

Upgrade Information of MPE720 Version6.04

1. Add Function / Item Improvements

1.1 Ver. 6.04 upgrade information

The add function and the improvement from MPE720 version 6.03 to MPE720 version 6.04 are as follows.

No.	Item of Function	Classification
1	Controller model (MP2310-MP2300S-MP2400) Addition	Add function
2	PC-LINK module addition	Add function
3	AFMP-02-C module addition	Add function
4	2181F-02 module addition	Add function
5	Automatic logical port setting to Communication process	Add function
6	Controller retrieval by 2181F-02	Add function
7	New motion instruction addition (ASCII/ SSEE/ FUNC/ C-TSK/ C-FUNC)	Add function
8	For sequence program	Add function
9	Motion program instruction input support	Add function
10	Motion program instruction input support (Servo On / Servo Off)	Add function
11	Motion program instruction input support (Alarm Clear)	Add function
12	Driving control panel	Add function
13	Addition of program execution registration screen	Add function
14	Set parameter addition	Add function
15	The motion alarm analysis screen is added	Add function
16	System window addition	Add function
17	Test run (Servo On (Off) /JOG /STEP /Alarm)	Add function
18	Axis monitor	Add function
19	Alarm monitor	Add function
20	Compile option setting from environment setting	Improvement
21	Trouble shooting function	Improvement
22	Change of name of variable in contradiction to rule	Bug fix
23	It makes an error when the MAL file made with Ver.5 is converted with Ver.6	Bug fix
24	Trouble that B and W register become unused treatments because of display of map of register list used by ladder application	Bug fix
25	When the MAL file made with Ver.5 is converted with Ver.6, the comment on the I0 variable is not converted	Bug fix

1.2 Past upgrade information

No.	Upgrade information	Remarks
1	MPE720 Ver. 6.02 upgrade information	Ver. 6.01→Ver. 6.02
2	MPE720 Ver. 6.03 upgrade information	Ver. 6.02→Ver. 6.03

2. Description of change of specification

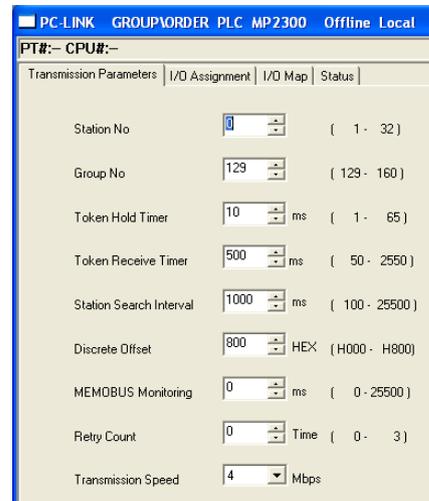
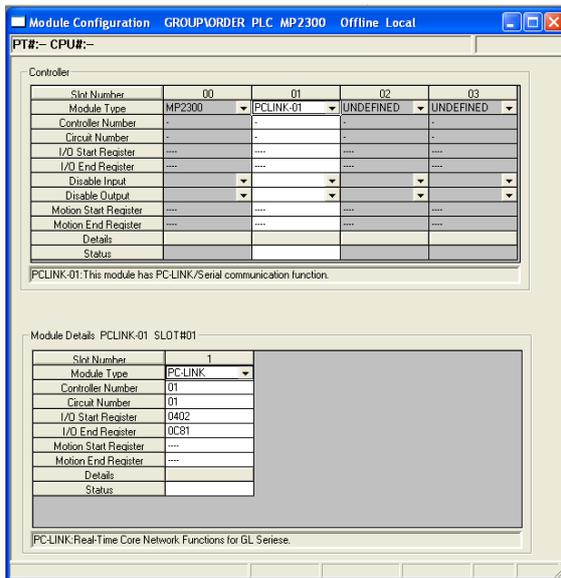
No.1 Controller model (MP2310-MP2300S-MP2400) Addition

The following controller models were added.

