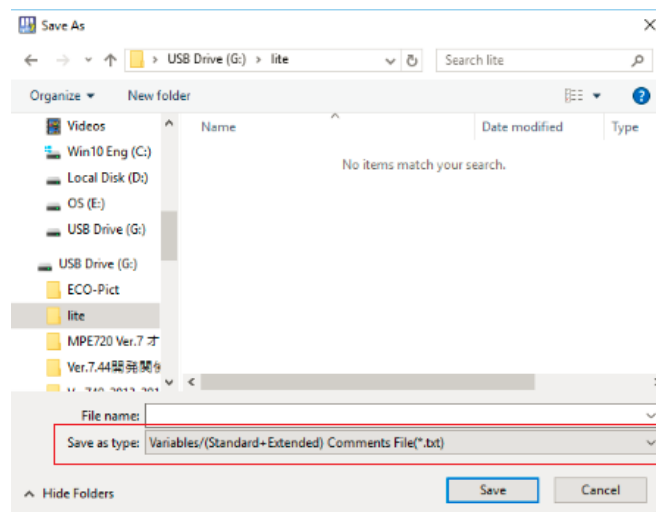
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 3 Supported visual compare function.

When the compare function of "transfer" was executed, and there was differences in a program, compare windows is displayed when a result of comparison was double-clicked.

(1)Compare windows which line up source program and destination program can be displayed.
Different point could be indicated with the color.

* Adding and changing: light blue (default).
* Deleting: red (default).

○Ladder Program Comparison Window.
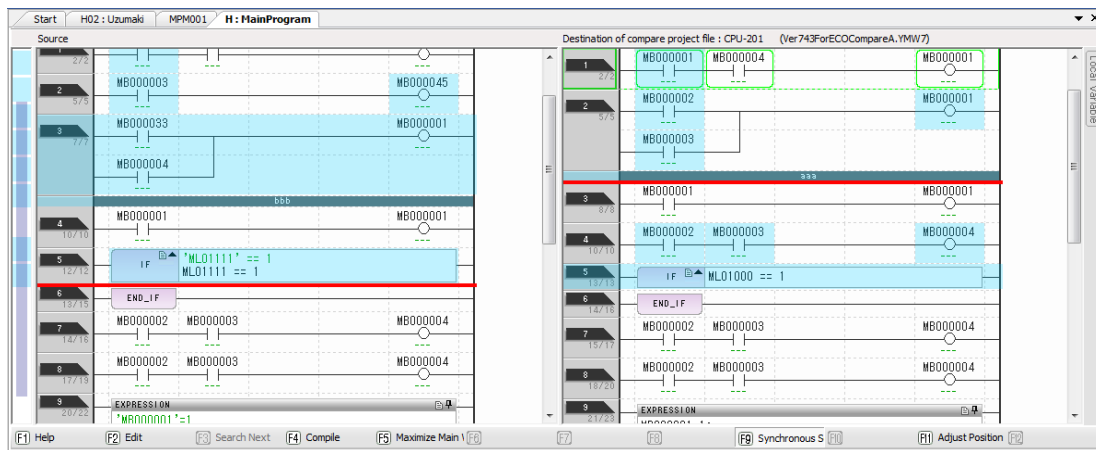
○Motion Program Comparison Window.
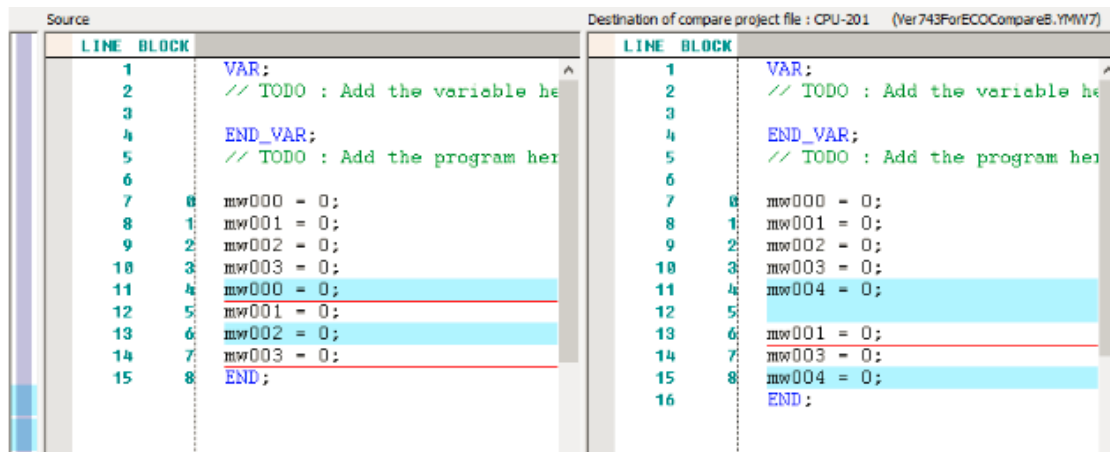
(2)When a compare window was opened, the following operations are possible.

