Upgrade Information of MPE720 Version 6.04

NO.	Item
4	Motion command addition
Ι	♦ Absolute encoder reset
	Motion parameter addition
2	Communication reset (Owxx00:Bit14)
2	♦ Gain switch2 (Owxx01:Bit5)
	◆ Latch detection demand completion (Iwxx00 : Bit4)
3	Correspondence to high-resolution of SVR
4	Integrated CP Ladder converter
5	User structure of variables
6	Import and export of variables
7	Print manager is added to "utility" menu structure
8	Improvement of print function
9	Automatic logical port setting to Communication process
10	Motion Command Assist
11	Motion Command Assist (Servo Enable, Disable)
12	Motion Command Assist (Alarm Clear)
13	Setting parameter addition
14	The monitor analysis screen is added
15	System window addition
16	Test run
17	Axis monitor
18	Alarm monitor
19	Compile option setting from environment setting
20	Troubleshooting function

2. Brief Description of Updates

No.1 Motion command additions

The following motion commands were added.

Absolute encoder reset (ABS_RST)

1) "ABS_RST" command initializes the multiple rotation data of the absolute encoder (set 0). 2) "ABS-RST" command clears "encoder backup alarm" and "encoder checksum alarm" when they occur.

No.2 Motion parameter addition

The following motion parameters were added.

Communication reset (Owxx00:Bit14)

This command resets MECHATROLINK communication and makes the parameters, that need cycle power, effective. Also it clears C-phase position data memorized in the interpolator for SONY linear scale.

♦ Gain switch2 (Owxx01:Bit5)

The "gain switch 2 (OWxx01.bit5)" is added in setting parameters and combine with existing gain change parameter (Owxx01.bit4), user can choose 4 different gains.

◆ Latch detection demand completion (Iwxx00 : Bit4)

"Latch Armed" status was added to the monitor parameters.

<Controller version>

Supported Version

- Built-in SVB function: MP2000 system software Ver2.50³ (MP2100/MP2100M/MP2300) or later
- SVB option module: SVB-01 system software Ver1.20 or later

No.3 SVR (virtual axis) now supports linear and higher resolution applications

MP2000 SVR support for "Linear type", and resolution in "microns meter" is available in the unit selection on MP2000 series.

<Controller version>

Supported Version: MP2000 system software Ver2.50¹ or later

No.4 CP Ladder converter is now integrated into Motion Works

This is a function that converts programs made with CP ladder into the Ver.6 style ladder program. This function is available only in "off-line."

No.5 User structures - variable

A User specified structure can be created, and variables will be allocated it to. The variables in the user structure are called "Structure members". Up to 100 members can be registered to a user structure.

The User structure can be allocated to global or local variables.

No.6 Import and export of variable

Import and export are available for "Global variable and comment", "Local variable and comment ", "Constant variable", "User structure", and "Ver5 CMT file"

The exported file can be edited in Excel(CSV format) and/or imported to the other project.

Туре	Type of file	Editing
The global variable and comment	CSV file	Possible by Microsoft Excel
The local variable and comment	CSV file	Possible by Microsoft Excel
The constant variable	CTF file	Not Possible
The user structure	YST file	Not Possible
Ver5 CMT file	CMT file	Not Possible

No.7 Print manager is added to the "Utility" menu structure

¹ A method for determining your controller's firmware version is shown in appendix A for reference



No.8 And configuring the print options is selectable as shown above

NO.9 Automatic logical port setting for any RS232, Ethernet, or USB communication process

The physical communication port is set to the communication process and logical ports are created automatically.

NO.10 Motion Command Assist

A Motion command assist function is added. Using the Motion Command Dialog Box, the motion instructions will be easier to input.

😹 Motion comm	nand assist			×					
Select Command	BLK : BLOCK N	IOVE		•					
BLK Regist	CLR : CLEAR COS : COSINE	IUVE		_		^			
Axis number : 🕞	END : PROGR END : PROGR EOX : ONE SG	HATIUN TIMI AM END AN WAIT	E CHANG	E					
Set to the argum	Set to the argum								
Source regist	Source registLDC : INTERPOLATION ACCELERATION TIME CHANGE								
Cestination re	egist -		-	>					
Comment	Comment								
BLOCK MOVE									
				~					
	Insert	Close	1	Help					
				/					

- NO.11 Likewise, a Motion Command Assist (Servo Enable, Disable) Motion command assist function for Servo Enable and Servo Disable is added.
- NO.12 Similarly a Motion Command Assist (Alarm Clear) Motion command assist function for Alarm Clear is added.
- NO.13 Setting parameter addition

The new parameter "Stop mode" is added to the setting parameter of SVB.

Stop mode has following selections.