- *MP2310
- *MP2300S
- *MP2400

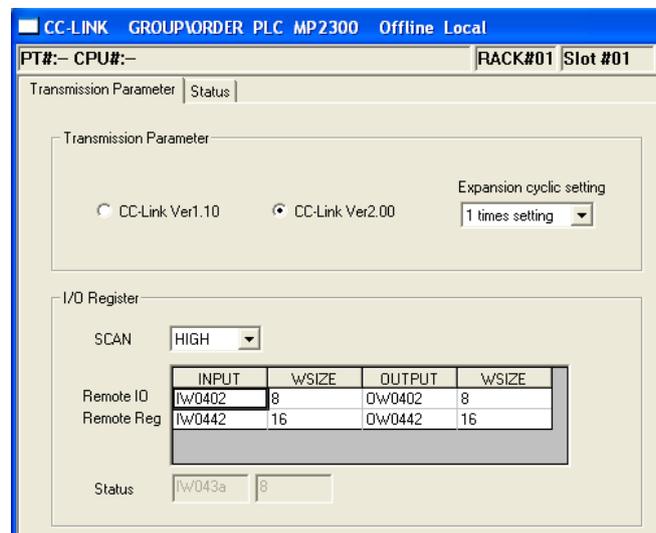
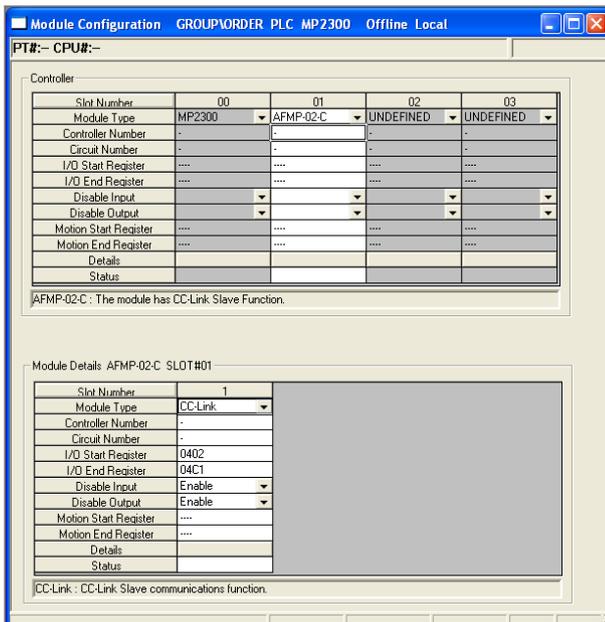
No.2 PC-LINK module addition

The PC-LINK function was added.



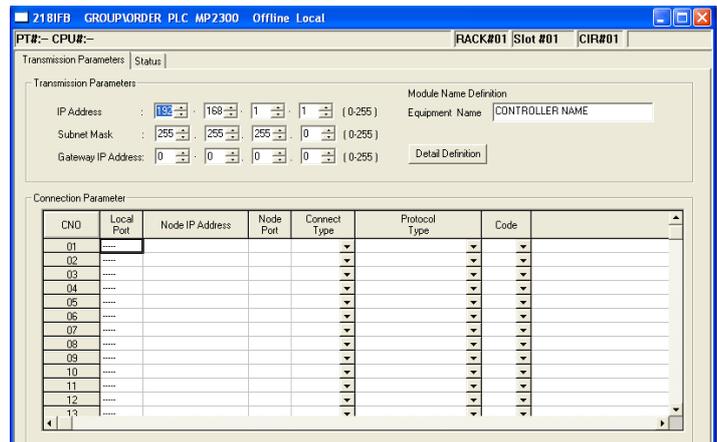
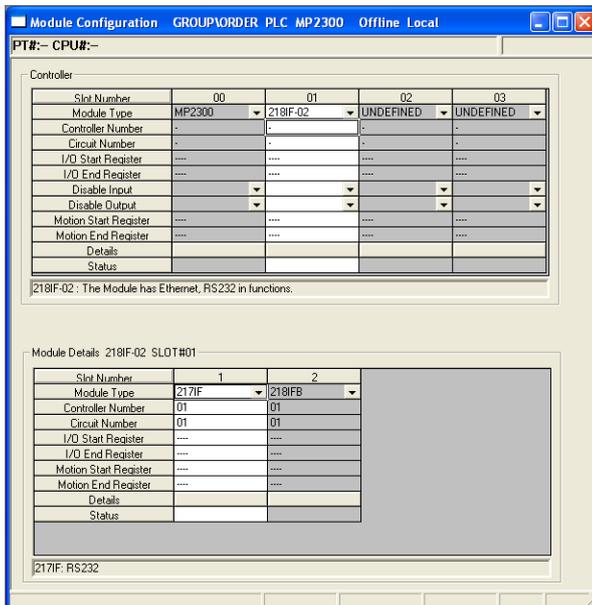
No.3 AFMP-02-C module addition

The AFMP-02-C module that was the CC-LINK module (slave) made by the Anywire Corporation was added.



No. 4 218IF-02 module addition

218IFB that 217IF that was the serial communications function and was the high-speed Ethernet function was added and 218IF-02 module that had line was added respectively once.