1. Simultaneous scrolling (F9 key)
Scroll the source and the destination at the same time.

2. Maximization of the main window (F5 key)
  It's possible to maximize a main window in the mainframe and see a result of comparison widely.

3. Justification (F11 key)
  Display the line of the other side program next to the line of the operation side program.

(3) When a compare window was opened, source program can be edited.
Destination program can't be edited.

(4) The compare difference color can be changed by Environment Setting in a page of "transfer"- "compare".
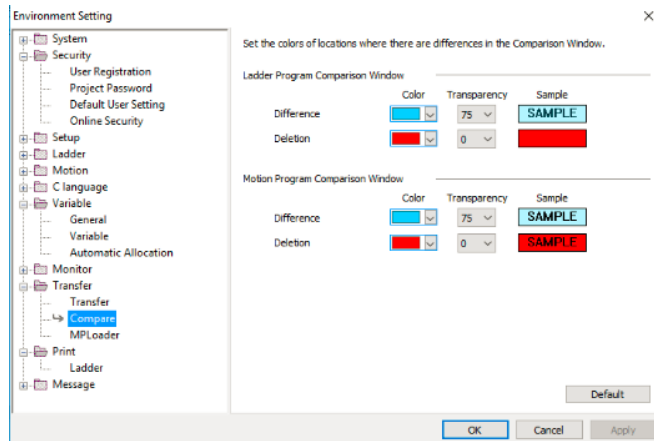
【Support Version】
○Controller

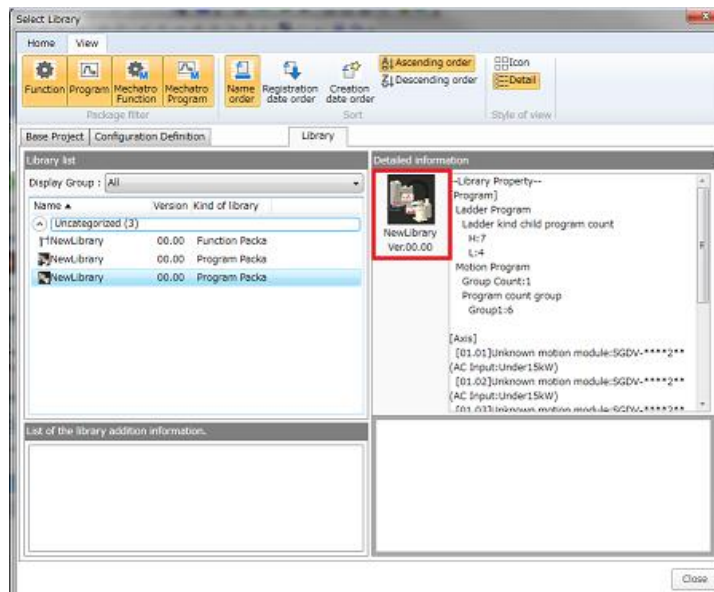| Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 4 Supported a base project package and a configuration definition package in the library function.

(1) The following 2 kinds were added to the package of the library function.

○Base project package
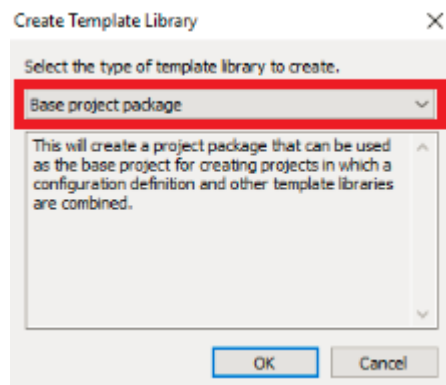
When a base project package is chosen, make target project to a library so that even other ones can use as a template.

○Configuration definition package
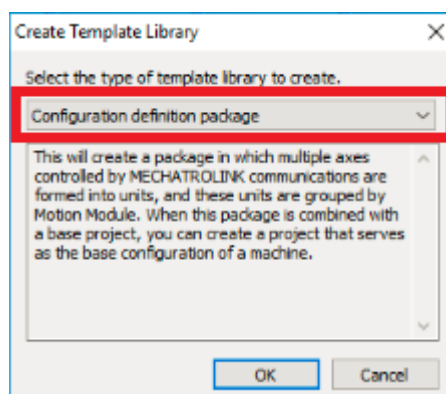
When a configuration definition package is chosen, using module assignment information in the target project, arbitrary servo module assignment is modularized and a library is made.

(2) Base project package and configuration definition package can be selected in a library select window of a library catalog.