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

Fixed Parameters Setup Parameters SERVOPACK | Monitor |

									-
No	Name		REG	Input Data		Unit	Current Value		
0	Run command setting		0W8000	0000 0000 0	000 0000 000	DH			
1	Mode setting 1		0W8001	0000 0000 0	000 <u>0000 </u> 000	DH			
2	Mode setting 2		0W8002	0000 0000 0	000 0000 000	DH			
3	Function setting 1		0W8003	0000 0000 0	001 0001 001	1 H			
4	Function setting 2	_	0₩8004	0000 0000 0	011 0011 003	3 H			
5	Function setting 3	Detail							2
6	Option Setting								-
8	Motion command	Mode settir	ng 2						
9	Motion command control flag	bètΩ N	fonitor 2 enabled	4	0	Enabled	Diashla	4	
10	Motion subcommand	DIK O II				Enabled	** Disable	5	
12	Torque/Thrust reference setting	bit 8-F S	top mode		6	ecelerate to a stop	according to the linea 💌		
14	Speed limit setting at the torque/thrust refer					lecelerate to a ston	according to the linear decelera	ation time constant	
16	Speed reference setting					top immediatelv	according to the intear accelera	don dine constant	
20	Positive side limiting torque/thrust setting at				L L	ecelerate to a stop	according to the deceleration p	arameter	
22	Secondly Speed Compensation								
24	Override								
28	Position reference setting								
30	Width of positioning completion								
32	NEAR signal output width								
34	Error count alarm detection								
38	Positioning completion check time								
40	Phase correction setting								
42	Latch zone lower limit setting						пк	Cancel	
44	Latch zone upper limit setting								
40	Desition loop, gain								

NO.14 The motion alarm analysis screen is added

The "motion alarm analysis screen" is added. It displays the alarm information which is occurred in the motion program.

NO.15 System window addition

"Module configuration", "Test run", "Axis monitor" Alarm monitor and "Motion parameter screen" can be displayed from System window.

System ×
🚟 Module configuration
🔤 📲 Axis configuration
🐨 Test run
Axis monitor
🔤 Alarm monitor
E Cir#01 : SVB01 : MECHATROLINK Motion Control
📖 🖶 Motion parameter list

NO.16 Test run

The "Test run" function is added. The Test run function is for checking if the machine controller can operate an axis and has three functions.

- Servo Enable, Servo Disable
- JOG
- STEP

Test Run		×						
🖾 🖸 🧭								
Axis (Cir#01 Axis#01) SGDS-***1**								
Servo	o On	Alarm						
Enab	led	No Alarm						
Enable	Enable							
Jog Step	1							
Speed refere	ence	3000						
Step distar		[1000pulse/min] 1000						
		[pulse]						
Direction Se	tting	Forward						
🗢 Forward 🗘	Reverse	1/ 10 times						
	8							
Run		Stop						

NO.17 Axis monitor

The "Axis monitor" function is added. The Axis monitor is a function to monitor the status of each axis in the Axis Monitor window. The status (Ready, Enable, Alarm, Warning, Profile Complete, In Position, Motion Command) and other monitoring can be monitored.

Start Axis Monitor						
Circuit Cir#01 : SVB01 : MECHATF 🚽 🕞 Normal speed monitor 🔹 💵 Monitoring 🔯 😰 🗕 Tollbar						
Cin#01 : SVB01	Axis#01 : SGDS-***1*	— Circuit and Axis Displays				
Ready/Servo On	Ready Disabled					
Alarm/ Warning	No Alarm No Alarm	- Status Displays				
Prof. Comp/ In Position	Prof. Comp In Position	1 2				
Motion Command	0:NOP					
Machine coordinate feedbac	276					
	[pulse]					
Position error (PERR)	0					
	[pulse]	- Monitor Parameter Displays				
Feedback speed	0					
	[1000pulse/min]					
Feedback torque/ thrust	0.00					

NO.18 Alarm monitor

The "Alarm monitor" function is added. The Alarm monitor is a function to monitor alarm information on all axes on the screen.

Start Alarm Monitor = X							
😰 Manually refresh	Monitoring						— Toolba
Cir#01 : SVB01	Axis#01	Axis#02	-	-	-	- ^	
Alarm	No Alarm	Occurred					
Warning	No Alarm	Occurred					
Cir#02 : SVR	Axis#01	Axis#02	Axis#03	Axis#04	Axis#05	Axis#0(
Alarm	No Alarm	No Alarm	No Alarm	No Alarm	No Alarm	No Alan	- Status
Warning	No Alarm	No Alarm	No Alarm	No Alarm	No Alarm	No Alan	
	Axis#09	Axis#10	Axis#11	Axis#12	Axis#13	Axis#1•	
	No Alarm	No Alarm	No Alarm	No Alarm	No Alarm	No Alan	
	No Alarm	No Alarm	No Alarm	No Alarm	No Alarm	No Alan	
<						>	

NO.19 Compile option setting from environment setting

The ladder program "Compile Options" can be set without displaying the ladder program in this version or later. Select "Ladder" – "General" from the tree in the Environment Setting Dialog Box and the Compile Option settings are displayed.