No. 5 Automatic logical port setting to communication process

To connect MPE720 with the controller, the physical communication port is set to the communication process and a logical port is made. It is a function that can be easily connected with the controller by setting this setting to the communication process on the MPE720Ver6 side automatically. (The communication process need not be considered.)

A physical port of the unsetting is selected from the list of the communication port in the communication process. It is set to empty logical port in the communication process that it clicks on a "Connection" button or "Setting" button by the automatic operation.

Parameter list set to communication process automatically

Physical port	Set item	Set value
Ethernet (LP)	Port type	100Base-TX
	Time out	10000ms
	IP Address	It is an automatic reading of IP set with the personal computer.
	Engineering port	9999
	Message reception specification	No
Ethernet	Port type	CP218
	Time out	10000ms
	IP Address	It is an automatic reading of IP set with the personal computer.
	Engineering port	10000
	Message reception specification	No
Serial	Port type	Serial

	Time out	10000ms
	Physical port	It is an automatic reading of the port number from the personal computer.
	Unit No.	1
	Baud rate	19.2K
	Data length	8
	Parity	Even
	Stop bit	1
USB	Port type	USB
	Time out	10000ms
MP2100	Port type	MP2100/2500
	Time out	10000ms
	Destination	Device
	CP	It is an automatic reading of the CP number from the personal computer.

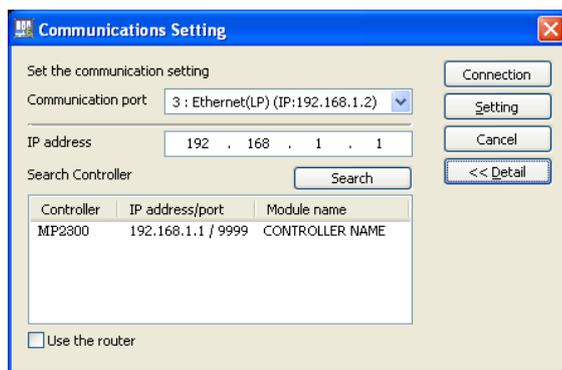
No. 6 Controller retrieval by 218IF-02

The controller connected with the Ethernet cable will be searched by retrieving on the network of Ethernet. It is a function that can be easily connected from this retrieval result by selecting the controller.

When Ethernet (LP) is selected in the communication port, the controller retrieval screen is displayed. The controller retrieval screen retrieves the MP controller on the network connected with Ethernet. And, it displays it as a tree list.

When "Controller retrieval list" at the head of the tree is developed, the retrieval is executed.

The execution result is displayed in subordinate's tree. And, IP of the controller who selects it is set to the Internet Protocol address setting item by the automatic operation.



No. 7 New motion instruction addition(ASCII/ SSEE/ FUNC/ C-TSK/ C-FUNC)

The ASCII/ SSEE/ FUNC/ C-TSK/ C-FUNC instruction was newly added as a motion instruction.

< Instruction explanation >

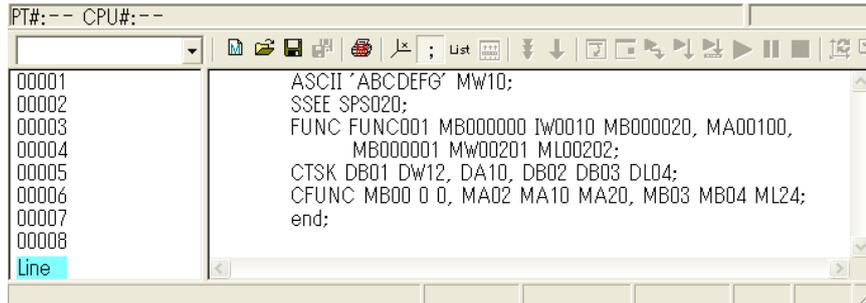
ASCII: ASCII character string is set to a specified register.

SSEE: The sequence subprogram is called.