○Base project package
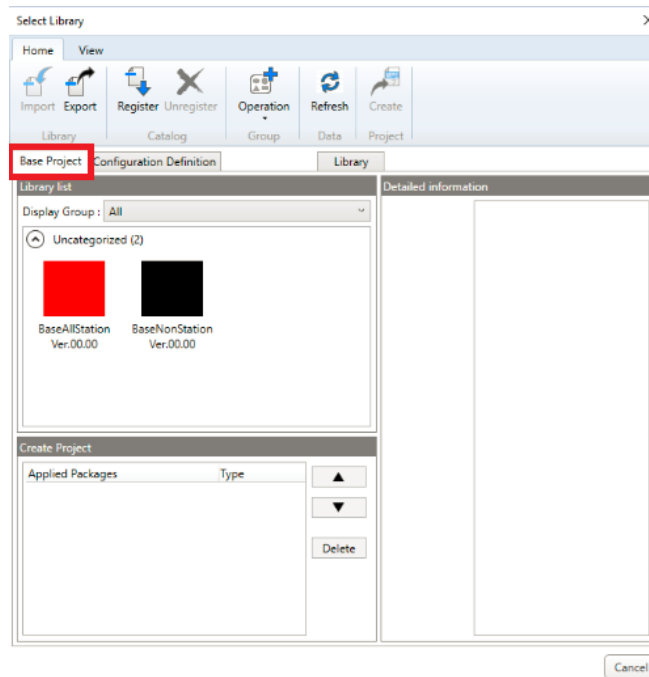
○Configuration definition package
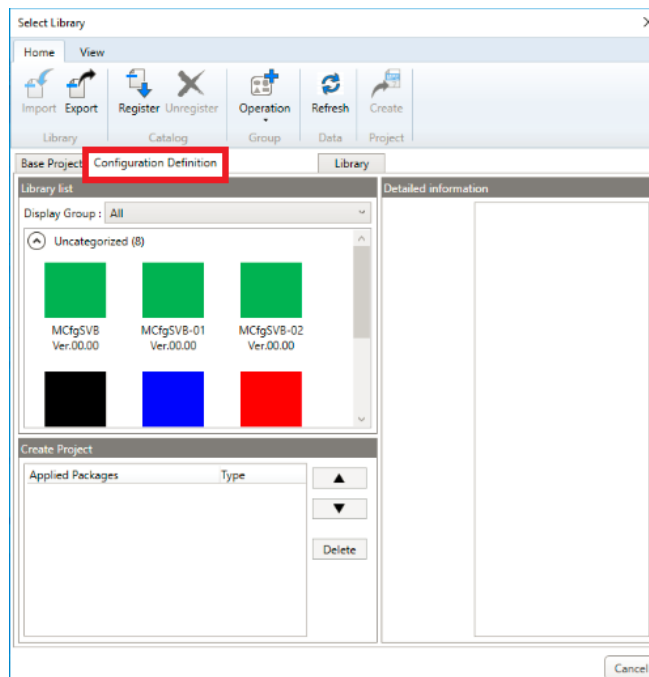
(3) Supported the function which can create a project file with doing the following operation in a library select window of a library catalog.

[Procedure]

1. 1 base project package is chosen and it's added to the project creating area by drag and drop.

2. Some configuration definition packages are chosen and it's added to the project creating area by drag and drop.

3. The "Create" on the home menu of the library select window is chosen.

4. Project creating Wizards starts, so axis information on a configuration definition is assigned to an axis of a base project.

5. A project file is created.

○Create Project
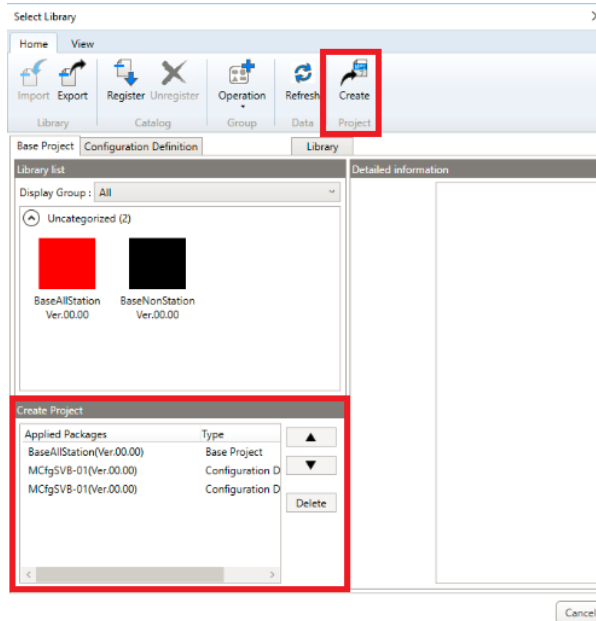
○Create Project Wizard
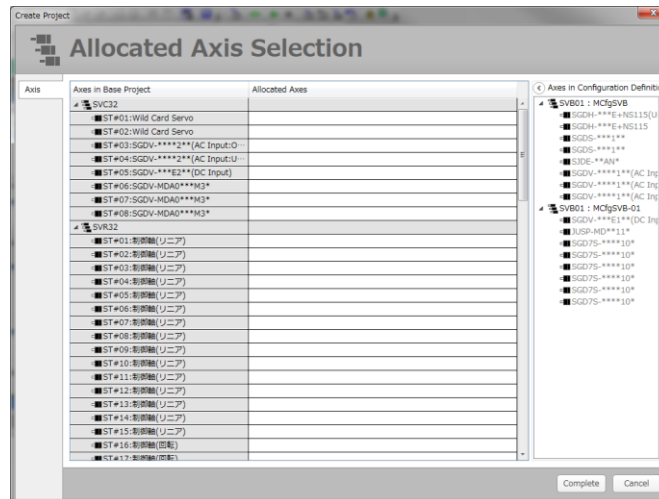
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 5 The library function was improved.