Environment Setting		×
System	Program	
Security	Create new CP ladder	Unuse
Setup	Compile Option	
🗁 Ladder	Multiple coil check	Disable
🕒 General	Compile to ver.5 compatible (version 5.3	Disable
Clanguage Variable Monitor Transfer		
int Print		
	(OK Cancel Apply

NO.20 Troubleshooting function

Troubleshooting is a function to analyze problems such as the error, battery alarm, scan time etc. When an error occurs, the message referencing the error is displayed in the System Monitor Sub-window. The name of the program with the error is displayed.

System Monitor [An Alarm Occurred] H is an integer operather to reset errors.	ion - division error[ErrorCode:0x0003]. Please correct the trouble spot, and click
H is an integer operation - division error[E	
RUN Status	FUNC D Name FUNC01 [E]B-VAL DB000100 [E]B-VAL DB000101
Scan time 🔳	Name FUNC02
Setting Current Max. High 10.0 ms 0.2 ms 0.4 ms Low 200.0 ms 0.0 ms 0.1 ms	

• A pop-up is displayed when the mouse is held over the status. Error information can be confirmed at a glance.

It's possible to analyze the error in the ladder program, motion program and sequence program. Also, an I/O module error can be detected.

Appendix A

How to find current firmware version of your MP2000 controller when

connected via MotionWorks?

MotionWorks - MP2300DEM0_FB_BASIC_with	EOT_and_5VW_2007_0130	[MP2300] - [Start]	
		a (a ' 🚥] : 👝 ' 👞 👘 👘 🛣 🛣 👘 🗍	- 8 ×
Offline MP2300 C:\Products\MP2000 Set	ries\MP2300DEMO_EB_BAS	C with EDT and SVW 2007 0130.YMW	
Setup Programming Monitor Tra	nsfer Utility		
Scope Register list Watch System mor	nitor		dder e
Start			₹ X
	[[]]]		dion
New	Communicati	Controller Information 9:26:59am S W R B ×	Varia
Open	Connection [2:Ether	i) Display the project data.	bie
Close	Disconn	Controller	
History		Туре МР2300	
MP2300DEM0_FB_BASIC_with_EOT_and		System Soft No. 2.44	
TorqueLimitExample.YMW		Release Date 2005/05/27	
COMPLETE_REV_Q.YMW		Design Car	
WD20000Casing is and i Masiable Usage (.=C) =C) =C	Program scep	
mr20005enes_i_anuvanable_osaye_(- L	High-speed Program Step	
		Start ProgramStep	
		Interrunt Program Step	
		Function Program Step	
		All Program Step	
		Program Memory	
		Using Memory KByte (Byte)	
		Empty Memory KByte (Byte)	
		Total Memory KByte (Byte)	
		ОК	
Output 🔳 Register List 1 🔛 Watch 1	💥 Cross Reference 1 ⁄ 👍 F	orce Coil List	
Ready			CAP NUM SCRL

How to find current firmware version of your Motion Module (SVB) when connected via MotionWorks.

Name	Register Number	Remarks
	SW00800	Module ID
	SW00801	CPU Hardware version (BCD)
	SW00802	CPU Software version (BCD)
	SW00803	Number of subslots
CPU Information	SW00804	CPU Function Module ID
	5₩00805	CPU Function Module Status
	5W90896	SVR Function Module ID
	SW00\$07	SVR Function Module Status
	SW00808 to SW00815	Reserved by the system.
	SW00816	Module ID
	5W90817	Hardware version (BCD)
	SW00818	Software version (BCD) 🗡
Rack 1 Slot 1 Information	SW00819	Number of subslots
	SW00820	Subslot 1 Function Module ID
	SW00821	Subslot 1 Function Module Status
	5W90822	Subslot 2 Function Module ID
	SW00823	Subslot 2 Function Module Status
Rack 1, Slot 2 Information	SW00824 to SW00831	Same as above.
Rack 1. Slot 3 Information	SW00832 to SW00839	Same as above.
Rack 1, Slot 4 Information	SW00840 to SW00847	Same as above.
Rack 1, Slot 5 Information	SW00848 to SW00855	Same as above.
Rack 1, Slot 6 Information	SW00856 to SW00863	Same as above
Rack 1, Slot 7 Information	SW00864 to SW00871	Same as above.
Rack 1, Slot 8 Information	5W00872 to SW00879	Same as above.