FUNC: Function drawing call from sequence program

C-TSK: Call of C language task

C-FUNC: Call of C language function



The screenshot shows a software window titled "PT#: -- CPU#: --" with a toolbar and a list of instructions. The instructions are as follows:

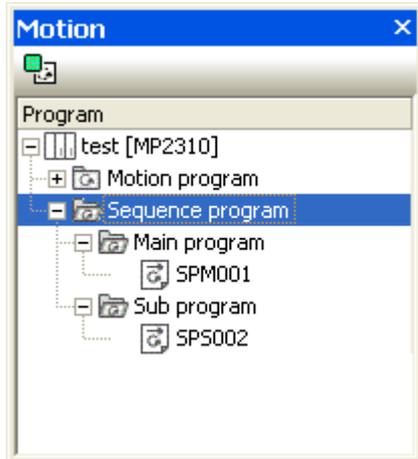
```
00001 ASCII 'ABCDEFG' MW10;
00002 SSEE SPS020;
00003 FUNC FUNC001 MB000000 IW0010 MB000020, MA00100,
00004 MB000001 MW00201 ML00202;
00005 CTSK DB01 DW12, DA10, DB02 DB03 DL04;
00006 CFUNC MB00 0 0, MA02 MA10 MA20, MB03 MB04 ML24;
00007 end;
00008
```

The "Line" column is highlighted in blue.

No. 8 For sequence program

Sequence program (SPMxxx/ SPSxxx) executed at each scanning was able to be made.

* It is possible to use it only by general that has M-EXECUTOR controller



No. 9 Motion program instruction input support

The motion program instruction input support is a function to support the description of the motion program when the motion program is made.

The pop-up menu is displayed in the cursor point that describes the motion program. When a motion instruction "MOV: Position" etc. is arbitrarily selected from the menu, the instruction assistance input screen is displayed. The parameter of the instruction is displayed on this screen. The instruction can be inserted in the program by setting the parameter without referring to the manual on this screen.

The instruction supported by the sequence program and each motion program is different.

Motion command assist

Instruction insert

Argument	Axis	Setting value	Unit
[Axis1] Position	A1	100000	[pulse]
[Axis2] Position	B1	300000	[pulse]

"POSITIONING"
MOV [A1]100000 [B1]300000;

Format

Axis

Parameter

Comment

Instruction input support support list

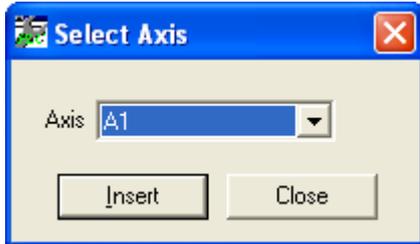
Classification	Item	Motion Program	Sequence Program
Axis Move Commands	MOV : POSITIONING	✓	
	MVS : LINEAR INTERPOLATION	✓	
	MCW : CIRCULAR INTERPOLATION(Clockwise)	✓	
	MCC : CIRCULAR INTERPOLATION(Counterclockwise)	✓	
	MCW : CIRCULAR INTERPOLATION radius(Clockwise)	✓	
	MCC : CIRCULAR INTERPOLATION radius(Counterclockwise)	✓	
	MCW : HELICAL INTERPOLATION(Clockwise)	✓	
	MCC : HELICAL INTERPOLATION(Counterclockwise)	✓	
	MCW : HELICAL INTERPOLATION radius(Clockwise)	✓	
	MCC : HELICAL INTERPOLATION radius(Counterclockwise)	✓	
	ZRN : ZERO POINT RETURN	✓	
	SKP : SKIP FUNCTION	✓	
	MVT : SET TIME POSITIONING	✓	
	EXM : EXTERNAL POSITIONING	✓	
Control Commands	ABS : ABSOLUTE MODE	✓	
	INC : INCREMENTAL MODE	✓	
	POS : CURRENT POSITION SET	✓	
	PLN : COORDINATE PLANE SETTING	✓	
	MVM : MOVE ON MACHINE COORDINATES	✓	
	PLD : PROGRAM CURRENT POSITION UPDATE	✓	
	TIM : DWELL TIME	✓	
	END : PROGRAM END	✓	✓
Speed And Acceleration/Deceleration Commands	ACC : ACCELERATION TIME CHANGE	✓	
	DCC : DECELERATION TIME CHANGE	✓	
	SCC : S-CURVE TIME CONSTANT CHANGE	✓	
	VEL : SET SPEED	✓	
	IFP : INTERPOLATION FEED SPEED RATIO SETTING	✓	
	FMX : MAXIMUM INTERPOLATION FEED SPEED	✓	
	IAC : INTERPOLATION ACCELERATION TIME CHANGE	✓	
	IDC : INTERPOLATION DECELERATION TIME CHANGE	✓	
High-Level Control Commands	PFN : SECOND IN-POSITION CHECK	✓	
	INP : SET SECOND IN-POSITION RANGE	✓	
	SNGD SNGE : SINGLE-BLOCK SIGNAL DISABLED/ENABLED	✓	
	IOW : I/O VARIABLE WAIT	✓	
	MSEE : SUBROUTINE CALL	✓	
	SSEE : SEQUENCE SUBROUTINE CALL		✓
	RET : SUBROUTINE RETURN	✓	✓
	EOX : ONE SCAN WAIT	✓	
	IF ELSE IEND : Branching Commands	✓	✓
	WHILE WEND : Repeat Commands	✓	✓
	PFORK JOINTO PJOINT : Parallel Execution Commands	✓	
	SFORK JOINTO SJOINT : Selective Execution Commands	✓	