Improved the following 3 functions in the library function.

(1) It became possible to choose display format in a registration Library from an icon and detail.
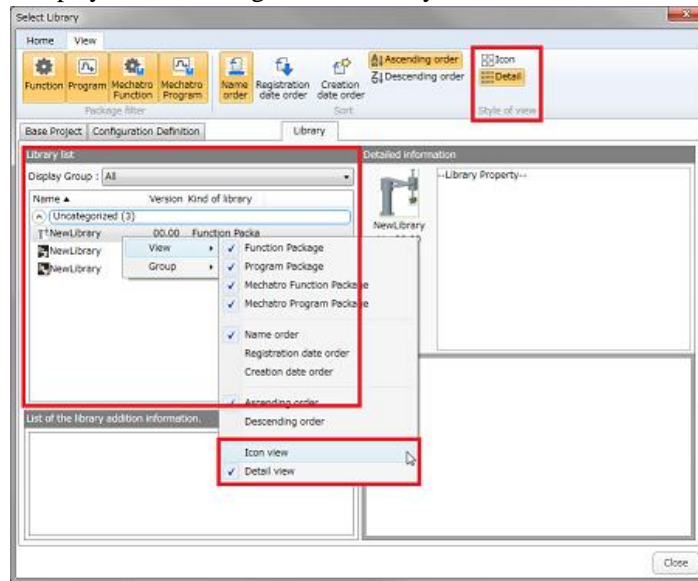
(2) Library image of a chosen library is also displayed in detail definition area besides property informations.

(3)It became possible to choose a library image from images of a system offer.
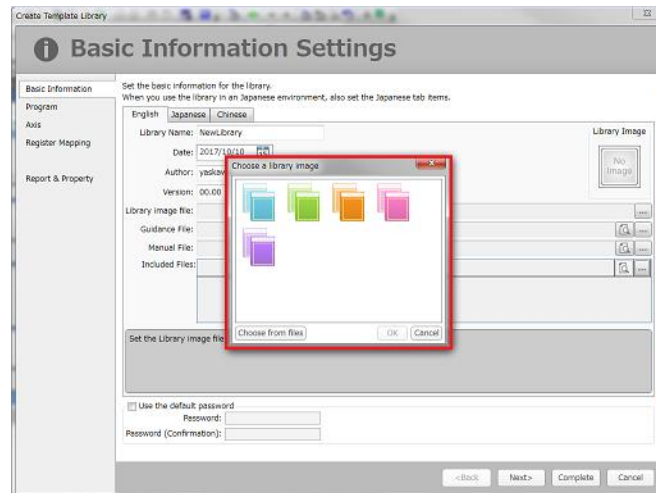
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 6 Supported monitor screen of maintenance monitor function.

After assigned the monitor function informations of servo pac to system registers, the screen can monitor the information.

○Monitoring screen of maintenance monitor function
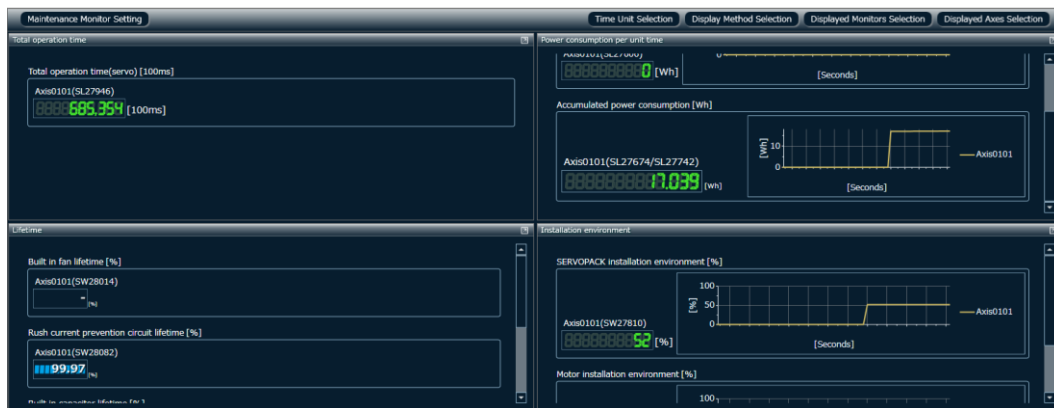
Supported visual display like a chart and an indicator as well as digital numeric display.

○digital numeric display
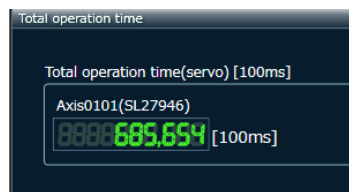
○digital numeric display＋chart
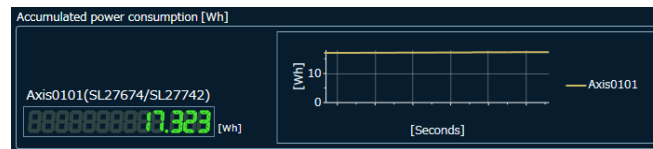
○indicator
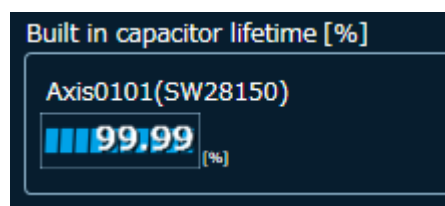
【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	Ver.1.12 or later.
Σ-7 Series	Ver.1.00 or later.
MP2000 Series	MP2000 series is not applicable.

No. 7 Display switch function in auto-complete list was supported.

1. "Edit" menu, "Display the Autocomplete list for variables and registers."
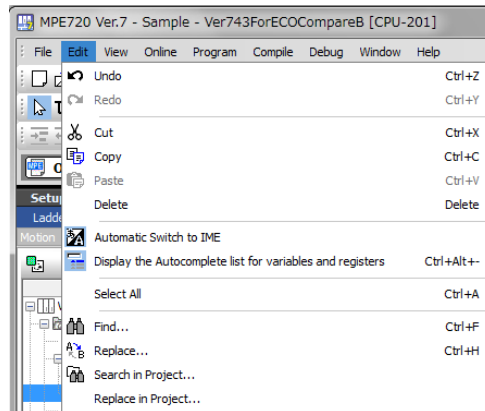
2. Short-cut Key "Ctrl + Alt + -"

3. Icon of a standard tool bar
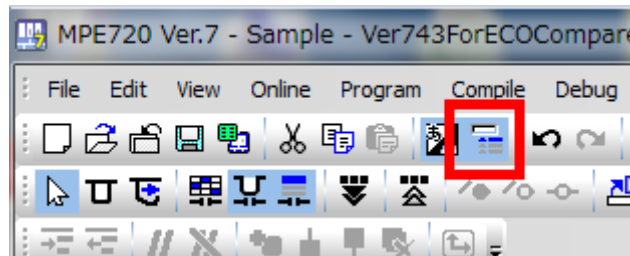
4. Tool bar of a Expression editor
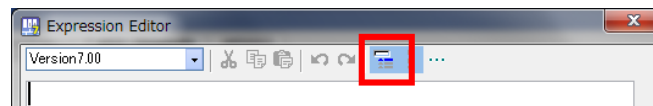
5. Of a pop-up menu of an Expression editor, "Display the Autocomplete list for variables and registers."
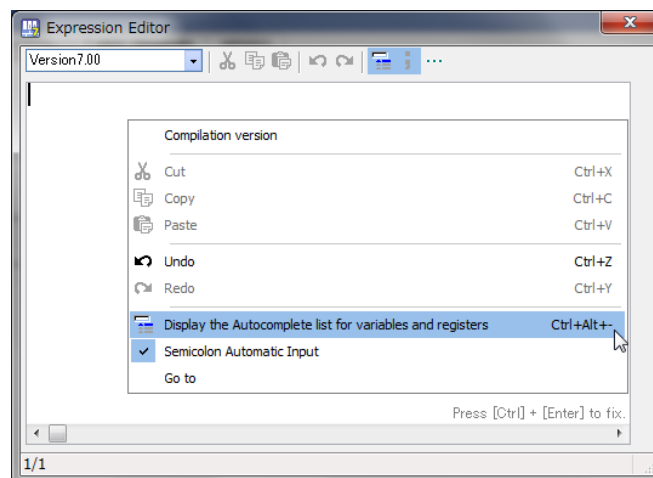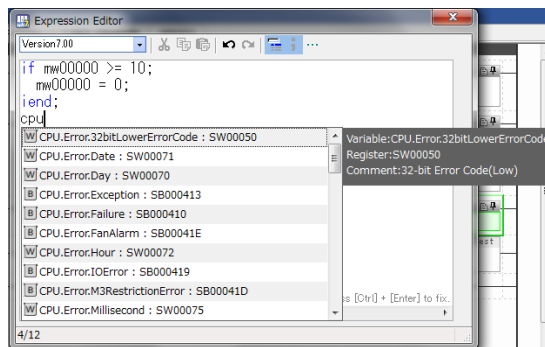
No. 8 Supported the function that make auto-complete list transparent.