Overview of Sequence Commands	SFR : BIT RIGHT SHIFT	✓	✓
	SFL : BIT LEFT SHIFT	✓	✓
	BLK : BLOCK MOVE	✓	✓
	CLR : CLEAR	✓	✓
	SIN : SINE	✓	✓
	COS : COSINE	✓	✓
	TAN : TANGENT	✓	✓
	ASN : ARC SINE	✓	✓
	ACS : ARC COSINE	✓	✓
	ATN : ARC TANGENT	✓	✓
	SQT : SQUARE ROOT	✓	✓
	BIN : BCD-TO-BINARY	✓	✓
	BCD : BINARY-TO-BCD	✓	✓
	S{} : SET BIT	✓	✓
	R{} : RESET BIT	✓	✓
	ASCII : SET ASCII	✓	✓
	PON : RISING PULSE		✓
	NON : FALLING PULSE		✓
	TON : ON-DELAY TIMER		✓
	TOF : OFF-DELAY TIMER		✓
Math Commands	= : SUBSTITUTE	✓	✓
	+ : ADD	✓	✓
	- : SUBTRACT	✓	✓
	* : MULTIPLY	✓	✓
	/ : DIVIDE	✓	✓
	MOD : REMAINDER	✓	✓
	: OR	✓	✓
	& : AND	✓	✓
	^ : XOR	✓	✓
	! : NOT	✓	✓
	== : MATCH	✓	✓
	◇ : MISMATCH	✓	✓
	> : GREATER THAN	✓	✓
	< : LESS THAN	✓	✓
	>= : GREATER THAN OR EQUAL TO	✓	✓
	<= : LESS THAN OR EQUAL TO	✓	✓
	Command Setting	Jog	✓
	Servo Enable	✓	✓
	Servo Disable	✓	✓
	Inverter Enable	✓	✓
	Alarm Clear	✓	✓
	Inverter Drive Control	✓	✓
	Inverter Input Command	✓	✓

No. 10 Motion program instruction input support (Servo On / Servo Off)

A specified axis is selected, and the program code in which a Servo On register is turned ON/OFF is made automatically. As a result, the motion register address is not considered and the program can be made.

- 0 : Servo Off
- 1: Servo On



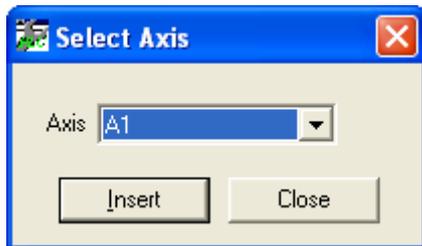
"[A1] Servo Enable"
OB80000 = 1;

"[A1] Servo Disable"
OB80000 = 0;

No. 11 Motion program instruction input support (Alarm Clear)

The program code in which a clear alarm is turned ON is generated automatically.

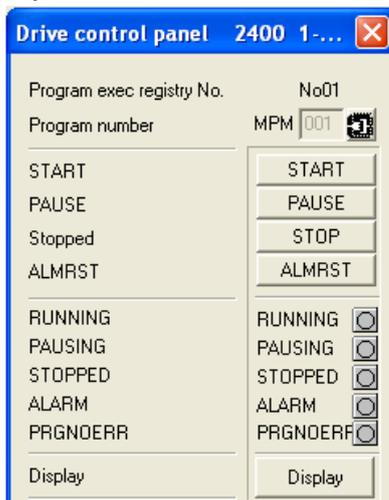
- 1: Alarm Clear ON



"[A1] Alarm Clear"
OB8000F = 1;

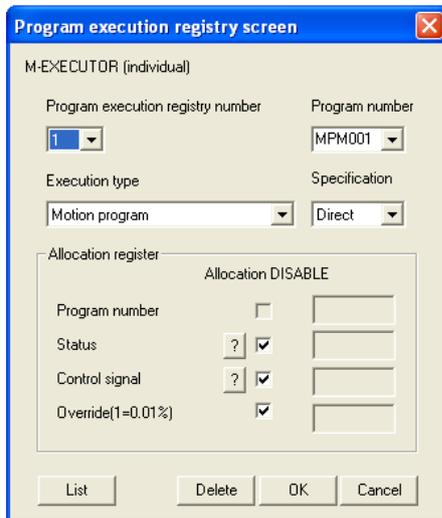
No. 12 Driving control panel

In MP2300S/ MP2310/ MP2400, the driving control panel to be able to drive the made motion program easily was added.