When a "Ctrl" key was pushed down when variable/register auto-complete list was displayed, the function makes the list transparent.

The list can be made transparent in operand input of a rudder device and expression editor.

○at the time of "Ctrl" key non-push down.
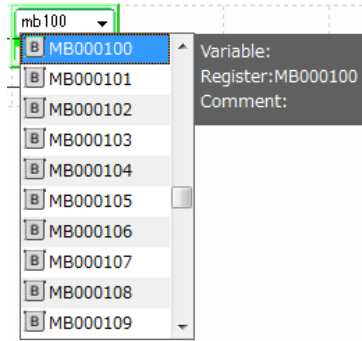

○at the time of "Ctrl" key push down.
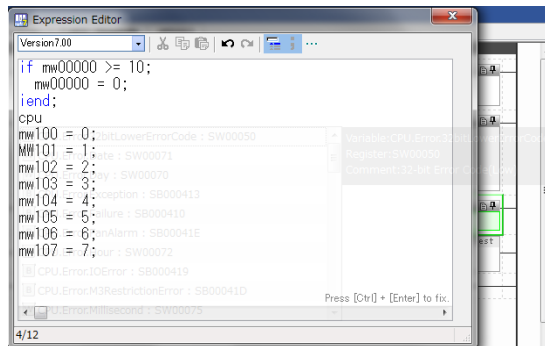
No. 9 Improved the display of auto-complete list which is at the time of register input.
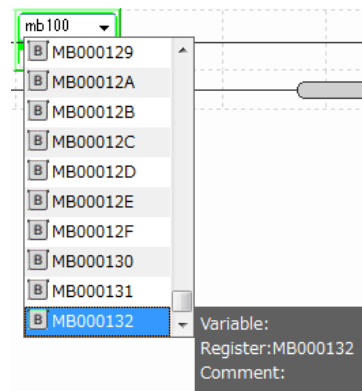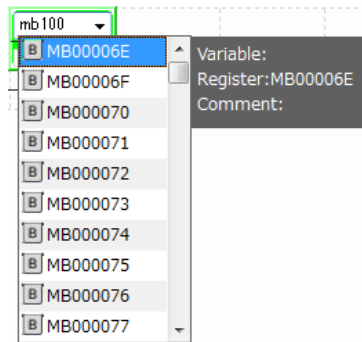
When a register was input in a variable/register auto-complete, added the item of 50 addresses (50 bits) of context.
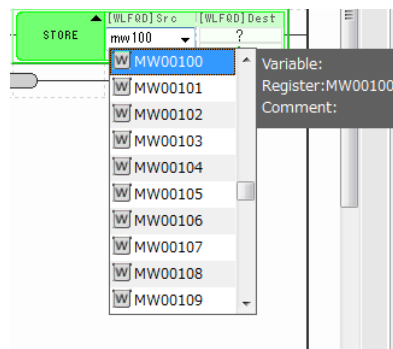
Ex. 1) MB100 was input.
a. MB000100 is chosen.

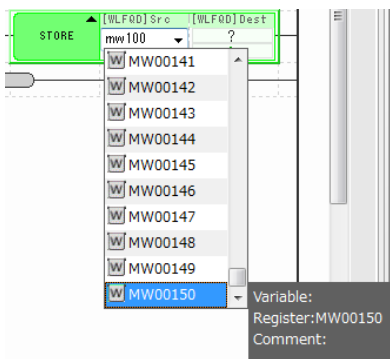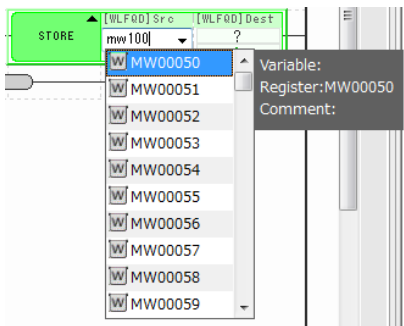b. MB00006E-MB000132 is registered with a list.

Ex. 2) MW100 was input.
a. MW00100 is chosen.

b. MW00050-MW00150 is registered with a list.

No. 10 Improved so that Trace Again can be performed during trace execution.

It is able to push down a Read Again button in real time trace or XY trace execution.

It's possible to check the contents of the trace data with executing Read Again.

* When the Read Again is executed in the trace execution, a real time display mode becomes automatic off.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 11 Sampling and trigger setting screen were improved.

The "No. of Delays" value of real time trace and XY trace wasn't sometimes restored correct.

So, it was improved so that the "No. of Delays" value might be restored just as it is.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 12 Improved the contents of the error message when switching trace enable/disable.

When enabling trace definition at the following condition, error message couldn't present the information which leads to its error cause. So, we improved.

【Conditions】

* A local register of the program which doesn't exist is included in trace setting.
* Trace definition disable state.

When enabling trace definition at the previously described conditions, it was improved that error message present the information which leads to its error cause.
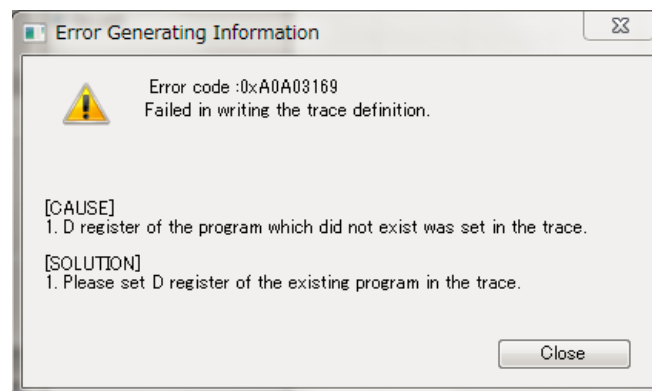
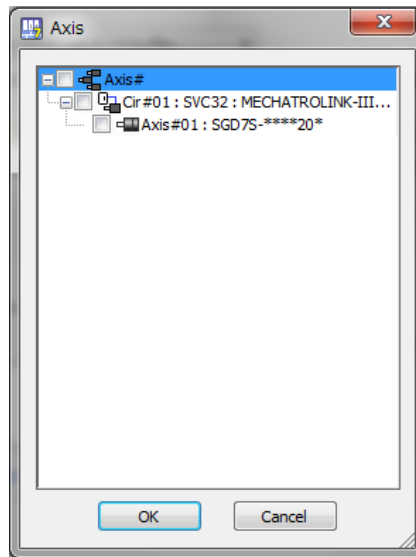【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 13 Improved selecting the target axis of sampling and trigger setting.

OK button was disable when no axis was selected in select target axis screen.

So, we improved so that OK button is enable when no axis was selected in select target axis screen.

【Support Version】
○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 14 Improved the switching operation of "Real time display" mode.

When real time trace or XY trace was opened during trace manager screen indication, "Real time display" mode couldn't be changed.

So, we improved so that real time trace or XY trace was opened during trace manager screen indication, "Real time display" mode can be changed.
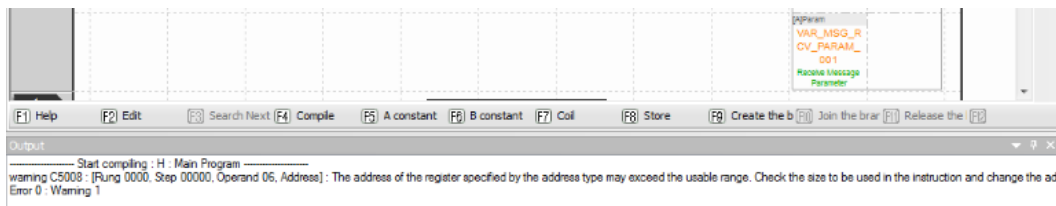
【Support Version】
○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 15 Improved the transfer processing of remote connecting.

There was a phenomenon that fails in transfer when a global register comment was written in at the time of a remote connection. So, we improved the transfer processing of remote connecting.


【Support Version】
○Controller

| Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 16 Improved comment out processing of motion program.

There was a phenomenon that the comment was not released using in a case with "Release Comment on Range" button in a motion program. So, we improved.

○"Release Comment on Range" button
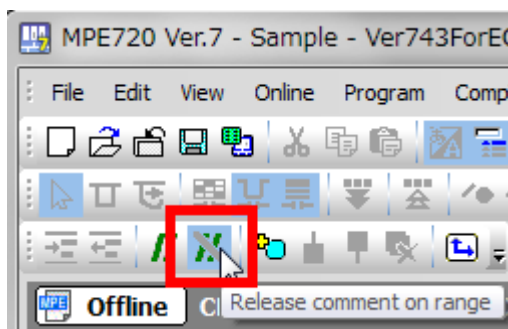
○Executed compile after comment out.
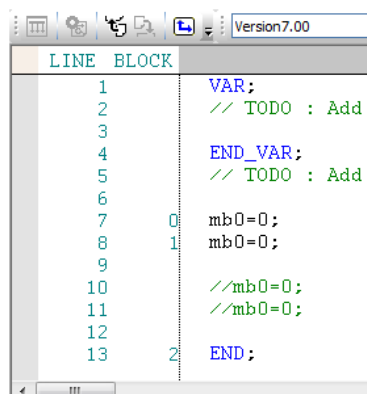
○Executed compile after using "Release Comment on Range" button.