No. 13 Addition of program execution registration screen

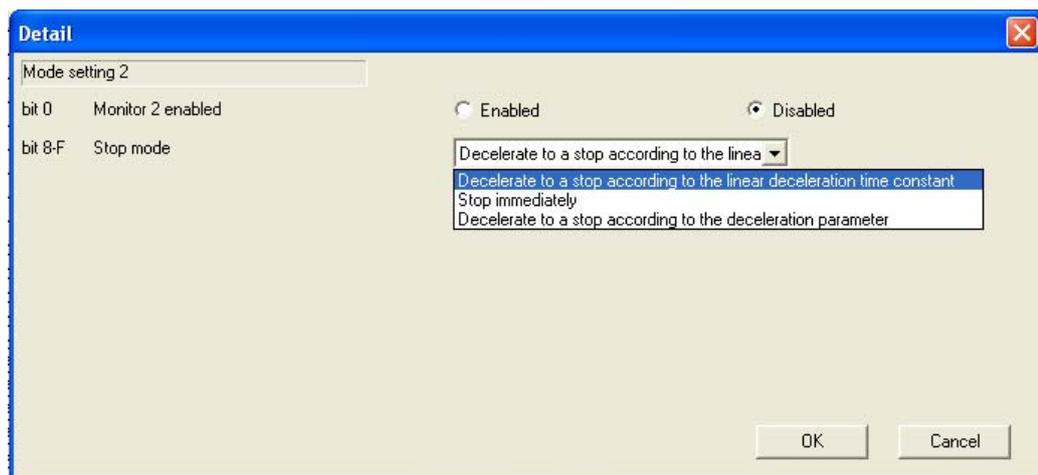
In MP2300S/ MP2310/ MP2400, the function that the executed motion program/sequence program was able to be registered to the system easily was added.



No. 14 Set parameter addition

The following items were added to SVB setup parameter No2.

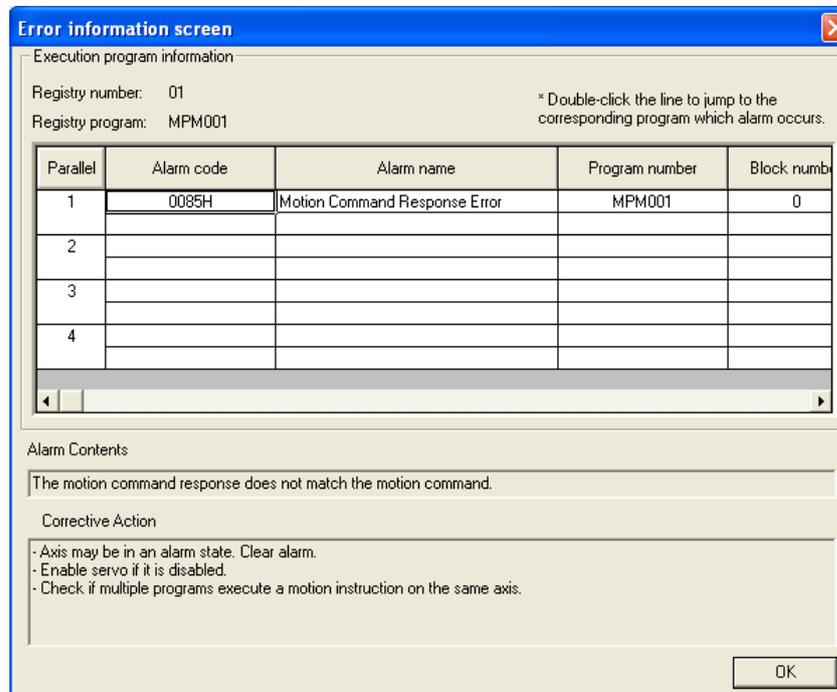
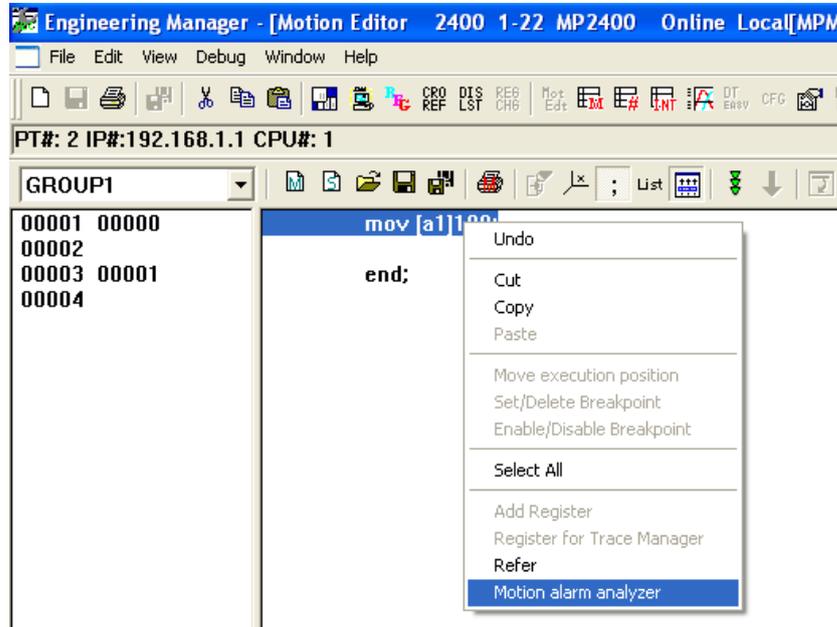
- *"Stop mode"
- *"Decelerate to a stop according to the linear deceleration time constant"
- *"Stop immediately"
- *"Decelerate to a stop according to the deceleration parameter"