So, we improved that comment is released after using "Release Comment on Range" button.

○Executed compile after using "Release Comment on Range" button.

【Support Version】
○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 17 Improved displaying current value of Expression instruction.

(1) In case of the following condition in a Expression instruction of the rudder program, there was an error which can't confirm the current value because it's displayed "!" with the reversed numerical value.

【Conditions】

・Online connection.

・When expression of logical negation (!) was used.

```
EXPRESSION
'DB000000'=!'DB000001'
DB000000=!DB000001;
1=!1
```

(2) In case of the following condition, there was an error which current value was displayed outside of "()". (It should be displayed inside)

【The condition】

・Online connection.

・Using the condition with "!" in Expression instruction.

```
EXPRESSION
if !('MB000000'==true)
if !(MB000000==true);
if 0!(==true)
'MB000000'=0
MB000000=0;
0=0
iend;
```

We improved (1), (2) above as follows.

Improved so that the current value can be confirmed also under the previous described conditions in a Expression instruction of the ladder program.

```
EXPRESSION
'DB000000'=!'DB000001'
DB000000=!DB000001;
1=!0
```

Improved so that the current value of the register is displayed normally also under the previous described conditions.

```
EXPRESSION
if !('MB000000'==true)
if !(MB000000==true);
if !(0==true)
'MB000000'=0
MB000000=0;
0=0
iend;
```
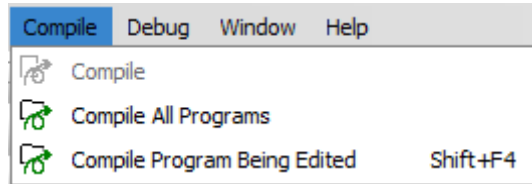
【Support Version】

○Controller

Controller	Support Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 18 The Compile Programs Being Edited function was added.

"Compile Programs Being Edited" function was added to the menu.

"Shift + F4" was assigned as a Short-cut Key.

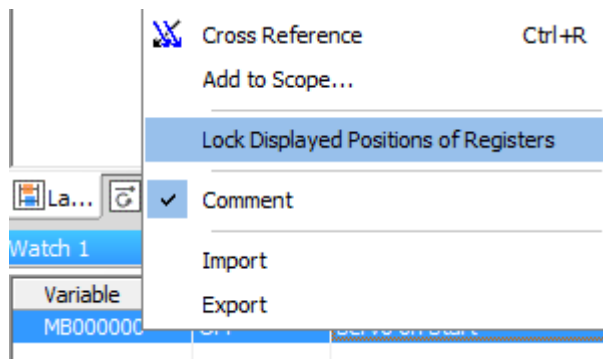This function is the off-line limitation function.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 19 Lock displayed positions of registers function was added to the watch function.

The menu "Lock displayed positions of registers" was added to the pop-up menu of a watch screen.

When this setting was effective, the location of the variable and register can't be changed by drag and drop on the watch.

【Support Version】

○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 20 Improved the processing at the time of copy operation of watch function.

When drag and drop or copy and paste was executed in different watch, in the same watch, and in automatic watch, display style couldn't be inherited. So, we improved so that can be inherited the display style when drag and drop or copy and paste was executed in different watch, in the same watch, and in automatic watch.
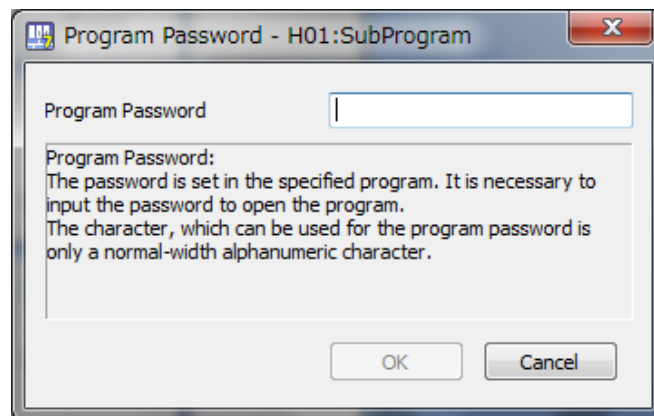
【Support Version】
○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.

No. 21 Improved the password input display.

There was no information of the number and the name of the program in password input screen.

So, we improved so that the number and the name of the program might be shown in password input screen.

【Support Version】
○Controller

Controller	Support Firmware Version
MP3000 Series	It is not dependent on the version.
Σ-7 Series	It is not dependent on the version.
MP2000 Series	It is not dependent on the version.