No. 15 The motion alarm analysis screen is added

When some errors occurred by the motion program, the screen where the error generation part, the cause of the error, and the measures were displayed was added.

As a result, it comes to be able to jump to the error part of the correspondence when the error part displayed on this screen is double-clicked.

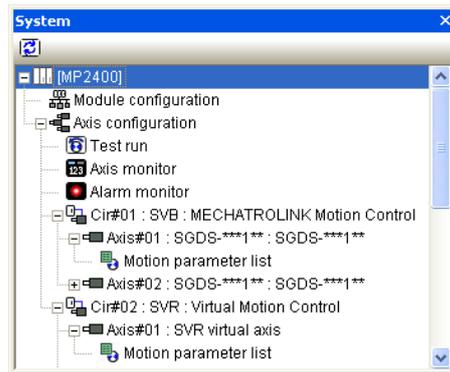


No. 16 System window addition

“Module composition definition”, “Test run”, “Axis monitor”, “Alarm monitor” and “Motion parameter screen” can be opened from System window by the one click in cooperation with Ver6 main screen.

The System window is a style of the docking System window similar to the tree System window of the motion program. Information on the system is displayed with the tree.

- * The module composition definition screen can be opened directly by clicking “Module composition definition”.
- * When the tree of “Axis composition” is opened, “Test run”, “Axis monitor” and “Alarm monitor” is displayed. The test run screen, the Axis monitor screen, and the Alarm monitor screen can be opened by clicking of each.
- * The motion parameter screen can be opened directly by clicking the tree of the axis.

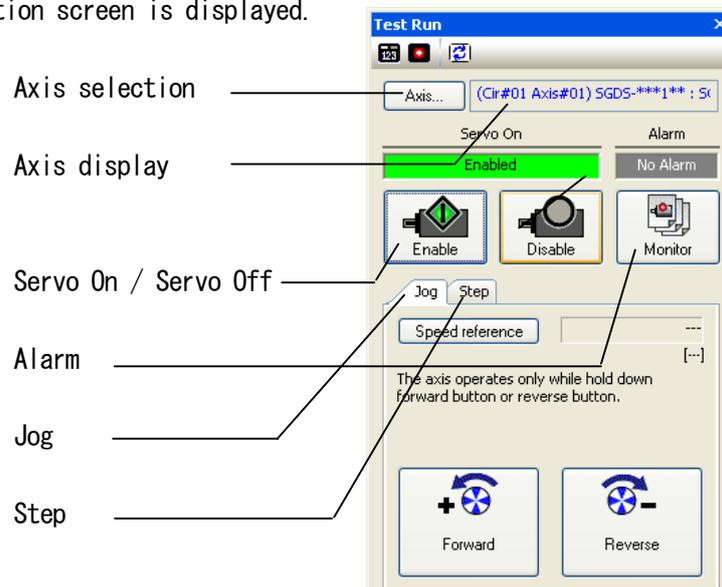


No. 17 Test run(Servo On (Off) /JOG /STEP /Alarm)

The test run is a function to confirm whether the axis operates according to a high-ranking instruction from the MP controller. It can be confirmed that the axis drives in the MP controller’s instruction in front of the application development process after it wires for the equipment.

A Servo On/Servo Off and the Jog driving, the step driving, and the alarm are provided as a function.

- *Servo On / Servo Off: It instructs by turning OB80000 that is the configuration parameter on and off.
- *JOG: It instructs in the fixed velocity sending by the motion command.
- *STEP: Relative Position Mode is specified.
- *Alarm: The state of generated alarm/Warning is displayed. Moreover, alarm/Warning information screen is displayed.



Test driving function list (Servo)

Function	Function explanation
Servo On / Servo Off	Servo On / Servo Off specified axis
Alarm Clear	The state of the alarm or Warning is monitored, and the Alarm clear is executed.
JOG	The axis is moved in a specified direction of the rotation at a constant speed for a specified axis.
STEP	It positions it for a specified axis for the specified amount of the movement.

Test driving function list (Inverter)

Function	Function explanation
Driving permission	Run permission specified axis.
Alarm Clear	The state of the alarm or Warning is monitored, and the Alarm clear is executed.
JOG	The axis is moved in a specified direction of the rotation at a constant speed for a specified axis.
STEP	No function

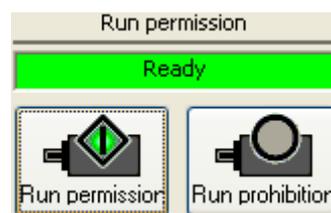
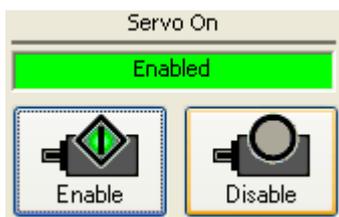
【Attention】

When the motion command is not issued, the test run can be started. The test run ends when the motion command is issued when the test run is starting. And, the test run screen shuts.

(1) Servo On / Servo Off

A Servo On or a Servo Off can be done. OB80000 is set to turning on or turning off by the button click.

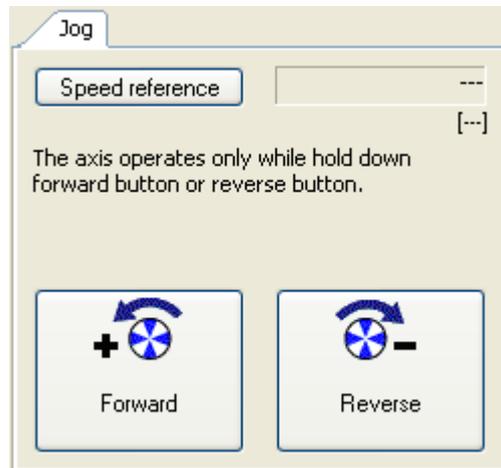
“Driving permission” can be done for the inverter. OB8000D is set to turning on or turning off by the button click.



Operating procedure		The setting data
1. Servo On	The Servo On button ([Run permission] button) is pressed on the test run screen. Servo On a specified axis.	OW8000 (bit0): A Servo On is set to turning on. * OW8000 (bit D): Driving permission can be done for the inverter.
2. Servo Off	The Servo Off button ([Run permission] button) is pressed on the test run screen. Servo On a specified axis	OW8000(bit0): A Servo Off is set to turning on. *“ OW8000 (bit D): Driving permission” can be done for the inverter.

(2) JOG

In set "Speed instruction value", the normal rotation or the reversal can drive the axis.
The axis rotates only while pressing the operation button. Driving stops when pressing is released.



Servo

Operating procedure		The setting data
1. Servo On	The Servo On button is pressed. Servo On a specified axis.	OW8000 (bit0) : A Servo On is set to turning on.
2. Speed reference	The tab of Jog is selected. Speed reference is set pressing [Speed reference] button.	The value is set to OL8010: Speed reference.
3. Jog start	[Forward] or [Reverse] button is pressed.	OW8009 (Bit2) : Direction of the movement is set. OW8008: The Jog Mode (7) is set to the motion command.

STEP

Operating procedure		The setting data
1. Servo On	[Run permission] button is pressed. Servo On a specified axis.	OW8010 (bit D) : Driving permission can be done for the inverter.
2. Speed reference	The tab of the Jog run is selected. Speed reference is set pressing [Speed reference] button.	The value is set to OW8011: Speed reference. Attention) The unit of a set value becomes a unit specified by " Frequency Reference " of inverter constant. Please confirm, and operate it.
3. Jog start	[Forward] or [Reverse] button is pressed.	OW8010(bit0) : Forward and OW8010(bit1) : Reverse are turned on respectively. OW8008: Inverter Drive Control (1) is set to the command.

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